

The Qualities of Hypermedia and Digital Media Learning:
Implications for Adult Visual Art Education
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Abstract

The digital age that we live in enables art educators to readily integrate technology for learning. An exploration of hypermedia as a direct or indirect enhancement for adult, visual art education seeks to understand practical and theoretical concerns for hypermedia uses and other forms of digital media learning. Qualitative, semi structured interviews of both art educators and hypermedia researchers highlighted teaching practices infused with technology in various ways as well as cognitive and technical theories behind technological learning. Art educators interviewed for this study did not attribute the ideal environment for teaching the visual arts to adults as being hypermedia. What emerged was a conceptual framework for approaching adult visual arts education, with collaboration, discursive approaches and non-linear structuring being very much at the core and mirroring the inherent format of hypermedia itself.

Keywords: hypermedia, adult education, art education, multimedia, digital media, visual arts.

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Chapter One

Introduction

Our culture, economy, education and the way that we interact with one another are changing. All of these elements of our world have evolved and taken more fluid, digitized and often times, more streamlined forms. Dialed phone calls have rapidly shifted into emails, the form of which has in turn been compacted into text messages via mobile phones. “We live in an age in which we are constantly inundated with images from newspapers, television and the Internet,” (National Docent Symposium Council, 2001, p 43).

Postal letters, now emails, are abbreviated to be the most basic and necessary components of correspondence. From Facebook statuses, Twitter feeds and foursquare check-ins, the day and age we live not only transforms the social sphere we are all inherently a part of, but nearly every facet of how we live our lives, as well as how we learn, has followed in form. “We are living in a time of fast-changing images and rapid-paced songs, of action movies and computer information networks,” (Burnham, 1994).

Communication and sociality are not the only areas within our culture that have seen radical transformations towards digitization over time. “The rise of the Internet and the ubiquity of technology has dramatically changed the way people get and share information and the expectations of what audiences want when it comes to... well...everything,” (Reich, 2009).

We have televisions and home appliances that are smarter than an individual whom may be endowed with perfect I.Q. or standardized test scores that are off the charts. Automobiles are being developed with the ability to drive for us, detect dangers proactively and so on. It is not an

attempt to play catch up but an ardent and necessary trajectory of this contemporary age for attitudes and forms of education to support the needs of the future citizens of this world.

“Recent years have seen rapid developments in the use of computer-based learning environments and information retrieval systems,” (Gerjets, Scheiter & Schuh, 2007, p 74). Education has, indeed, become more ‘smart’ in the sense of ‘smart’ phones and ‘smart’ appliances-the increased accessibility of student-centered, classroom technology inclusion, the increase of teacher development for digital age literacies, new-world curricular adjustments, courses and even entire programs being offered online across educational levels and fields.

However, much of this is still out of reach for many learners; moreover, it suggests a hasty jump straight to what policymakers thinking is necessary to add (technology), where they’ve spring boarded over fundamental thinking processes that will help understand why learners can learn with/through technology in the first place.

Interestingly, much of the digital reform seen in education has been spurred on by what can closely be compared to as a tease from the high level of technological gadgets, as if those technological gadgets point at education and giggle, “you are not at *our* level, therefore less superior.” Such educational reform regarding technological concerns needs solid inspiration from and grounded basis in cognitive learning theory and scientific experiments or examples highlighting biological rationale. Otherwise, if only propelled by fires lit from underneath, any reforms’ ultimate goals will be ill placed, misguided and potentially dangerous to today’s learners.

Within education, the digital realm has often been approached in practicum and research as technologic inclusion or online pedagogy, such as teaching methods for online or virtual settings. Current and future research must be connected to inform educational, addressing

cognition and learning styles, or sub-styles for learning through/with technology. The way that digital information is processed in and enhanced by the human brain is a new realm of study that, with so much to be gleaned from, is only at the beginning of its threshold. This research aims to highlight a gap appearing amiss in both educational and technological research that would seek to bridge learning cognition with digital information processing, targeted for the teaching of the visual arts.

All you have to do is look around to see how ‘natural’ learning occurs. At coffee shops, airports, lobbies, libraries and even family kitchens and living rooms, lifelong learners have their laptops open and cell phones in constant motion...it has become a way of life, (Magney & Sorensen, 2011).

This research begins upon the broad topic of hypermedia, a networked system that holds information in various forms of media (e.g. video, sound, text, etc.,) connected through associative links or nodes.

In 1945 when Vannevar Bush, scientific consultant to then United States President Roosevelt, creator of the ‘memex’ and contributing scientist to the Manhattan Project, synthesized a method to gainfully maximize the gathering of information, he initiated the concept of hypertext. Hypertext allowed for a network of textual based information to be linked and interconnected. The memex that Bush envisioned was a hypothetical place where all of the interconnected hypertext would occupy. In a contemporary sense, hypertext is now hypermedia (provided it contains various forms of media) and the memex in which it all lives is the World Wide Web.

Since these early beginnings, the technology and progresses of the World Wide Web and hypermedia has developed exponentially. More specifically, in the last 20-30 years the academic and technical examinations of hypermedia as an interface for learning and its subsequent educational implications has increased and expanded. Yet, even while over the previous 15-20 years research regarding hypermedia's educational implications been growing and developing, a large majority of such research seeks to claim hypermedia learning as superior (or not) over traditional methods of learning.

As technology has and will only continue to advance exponentially, contemporary research must match the progress of technological advancement for the sake of discovering proper and appropriate uses and justifications for technology in education.

“Hypermedia has broad application in education,” (Liu, Lu & Wan, 1999, p 43). This current research explores the implications and limitations of educational hypermedia for learners within visual arts education environments in higher education such as community college and visual arts programs at the college levels and, at a glance, museums. “Today's lifelong learner will query immediately using any technology to find the answer or find a pathway to learn more,” (Magney & Sorenson, 2011).

How can educational hypermedia directly or indirectly enhance a visual arts education through technological inclusion for adult learners?

This research hopes to address other, less direct, queries, as well. What are the implications of educational hypermedia currently? How should educational hypermedia be approached for visual arts education? What are the cognitive significances of hypermedia and digital learning currently in the field of visual art education?

This research considers potential implications and implementation strategies of educational hypermedia or digital learning with adult and older learners, such as what kinds of strategies are currently being used as well as looking forward to what strategies could be used next. This inquiry considers the learning characteristics of the audience such as previous knowledge bases and attitudinal dispositions.

To highlight an overview of the older or adult learner's learning characteristics, Eighmy, Hall & Lenoue (2011) provide solid summations. The adult learner brings life experiences and prior learning to their learning experience, which can be enhanced by and connected through a constructivist learning theory. The adult learner is likely to have developed relationships and collaborations throughout their experiences, which points to a strong point in what digitally mediated learning can foster, a relational and collaborative learning experience. The adult learner generally has a need to be self-directing as well as autonomous towards their learning activities.

Additionally, adult learners, even younger adult learners, bring with them a readiness to learn as they experience needs in their own life situations. Their informal learning outside of educational institutions promotes an intuition and eagerness for educational content and goals. It is also important to note that "individual difference among people increase with age; therefore, adult education must make optimal provision for differences in style, time, and pace of learning," (Eighmy, Hall & Lenoue, 2011).

Lastly, this research questions the possibilities of educational hypermedia's implementation with visual arts education. "Hypermedia enables a nonhierarchical, interactive presentation of student-generated critical reflective aesthetic-expressive discourse. Via the Internet we can expand the dialogue to classrooms throughout the world and further broaden our own perspectives," (Keifer-Boyd, 1996, 30). Of the current research on understanding

hypermedia's role in cognitive learning, little exists of its specific value or benefit towards teaching in the visual arts.

“Petraglia notes that ‘a common claim in the literature of hypertext’ is ‘that principles of association that shape hypertexts mirror the complexity of human information-seeking and problem solving’ (p. 57),” (Gabbard, 2000, 108).

When considering the structure of hypermedia as an interconnected network of shared information, a parallel surfaces with the way the biological brain is formatted for constructing new knowledge by connecting new knowledge to previous knowledge. This has become a theory among researchers within the topic of educational hypermedia.

Additionally, this theorized parallel is seen in this research as a tool for enhancing learning, which is explored through examination of self-regulated learning and non-formal learning theories.

The World Wide Web inarguably offers an exponential amount of information to be navigated. The way a learner would simply navigate through the plethora of information is only a small part of the total understanding of how the learner would make sense of what s/he is navigating through or how it compares, both quantitatively and qualitatively to traditional material learning (such as textbooks.) However, hypermedia learning's success over traditional learning convention is not the emphasis of this research, as it has been in previous research, because it is not and should not be the single issue that educational, cognitive and technological researchers could employ their work to determine. One main assertion of this research is that the quality, experience and event of hypermedia learning shall be viewed as an enhancement, an extension to traditional learning convention. “While making sure that core curriculum outcomes

are met, teachers are creating ways to modify the lecture-and-lesson delivery to a seek-and learn strategy that can be individualized,” (Magney & Sorenson, 2011).

Due to the multi-faceted, all-encompassing, multi-modular state of our current culture and environment, educational perspectives or theories should not seek to boast one method over the other, a certain outcome as triumphant over another; instead, educational theory and practice should seek to harmonize the various learning styles and sub-styles, methods and successes of today’s diverse, wide-ranging learners.

What hypermedia learning environments could offer are advantages in building self-regulating learning skills, the ability to scaffold knowledge more richly, extend the flexibility and freedom of the learner-centered experiences, opportunity to hear multiple voices and perspectives on certain content areas, just to name a few.

Hypermedia learning experiences are controlled by the reader/user; therefore, the experience becomes more learner-centered as the learner is in control of what to read, what to view, when to consume it and how to make sense of it. In this respect, the reader/user/learner has now become the author of their own construct of knowledge. “Technology gives each of s the opportunity to create our own personal connection to something, online and offline,” (Reich, 2009).

For a creative discipline such as the visual arts, this flexibility opens up a wealth of opportunity truly beneficial to the art making process, which in many cases finds itself experimental, experiential, intuitive and highly personalized.

“Hypermedia has great significance for training young people for the future,” (Liu, Lu & Wan, 1999 p 43). Adding to Liu, Lu & Wan (1999), hypermedia has great significance in enhancing the education of young people for the future, as well.

Hypermedia possesses a structure that branches out exponentially and non-linearly, much like the divergent thinking of our times necessary for the success in areas such as creativity and academia. Creativity, the combination of strategy, style, creation and problem, unique to the thinker/learner is similar to hypermedia because not only are both the structure of and the style of learning for education with hypermedia divergently structured but both support the development of autonomous self-strategy. Through self-strategy the learner's construction of their knowledge is "...when they get to control what to learn, when to learn, where to learn, and with whom to learn' [Falk & Dierking, 2000, p 6]," (Neill & Taylor, 2008, p 28). Because of this, hypermedia is theorized to possess a unique lens applicable to the teaching of creative concepts and techniques.

For example, for an artist who is about to undertake a new endeavor of creation, research may be a welcomed, sometimes vital (although personally established) route. With an art making practice, so steeped in intuition, autonomy and in many cases, inclusion, a hypermedia-learning environment that is structured upon the artist/learner's self-regulated processes could prove paramount to the artist/learner undertaking a personalized research route, whether for preparation or actualization.

"Encompassing notions of relational inquiry, relational learning, and relational aesthetics, web-based hypermedia research offers unique opportunities for exploring the porous boundaries between art, research, and teaching," (McKenzie & Timmerman, 2008).

It has been theorized that learners who benefit most optimally from hypermedia are those who are developing their self-regulated learning skills or those who have developed these skills to a mastered level. Research has also theorized that hypermedia learning lends itself best to older learners and/or adult learners. This researcher acknowledges, however that, specific design

choices may position the hypermedia-learning environment just as potentially successful for younger learners as older. Design choices such as learning prompts, goal-setting sections for textual input, tailored content display, etc., could be simple steps towards a solution of this very complex question.

And with consideration that “there is a continuing debate about the effectiveness of such technologies for learner,” methods of qualitative research, literature examination, semi-structured interviewing, best-practice investigation and logical post-positivist strategies with thematic analysis in this research will examine both the theories and practicum of hypermedia and digital learning, (Azevedo, 2005, p 201). The discoveries of these methods shall be applied to this researcher’s query.

The learning nature of the adult learner links to many of the afforded advantages of technologically infused learning; the nature parallels the structure of hypermedia-based learning. As with many pedagogical content and delivery choices, the way such a practice is approached lies both in knowledge of the learner as well as theoretically driven research.

Azevedo’s (2005) research, for example, has aimed at highlighting that types of specific design choices affect the mental models of learning for varying aged learners; Shaprio’s (2008) research has also geared towards determining design elements in regards to appropriate scaffolding for older learners within an educational hypermedia environment. Yet, these step over the initial inquiry, does educational hypermedia benefit older learners more successfully and if so, why? Direct research related to this inquiry will hopefully lend itself to strategic implementation strategies.

And so, even with the incredulous amount of research that already exists on how individuals learn within hypermedia settings, such as work conducted by Eyboglu & Orhan

(2011), Azevedo (2005, 2010) and Shapiro (2008), there is still so much further to go. Research should seek to understand not just how individuals learn in educational hypermedia settings, but why a certain audience, in this case, college-aged students studying visual arts, may learn more successfully than another or why certain subjects, such as the arts, history or language arts, as examples, may be more successful for educational hypermedia implementation over others.

The citizens of our contemporary society *must* be enabled with specific yet overarching creative-strategy skills and consequently, this research uncovers this urgent inquiry due to the demanding nature of our contemporary times.

Research has, in the last 20 years, focused on several sub-topics of educational hypermedia. Such has focused on hypermedia's success over traditional models for learning, its advantage in teaching specific subjects such as medicine or science, interface designs, the role of the educator during the hypermedia-learning process, the role of specific cognitive characteristics during hypermedia learning, learner control and autonomy, to name only a few of those that will be further detailed. It is important to note that only a small selection of educational hypermedia scholarship has addressed its implication towards visual arts education, whether studio or academic based such as the work of McKenzie & Timmerman (2005) and Barrett (1998).

As mentioned, further research must be conducted and considered in order to relate new theories towards even newer practical, implementation strategies for educators in visual arts executing a hypermedia-based practice or similar technologic teaching practice.

Many have contributed to the technological topic of hypermedia as well as the educational topics regarding hypermedia. Exploring the area of educational hypermedia and visual arts should inspire, at the least, an encouragement of digital media, online learning and

new media skill development that can be approached in alignment with the teaching of visual arts.

Table 1

Glossary of Terms

Educational Hypermedia- hypermedia, such as text, image, video, audio, animation, etc., that may provide educational content for learners/users.

Facebook Status- a way to communicate by writing and sharing publicly any text on the social platform of Facebook, a website for social networking, photo sharing and more.

Foursquare Check-in- shares one's physical location online social networking sites such as Facebook, through cellular phones via text messaging or a Smartphone contingent application.

Goal-setting Sections for Textual Input- in an educational hypermedia environment, a space is provided for the learner/user to input text in response to a question inquired by the system about their current status along their learning path and its relationship to any predetermined learning goals.

Hypermedia- a networked system that holds information in various forms of media (e.g. video, sound, text, animation, etc.) connected through associative links or nodes.

Hypermedia-Based Learning- learning that has the potential to occur through hypermedia such as text, image, video, audio, animation, etc.

Hypermedia Learning Environments- an environment, such as a web page or specific web browser, which facilitates learning through hypermedia in a variety of ways such as content-specific webpage content.

Hypertext- a method of computational data storage that is contained in texts and retrievable non-sequentially.

Interface- a boundary or surface across two systems that communicate.

Learner-centered- learning experiences that are tailored to student interests, learning styles, behavioral and motivational aspects as well as an element of control over timing and delivery that is preferable and most successful for the learner.

Learning Prompts- in an educational hypermedia environment, it involves a prompting container of text or image which would require the learner/user to consider where they are in their pre-decided learning process, where they should go from there and whether or not their learning meets any predetermined learning goals at that current point.

Media- plural means of communication.

Memex- termed by Vannevar Bush, it predicted the idea of hypertext and was originally conceived as an idea a large, vast system of storage, using advance memory capacities.

Multimedia- the combination of several types of media, particularly employed through technologic application.

Node- a peripheral connected to a larger network.

Relational Aesthetics- termed by Nicolas Bourriard as an approach to considering artistic practices and messages as stemming from a total human, collective experiences of values and appreciations.

Relational Inquiry- collaborative method of undertaking a question or problem-solving activity.

Relational Learning- the idea of learning within relationships and/or collaboration.

Self-Regulated Learning- a combination of cognitive and metacognitive skills which allow for a learner to successfully control, complete and manage their own learning goals and systems.

Smartphone- a cellular telephone enabled with Internet access as well as data downloading and uploading and other advanced computational capabilities that vary in phones.

Smart-appliances- home appliances containing computational and online-like computational capabilities which can improve energy efficiency as well as connect with other devices in a home.

Text Message- the exchange of brief messages entered with text and sent via mobile devices such as cellular telephones as well as computers.

Twitter Feed- a way to communicate by writing brief text posts to share on Twitter, a social platform for sharing short amounts of texts with other users, also known as micro-blogging.

World Wide Web- the system of inter-connected amounts of information, accessible through hypertext via the Internet.

Chapter Two

Review of Literature

Hypermedia

Over the last thirty and more specifically, the last 20 years, research on learning and hypermedia, respectively, and how the relationship between the two topics has blossomed. The topic of educational hypermedia has lent itself to numerous categories of research design and hypotheses. Hypermedia being seen as a technology and facilitating device has developed over time and been variously ways, varying by its exponential growth and increasing advantageous discoveries.

Gerjets, Scheiter & Schuh (2008) define hypermedia as a “network-like information structure where fragments of information are stored in nodes that are interconnected by electronic hyperlinks,” (Gerjets et al., 2008, p. 74). Their view of hypermedia is that hypermedia is an environment where active, constructive, adaptive and flexible self-regulated learning may occur (Gerjets et al., 2008).

Similar to Gerjets, Scheiter & Schuh (2008), Ford & Chen (2000), as described by Eyboglu & Orhan (2011), relate hypermedia as “a methodology or technology wherein the information unites are interconnected and the pages can be traversed in many different sequences choosing navigation tools such as site maps, forward and back buttons, home pages, hyperlinks and so on,” (Eyboglu & Orhan, 2011, p. 50).

To explore more deeply the structure of a hypermedia environment,

Both hypertext and hypermedia function using a number of key features (Dicks, Mason, Coffey, & Atkinson, 2005), including textual, visual, and/or aural entities (“nodes”), and a means of enabling the reader to move between entities (“links”). Any node may have multiple links to other nodes, with nodes able to be designated depending on which side of a link they are on (“source or “destination), (McKenzie & Timmerman, 2008, p. 127).

While the exact terminology that defines hypermedia may vary per researcher and researching projects, for the purpose of this research, hypermedia is defined as a networked system, holding information in various media forms (e.g. video, sound, text, etc.), which is connected through associative linking or nodes.

Educational Hypermedia

Yildirim (2006) describes hypermedia environments as interactive learning systems. He further defines learning systems as cognitive tools and outlines these cognitive tools’ advantageous as an opportunity for learners to function as designers and problem solvers via computers.

Some research claims that the learning that may occur within hypermedia environments is similar if not a prime example of Constructivist learning. While providing opportunities for users to interact with multiple viewpoints, there is potential for the learner to facilitate their own, constructed knowledge. Users are able to access large knowledge bases and satisfy their particular learning needs based on both prior knowledge and their preferred approach to learning.

Constructivist learning, McGuire (1996) as quoted by Gabbard (2000) shares that each individual constructs sense from new information. McGuire (1996) also goes on to assert, as

quoted by Gabbard (2000), that if hypermedia systems emphasize alternative viewpoints while providing opportunities for users to interact with these viewpoints clearly, then there is potential for the learner to facilitate Constructivist learning.

Because hypermedia environments flood our informational inputs, the learner/user has the ability to exhibit control over what they experience, read, view and learn. This learner control is another characteristic of the Constructivist learning theory.

Yildirim (2006) and McGuire (1996), as shared through Gabbard (2000), believe that hypermedia opens up multiple pathways for learners' control. By placing the learner in the author's and educator's seat, learners thereby feel more free (than traditional learning) to "construct their own understanding" and move beyond being mere recipients of ideas, (Gabbard, 2000, p. 105).

The relationship to knowledge offered by hypertext is no longer based on the understanding of a body of knowledge prepared in advance by the author, but on a users personal reconstruction, (Fastrez, 2001, p. 101).

Like Fastrez (2001) and Nelms (2001), Gerjets, Scheiter & Schuh (2008) also support the idea that a hypermedia learning environment can be advocated from a Constructivist perspective because of its high level of learner control and the learner's active participation in the environment.

Such multiplicity of content representations inherent of information-abundant systems, specialized, cognitive skill sets at the micro level enhance and increase the learners' knowledge construction within a hypermedia-assisted-learning, (Azevedo et al., 2010).

However, Constructivists and proponents of educational hypermedia have their dissenters; qualitative subject interviews from Nelms' (2001) research found that some learners may not be as motivated with digital study material as they would be with more traditional material (such as print.) Eyestrain, navigational confusion and restlessness were cited by some subjects in this particular study as impeding factors to their study skills and posttest performance.

Shapiro (2008) proclaims that the level of user control and navigating flexibility found in hypermedia learning environments is both a strength and a weakness. Her body of research support system design, organization, navigation, prompts and motivational elements (which are luckily intrinsic features to hypermedia systems) are beneficial for learners, regardless of learning level and expertise. Shapiro's (2008) research also suggests that these elements be designed with learning goals in mind, otherwise risking a lack of cohesion. This may lead to a sense of overwhelm.

A structural parallel between hypermedia environments and human cognition is also supported through research. An "integrated media which... employs various media forms such as text, graphic, animation, audio, etc to browse, query, select, link and use information," hypermedia is also comprised of associative links and non-linear nodal networking, (Liu, Lu & Wan, 1999, p. 42).

Similarly, human cognition is structured and built by creating associations between prior knowledge and new knowledge, establishing correlations, similarities or contrasts across several concepts. Such a complex network, similar to hypermedia, allows for concrete knowledge to be constructed from abstract concepts.

In theory, hypermedia resembles human cognition because it is a web “capable of supporting that property of the mind in refining the associations made by its user between all the documents which he possesses,” (Fastrez, 2001, p. 102).

Contrarily, there is conversation about the role of prior knowledge in hypermedia-assisted-learning environments. Shapiro (2008), who demonstrated through research that adaptive scaffolding, which are learning components using previous information to connect to new information, in educational hypermedia environments should be determined by learners’ prior knowledge levels. “Learners’ performances revealed that prior knowledge mediated the effectiveness of the [site] map structure in helping learners meet their assigned goals,” (Shapiro, 2008, p. 32).

By applying Pintrich’s (2000) advanced taxonomy, Azevedo’s experimental research determined that self-regulated learning, the process by which learners internally measure their learning, as measured by verbal protocols and learning characteristics (prior knowledge, developmental level) has a large role in hypermedia learning. Because hypermedia’s openness allows for the freedom to choose and select educational material and content, its powerful and complex environment requires the student to adaptively regulate these activities to meet task demands as well as personal goals and sub-goals, (Azevedo, 2005).

Accordingly, Azevedo, Chauncey, Johnson & Moos (2010) highlight that educational hypermedia fosters self-regulated learning as it involves the numerous deployments of processes that involve planning, knowledge activation, reflection and metacognitive monitoring/regulation. Due to the abundance of information accessible in hypermedia learning environments, the learner must maintain their internal learning skills while reflecting their external learning activities (such as proper selection, time management on pages or links, etc.)

Educational Hypermedia and Older Learners

Adults are theorized to take great advantage of the Constructivist learning style in that they see the need to construct new knowledge as it relates to specific experiences and needs in their life, (Eighmy, Hall & LeNoue, 2011). Their abilities in and needs towards self-directing their learning experiences plays a large role in the construction of the knowledge which lends itself strongly to problem-based, constructivist, collaborative approaches in learning, like those “prevalent in online education delivery,” (Eighmy, Hall & LeNoue, 2011, p. 7). “Adults are capable of independently choosing and constructing their own learning experiences in whole or part, and often prefer to do so [Knowles, et al., 2005; Zemke & Zemke, 1984],” (Eighmy, Hall & LeNoue, 2011, p. 8).

Knowles (1980) refers to the study of helping adults learn as andragogy. This area of study combines both the theory of understanding as well as the practice of supporting the learning of adults and is based on key ideas that the adult learner has become more self-directed with maturity, that their life experiences, including errors, will enrichen their learning experiences. Other ideas included within andragogy are that adult learners are internally motivated to learn, are more problem-based than content-based in their learning experiences, care more for the practical learning of their chosen content and will want to understand why they are learning what they are learning. While some of this may be generalizations, it is key to note theories when considering the implications of hypermedia or digital learning experiences.

So, while Eyboglu & Orhan (2011) seek to ascertain hypermedia’s equal-leveled access, regardless of prior knowledge levels and learning/cognitive styles, it is a sub-theory within the field of educational hypermedia that would require deeper research, both qualitative and quantitative.

There is also much research regarding self-regulated learning and educational hypermedia. One study conducted by Nelms (2001) led to an idea of hypermedia and the ability to self-regulate learning/studying in college students. By examining hypermedia's structure and content (linear, non-linear, paper and website) as variables within an experiment of 68 college students, Nelms (2001) found no distinct data that supported hypermedia's gain in posttest performances, suggesting that self-regulating behavior was not supported by the (specific) hypermedia environment.

Nelms (2001) used a calibration of comprehension for his study and defined it as a,

“Comprehension paradigm adapted to investigate study self-regulation in a hypermedia learning environment...in a typical calibration experiment, subjects read expository text and then are asked to predict their performance on a simple objective test over the materials read.” (Nelms, 2001).

Contrary to Nelms (2001) and defined as a “constructive process whereby learners set goals for their learning and then attempt to plan, monitor, regulate and control their cognition, motivation, behavior, and context,” Azevedo (2005) posits that self-regulated learning is a beneficial characteristic both fostered by and supported within hypermedia learning environments.

Self-regulated learning is an event that is detectable, (Azevedo et al., 2010.). In a hypermedia learning environment, these authors monitored through data collecting methods such as trace online methodology, measuring live eye tracking, tracking concurrent think aloud protocols and the analysis of keystroke, mouse-clicking. With such data, Azevedo, Chauncey,

Johnson and Moos (2010) continue to assert that, while no single methodology can capture all aspects of self-regulated learning, certain process occur more or less frequently and for x time amounts.

By tracing the temporal unfolding of self-regulating learning processes, Azevedo, Chauncey, Johnson & Moos (2010) believe that greater understanding will be made to the nature of processes, their interrelationships, maladaptive versus adaptive processes, the nature of the cycles and how they relate to and are fostered by hypermedia learning (Azevedo et al., 2010).

Azevedo, Chauncey, Johnson & Moos (2010) measured the frequency and duration of the self-regulating learning processes (Planning, Monitoring, Learning Strategies, Task Difficulty & Demands, Motivation) through trace online methodologies within the hypermedia-learning environment, MetaTutor, MetaTutor is “a new multi-agent hypermedia learning environment,” is an example of a hypermedia-learning environment that contains embedded adaptive scaffolding, (Azevedo et al., 2010, p. 216).

Out of all processes, the most frequently employed class of processes (as tested in an experiment involving 44 participants) was learning strategies during the hypermedia learning session, (Azevedo et al., 2010); learning strategies accounted for over 76% of all employed processes by the participants and upon deeper data collection, the researchers found that the most commonly used sub-strategies within overall learning strategies “were taking notes, previewing, summarizing and re-reading,” (Azevedo et al., 2010, p. 217).

However, Azevedo, Chauncey, Johnson and Moos (2010) state that much of their current methodologies employed captures quantitative data, which defines the *when*, *what* and *where* of hypermedia learning as it fosters the process. Qualitative data collection would be more

appropriate in determining the *why* and *how* certain processes are employed at certain times of the hypermedia learning versus others.

Although there are several ways to define self-regulated learning, one way of defining it, “self-regulation is the process whereby learners systematically direct their thoughts, feeling and actions toward the attainment of their goals (Flavell & Mille, 1998),” (Kuo, 2010, p. 4).

Zimmerman (1998) as summarized by Kuo (2010) furthers that self-regulated learning “rather...is the self-directive process through which learners transform their mental abilities into academic skills (sic), (Kuo, 2010, p. 4).

Self-regulated learning has been linked to academic achievement. Bandura & Martina-Pons (1992) found that “self-regulated learning processes were significantly related to academic success,” and that self-regulated learners not only exhibit greater academic success but also show positive self-motivation and orientation, (Kuo, 2010, p. 3).

Self-regulated learners are not afraid to fail or admit if they do not understand a concept, (Kuo, 2010). Self-regulated learners are actively engaged in the construction of their knowledge, a strong perk when encountering and navigating a hypermedia-learning environment. These learners will often select structure for their learning and are highly motivated intrinsically (Kuo, 2010).

While Kuo (2010) suggests the crucial importance of self-regulated learning skills with college-aged students, as they are asked more in balancing and organizing their academic priorities, it is also a category of skills important to learners of any educational level.

Educational Hypermedia and the Visual Arts

The non-linearity of hypermedia exploration allows for non-default, unique pathway discoveries. Keifer-Boyd (1996) insists that this quality would prove exceptionally valuable in the area of online, creative critiquing.

The classroom has the potential to be expanded, Keifer-Boyd (1996) believes, through learning environments such as hypermedia because hypermedia enables interactive, hierarchical presentations of user-generated discourses. Educationally, Keifer-Boyd (1996) shares that hypermedia was used to challenge pre-service art educators in incorporating postmodern concerns of multiple realities and hypermedia's active facilitating role in this endeavor.

Highlighting hypermedia's network like structure as a theoretical parallel to creative expression, Reese (2002) describes an art community program that worked with underserved and inner-city youth populations. The community, which represents a web of interconnected voices and opportunities, much alike the "dynamics of the World Wide Web" provided a framework for the elementary youth group to explore social issues through artistic exploration, connection, examination and contribution, (Reese, 2002, p.348). "The order in which the different activities appear is not meant to suggest a rigid recipe, but rather represents a strategy that can be employed as a nonlinear framework," (Reese, 2002, p. 348).

"Hypertextual narrative teaching strategies can be used a dynamic framework rather than as a static recipe," (Reese, 2002, p. 349). The idea of an interconnected, nonlinear environment and the opportunities to disseminate issues and concerns by linking individuals empowered this youth group in a community art program.

In a less theoretical example, interactive multimedia was explored as a re-conceptualized delivery system within a college-level art history survey course within the work of Cason (1998). Interactive multimedia, with a multiplicity of represented media forms and the opportunities to

be interactive can be appropriately compared and aligned with the ideas of hypermedia, within this research. “Simultaneous use of audio, text, animation, full-range color, full-motion video, and graphics,” not only approached the goals of visual literacy but also opened up multiple pathways for learners who may be in such a course with varying expertise and interests, (Cason, 1998, p. 337).

Whilst on the study of the visual arts and not precisely a visual arts activity, the evidence provided by the research of Cason (1998) shares not only that interactive multimedia is “highly effective in terms of learning outcomes and student satisfaction’, (Kearsely, 1992, p. 107),” but also that it may reorganize the hierarchal and linear approach to teaching on and learning about art history, (Cason, 1998, p. 338).

Another project that explores the intersection of hypermedia and visual art study was facilitated by Eilam & Gurtler (2010), where high school seniors interpreted a dynamic performance art work through a hypermedia environment. The learners were also immersed in a hypermedia learning environment that included more educational content on the specific performance art. “Interpretation of performance art is highly complex...this learning environment enabled most students to overcome some difficulties involved in this dynamic visualization...” (Eilam & Gurtler, 2010, p. 244).

Allison King’s (2001) research provides support not only to the idea of hypermedia technology in facilitating the visual arts but also the non-linearity it shares with the human mind. Through a program she introduced titled ‘Sketchstack,’ and operating very much like a “hypermedia document that is a collection of multimedia experiences like a stack of index cards,” the early introduction of hypermedia as a reflection and creation tool versus a presentation tool in arts education garnishes attention for digital media literacy and introduces

thoughts upon artistic/technologic language, (King, 1998, para. 1). The research also shares that art can and should be facilitated by and through technology through two themes, one is that playfulness is restored by technology and the other that process over product becomes increasingly paramount through such processes.

Within King's (2001) research, Chung et al. describes,

The concepts and the structure of hypermedia are basically consistent with the associative (creative thinking process. Thus, hypermedia provides a solid foundation for the design of creativity facilitation programs. Hypermedia technology itself can readily be adapted for the design of the creativity facilitation programs, (King, 2001, para. 3).

Described as a "tool for research (Dunn, 1996), a method for community building (Krug, 1997), a forum for interaction (Heise & Grandgenett, 1996), Sweeny (2004) suggests the Internet and various Internet-based approaches to art education be informed by the concept of a decentralized network. Current approaches to art pedagogy should also seek to address contemporary forms of visuality, which are being created in a variety of both actual and virtual spaces, (Sweeny, 2004).

"There are few studies to turn to that relate directly to the use hypermedia in the arts, more specifically visual art," (King, 2001, para. 6).

This research has sought to synthesize contemporary and relevant research regarding hypermedia and the visual arts. This exploration has also included literature regarding digital media topics and technological inclusion topics with visual arts studies. Considerably, the literature on specifically hypermedia and the visual arts is less quantified than the literature on

hypermedia and other areas of education, much of which is focuses on scientific or medical subject areas.

Educational Hypermedia and Experimental Evidence

Yildirim (2006) summarizes Jonassen Carr and Yuel (1998) and Reeves (1999) who assert that when computers are used by the learner to replicate what the learners' know, the activity then engages the learner in critical thinking, higher order learning and deep thinking about the content that they are already studying. "In other words, they," (cognitive tools, hypermedia systems,) "require students to think about what they know and learn in different and meaningful ways," (Yildirim, 2006, p. 1).

And while the access and abundance of computer-mediated technologies infiltrate virtually every aspect of daily life, empirical research has yet to support definitively that hypermedia-assisted-learning improves cognitive levels by providing more control in the learning process. Much of the empirical research has been aimed at evaluating the quality of any results that may be yielding between educational hypermedia and traditional learning media instead of the unique cognitive engagement provided by educational hypermedia. Azevedo (2005) shares that this rift as well as unanswered theoretical and educational issues relating to hypermedia could allow the entire technological environment to be undermined.

As of 2010, about 50% of research on the topic of hypermedia have "supported internet-learning (to be) more effective than its traditional counterpart," claims Gao & Wu (2010), "while the other half identifies no significant difference," (Gao & Wu, 2010, p. 13).

If hypermedia environments are to be successful as learning environments, then careful consideration in their design is required, shares Shapiro (2008). Insisting that hypermedia

learning environment design should derive from the learning goals, tailoring is required to be based on the learners' levels of prior knowledge and metacognitive levels, (Shapiro, 2008). For example, Shapiro (2008) calls for novice learners or learners with low levels of prior knowledge in the content of a hypermedia-assisted-learning environment be supported more by site maps and highlighted links.

Such specific design elements explicate relationships between concepts and their location in the hypermedia-assisted-learning environment. This way, such a learner will spend less cognitive resources navigating the system and more time learning, making connections with the content.

For learners with higher levels of prior knowledge and metacognition, Shapiro (2008) suggests that these "learners are best served when given [the] motivation and opportunity to engage their existent knowledge," therefore the system design, for these learners should avoid site maps as a home but could be offered at request, providing minimal cues for navigation and cohesion and providing metacognitive prompts, (Shapiro, 2008, p. 37).s

An example of a metacognitive prompt from Shapiro's (2008) research would be a pop-up window that questions the understanding of a learner or requests predictions about the system's (future) content.

The type of designing outlined above my Shapiro (2008), which is based on learner's prior knowledge levels suggests that scaffolding lends itself positively to successful and educational outcome within hypermedia environments. As somewhat of contrast, Azevedo (2005) suggests the role of a human tutor in tangent with an advanced hypermedia system would combined provide adaptive scaffolding conditions (Azevedo, 2005).

Additionally, Azevedo's (2005) research showed that students who were not provided scaffolds (human tutor or embedded into the hypermedia, such as an adaptive hypermedia learning design element) showed little to no qualitative mental shifts from pretest to posttest.

Fixed scaffolds within the educational hypermedia system, as opposed to adaptive scaffolds, seemed to interfere with older learners' (college level and above) abilities to develop mental models (or comprehension) yet assisting the mental model (comprehension) levels in younger learners (adolescence.) According to Azevedo's (2005) research, human tutoring or assistance that offers adaptive scaffolding during the learning process tended to yield significant qualitative mental model shifts across middle-, high school- and college- aged students.

Along with prior knowledge levels, a learner's own confidence will affect their educational performance. Three factors found to affect the educational performance within hypermedia learning environments were perceived values in informativeness, entertainment and irritation (Gao & Wu, 2010.) In a field study that tested hypotheses of perceived values of educational hypermedia by examining cognitive antecedents in informativeness, entertainment and irritation, Gao & Wu (2010) found that if an educational hypermedia's structure and content provided the user with a satisfactory level of informativeness, measured qualitatively, then the user/learner would find high value with the technology.

From Gao & Wu's (2010) research, the learners/users who found educational hypermedia course-companion sites, consisting of reinforcing concepts, chapter study guides, practice tests in both static and interactive formats online games, crossword puzzles and hyperlinks pointed at external resources, to be vivid and interactive, (testing their hypothesis on the perceived value of educational hypermedia in correlation with 'perceived entertainment') yielding higher positive attitudinal measurements associated with high value placements in the technology (Gao & Wu,

2010). The research supported their hypothesis that perceived value of an educational hypermedia environment affects qualitative and quantitative repeat usage, (Gao & Wu, 2010).

Experimental evidence on metacognitive strategies in hypermedia learning environments demonstrates that metacognitive activity plays a role in augmenting educational hypermedia outcomes, (Shapiro, 2008).

Kauffman's (2002, 2004) experiments, with one control group who did not receive external, metacognitive strategy prompts (questions) scoring lower on problem-solving hypermedia assisted learning posttests than an experiment group who received metacognitive prompts; this suggests that metacognitive strategies influence successful outcomes of a hypermedia-assisted-learning.

Similar to Shapiro (2008) who believes that careful, technological design will affect the successes of hypermedia-assisted-learning environments for learners and Azevedo (2004) that found similar results, Gao & Wu (2010) assert that the crucial factor for educational hypermedia success is the crucial interaction between the technology and the "participants cognitive and information processing activities, interests, motivation and cognitive structures," (Gao & Wu, 2010, p. 13).

The debate on cognitive/learning styles and their role in hypermedia-assisted-learning success has remained lively. Cognitive style, defined by Green (1985) and quoted by Eyboglu & Orhan (2011) refers to "information processing habits which represent a person's typical modes of perceiving, thinking, remembering and problem-solving," (Eyboglu & Orhan, 2011, p. 51).

In their research, Eyboglu & Orhan (2011) grouped cognitive styles into two categories, Holist and Analytic (W-A), (Eyboglu & Orhan, 2011). Eyboglu & Orhan (2011) analyzed learning/cognitive styles and their impact within hypermedia learning environments determined

by learning achievements and navigational tool usage by participants. Recent research theorizes that learners who are considered to be more analytic tend to follow more linear paths, “whereas holist learners tend to navigate by jumping between information units (Kim, 1998, 2001; Kim & Bryce, 2002; Palmquist & Kim, 2000),” (Eyboglu & Orhan, 2011, p. 53).

By dividing the hypermedia information into two separate designs, paging (where the chapters of a specific content were divided into smaller parts and each part was presented on one screen, one at a time) and scrolling (where each chapter was presented as a long page so that the learners must activate the scroll bar to view/read the rest of the chapter), their experiment’s results found that there were no significant learning achievements, measured by a pretest and a posttest, found in either the holists or the analytics. This suggests that cognitive/learning style alone does not affect learning achievements in hypermedia-assisted-learning environments, (Eyboglu & Orhan, 2011). Furthermore, this lack of significant difference in achievement levels per paging vs. scrolling environments, implies that neither paging/scrolling in educational hypermedia environments will determine a significant difference in achievement, (Eyboglu & Orhan, 2011).

Eyboglu & Orhan’s (2011) research, in determining that cognitive styles and hypermedia learning environment do not support significant gains or losses for learners of all cognitive styles, argues that hypermedia learning environments may therefore be designed and effective or beneficial for learners across the board. “This shows that students with any cognitive style can learn equally in such an environment, and be satisfied with both using scrolling or paging,” (Eyboglu & Orhan, 2011).

In essence, regardless of learning style and type of information presentation (paging vs. scrolling) learners have equal opportunities to benefit from the educational engagement of hypermedia-assisted-learning environments.

Eyboglu & Orhan (2011) describe another theory by Song (2003) that people who were found to have prerequisite, subject domain knowledge move through educational hypermedia more linearly, “whereas people having no prerequisite knowledge went back and forth repeatedly,” (Eyboglu & Orhan, 2011, p. 62).

Technology, Education and Implications

Azevedo, Chauncey, Johnson and Moos (2010) implore researchers across educational and cognitive psychology, educational research, computer science, AI research and computational linguistics disciplines to begin the research that would understand the complex nature of self-regulating learning so that the design of educational hypermedia will become more adaptive, intuitive, scaffolded and reactive per its learners.

The current state of research across the fields of technology, cognition and education suggest many points about hypermedia. Hypermedia is theorized to be educationally advantageous, with advantages such as boosting learners’ knowledge scaffolding, according to Shapiro (2008) and as researched by Azevedo, Chauncey, Johnson & Moos (2010) and in developing the crucial skills for self-regulated learning. In addition, other researchers have noted hypermedia’s learner-centered freedom as an educational advantage as well as its increasing level of intuition with the exponential growth of the technological field.

Research is amiss in connecting the actual parallel between cognitive structure, or the way that the brain processes and maintains new information, with hypermedia’s structure. While

some studies, such as those found in Gabbard (2000), claim that this hypothesis is invalid yet further research since then is slim. Research is also needed to explore the cognitive implications of hypermedia for younger learners. While digital and online classrooms exist such as the Electronic Classrooms of Tomorrow, educating fully online, K-12, emerging scholarship is yet to follow such examples.

Future research across fields such as cognition, technology, pedagogy and aesthetics should also highlight hypermedia's educational implications or limitations in the teaching of the arts. This may require several research designs, contextual environments and/or case studies, grounded theory research and more. For example, when attempting to connect complex ideas around technology with complex research on learning theory, the next step may lie in seeking emergent examples in practicality or designing a framework for implementing practical strategies.

Theory and practice are the two main lenses applied to the research design of this research. In doing so, the previously detailed scholarship around educational hypermedia is considered in relation to this researcher's hypotheses regarding hypermedia's educational role in the visual arts for older learners.

Chapter Three

Methodology

Research Method

This research executes a constructive framework with a focus on the Interpretivist research paradigm as it seeks to generate predictions by understanding the current literature on educational hypermedia and qualitative semi-structured interviews. This research marks Interpretivist inquiry as it seeks to understand the theoretical and practical concerns surrounding digital learning, specifically through educational hypermedia, within the visual arts. To consider this researcher's hypotheses about educational hypermedia practices in an older/adult learners in arts education, a close examination of the current scholarship and research relates a baseline, foundational framework.

The historical and technological developments of hypermedia or digital learning environments have informed implementation strategies. Educational studies, pedagogical concerns and cognitive foundations are also considered. In addition, it is important to examine current, scientific experiments, quasi-experimental research design, case studies and any other theoretical developments conducted in the cross-combined fields of technological learning and digital learning cognition.

A qualitative research design allows for individual attitudinal measurements to be considered alongside with content area expertise. Experiences and research, theory and practice all play crucial roles in this a semi-structured, interview paradigm. While concentrating on technologically dense content, this researcher found a balancing approach of interviewing content-area expert/individuals as well as practicing individuals best able to highlight the

multiple voices and sides to the issue. This can be seen as, in a sense, to mirror the format of hypermedia itself, in that it shares a non-linear, jump-style, open and discursive conversation. This approach acts as a bridge between theory and practice.

Additionally, to explore this researcher's hypotheses on educational hypermedia practice in an older/adult learners arts education, a close examination of the current scholarship and research relates a baseline, foundational framework. Technology being seen as a facilitating device for learning as well as a physical or virtual context for learning is one approach towards understanding how and why hypermedia can even serve individuals educationally.

Importance lies for this research establishing within its methodology an appropriate balance between theory and practice. In this respect, the research design could be seen to establish a framework wherein parallels could be drawn across theory and practice, as well as similarities and contrasts. It provides an example for words, perhaps a face to an action. In doing so, this research hopes to provide to the already highly documented realm of educational hypermedia research a collection of practical strategies already currently being implemented. Subsequently, this would highlight the benefits and the implications of educational hypermedia, as well as analyze suggestions of where, in the immediate to near future, educators in the arts can hopefully take digital learning experiences from here.

Participants

The selection process for individuals was partly a homogeneous selection strategy, in that the research sought the opinions and experiences of individuals who shared similarities in technological teaching practices. It also strategizes snowball sampling in that the participants met research interests. It should be noted that the selection of participants as well as research design

have become blended of various approaches due to what this current research aims to accomplish being somewhat novel with little precedence.

Of the six total participants, five were educators and two were published authors in either hypermedia or digital learning; one of the educators had a blended background in that the individual was both a published author on hypermedia and currently teaches in a teacher education program in Canada. Of the other four educators, three teach at the post-secondary level, within college arts programs. The fourth educator teaches and acts administratively in a digital media program within a museum for adolescents and young adults. Of the educators in college-level arts programs, one teaches within a community college setting with a varied and blended audience of learners and the other two primarily work with young adults in a visual arts program.

The educating participant with the blended background in publishing hypermedia scholarship currently works with undergraduates and graduates within a teacher education program in Canada. The published researcher participant has extensively published material regarding educational hypermedia and has a background teaching graduate courses in learning theory, educational psychology and educational technology at various locations in the United States; this individual now works primarily in Canada.

Content experts are able to lend their expertise, opinion and individual approaches regarding the field of educational hypermedia. These participants contribute a unique lens to the theory of teaching with and through educational hypermedia or other digital teaching/learning strategies. Specific interface design, cognitive learning styles and characteristics, scientific understandings of human-learner cognition and more were all areas that these field experts lent informed voices upon.

Additionally, specific field practitioners, art educators with specific technological inclusions inside and out of their classrooms were a part of the spectrum of voices represented. Their classroom or learning environment experiences, keen observation of and collaboration with their learners and appreciation of contextualized learning constraints such as administrative concerns and teacher training were vital to providing this research with pragmatic consideration of the theoretical issues at hand.

Data Collection

Data from the participants of the study is collected through semi-structured interview processes. This approach relies on the researcher as the main instrument. This approach attempts to seek patterns, complexities and also revolves around the theory, current literature and original hypotheses and research questions. All six interviewees were invited to respond to contextually consistent interview questions as well as to share thoughts, ideals, speculations and specific examples on related or divergent topics of the interview.

In combination with an examination of the current literature on educational hypermedia and related with this research's original research questions, this method of data collection was selected due to its opportunity to develop patterns and thematic strategies which would/could align with theory. It allowed educators and content experts to openly share their voices on this emerging topic and meriting attention.

Data Analysis Method

Through thematic analysis, data collected through participant interview was examined by a system of coding responses into categories. Interview responses were explored through

categorizations and thematic ideas across settings and cases. Examples of core issues and themes represented by categories were backgrounds, comfort levels, current uses, perceived benefits, concerns, implications, learning styles, contexts, content, assessment and audiences. By unifying or contrasting patterns in responses regarding, for examples, strategic technologic implementation or personal dispositions towards the amount of classroom technologic inclusion allowed for comparative analyzing, which then was considered upon the backdrop of current scholarship and literature reviews.

Categorizing participants' responses additionally allowed for themes across technologic goals in the classroom or preparation processes for both educators and their learners to be coded into a system that was applicable in analyzing the combined participants' contribution to this research.

The most prioritized or ultimate goal is to determine practically and theoretically what is possible for an arts education for adults that involves technology and teaching.

Chapter Four

Data Results

Use of Technology in Educational Settings

For the participants, their uses of technology in their educational settings are varied but include illustrative, resource collection, communication and instructional purposes and summarized in Table 2. In a visual arts program, an educator teaching humanities topics outlined that their use of technology was in one way for illustrative reasons, such as showing an artist's work while discussing relevant literature or as a resource online and out of the classroom for students to disseminate course information, links to texts, etc. "One is to illustrate the theory and ideas that we're talking about in class... So, I feel that being able to integrate... has an illustrative function," (A.F., personal communication March 12 2012).

In addition, the humanities educator shared their use of online platforms such as Twitter and Facebook. Twitter is one technology that, in this example, was executed in the classroom as well as out. "A lot of students use email so they can reach me through Twitter, instant message,"(A.F., personal communication March 12 2012). This specific educator also included Skype to host artist talks.

One usage of technology that existed as a commonality across all educating participants was the showing films and exhibiting multi-media embedded presentations; two of the participating educators, the instructor on humanities topics and the instructor in a teacher education program, related this practice. These instructors who cited this in their classroom shared that it was for illustrative, connection making or for further detailing purposes.

Online class blogs were expressed to be another use of technology for three participants, the humanities and contemporary culture instructors within a visual art college program and the photography instructor within a community college. Communicating with students outside of the classroom, addressing issues, problems or points of interest and creating open forums linked these educators' usage of a class blog. For the humanities educator,

...a blog with resources for dissemination. I think that *especially* at an arts school where there's not a bookstore... where art supplies are just so incredibly expensive... to have this other expense of books or to have to hunt down journal articles yourself or to go really deep into a system, to have everything in one place, disseminated together, is really important, (A.F., personal communication March 12 2012).

Such blogs tended to be semi-structured and open for discourse; the photography instructor in a community college outlined their expectation of the students' use of the blog to be open to the learners' discretion and interpretation

The humanities instructor related that at a certain point, many of their students do not need encouragement or prodding to post their work online, share resources online or partake in online learning, in general. "...One thing about a blog that's really nice is that, as the semester goes on, students will start, um, putting stuff on the blog without any prodding that they've run across," (A.F., personal communication March 12 2012). This educator shared that their students' activity in this has impacted the learning outcomes positively.

When asked on other uses of technology, Blackboard, an educational software and management system, was also shared. The photography instructor in a community college,

humanities instructor and an educator in a teacher education all shared that they occasionally include Blackboard as an instructional technology off-campus and out of the classroom.

The photography instructor, educator in a teacher education program and the humanities educator within an art program all expressed general dissatisfaction with this as an instructional technology. The photography instructor at a community college shared that this was a requirement of their institution's administration.

The photography instructor in a community college also uses technology instructionally which meant that technology such as image-altering software or digital cameras was a part of the courses' required content.

Additionally, this specific educator shared that they use Flickr, an online photo hosting website, for content sharing, content discussion, an environment for feedback and way to connect with the students with various media off-campus or out of the classroom. "...I use Flickr...primarily, coursework that occurs off-campus and outside the classroom," (E.W., personal communication, March 18 2012). This is similar to other participating educators' usage of a class blog.

Thematically, the use of technology as a way to represent visual information appears a strong link in practice. Similarly, technological components to a course such as a hosted blog or forum for communication, discussion and conversation appears that the participating educators care for and encourage the learners to continue their learning outside of the classroom. In practice, an online learning component, separate of the physical course appears a successful and common method in arts learning contexts to coordinate further participation and sharing.

Perceived Benefits of Educational Technologic Inclusion

Some participating educators described their technological practice by being open to students' suggestions when a technological approach was preferred for an assignment. The humanities educator shared that, "they can make a video, they can make a webpage, they can... do an audio piece... So, then students that have different either interests or learning capabilities or ways of expressing themselves... can use different formats," (A.F., personal communication, March 12 2012).

For both the humanities instructor and the educator in a teacher education program, assignments were typically open, flexible and were encouraged to be completed with multi-media practices in the classrooms.

The educator who instructs future teachers, in the teacher education program, defined technology as any tool that helps their students learn if not using traditional materials and also shared that any assignment that is part of the syllabus carries an option to be supplemented with other means of completion, such as hand-made books or digital video projects. "So, [the students] go out to three places in [the] (area) and... do an ethnography of those places. And, quite often they've chosen to represent those in digital forms," (T.S., personal communication, March 16 2012).

The teacher education instructor also describes opening up their classroom to various representations of a learners' comprehension as transformative in that the learner will have to consider how to represent their knowledge in communicative, technological forms. "...that's a way that they can sort of deepen... their skills and also, it forces them to figure out 'OK, so how do I communicate this through this technology?'" (A.F., personal communication March 12 2012).

The humanities, teacher education and photography educators also relay that they educate learners of various learning styles, interests and motivations. To accommodate this variety, these three educators felt that incorporating technology, especially if the technology is hosted in various formats (video, audio, blogging, etc.) would encourage learner participation and improve the learning outcomes of their learners.

Similarly, the professor of a contemporary history class shared, “we’re associative thinkers these days,” and “there’s a lot more brain patterning that shows that students or...this demographic—younger set of millennials...minds are literally wired differently than their elders and that is because of their exposure to technology,” (M.H., personal communication, March 21 2012).

Within the college arts program, the humanities educator shared that since there are a number of ways for a learner to communicate in today’s world, there should be a number of ways for a learner to communicate their knowledge or understanding of a topic. “So, sometimes they write a paper...but that’s not necessarily the best way or the only way to... communicate your understanding of the work or to analyze it,” (A.F., personal communication, March 12 2012).

When inquired on specific reasons for technological implementation, a digital media museum program educator expressed their beliefs in the program; this educator felt that their audience, mostly young adults, were using most of the program’s technology already and felt that the museum’s educational program was one way to educate the learners on how to use the technology more positively. For learners with little access to technology such as video games, video-editing software, image-based software and advanced computers, this program, the educator felt, provided access to the above and would improve the learners’ inclination towards

having more authorship, developing critical thinking about media creation; through all of this, the educator shared that the learners were learning about art through technology as a tool.

The digital media museum program educator shared that one of the purposes of the program is to have learners move from consuming less to creating more through learning online as well as learning directly with technology. Additionally, by opening up the practice in this way, the digital media museum program educator felt that, while potentially inexperienced when entering the setting, by playing around the learners develop more expertise. Particularly, the digital media museum program educator shared that high value is placed in the informal learning style specifically implemented in their setting.

We look at it as a tool for learning about art or to become civically engaged or to amplify their expression of themselves. So, there's a process of—of trying to get them to understand... the importance of technology is how you use it as opposed to just in technology itself. A lot of technology... programs that use technology get excited about the technology itself... and just want to help people just build skills. But, we're really interested in like, using digital literacy to get back to ideas about expression or, um, our community engagement or other uses that go beyond just the technology, (L.S., personal communication, March 19 2012).

The digital media museum educator expressed a hope that “institutions could see that none of their content is compromised by making these kinds of programs happen and that the content is, in fact, enriched by being responsive to communities as opposed to not,” (L.S., personal communication, March 19 2012).

The humanities topics educator felt that “digital literacy is incredibly important,” (A.F., personal communication March 12 2012). Therefore, the inclusion of multiple representations and a required online component is one method for teaching these digital media literacies for this educator. Academia, expressed by the humanities educator, does not exist in only journal and paper formats. So, this instructor, in knowing that academic text highly permeates the online realm, felt this to compel their educational, technological inclusion.

Other motivational reasons for implementing technology emerged from the participating educators. The humanities educator felt that using and demonstrating with technology in their classroom could motivate their students to feel more comfortable in using it on their own, by seeing this educator actively using it.

...the students aren't setting up Skype and dialing in but they're watching me do it. It's not a big deal and that's a skill then that, in some ways, they gain... It wouldn't be something someone would be afraid if they haven't used it before. (A.F., personal communication March 12 2012).

Both the humanities instructor and the educator in a teacher education program felt that literacy is not to be limited in being measured by hard copy essays. The educator in a teacher education program shared that learning does not always limitedly happen sitting behind desks.

...classroom is one place you can teach, but what kind of...what do we learn by sitting in desks, in rows...what's taught in an embodied way through that kind of learning

environment—what do we learn—how do we learn in virtual environments... (T.S., personal communication, March 16 2012).

When asked to share thoughts on the successes of technological inclusion, the educator in a teacher education program felt that teaching with online components that require a collaborative and participatory activity will build the learners' knowledge in, "the role of relationships... learning both in technology as well as outside the classroom and we're taking that role more seriously in terms of how we understand learning, (T.S., personal communication, March 16 2012).

Similarly, the educator in a teacher program shared that learning becomes more meaningful when implemented through relationships with their peers and others in their community. Additionally, this particular educator has shared that students participating in a community, either online or in person, give something back to the community. This was shared in correlation with their belief that meaning making in learning comes from an outreach component with a community, online or physical.

This educator in a teacher education program also shared that a contribution to an online community brings the work of their students into a new place in space and time.

Maybe you think of a traditional assignment is really just stuck in that—in the present—where you... answer the test or you write your essay and you submit it. Whereas these types of assignments using technology kind of projects certain point forwards in time, maybe backwards too—and their pulling together resources and memories and whatever

they're integrating across different things. (T.S., personal communication, March 16 2012).

By submitting one's mastery or experience of learning into an online realm, it can exist in a sense that is beyond the present tense of submitting a hard copy of an essay, which will be read and seen only by the instructor at one time, generally speaking. The students' online submission can be propelled forward in time, as it is now a part of the online schema.

Overall, five of the six total participants, incidentally, the five educators, all shared their sensibility that they view technology as a teaching tool. Specifically, the instructor of a teacher education program shared, that the learning process and meaningfulness of the learners' take-away is very important.

...a lot of times, education has become very much about assessment rather than the learning, right? We're really focused on the end results and on the exams around the outcomes versus the actual process of learning, which is what education really should be about. (T.S., personal communication, March 16 2012).

Being one of the most mentioned reasons, the use of technology as an opening up of educational content to a variety of learning styles and interests evidences frequent usage by the educators in the arts. This may suggest that within an arts education classroom, teachers can feel encouraged to have one learner focus on an artist lecture on video while another reads from a lecture transcript, respectively based on learning style and/or interest; there is inherent flexibility

with such a practice. This type of method is particularly highlighted but a participant's response whose assignments carry an alternative option to be supplemented with a digital project.

Similarly, aside from student's interests it appears very connective that educators feel it relevant to their learners' total educational needs to receive a certain level of technological exposure. Towards some end, such as with the humanities instructor, the educators believe that the students will be able to take this type of technological exposure and make it into positive usage later on, if not more immediately.

Educator Comfort Level and Background with Technology

A background in media allowed for their practice to be infused with technology, expressed the humanities instructor in an arts program. Conversely, the photography instructor in a community college shared that much of their technological strategies were initiated by administrative constraints yet had evolved over time into a practice that includes Flickr sharing and discussion as valuable way for group sharing and participation to occur.

The three digital media museum program, humanities and contemporary culture educators all shared in some way that they had backgrounds in media. Both the contemporary culture professor and humanities instructor in the visual arts program shared similar backgrounds in video and film studies and as well as the teaching of these media. These educators related that their backgrounds enabled their approach towards including technology in their classroom, with it seeming unintimidating due to their own comfort with technologies.

By analyzing the theme that educators with either professional or artistic background appeared more comfortable or inclusive of technology in their teaching practice, a strong link exists between technological pedagogy and personal, professional or academic preference

towards technology. Educators with either artistic or professional trainings appear more comfortable than others with less experience towards incorporating technology into their teaching practice. Comfort being interpreted as a willingness to use technology either to teach with or through educational content and is highlighted through the participants' verbal accounts on topics such as successful learning outcomes, practical implications and concerns.

Furthermore, artistic backgrounds with technology, which linked the humanities, contemporary culture and digital media museum program instructors, continued to connect these three participants as it was most indicative of technological inclusion in their teaching praxes. While some participants have deeper backgrounds regarding technology, all marked or mentioned the effort of remaining educated on new and emerging technologies. This connects to a largely reoccurring point, detailed further as it is thematically included with concerns for/by the educators. The expressed lack of teacher training regarding advanced technological inclusion in teaching practices appeared to affect even the participants with strong technologic backgrounds. The point that these educators made in marking the efforts to stay informed on emerging technologies suggests teacher training is seen as ongoing.

While some of these participants may have deeper backgrounds in technology than others, as a theme it points not only to adequate teacher training as a necessity but that educators, during their training, will learn specific technologies as well as understand why it would be certain software's and online components of learning be a necessary part of their training and future educating careers.

Concerns for Educators and Educational Technologic Inclusion

Similar to how the participating educators uses and perceived benefits vary, the concerns and limitations expressed by the participants varied accordingly. The humanities instructor in an arts program and the photography instructor within community college connectedly felt a concern over administrative policy regarding technology. Particularly, the humanities instructor was concerned with administrations needing to have in-depth discussions about why and how certain technologies are taught and others are not; this specific instructor also expressed concern about what policies are available when access is an issue for learners, such as if one student has technologic access and another one does not.

When inquired regarding concerns of technological inclusion, both the published researcher as well as the educator within a teacher education program shared commonality because they highlighted a shortcoming evident within teacher training. “I think we are doing a really poor job of training future teachers,” (C.T., personal communication, March 9 2012).

The published researcher felt that, currently, prospective educators are not receiving enough or appropriate training towards specific technologies, such as knowing how to teach it or how to teach through it. “And the question is, how do you train these folks to immerse themselves in this kind of environment and then to actually teach effectively using these tools,” (C.T., personal communication, March 9 2012).

A consideration that the published researcher disclosed was that technology in the classroom should always be connected to research, theory and learning goals in order to be properly implemented.

Another limitation the photography instructor in a community college disclosed was that due to class time and prep time needed for the implementation of technology, sometimes there was less attention given to their students face-to-face.

Regarding how they would like to see their technologic teaching practice go from here, the photography instructor in a community college was concerned about the motivational factor in having their students do more work online. Touching on the idea of learners needing to be self-directing, this educator shared a concern that their students do not work or share online as much as the educator would like to see. “Ideally, there would be some way for them to know how much—to realize and to self-regulate or self-direct or self-pace themselves so that they know they’re succeeding,” (E.W., personal communication, March 18 2012).

The published researcher outlined a limitation in the amount of funding possible for educational contexts to implement technology. This individual currently works on a grant-funded project for designing an educational, virtual technology where learners will have the ability to create and manage avatars, which represent themselves as learners. Additionally, this researcher also felt that digital media learning is something that is difficult to assess and has not received enough scholarship or research to be addressed as an issue. With self-regulating learning skills being described as paramount for learning online or in digital settings such as with hypermedia, regarding the visual arts, this researcher also shared that “it would be an ideal—hypermedia would be an ideal media for this kind of...domain,” (C.T., personal communication, March 9 2012).

A detailed outlining provided by the published researcher cautions that,

...technological advances are happening so fast and so quickly that we, as researchers...are not able to catch up with our theories. Our theories are still very impoverished, in terms of theories of learning. Because all of a sudden, for example, we have technologies, whether it’s the iPad, for example, that can allow students to interact

with multimedia, hypermedia environments...but we have yet to understand how the mental...issues related [sic] to learning. There's just an assumption, 'oh, there's a new technological environment, so let's just put it out there and they're going to learn'...So, ...technologies superseding our scientific understanding of learning of these technologies, (C.T., personal communication, March 9 2012)

Participating educators concerned with administrative policies about technology in their teaching demonstrates their care for what their students learn and why, regarding learning with and through technology. The participating educators concerned for either active or absent yet ardent policies ensure their fairness towards teaching. Additionally, this marks a concern and care not just for their particular learners' education, but also for their total educational community, demonstrating fairness and diplomacy.

Finding the lack of face-to-face that may be indirectly caused by technological inclusion, specifically mentioned for the photography instructor's teaching practice appears a single issue, as one participant only marks it.

Linking Azevedo's (2005, 2008) literature regarding self-regulated learning, another singular issue marked by the photography instructor emerges within the theme of educators' concerns, which is an issue felt in motivating their learners to activate more technological learning, outside of the learning environment. This particular educator, who has described their observation that their learners' seemingly lack motivation, was very interested in the topic of self-regulated learning. This connects back to the point of adequate teacher training and perhaps suggests that self-regulated learning, understood as cognitive and metacognitive processes, be included in contemporary teacher training.

The issue of funding for technological teaching inclusion can be analyzed through practicality and necessity; educators, perhaps, again, within teacher training, would benefit from recognizing the fundamental contrasts between the two and how to advocate for either or.

Concerns for Learners and Educational Technologic Inclusion

For the photography instructor in a community college, their concern is for getting students motivated and participating online. “I’d say I spend quite a bit of time thinking about how to motivate them or guide them,” (E.W., personal communication, March 18 2012).

The photography instructor further shared that many students had expressed their disinterest in online participation because, in this course, it was not being graded. “I interviewed a few of my classes this past week, asking them what would get them to...spend more time online and do more work online and several said, ‘well, if it counted more for the grade,’” (E.W., personal communication, March 18 2012). However, the instructor reported that typically by the midterm of their teaching semester, most all students are engaging with the Flickr classroom community.

The humanities, teacher education and photography instructors all imparted that not all of their students have access to online settings, possess laptops or have the resources to access settings with technology. These three educators outlined this as a concern and a limitation.

Similarly, the digital media museum program educator shared that many of their learners do not always possess the right conditions at home or school to have access to their specific program’s technologies; part of what this specific museum program aims to do is provide this place of resources for learning, relates the museum educator.

A varied group of adult learners, which ranges socio-economic backgrounds, characterizes the group of learners in the photography instructor's classroom. This instructor shared that some of the students are homeless. Therefore, this educator has outlined their concern for issues of access and practicality. Both the photography instructor and the digital media museum program educator share a united concern about practicality as understood by their learners.

The humanities instructor and photography instructor share in common that they both have described a large group of their learners as approaching their educational, technological content with practicality and in some cases, skepticism. The learners in these settings are described as being concerned with the usefulness of digital media skills or the investment of time in this type of educational content. "A lot of these students are overworked. They have jobs. They have families and they're trying to do coursework and they're making practical decisions of their own of what to do and where to spend their time and energy," shares the photography instructor from a community college setting, (E.W., personal communication, March 18 2012).

Across the various settings of the educating participants, all five educators related that their learners came into the learning settings with varied levels of previous knowledge regarding technology or online environments. Because of this, the humanities instructor, for example, offers short workshops during class time and students with previous knowledge bases would be excused from these sessions. However, the humanities instructor described this as a limitation in that it takes up class time to conduct the workshops, which could be used for other learning or exploratory exercises. "...I give workshops. I give instructions. There's instructions on the website or on the blog to support that... The problem with that is—is that it takes up class time," (A.F., personal communication March 12 2012). The humanities instructor outlines an ideal

vision that students' may be prepared to come to the course potentially knowing a specific grouping or collection of software, allowing the course to run more smoothly for all.

In practice, these concerns can be worrisome for both the educator and the learners. An unintimidating infusion of technology with learning content is sought and above most, technology being connected to learning goals appeared a connective theme regarding concerns for learners.

Table 2

Emergent Themes in Participants' Responses

Themes from Responses	Further Detail
Using technology in educational settings	For such as reasons as illustrative, collection of resources, communication and instructional.
Perceiving benefits of using technology in educational settings	Such as providing alternative methods for assignments, learning digital skill sets, deeper thinking, collaborative learning and inclusion for varying knowledge levels and interests.
Educators' backgrounds/comfort levels impacting technological inclusion	Backgrounds such as professional, artistic or formative education and varying comfort levels with using and including technology in educational settings.
Concerns for educators with technological inclusion in educational settings	Concerns such as access of materials and technology, funding, teacher training, preparatory time and appropriate policies.
Concerns for learners with technological inclusion in educational settings	Concerns for issues such as learners' access, motivation and practicality.

Chapter Five

Data Analysis and Discussion

The data acquired by qualitative interviews shows several commonalities through thematic analysis. While the educational contexts for the practitioners varied, with their own individualized sets of concerns, usages and successes of educational technology, connections to the current literature emerged as well as emergent additions and caveats to this research's current queries.

How can educational hypermedia directly or indirectly enhance a visual arts education through technological inclusion for adult learners?

Ultimately, this researcher discovered that it was not the specific environment of hypermedia that enhances the teaching the arts with adult learners. It is the theoretical structure of hypermedia that educators should seek to create in their visual arts practices, whether academic or technical, because it is a discursive, participatory, collaborative and non-linear realm. Yet, since the specific language of *hypermedia* could not be cited in participant's statements as enhancing their learners' visual arts education, the original research question, in its exact words, was not supported. However, being flexible towards multiple media formats, opening up one's teaching of the visual arts to the various learning styles and interests or simply encouraging the students to have a voice in their online community takes example from the theoretical structure of hypermedia. What was discovered is that hypermedia *represents* a strong way to teach adults the arts, but was not supported in this research as being the ideal, strongest or even most mentioned environment to teach through or with.

However, this question was supported in other indirect ways through examples or connections between technology and enhanced educational outcomes, such as operative skills gained, collaboration or artistic development.

In the digital media museum program setting, learners were understanding how to create art with technology. In other settings such as in the college arts programs, the learners were discussing, sharing and broadening their knowledge base of arts topics. With the latter example, it would be supported that these ways are seemingly more successful for teaching with digital media in online settings because they tend to be more academic, with more textual based data. There seems to be a potential here for more hypermedia environments to be infused but was not explicitly pointed out by the participants.

In the teaching contexts of the humanities and contemporary culture instructors, digital media skills and academic content expertise is being gained by their learners; the specific language in the latter statement being digital media, yet not necessarily hypermedia. For these two instructors, digital media also included an online component.

In the teacher education program, the connection with their online community was observed by relationship-building, online collaboration and, ultimately, interests for digital technology expertise increased. These specific examples support that, as an enhancement, providing adult learners ways of exploring visual art through technology outside of the classroom and providing levels of autonomy has positively impacted the students' expertise and experiences.

The photography, humanities, contemporary culture and digital media museum program instructors all felt that their technological choices were benefitting their learners' visual arts

education because their uses and choices of educational technology would always refer to or employ an artistic theoretical or technical topic.

Regarding outcomes, the educators who shared their observation that learners' visual arts outcomes were improved also attributed the success to the sense of authorship that a student acquires by contributing content within an online community. It appears in several cases that when a student feels safe enough to contribute to an online community, they are more likely to connect their learning in various ways, and in the example of the college arts program, the students would hyperlink resources on artists, articles and other online data with their contribution to the online blog.

I think authorship is a really important thing that's going on right now which is that people are authoring their own media and this is why what's happening with media is more revolutionary is because...it's so easy now to create either an identity as a business, to contribute to...Wikipedia...to kind of become an amateur expert and that threatens a lot of institutions that have an investment in maintaining authority. So, what ends up happening is, institutions that are trying to maintain authority are not always serving their audiences. (L.S., personal communication, March 19 2012).

The multiplicity of voices that are represented by online content seems to be successful with the learners in the visual arts college, the educators of these contexts voiced. The educator of a teacher training program also shared that their learners were successfully using multimedia in their assignments. How this was assessed was not shared.

Similarly, in the teacher education program, the learners were described as being empowered by the nature of their unique voices when contributing online. Assignment completion being flexible towards various inclusions of media requirements appeared to stimulate and encourage the learners to use more multimedia and online components.

The learners of the digital media museum program were described as successfully using their digital media creations, such as projects involving mapping the community, becoming more involved in their community. For this researcher, it emerges that educators who believe that digital media or online presence can stimulate positive changes will reflect in their teaching practice and technological inclusion.

The humanities instructor shared that for other, more studio-based classes that they taught, it was hard to see a similar, technologically infused practice as with the humanities courses. This instructor even shared that it should be more important that in studio classes the students be making work than spending any time online or with digital media. This implies, to this researcher, that while educators are confident their online components help to teach the arts as a tool academically or theoretically, that either the visual arts aren't being defined by the educators as both studio and academic or that strategies to find online learning environments that will work in combination with studio classes has yet to be established or supported.

For this, it could be conclusive to say that online learning, some of which may contain hypermedia environments, is being approached for certain realms of arts education and not others. Since it has also been shared that scientific research is difficult in keeping up with technology, it could also be conclusive to say that while it can be wished that research establishes a verifiable system of how to use technology in a hands-on, studio-based, visual arts education

environment, it will regardless be unsuccessful unless viewed attitudinally by educators as possessing merit and benefit.

Aligned with its best intentions, this research contributes the idea that technology does have a place in visual arts education for adults, as both an enhancement as well as a modeling framework. While the complexity of our minds could be compared to that of a computer, with its complex abilities to process vast amounts of information, our involved presence in the art projects at hand is ultimately what should not be overlooked. Our ability to master tools that enhance these processes is extremely accessible and will only improve, but the human brain should still be viewed as the dominant creator of unique and novel ideas and work.

What are the implications of educational hypermedia currently?

The photography instructor community college setting and teacher education instructor expressed that they valued the learning process over the outcome. Incidentally, both of these settings had the lowest amount of technological inclusion.

In the teacher education program and the photography course, the educators shared a common link in their concern that technology is constantly changing therefore it is difficult to both stay on top of current technology as well as know how to instruct through and with it. “Technology is—things are always changing, in terms of technology and different developments and...I can’t even imagine what’s possible today if never mind in 10 years [sic],” relates the teacher education instructor, (T.S., personal communication, March 16 2012).

“Limitations in terms... instructor knowledge and with technology changing so quickly—like, staying up to date on what’s possible,” may be seen as a limitation, (T.S., personal communication, March 16 2012). This researcher sees the constant influx of new technology and

current technological implications to be a unique opportunity, in terms of its role in the arts. The visual arts, while contributing to a large continuum of visual language, are contributing new and unique things all the time. This research believes that the role of incorporating consistently changing and challenging technology into an arts education, both academic and studio, raises the bar for creative thinking skill development. It also parallels the artistic practice that many young artists strive for, something that is being propelled by current cultural implication.

The contemporary culture and humanities instructors, in sharing their beliefs that content mastery can be represented in a number of ways, seems to represent a value or belief. Believing this appears to reflect positively in their practice. Not only is their practice infused with technology, but they are thoughtfully considering into which technologies they teach but also what the purposes are aligned with learning goals, such as why should the learners be learning with and through these specific technologies such as blogs, PowerPoint, Twitter, youtube.com, etc.

While the photography instructor sees value in their students' online contributions, this teacher shares their need to be face-to-face with their learners and feels that participating online, in some ways, detracts from this. The teacher's own disposition leads to their specific approach in integrating the online component, which the learners are described to be less motivated in approaching.

In the college arts program settings, learners are required and graded by their online contribution and their integration of multimedia into assignments. This suggests that motivation, in these cases is prompted by grading; more research would be needed to conclude this theory. However, in this research, this signifies a difference in learning outcomes, technological practice and audience characteristics.

Another commonality this researcher observed in interviewing educators is that two educators, the teacher education and photography instructor viewed technology and online components in their teaching practices as a tool. As a tool, technology and online components were being seen as enhancements, improving their students' outcomes.

How should educational hypermedia be approached for visual arts education?

Since technological practices are seen as a tool, the humanities, teacher education and photography instructors all pondered the decision of when/if technology is included and if it's always necessary.

...just because you're using technology doesn't make it more interesting or integrated or inquiry-based or participatory or any of those things...it could be just as dull as...a paper test or an electronic test—it could be just as dull... sitting, watching, being fed images, uh, that's not any more educative... (A.F., personal communication March 12 2012).

It appeared that hypermedia was not explicitly labeled as the best approach to educating adults in the visual arts. One educator, the humanities instructor, described their teaching practice as similar to the structure of hypermedia because it has multiple opportunities for communication and representation. Its approach has been outlined more so as a theoretical framework than any actual incorporation solely hypermedia-based learning environments.

Both of the participating researchers shared their hesitance that the finer points of technical art skills, such as drawing or embedding a canvas into a hypermedia environment were not yet conceived of and could not be fully speculated upon. In this respect, the original research

question was not supported. There is not an established practice or theory yet for educating technical strategies in the visual arts.

However, this research contributes an envisioned scenario where demonstrations are posted online in video form, and hyperlinked text-based instructions can be interconnected; in this scenario, learners can comment and share personal experiences on the technique at hand and other forms of media could also be shared.

This interestingly connects to a point contributed by the participating researcher that describes researchers in technological fields as having difficulty keeping their theories up to date with emerging technology, that even the theories have yet to catch up. “Our theories are still very impoverished, in terms of theories of learning,” (C.T., personal communication, March 9 2012).

The digital media museum program educator supported the ability that digital can promote change. Believing that digital media and moreover digital media skills can promote positive social change are strong, supported in literature as well as seen in cultural movements.

While the educator in the teacher program in Canada commended the ability of social and digital media to promote change, it appeared to this researcher that the theory of digital media to promote change was not fully represented through the teaching practice and in the educator’s inclusion of instructional technology or an online component,

...the role of social media and change—like we saw last year with... developments and the Occupy movement and all the things that are happening in terms of...potential for social change that’s linked to social media. And... on a more micro level the same thing applies locally...(T.S., personal communication, March 16 2012).

Conversely, it is the belief of this researcher that the museum educator fully believed in the empowerment and potential for change possible of digital media creation. “So, it’s interesting how much technology has changed but it—it’s brought change in ways that people who have revolutions before [sic] were trying to change,” shared the museum educator, (L.S., personal communication, March 19 2012)

It also appears that the educators who shared that their learners had successful learning outcomes through technological and online inclusion in the teaching practices also had the most background in technology.

The humanities and contemporary culture instructors in an arts college agreed that online learning components opened up their students to multiple forms of content and that the multiplicity seemed to work for learners who come to their classrooms possessing multiple learning styles, interests or motivations. For this commonality, this researcher asserts that the framework or environment of an arts program also fosters this type of learning because the multiple, artistic representations characterizes this type of learning environment, something that the learners are already immersed in.

Currently, educational hypermedia implies and necessitates appropriate teacher training on technology, not just instructionally but philosophically; this emerged through interviews with participants. Educational hypermedia also implies technological access and prioritization. Students are not only to be provided access to the technologies where they may experience educational hypermedia environments but must also, whether motivated intrinsically or externally, be able to see benefit or value in this activity. In the arts, educational hypermedia seems to imply delineation in one realm over another, such as theoretical over technical. As

stated previously, hypermedia was not explicitly explained in these words, therefore the main hypothesis was not supported.

Throughout the research, it was discovered that not all participants, while enthusiasts for the research, were familiar with the usage and/or the definition of “hypermedia.” For any select individuals who knew of the term, the definitions varied. It was paramount for this researcher to define how the term was being used in the context of this research, however it seemed that it was a nebulous term to many. Mostly on those “in the know” were aware of it and, again, these definitions varied.

Through interviews, the exact terminology began to shift from examining how hypermedia is structured and could benefit the arts to how technology and online components could benefit arts education for adults and why. Hypermedia, as a term, lent itself to informing this researcher’s theoretical framework of exploring digital environments for learning. Hypermedia was also initially the instigator in comparing human cognition to World Wide Web structure. Due to this, approaching the participants’ experience and philosophies of digital media and online education seemed a more appropriate way to investigate the implications of such pedagogical practice in the visual arts for adults.

What are the learning significances of educational hypermedia and digital learning currently in the field of visual art education?

Contrasting other participating educators who saw technology as an enhancing tool for learning, photography instructor in a community college setting described their technological inclusion as more instructional. This educator differs some in their use of technology, as it is a

direct part of the courses content, such as digital cameras and image-editing software. This educator has described the learning outcomes as varied and not as successful as they would like.

One idea this researcher concludes is that the technology is being approached differently, being seen as instructional replacement versus a self-regulated enhancement, and is therefore negatively affecting their learners' learning outcomes and motivation.

In this community college context, the levels of motivation appear to be lower than in the college arts program settings, such as in the courses taught by the humanities and contemporary culture instructors. One theory may be that in this specific example, the learners are not being graded for their online participation as they are in the arts program college settings. Students may not be motivated by acknowledgement for their online participation in specific ways that are not being provided from the instructor.

Even with the emergent nature of technology of our time, educators in the arts who participated in this study appear to be linked by a faith that learning digital media as well as self-directing one's navigation online can benefit not just the online community and the physical community but that it can also have a positive effect on the students success in the professional world and their artistic abilities. How strongly this belief is represented in their practices appears to have a link in the success or positive outcomes for the learners.

Empirically, we need more research that uses multiple methods and levels of converging data to better understand the complex nature of learning with computer-based learning environments. Educationally, we need theory and evidence to drive instructional decisions for the effective use of computers as metacognitive tools. (Azevedo, 2005, p. 200).

Chapter Six

Conclusion

As our culture continues to progress forward in a continuum of increasing technological expansion, we will always be looking for new ways to be efficient, effective and superior in our work. Whether many prefer computer typing over handwriting, using the “cloud” for storage versus bookshelves and closets or the use of Photoshop to create works, we should note why we use these technologies. For many, we enjoy the feeling of being in control or having expertise of a technology. For some, it is an expression of power. For others, it is because there is value in learning from electronic sources of information and instruction. Since technology and electronics infiltrate most aspects of an individual’s daily life, the realm of education has also experienced a wealth of contribution regarding technology and cognition.

Hypermedia, as defined in this research as a networked system that holds information in various forms of media connected through associative linking or nodes, has been explored as an enhancing teaching tool as well as an instructional environment and the possible implications for its use in visual arts education for adults. Currently in arts education, digital media, technology and online learning serve unique purposes for instilling participatory, collaborative, discursive and non-linear thinking skills sets, to name a few discovered through research. While hypermedia is seen to have educational benefit, it was not explicitly supported in this research that it could be an ideal environment for learning the visual arts. The elements of a hypermedia environment, such as web pages, associated text blocks, loaded sources of images as well as connected ideas and voices emerged as being the stronger, more important considerations and examples for including technology and online components in arts education.

This researcher originally set out to establish a set of protocols or strategies for learning the arts through/with hypermedia, provided hypermedia was found through the research to be a beneficial, supported and appropriate method for such content. As research progressed, hypermedia specifically was found to not be a supported context for teaching the visual arts; however, what emerged is a unique, informed contribution regarding educational and technological teaching, in a broader sense.

As stated previously, the aim of this research was not to necessarily claim hypermedia learning as superior over traditional methods of learning, but that the quality, experience and event of hypermedia learning could be viewed as an extension to other learning conventions. In this respect, the various learning styles, sub-styles, methods and success of teaching with/through the visual arts with adult learners was examined and found little conclusive that hypermedia is an environment for this.

This research has succeed in its original intent to highlight a gap amiss in both educational and technologic research that seeks to bridge theory with digital information processing, targeted for teaching of the visual arts to adult learners. This was accomplished through examination of literature, qualitative interviews with practitioners, researchers as well as theoretical frameworks that guided the discoveries through the process. Ultimately, the research design helped contribute an understanding of technology as a learning tool, an enhancement of learning the arts through various methods and beliefs as well as current, contemporary motivations, such as technological increase and the development of necessary technological workforce skills.

Hypermedia, while not necessarily proved to be an ideal setting for teaching the visual arts, has provided a representation or conceptualization for approaching technological teaching.

If understood and seen as a web of potentially accessible, fruitful knowledge and exhibited through research as having educational potential, then what now lies is gearing the development of technological, learning environments and exercises towards replicating this form, even if only conceptually.

Based on the current implementation strategies for digital media and online learning on the arts, this researcher believes that creating a space for students not only to gather information but also to contribute to would be paramount. Depending on context and content, such as a more studio based ceramics course or a critical theory course on Postmodernism, an assessment of online participation and the inclusion of digital media into assignment should be implemented to provide both motivation and acknowledgement of activity. Specific methods of assessment should vary from reflective logging exercises to content-based tests. Professors will have to "... start thinking about pulling apart their neat little syllabi and really looking for opportunities to approach their audience in a way that will be more effective for their overall learning experience," (M.H., personal communication, March 21 2012).

Examples have been proven in this research to carry strong illustrative purpose in the college arts courses; however, to go beyond illustrative uses, examples of how digital media, online sharing and online media has promoted and propelled activism or other positive attention for its contributors should find a place in this context. This may highlight more motivational content for students and their online, digital participation.

Additionally, this researcher would enjoy the implementation of more digitally literate coursework for teachers in training. In many verbal responses through this research, it appeared that digital literacy was a learning process for all participants involved not just including the

learners. Instructors must model what being literate in digital technologies and the online realm means. This may also propel motivation.

With all of this considered, it is ultimately important as an educator to be considerate of issues of access and concerns but also especially that technology may not always be appropriate. While it's role and importance is increasing and should try to be incorporated in a majority of educational programs, one must be cautious of the reasons why we include technology. Technology, electronics, digital media and online learning should never be an arbitrary add-on. Instead, it should come with deep consideration, connected to learning goals and infused creatively.

For hypermedia to be conclusively supported as a beneficial and practical environment for teaching the visual arts with adult learners, future research that would document cognitive domain applications as well as successes in learning outcomes will be needed. Our culture is changing and we can change with it, using its affordances positively, if done wisely.

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Appendix A

Interview One Protocol

1. In what ways can hypermedia improve learning outcomes within self-regulated learning environments?
2. In what ways can self-regulated learning improve learning outcomes?
3. How are hypermedia-designed learning experiences changing and what are the implications for that for education?
4. What is your ideal vision for hypermedia based learning experiences in education?
5. What do you see as being the limitations of using hypermedia based learning experiences in education?
6. Is there an interjection between fine art with hypermedia learning and where do you see it going?

Appendix B

Interview Two

I: My first question is, um, in what ways can hypermedia improve learning outcomes with—within self-regulated learning environments?

P: Wow. [Clears throat.] Getting right to the matter of things, um. [Pause]. Well it can be by giving students, people, humans, um, access to multiple information sources that may be required to problem solve, to understand something conceptually, to, uh, develop skills, right? So, the flexibility inherent in hypermedia allows for that. However, uh, one of the things we know about humans is that we are pretty bad self-regulators. So, that's kind of what keeps us in business because the fact that—there's a misconception. People think that by giving students access to these resources in a non-linear fashion, that students will make good instructional or pedagogical decisions. But, what we know is that it actually requires—in order for one to be effective and learn, comprehend, etcetera, um, whatever their main topic may be, it really requires self-regulatory skills such as cognitive, metacognitive, keeping your emotions in check and motivation, um... So, we know that students don't really fully comprehend materials or how problems—understanding or showing that they do understand because they don't have the self-regulatory skills. Does that make sense?

I: That makes total sense. Yeah, um, and so—so self-regulated learning skills are *paramount* essentially—

P: Mhmm.

I: is that—I mean, I would agree, uh, with that. Do you agree with that?

P: Yeah. Absolutely.

I: Okay. For that kind of learning—

P: Yeah.

I: —for the nature of hypermedia learning—

P: For hypermedia learning.

I: So, with that in consideration, I think that my next question is very similar to the last one. In what ways can self-regulated learning improve learning outcomes? Does that question make sense?

P: Yeah. Absolutely.

I: Okay. Go for it. [Laugh].

P: So, maybe one way to answer the question, Casey, is by providing example. So, yeah, we agree that fundamentally—that a student would need or require self-regulatory skills to benefit from hypermedia-type learning environments. So, um, if you break those down into different types of process or skill—so, from a cognitive perspective you need to create plans, you need to plan—well create plans, you need to create relevant goals—learning goals, sub-goals. Uh, you should also activate as much of your prior knowledge as possible to use as an anchor for what you're about to learn. Um, from a metacognitive perspective, another one of the key issues is, uh, that students—and we know this from metacomprehension literature, is that students are really—well, students, *humans* in general, are really bad metacomprehenders. We tend to overestimate what we understand or don't understand and whether it's from text or diagrams or animation. So we make—tend to make inaccurate judgments, which really lead to using inefficient or ineffective learning strategies... So, metacognitive monitoring is extremely important. And it's actually challenging and does impose a cognitive load because, think about, you know, using a hypermedia environment, "I have to understand that and monitor whether I'm understanding what I'm reading. I have to keep track of how much time I have left for learning." I gotta keep

track of sophisticated things like, “are the strategies that I’m using effective? How do I even know if they’re effective?” So, there’s a lot of demand in terms of metacognitive monitoring and then learning strategies. Hopefully, we want students to use very effective learning strategies. And whether they’re domain specific—so, for example, if you’re doing science you might think of argumentation skills or whether they’re domain independent strategies like knowledge elaboration. “I knew x, I’m now learning more about x, but then how do I elaborate? How do I extend my schema of what I know?” Right? And all this, while keeping in check, you know, your motivation, “am I interested in the topic? Do I have the self-efficacy to learn about this content?” And then, one of the things, you know, that a few of us are starting to do is look at emotions also. So, if I’m confused, what do I do? How do I self-regulate so that I don’t get bored? Or, if I’m bored—

I: Mhmm.

P: —how do I get out of boredom so that I can actually learn this material? So, we really consider those issues the, uh—so the cognitive, metacognitive, motivational and emotion/affective as the four pillars of self-motivation that we should really be paying attention to.

I: Very interesting. That’s very interesting. Yes, I think that the emotional pillar that you’re describing—cause, it’s almost so basic but maybe it’s getting overlooked—that if you get frustrated, how are you going to act and then how does that impact your further progress? I mean—

P: Yep.

I: —sometimes they give up. It's very possible that a learner could just stop, be overwhelmed. So, um, with such an advanced, you know, learning environment as the hypermedia learning environment—

P: Uh huh.

I: Um, yes, I think that is a huge, should be a huge consideration and it, as a pillar should be, you know, the same, you know, merit as the others. So, that's good. I remember reading about that as emer—it was emerging, I think, in the last article that I read of yours?

P: Yea.

I: Which I think was 2010. But yes, okay, very interesting stuff. How is [sic] hypermedia-designed learning experiences changing and what are the implications for that for education?

P: Wow. How are they changing?

I: Mhmm. We can break that down into two. How—

P: Okay.

I: —how is hypermedia-designed learning experienced changing? Meaning, um, where have you seen them—where have they started with the learners and where as it come since then?

P: So, hypermedia as a technology?

I: Yes.

P: Okay. So, really started with reading comprehension. I mean, really started with hypertext.

I: Hypertext, yes.

P: And then was the multimedia [sic], kind of, revolution, if you will and kind of merging of hypermedia. Um, so starting a lot with hypertext and the reading comprehension folks and then everyone basically got into it whether it was for different topics or domains like medicine or science, uh, or social studies. Um, and, you know, one of the things that is becoming more

apparent is, uh, you know, the publishing, the textbook publishing companies, like your typical—excuse me—biochemistry undergraduate textbook which is, you know, about “yay” big. [Hand gesture].

I: Mhmm.

P: Um, a lot of these publishers now, especially for undergrad courses, even in educational technology, uh, are putting, you know, um, hypermedia like environments that are equivalent to their textbooks online. I just find that we are repeating the same cycle. It’s like, “look, just because you put it online doesn’t make it more effective” because they’re still not dealing with the issues of the fact that students, who are your typical undergraduate students will not know, you know, what is relevant or what is irrelevant, they might not know the metacognitive monitoring skills. So, why would you assume that they’re going to learn from this stuff?

I: Mhmm.

P: Yeah. So, sorry. So, I’m not sure, uh, I was trying to answer your question but it was a little...

I: Okay. Yes, no you did, though. And, it’s just interesting because I definitely agree with that. Uh, you know, in constructing my research for this, it seems that, you know, there’s been so much research done, um, and experiments conducted, trying to really say that one method is better than the other, like digital versus traditional, etcetera.

P: Mhmm.

I: But, either—it, it shouldn’t really even be about that. It should—we should be looking at the cognition and how can we better, you know, an optimal—

P: Yep.

I: —an optimal amount of the learners' cognition and you know, then figure out the strategy. But it's almost like they skip over that part and go and just strategically think, okay, everybody's going digital.

P: Digital. So we gotta do it because—yeah.

I: Right. So, I think that also you addressed most of that question actually in your answer because the second half of it was, what are the implications for that in education? And you started out, you said, you know “it started with hypertext” or “educationally speaking, it kind of, sort of started with hypertext” and now, people are putting textbooks online. So, um, yeah I consider that to be a pretty well versed, relevant answer to the question. Um, if you have any other thoughts on that—I mean, I'm open to it.

P: Um... well, I guess what everything's really about is bringing in the whole scaffolding issue.

I: Ahh.

P: Some people have started—especially those in the field of ed tech—most of them are starting to include scaffolds. But the question—the problem is that these scaffolds are static.

I: Mhmm.

P: There might be a prompt, for example, at the end of a chapter or at the end of hyperlink, you know, “did you think about X?” And the question is—what we are starting to realize is that those kinds of static scaffolds, because they're basically not adaptive, they're generic, they're for everyone. Um, it doesn't mean—so why would you assume that at the end of the page I may have—I may need a metacognitive prompt, maybe I need it in between or between paragraphs. So, what we're learning is that those, uh, prompts, that are static and generic are basically useless. Okay? Because people are not using them. So, if you look at frequency, students are not using them. And then the ones that are more sophisticated, that deal with metacognitive issues,

for example, are definitely not being used because students don't know when they need to be prompted metacognitively.

I: Right.

P: If that makes sense.

I: Yeah. That makes sense. It does. And I agree with the scaffolding point. I have a, um, large part of my research, um—does address the whole scaffolding—address [sic] the idea of scaffolding and in your specific example with MetaTutor, you, correct me if I am wrong, there are adaptive scaffold systems built into that—into the uh, format of that, correct?

P: Yes.

I: Okay.

P: So, uh a few of us are focusing on the adaptive scaffoldings because the question is that, during learning—so during learning, well basically better than before learning or after learning—during learning students, uh, will need certain scaffolds. So, the question becomes, uh—and this is something related to what people are talking about now—folks who are talking about personalized instruction. Well, sure, but how are we going to personalize it? Right? Uh, if we are going to be dealing with individual differences with students then we need to have adaptive scaffolds. But the question is, how do we build those scaffolds? What are they based on? So, we are pushing for—they have to be theoretically driven—

I: Mhmm.

P: —and they really have to be, basically, based on research that deals with and collects process data. So, in MetaTutor, to give you an example, let's say the student sets a goal for learning about the four chambers of the heart. And, let's say that they click on one of the hyperlinks that

has to do with, lets say, circulatory system in non-humans. Well, you and I would know that basically that content has nothing to do with the goal that I just set, right?

I: Mhmm.

P: So what happens is—this is just a very simple example but one that’s effective—is that once the student clicks on that hyperlink, the system already knows that that content has nothing to do with this particular, uh, goal. So, what we do is, based on—we know that typical, on average, undergrad student will spend, let’s say, thirty seconds on that, uh, particular page. So, what the system does is basically wait—within thirty seconds there is a time threshold, in that you should be metacognitively monitoring. Thirty seconds is long enough for you to read the page and to make a decision as to, “yes this content does not relate.” So the assumption is that you’re engaging in metacognition. Okay? If you exceed that threshold then the system, instead of doing the metacognition for you—it will actually prompt you.

I: Okay.

P: By, “do you think this content is related to your current sub-goal?” In which case, you need to say yes, which would be the wrong answer. Right? In which case, you start a tutorial dialogue, “explain to me why you think this is related,” versus, “no, you’re right, this has nothing to do with it and I need to move on to the next page.”

I: Wow.

P: So, there are time thresholds, there are all types of thresholds—your behavior, how long you’ve been on the system, how long you’ve been on that particular sub-goal, what pages you’ve navigated. So there’s a whole—there’s a whole set of, um, production rules, or rules that basically guide what the system does for you, in terms of scaffolding.

I: Wow. That's extensive. That sounds like quite an, um, intuitive and extensive way for a built in scaffold to operate.

P: Mhmm.

I: That's impressive.

P: Thank you.

I: My next question is, um, kind of more of an opinion. And I feel that it is quite fitting for much of my research, because it is taking a lot of the scholarship around hypermedia, educational hypermedia and uh—like cognitive psychology, all those kinds of things and trying to connect the dots and see what its implications would be for the visual arts in teaching. So, kind of a new territory [sic]. But. I'm sure that somebody's probably already done something like that. But it's like, uh, you know, trying to, like I said, connect the dots. So your opinion is definitely very valuable and ask what's your ideal vision for hypermedia learning in—let me repeat that. What's your ideal vision for hypermedia based learning experiences in education?

P: Wow, that's, um—that's a very interesting question. Um, well, uh, I think we should—it would be interesting to try, um, hypermedia environments where students actually construct their own artifacts or they construct their own knowledge to a certain extent and I'll explain that in a second. But I think, you know, because we talk about engagement and we really don't know—what is engagement? Is it behavioral engagement? Does that mean that the student is staring at the screen and is, like, so locked in and so interested that time just flies, etcetera, or are they cognitively engaged? Um, I think we need and we have the ability with new technologies to actually augment that user or learner experience by actually getting a student to—for example, in MetaTutor—one way, if I was thinking about modifying, which we are, MetaTutor—it would be wonderful if the student not only had access to, for example, let's say a 3D model of, let's say, a

heart that's pumping, to actually get a student to do something to the heart so that they can come up with hypotheses. So for example if I have an occlusion, let's say, in the right atrium, what would happen to blood flow? So right now, for example, we can ask that kind of question—

I: Mhmm.

P: —but students will have search text and diagrams for it. Um, I think, we can take advantage of the affordances that are provided by hypermedia and really extend those to a much more immersive, if you will, experience. Um, I think that would get, especially with younger kids—I think that will get more at the whole engagement and motivation issue. And even, you know, college students—I think that students of all ages, you know, where people are constructing their own learning, if you will. So, even to give you an example of that, if I can, um—we just got actually—part of the reason, you know, was it Wednesday we were supposed to meet, um—I had a whole bunch of paperwork—we just—its official now—we just got a 1.2 million dollar grant from (an organization). I can't hear you. Can you hear me?

I: Yeah.

P: Oh, Okay.

I: I was smiling, I didn't want to interrupt but I'm smiling silently, because that's really exciting!
[Laughs].

P: Why, thank you. But, um, so what we're doing is basically it's a version of MetaTutor and a better version of Betty's Brain, which is one of the colleagues here—but the kids are actually building their own avatar.

I: Wow.

P: So, the avatar is actually, from our perspective, an embodiment of who you are as a learner. So, not only will it learn about science and scientific processes, but it will also start learning

about who you are as a self-regulated learning being, you know. So, you might imagine—imagine having this simulation where its hypermedia-based and the kid basically collects all different kinds of hypermedia content and they structure their own content, okay, to answer a particular problem and then they also, uh, learn about themselves as a self-regulating being. They actually get to see how they would solve problems, you know?

I: Wow. So, avatars...that's interesting.

P: Yea. And we're getting much more sophisticated with avatars, also. I think avatars is one of the ways to go because people are starting to talk about—almost like the social—it's a social interaction—which we always think about as human to human. But, here we are human to artificial being, um, and which in this case would be on the screen, um. But, start exploring those issues about, you know—can we really have a social relationship, is this really social learning if you're learning from an avatar, for example.

I: Yeah, that's an interesting question and it's an interesting issue. It's probably going to have to be answered over time, perhaps, yeah.

P: Yeah.

I: What do you see as being the limitations of using hypermedia based learning experiences in education?

P: Uh, funding—

I: Okay.

P:—is one of them. Um, especially federally funding, I mean it's so—who knows what's going to happen, especially in the U.S. in the next, uh, year—interesting times. Uh, so funding is definitely one of them. So, for example, we—we are fortunate enough to be one of four groups to be funded by (an organization) during this last round. They usually fund more folks, um. So, one

is, funding. One is um... the fact that our technology is—technological advances are happening so fast and so quickly that we, as researchers, are un—are not able to catch up with our theories. Our theories are still very impoverished, in terms of theories of learning. Because all of a sudden, for example, we have technologies, whether it's the iPad, for example, that can allow students to interact with multimedia, hypermedia environments, right—

I: Mhmm.

P: —but we have yet to understand how the mental, uh, issues related [sic] to learning. There's just an assumption, “oh. there's a new technological environment so let's just put it out there and they're going to learn.” It's like, No. So, funding, technologies superseding our scientific understanding of learning of these technologies, um, the other thing—a third factor, I would say would be computational power.

I: Okay.

P: The more we—the more artificial intelligence, for example, we want to put into these environments, the more demanding it is for your typical, you know, CPU, to basically crunch all of this data in real-time, to make inferences in real time, to provide adaptivity in real time, um. And that's bad enough in a laboratory setting where everything is controlled, so we can imagine if you wanted to impact students, for example, whether at informal settings or at home or let's say in a museum or an art gallery or at school, you know, it's just not going to happen.

I: Right, right.

P: So, I think those are really the three, um, three most important barriers.

I: Yeah.

P: I also think that—sorry—and one other that just—another one that just came to mind is teacher training.

I: Ahh.

P: I think we are doing a really poor job of training future teachers. Uh, like for example, when I was at the (university), uh, you know, I taught an educational psychology course. So, I mean, you're going to be a teacher, of course you need to know educational psychology—it's almost like "I want to be a surgeon, but I don't have to take anatomy," huh? How does that work?

I: [Laughs].

P: "You know I'm just gonna slice and dice, you know." [Laughs]. Um, so, it doesn't make any sense, you know. Teachers are learning things about learning styles—it's like, why would you want to simplify human learning—

I: Mhmm.

P: "Johnny's a visual learner. Mary's a auditory learner." It's like, come on. Seriously? If you have an inclusion class, that's something different. But, if you have—it's your typical classroom, it's like, come on, you know. Um, so teachers are not being trained on—once they become teachers—on how do they use the technologies that you and I use for learning, for example, you know. They go back to the old thing, "oh, we learn [sic] PowerPoint"—oh WAAH, well, okay—

I: Mhmm.

P: —interesting. But our question is how would you learn—how would you use, for example, a simulation environment in, let's say, your science classroom and then how would you assess students' learning from that simulation environment? Right? And teachers don't know to do that.

So...

I: That's fantastic. That's actually a point I had yet to think about. And, being in a teacher education program, myself, yeah that's like...that was such a great point. Um, I know that, at least in my teacher education program, you know, there is X amount of types of courses that are

required to be taken to get a public school teaching certificate and it's going to vary, state by state, here in the States. But, um, it's just very limited and it's very theoretical and while theory is totally great—I'm a really big fan of critical theory, I really love immersing myself in that kind of thing—but, you know, taking theory and putting it into practice is a totally different thing—

P: Sure.

I: —and being a young adult, in this type of program and, you know—so my personal experience is that theory to practice is a very big, paramount thing. So when we're talking about complex, technological things, um—theorized learning, cognitive things and then all of that, you know, going from theory to practice, I mean, there is just so much more that needs to go into the preparatory system for teacher, I think. Yeah, I definitely agree with all of that.

P: No, absolutely. Yeah and I'll give you an—if I can—I'll give you an example.

I: Yes, please.

P: So here in the province of Quebec we have what is called CEGEPS, which are a two-year pre college. So, students here go to grade eleven and then they go to a CEGEP, which is for two years—whether they want to go into social sciences or humanities or pre-med, engineering, etcetera, then they apply to University [sic].

I: Wow.

P: Yeah. So, it's actually good because when I did my, uh—well before I did my undergrad here I actually—it took me three years to do, go through the process. But I really, you know—you're not wasting time in the University and so it's kind of a safe place to waste time, if you will, to explore what you want to do.

I: Right, to make that decision.

P: Yeah, to make that decision. So we're working with one of the largest ones here and uh, one of the grants is to look at how teachers should be using these Smart, uh, Boards and smart technologies. So we went in, I went in with one of my Master's students to observe and I'll tell you, I mean, with the experience I have in terms of teaching in a higher ed context and the expertise of knowing cognition, learning and technologies—when I walked into that room I felt overwhelmed and I felt like a novice. My first thought was if I—if I were teaching in this room, I would be scared, basically, because I would not know when and how and for what purposes to use these eight SmartBoards that are basically covered [sic] a wall—wall to wall, it was just unbelievable. So, it kind of, I felt almost like a novice, again—

I: Mhmm.

P: —so I'm overwhelmed because I know the content, I know the technologies that can facilitate my teaching but I have no idea how to use these because I'm worried about things like technical issues. I'm worried about things like my students may actually know how to use this stuff better than I do. Right? And then the biggest question is, when would I actually use these eight SmartBoards to enhance my students learning? Meanwhile, I was there with my student. We were there for an hour and a half. And this physics teacher, I mean, was just incredible. He had two SmartBoards, he knew when to bring things up, students were working on the SmartBoards, it collects data in real time. They can wear the microphones so it can collect data. It was just unbelievable—to this physics teacher, it was not a problem. It was just like another day at the office.

I: Wow.

P: So, it was just fascinating because part of the grant is to look at other teachers who have never used this kind of, um, equipment and environment. And the question is, how do you train these

folks to immerse themselves in this kind of environment and then to actually teach effectively using these tools. So...

I: So, in a sense, I get the feeling that teachers need to—they are the learners—

P: Yeah.

I: —in this kind of environment in order to facilitate the learners. It's kind of a full circle in a way.

P: Yep. No, absolutely.

I: Interesting. So we've talked about like, the, um—what we think are the improvements, what helps the learning outcomes, what could be seen as limitations for these kinds of educational experiences. And so, this question may be a little, tough.

P: [Laughs].

I: [Laughs]. And, it's again just—

P: “Wait, I can't hear you anymore, bad connection!” [Laughs].

I: [Laughs]. I mean it's again your opinion and it's about the interjection between art and hypermedia. You and I kind of touched on this in our, uh, meet and greet. So, that's where I got the inspiration to go ahead—and I figured I would write this into the interview questions. So, is there an interjection between fine art with hypermedia learning and where do you see it going?

P: Huh, wow. That's interesting... Wow, that is a tough question. [Short laugh].

I: I had to ask it [Short laugh].

P: Oh, no, no. Absolutely. It's great. Uh, and I'm not, uh—I'm going to try—I'm going to try to answer it in the way I should not be answering which is basically, um—we see a lot of bells and whistles and that's a problem. But, in terms of—so, for teaching fine art or the integration of fine arts into—whether it's a design process, Casey?

I: Ideally, for the teaching.

P: For teaching? For teaching the fine arts?

I: Yeah, yes.

P: Wow...

I: I realize that is not quite your, um—your specific content area.

P: Yeah, but still, tm, that is so interesting because well, first of all, my knowledge base, at least in that area is [laughs] zero. Um, but couldn't you—oh my gosh, teach things like, uh, color theory and um—I'm trying to think about—if you were to choose something like more aesthetic like, uh, I guess—and once again, my knowledge base is very small, um—art history. Um...how could you take advantage of, um—I mean first of all I think it would be an ideal—hypermedia would be an ideal media for this kind of, uh, domain... Oh my gosh, that is really a tough question. Um...

I: Well, if it's something that you're, um—you don't feel comfortable with that's quite alright. I mean, it's tough. That's what I am trying to do with my thesis. I'm trying to connect all of these dots to the teaching of the arts. My current, like, spot, where I stand with it is that conceptually—conceptual based art learning, um—art history would be something like that, art theory, critical theory, kind of those that are—I don't want to say less experiential but more conceptual and less hands-on—is where I see this falling into place. But, um—but so, again that would have to depend and is contingent upon the learners, their ability to self-regulate, the teachers ability to recognize issues like that. So...

P: But, what about those activities, those that are artistic expression? So, for example, if you were drawing or painting, how would you use—oh my gosh, that really pushes the envelope because for those particular aspects, which are so individualized—

I: Yeah.

P:—and artistic in nature, right? Um, can you have a canvas, for example, embedded in a hypermedia environment, where you are learning a particular technique—

I: Mhmm.

P: And provide scaffolding?

I: I think it's possible. But, um, it's very—it's kind of controversial in the field of arts education because like you said, it's very subjective. It's very individualistic and many times it's very experiential. So, um...

P: [clears throat].

I: But I find it very interesting because even though I'm both a researcher, I'm an aspiring educator but I'm also an artist and would like to consider myself an artist, a lot of my own learning has been, um—I guess you could say self-regulated learning in hypermedia kind of environments. So, I find a lot of much of my time is me taking the initiative find [sic] more stuff that I need before I can start an artistic project. So, a lot of inspiration for this type of thesis topic comes personal, you know, almost, auto-ethnographical inspiration.

P: Yeah. So, could you not have an environment, as you were saying, that you could go out—that exposes yourself to different artistic expressions? Can you include that in a hypermedia environment or does one actually have to have the experience of, let's say, going to an art gallery or a museum or wherever the art actually is situated to have that kind of contextualized, situated cognition perspective. Um...

I: Yes. I'm not sure, I—I think that it could be both. It's hard to answer, but I think it could be both. In my opinion, when it comes to arts education, I'm not—I don't think that it—that a hypermedia-learning environment should seek to replace—

P: Okay.

I: —say, the physical object or the, um—if you're going to a museum and you know, it's an objects-based learning. But um, distance learning, is a good example of when those kinds of things really come into play.

P: Mhmm.

I: You can certainly—I recently presented on virtual museums—just like a broad overview of what a virtual museum is and the kind of technology that it requires—

P: Okay.

I: —so, that's something that I believe is very beneficial in many cases.

P: Sure. Wow.

Appendix C

Interview Two Protocol

1. In what ways do you use technology in your teaching practice?
2. For what reasons do you implement specific technologies in your practice?
3. How successful or unsuccessful do you feel teaching with technology is in your practice?

Why?

4. In what ways do you feel your technological teaching practices benefit the visual arts education for your students?
5. Are you familiar with the term ‘hypermedia’? (If answer is yes, ask for elaboration and proceed to question #6. If answer is no, follow up with:

Hypermedia is an assortment of information, formatted variously such as text, audio, video, animation, etcetera and is while spread across a vast area, is interconnected by associative links or nodes.)

6. Do you see your own teaching practice as similar or contrasting to this? How so? This can be conceptual or literal.
7. In your opinion, what your ideal vision for technological teaching practices?

Appendix D

Interview Two

I: So, my first question for you, _____, would be, in what ways do you use technology in your teaching practice?

P: I use it in a lot of diverse ways. So, um—so at a very basic level, I use it to communicate with students. Um, I know that, for example, as technology changes now a lot of students use email so they can reach me through Twitter, instant message. But they can reach me through Facebook. Although, I am always a little bit hesitant to actually friend students on Facebook, although I have.

I: Okay.

P: So, I use it for communication. I also use it sort of as an illustration, um, in the—well actually to step back from that, I use it as a tool for dissemination. So, the students can get their assignments online, um. They can go online for more information, like links and resources and I also use it to communicate through a blog. So, that's a blog with resources for dissemination. I think that *especially* at an arts school where there's not a bookstore—[short laugh]—um, and also where art supplies are just so incredibly expensive, um, to have this other expense of books or to have to hunt down journal articles yourself or to go really deep into a system, to have everything in one place, disseminated together, is really important, um. So, I use it in the classroom in kind of two ways. One is to illustrate the theory and ideas that we're talking about in class, especially since I'm teaching humanities and Art History classes which are based a little bit more on theoretical concepts. So, I feel that being able to integrate—whether it's audio or radio or video or websites—um, has an illustrative function. I also use PowerPoint, although I have like, you know, an adverse relationship with it.

I: [Short laugh].

P: But the fact of the matter is that you can embed multimedia within PowerPoint. Even just being able to use images to illustrate something or have an image up while you're talking, um, is really great. And the other—the other thing is that there just aren't chalkboards, anymore, anywhere. [Short laugh].

I: You're right.

P: It's this really odd thing where I love a chalkboard because—I still use them when I can—because this kind of brainstorming takes place when you're writing things down and people have ideas or you're asking people, um, to react to something and they have a lot of different things to say. It's great to write it down. So, like I said, I have an adverse relationship to, um, PowerPoint. And then I also use it for—other ways for students to communicate their ideas. So, sometimes they write a paper, um, but that's not necessarily the best way or the only way to, um, communicate or analyze, um, to communicate your understanding of the work or to analyze it. So, sometimes I will have them do a PowerPoint presentation, um, and that then forces them to learn the technology, as well. Or there's an upcoming assignment where they can do something live. They can make a video, they can make a webpage, they can, um, do an audio piece as part of it, um. So, then students that have different either interests or learning capabilities or ways of expressing themselves, um, can use different formats, um. And then I also use it, um, kind of as a substitute now for artist talks, in some ways, um. Especially when I'm teaching topics around humanities where, um, you know—looking at very broad topics such as food justice, for example or sub-cultural studies or dissent which I'm looking at right now—where I have knowledge of these things but the expert in the issues has more knowledge, is able to communicate that in a very different way. So, um, kind of opens up the classroom to really short—they don't have to be

long—talks—like when you have someone there, you don't want them to just come and leave after twenty minutes. So, um, it's great to be able to open up a classroom in that way, too, to kind of get another, another sense. So, you know, I use—I use technology in a broad range.

I: I see. I want to go back to your point quickly—er, just for a moment, when you said that you open it up for—for their interests and for different reasons that may be relevant to them, if I have that correct? So do you feel that when it's opened up—when you open up a learner's interest, say in your specific teaching practice, do you feel that's more beneficial for their learning outcomes?

P: Yeah. I definitely do. Because—especially because there might be some students that really struggle with writing but might be able to articulate something, you know, in an amazing way verbally—so, doing an audio piece, um. Just sort of my opening things up, getting—getting good feedback on it might open up other ways—and there's—there's, like I said—there's a number of ways to communicate. I still feel that the written word is important and especially, you know, doesn't really matter if you're going to be a graphic designer or an educator or an artist, you have to be able to communicate in writing. But, um, at the same time, I don't want to—I don't want to limit students, um, who have other skills that are maybe more pronounced than writing and can communicate that way.

I: Right.

P: And then as far as interests go, you know, it just may be that a student can write really well but they are really interested in video and want to make a video. So, that's a way that they can sort of deepen, um—deepen their skills and also, it forces them to figure out “OK, so how do I communicate this through this technology?”

I: Mhmm. So a new skill set, perhaps?

P: Yeah.

I: Um, for what reasons do you implement these specific technologies into your practice?

P: Um, well there's probably a couple different reasons. One, is just because that's the way that I think.

I: Okay.

P: I couldn't imagine just going in and lecturing for a whole class. I come from a media background so I'm always using lots of different media in my practice and my research and my own writing. So, that—there—so from—in a very simple way, um, it comes from how I think. I think the other reason is, I really believe that digital literacy is incredibly important and I think that, um—I think that, for example—that the students aren't setting up Skype and dialing in but they're watching me do it. It's not a big deal and that's a skill then that, in some ways, they gain, you know. It wouldn't be something someone would be afraid if they haven't used it before. Um, you know, I think the other reason that I use it is because, um, academic texts don't just exist in one place anymore. So, they used to be journal articles or books, maybe sometimes a magazine or newspaper. But now, you know an academic text—text could be a youtube video or it could be using audio from NPR. Um, I just read an article online that was *only* online in the UK Guardian and it was great. It was about, um, the stuff that's going on with the Kony video, um, and they were like pulling from all these academic sources. I mean, it was—it was a great article. It was accessible. It was smart, um, and it was, like—it had theory embedded in it. So, I really kind of feel like those sources can come from anywhere and just limiting yourself to academic texts also limits, um, the students experience of what you're teaching—the topic that you're teaching.

I: Like, TEDTalks, for example—

P: Right, right.

I:—are an academic source that simply live in video form—

P: Right.

I: —I'm pretty sure you could purchase them probably. But, they're online—

P: Right.

I:—and they're free, so...[short laugh].

P: I mean, the other thing that happens is that, um, if you use multimedia in the classroom, then you can use it outside of the classroom and students can watch these works as part of their homework and then you don't have to take the classtime in the classroom to actually show—I mean, it does take time to get a video up, um, you know, run it and then have the discussion. So, lots of times I'm able to just give, um, a video or a blog site or audio as homework along with readings and we can have those discussions in class...I also use it as a way—you know, I don't know the difference between, like, me being (part-time) and teaching at two places and someone who's full time but, um, I just like can't be on all these different sort of systems and, um, you know, collecting all these different papers, um. So, for me being able to get homework electronically is really, really great. Whether I'm working with my thesis students—they can use a dropbox. I can annotate it and send it back it back to them. But even for the undergrads, having them post to a blog, give them comments, grading, again, it's just—it's just—it gives them the experience of blogging and using that technology and then, uh, it gives them more immediate feedback then, um, then if I were giving them papers.

I: And, perhaps waiting a week or two to get that assignment back? Yeah, it's a learning process all around.

P: Right.

I: I'm starting to see, in my opinion, that it's kind of full cycle.

P: Oh, yeah.

I: If you agree with that.

P: Yeah.

I: Um, so the articles or the scholarly—and academia—and theoretical, and very rich content that is existent across multiple realms now, um. Teaching that kind of literacy is something that would allow them to then be able to access—

P: Mhmm.

I: —and know how to search, how to find, is [sic], um, this type of content, right?

P: Yeah, and I mean, some of them are better than others, um. Some people come in with those skills just spend a lot of time, you know, looking through Youtube or, um, you know, some students just have different interests coming in and already have all of the Yahoo news alerts. But, it's great. I mean, one thing about a blog that's really nice is that as the semester goes on, students will start, um, putting stuff on the blog without any prodding that they've run across. I mean, some will still email it to me and then I'll put it on the blog, which is—which is fine, either way, uh. But, yeah, so sort of prods them—and you know, there are some students that if they don't understand something they're reading, instead of sending me an email, they'll go and do this sort of research, so it's definitely self-motivated.

I: Very nice.

P: Yeah.

I: That's awesome. Um, I just want to go back to a point that you touched on with the prior experience in students that they come to class with—

P: Right.

I:—are the students who are less experienced with technology, or maybe they just, uh, are a little intimidated, perhaps. What kind of practices, or, um, methods do you currently have to encourage them or to, uh, educate them in that?

P: I—you know, I try to do everything at the beginning of the semester unless it's a special project, um. But, um, you know, so I'll excuse the students that say that they have the technologic background but if they don't—[laugh]—then they have to figure it out for themselves, pretty much. But, I give workshops. I give instructions. There's instructions on the website or on the blog to support that, um. The problem with that is—is that it takes up class time.

I: Mhmm.

P: That's the problem, um. When I do audio assignments, I work with the students a little bit on audio. I don't care what they record it on. You know, they can record it on their iPhone, it doesn't have to be fancy audio equipment, um. I did a radio broadcast with students so we had to learn how to use the mixers and—so, that's a problem, it really takes class time. And, you know, I think sometimes, if you don't have those skills as a professor then—there—you don't incorporate those kinds of assignments or you just kind of leave students on their own which, um, which can be okay, you know, 'cause it's part of a learning process. But, um, it could also send them down a rabbit-hole, for sure.

I: [Short laugh].

P: Because there's also this notion of appropriate technology. So, I—you know—students can propose anything to me. I could say, “make an audio project” and they propose to me a video project. And, if I feel it's appropriate technology for the assignment, I'm fine with that. But, I think if you're not familiar with technology and students come and propose a video project,

again , they could be going down a rabbit-hole. It might not be the appropriate technology for that assignment, um. So... those are just issues that come up in teaching. I think that, um, those are the sort of things that make a lot of people that don't have a lot of experience in technology hesitant.

I: Mhmm. That's neat. That connects with something I've been finding out in my own research about teachers' training and, again, full-cycle learning process. It's both for the learner as well as the educator

P: Right, yeah. And, if you don't use it a lot, like I—you know, I could show them how to edit in iMovie but every time I get into iMovie I fumble around, you know. It would be like another kind of added, um, prep time for me to—to go through that. So, really, if they wanted to do video they would have to have those skills—which most people do now, on a very simple level, um.

I: Yeah, I would agree with that, definitely agree with that. “Appropriate Technology,” I'm just curious if you could elaborate more. You said that...

P: Yeah, I mean, it's a term. You could probably find it somewhere online, somewhere. At some point, it was a term that was used a lot probably in the early to mid 90's, too, when technologies were shifting. So, the appropriate technology could be a pen and a pen—a pen and a piece of paper.

I: Okay.

P: Right? Or, it could be, you know, I don't know, an HD video camera or something like that, right? So, what's the appropriate technology for the task? Just like even here, right now, I just get really nervous about this (event) that's part of the (different event) because there's no—there's nobody looking at the technology. Like, there was a question on a questionnaire about, “should professors have iPads in the classroom?” And so, my question would be to them “well, okay,

well for what? What would we use it for? We can't plug it into a projector, it will only run video—“

I: Yeah and the wi-fi...

P: Right. But, you know, I have a little connector for mine but it can only run video unless you hack it. Then you can run your PowerPoint. Um, so—okay, so, that wouldn't work. Is it so that you can get papers electronically and grad them? You know, I have these great annotation tools. It's worked really well but that's what I mean, like, there needs to be this discussion, not just like, “let's just put technology in the classroom”—what's the appropriate technology?

I: That's a great point. Um, again connecting to some other research that I've found that there seems to be this common misconception I'm finding that if you just add technology in, they think that the students will learn better or that it's just going to improve learning goals and outcomes, all around. So, there's just a lot more discussion needed—

P: Yeah.

I: —for when any context of learning approaches that type of decision.

P: And, I think that there probably needs to be policies like, I mean, on a departmental basis it would be different in fine arts then it would be in arts and humanities. Um, you know, what's the policy around technology—if everyone is using it and someone isn't using it, does that become an issue? So, that's why I think that looking at what's really appropriate is really important.

I: Great points. How successful or unsuccessful do you feel that, um, teaching with this technology has been for your practice?

P: I think that for the most part it's been really successful, um. I—I would say that—it's clunky, so there's some limitations that I feel in the classroom that I don't necessarily think the students feel. Like, I get kind of frustrated having to go out of PowerPoint—[short laugh]—because I

can't stream here at (the institution). So, I'll have to download all the videos ahead of time. So, getting out of PowerPoint—I'm going to the video. I have to get back—I find that frustrating because it's not as seamless for me as I'd like it to be. I don't—I don't think that they find it as frustrating as I do, [short laugh]. You know, I mean, I think that there's some limitations because there's not a suite—like, if there were just one suite of technologies I could use—and blackboard is not the answer, too, because that's not one suite, either. But, um—but, like if the school had one suite of technologies that you could use and the students had training on it, that would be a little bit easier, um. If, under—you know—I would—I would use Twitter in the classroom as a backchannel if the under—if I felt that the undergraduates weren't doing something else when they were on there—I mean, their cell-phones. I use it with graduate students—

I: Sure.

P: —and it's fine. You know, if we're watching a movie, we can get on a backchannel and if someone is talking to the class, they can ask questions or I can talk to them instead of interrupting someone on Skype that used a term that they thought that they thought everyone knew, you know. I can type that answer to them to the backchannel. But, um, so—so I would say that those are the limit—the limitations are really the limitations that each school has with technology—I mean, because I've always taught this way, in some ways it's kind of hard for me to answer that question—

I: That's okay.

P: —because, you know, when I've taught performance studies or when I've taught performance art, I would always bring in videos and we would read and we would watch videos. Or, even when people used to still use slides. I mean, it—it's like an ancient version of it but I've kind of

always taught that way. So, I couldn't imagine, um, just doing a straight up lecture and not incorporating technology in some way.

I: Right. Well, I think that will feed nicely into the next question, which is, um, in what ways do you think that your technological teaching practice benefits the visual arts education of your students? So, the students that are studying fine arts, um, what's your feeling on that?

P: Well, I always think—well, I don't use it in (specific class), [short laugh]. I mean, we do—I mean, actually I take that back. We do use it during crits. So, um, you know, people will be kind of stumbling through, like, maybe not know artists that maybe are working in the same way, either content wise or, uh, technically. So, we've brought up, um, images to show them during crits. So, that actually is pretty nice, um. I mean, it's sort of a limited way but that's pretty nice. And I can't see doing much else in (specific class). I know that there was talk in (specific class) and whether they did this or not—having them write for a blog which I think is kind of ridiculous—I mean, they have to—they should be making work. Um, and I think what it allows me to do in my humanities class is—which always has some sort of component that tries to touch on art—is that it lets me use art examples to illustrate. So if it's food justice, I'm still able to use, um, videos, um, images from artists that are working in that realm or have them come in and do presentations or have them do presentations, um, over the web. Again, I feel that being exposed to these tools are things that they then could incorporate into their own art practice, um. You know, especially the audio thing. That is stuff that is always new to people, um, 'cause I do that the first semester of sophomore year. So, for a lot of the—the students it's like something completely new to do something with audio. We listen to a lot of sound art around food and, um. So, I kind of feel in those ways that since I'm not teaching a straight-up visual arts class here—when I teach social practice (location) or at other schools, I mean it's—you know—it's just—it's

just so amazing what the difference, say, ten years can make being able to access the work so they can actually see—I think that there's such a difference between reading about something that an artist did and trying to imagine it in your head and trying to talk about it and actually being able to see it.

I: Definitely. And whether it's, um, more on the academia side versus a studio side it's still, um, a visual arts education—

P: Right.

I: —and they're studying theory, history, etcetera. So, um, I would still—do lump that in with the arts education.

P: Yeah, and I think that—for people to think visually that—being able to actually see an illustration of what you're talking about in theory and be able to analyze that is really important.

I: For sure. So, are you familiar with hypermedia, as a term?

P: Yeah, yes.

I: Okay. It's actually something that I tend to have to define, usually, when anybody asks about my topic of my research. So, it's neat to find someone else that is kind of familiar with that already. If you don't mind, what are your words on hypermedia? What's your understanding of it?

P: Well, I mean, actually, we used to use that term a lot in the late 1990's, actually.

I: Then, it went away, now it comes back—

P: Yeah and now nobody knows—and now people call it everything, multimedia, new media, hypermedia—

I: They all kind of [short laugh] flow together.

P: [Short laugh]. Right. Well, the funny thing is when people very first started using it, it was when, um, artists and others—but especially in the arts—were doing these large websites that had text pieces on it. And the notion was, it wasn't linear because you could click on all these words that were highlighted with some kinds of image and it goes somewhere else, right? That was hypertext. And then people started with, kind of visual websites and that kind of, became a term, sort of hypermedia, um, you know. So, it's a term that kind of goes up and down and I don't—I don't know exactly how you're using it. Maybe you're using it like I use the term multimedia.

I: Yeah, I think that they are a little bit interchangeable, in fact. The way that I use hypermedia is that it's a wealth of information, formatted in various, uh—or they have various formats, so video, text, audio, animation, 3-D modeling, etcetera and they're hosted in several different locations that can be accessed by associative links. So it's multimedia with an interconnected, networking system. That's how I use it. And, I was saying earlier that I compare that to cognitive structure, at least, how we build information because a lot of information stored in our brains in very different places of our brains—most of which we very unaware to and the way that build new knowledge is that we have to build those associative links across the old knowledge, the new knowledge, future knowledge. So—and I ask you that just to see if I could get your opinion in comparing hypermedia as similar to contrasting to the way that you teaching. Especially since you're technologic teaching practice—

P: It's similar.

I: Similar? Neat.

P: Yeah. Although—the funny thing is that, when you were talking it made me think about, like what—because I teach things that are very current, for the most part, there is this funny notion

that when—you know, when I'm doing my own research, which follows the same model that you're talking about—it's like, at some point, I have to stop. Because there's always more information coming in, you know, especially when I teach food justice. There's just all this information I could point the students to and talk about a little bit. But, at some point I have to stop or my class will just, like, always be dynamic and it will just be too much and my syllabus will never mean anything. So—

I: Yeah. I mean, that's the thing, probably, I think, with, um, a wealth of information system [sic]—an information system or the *information superhighway*, if you will—with, uh, something as conceptual and technological and complex as hypermedia. So, that probably would feed into another question about the limitations. You were saying “at one point, we just have to stop,” and you were—you were expressing some limitations earlier with, um, class time or prep time or what the learners bring in. I was just wondering if you had any other thoughts on the limitations.

P: Well, the—the time—the prep time and class time are both huge issues around it. I mean just—just simple things like, if you can't stream a video or having to download them—takes—I mean, you could be doing something else—but it takes time to—time to do that, time to—to set up for the class. I mean, I probably get there earlier than—it's not like I can just walk into the classroom, you have to set up and make sure that everything is working and you have to have all of your videos before hand, um. You know, for the students, I think it's the same issue as for me—if there were a suite of tools that they knew. I mean, I'm really not sure how—I'm really not sure how literate students in the fine arts leave here. I mean obviously graphic design and digital media design, um—

I: And you mean 'literate' in the terms of—

P: —of technology. Yeah—

I: Newer technologies?

P: Yeah. I'm just not sure how literate they leave here and if there were, like, again, a suite of tools that they knew that they could use, they might bring them to the classroom or they might bring them into their research or, um—so I think that's a limitation. And, I do think that not having policies around new media in the classroom is a limitation as well. You know, I think there's this point here now where everyone thinks they have to have a blog for their class—which is fine if you're giving students feedback. But, if you're having them post to the blog and not give them feedback on their writing or their ideas, then I'm not really sure what the point is.

I: Yeah. That's a really good concern.

P: Yeah. It's just busy work then or having it because you're supposed to have it or something like that. So, you know, I think that—probably, besides prep time and besides class time, um, I think that, like, the limitations around it is a suite of tools—and I think that's the same everywhere.

I: Yeah. I definitely think that could be broadly applicable.

P: I do—there is one more limitation that I just thought of—I thought of it before and it just sort of popped into my head, um. One other reason why I wouldn't use Twitter, for example, in the classroom, is not all of my students have a cell phone or a Smartphone. Not all of them have a laptop and not all of them have computers. So, I think that that is another limitation. Again, we were talking about policies around, um, hypermedia in the classroom and, you know, departments needing to assess appropriate technology. Well, if your students don't have the technology that becomes an issue, as well.

I: Surely. Yeah, I mean, we may—our technology may be as advanced as it is at this current point—it will continue to advance, but that's not an assumption that everybody has access to it.

So, yeah, I think that—that is definitely a major concern, access. And, something that I heard at a conference recently, they were talking about digital technology in museum practice and, you know, is it beneficial? Is it more—are there more limitations than we think? I think that it can be idealized to a certain extent. Whenever you try to implement a certain amount of technological practice—technological teaching, a large, um—like a large concern would be, is it helping or is it distracting from what's at hand or the object that you're looking at? So, I think a large concern would be—the question would become weighing the use against the learning goals and weighing the benefits, you know, and really putting some deep thought into that without, like we were saying earlier—just because you put it in, doesn't mean the students are going to pick it up or see value in it—or be able to leave here with that much more in their literacy skills. And um, lastly, another opinion question. What's your ideal vision for technologic practice in the classroom, for the arts classroom?

P: Well definitely what I said before—definitely like a suite.

I: A suite? Yeah, definitely.

P: Yeah, yeah. I mean, it would be great if you go into a classroom and there's a SmartBoard and there's a suite of skills that the students are trained on and that the students have something in the classroom—if it's an academic class, for example, that they can use. So, you know, I hate the idea of students sitting behind laptops, um, you know. But, there are times when it would be great if they were on a computer when I was on a computer. There's, you know—I would love them to, you know—there's times in class when you could hand out something for them to read and they read it. It would be great if they could be flipping through a website for, you know, 10 minutes, 15 minutes and then we could analyze it, talk about it. I know that there's been experiments, um, that are completely backwards. Like, um, (name) told me about this. I think it's

a math teacher. So, the students watch all the math instruction that you would get in the classroom at home and I think that this teacher has actually taped herself, um. And then, in the classroom they actually do their homework. So, that's kind of like flipping it and, you know—that doesn't really kind of work in the kind of classrooms I teach but I would like—I mean, it would be really great if they could sit and look through things kind of with that immediacy and then analyze them right after their discussion. You know, if we all just—instead of me going through the website and, um. So, it would be great if they had access to the tools. Not all the time, not everyday. But, that there was a way to access the tools in the classroom, as well.

I: And I'm getting the feeling that what would be, uh, wanting to be attained here is like a balance?

P: Yeah. Oh yeah, I mean, it's not something that you would beat on all the time. I mean, it doesn't—dialogue is really important. So, I don't think that it would replace dialogue. But, being able to have tools that you could access in a classroom, um—know how to use them. And, I do think that there needs to be—there needs to be some sort of mechanism to train students—I mean, obviously students are not going to go to training outside of the classroom, if they don't have to. But there might be a way to do it during (first) year.

I: That is something I was thinking of.

P: Yeah, the same way that you do a writing section. I mean, it probably doesn't have to be probably a whole year but the same way you'd do a writing section—there's some way that there's technological literacy [sic]. But, then again that would go with departments actually having a policy—“okay, we need students to know this, this and this when they come into our classes.”

Appendix E

Interview Three Protocol

1. In what ways do you use technology in your teaching practice?
2. For what reasons do you implement specific technologies in your practice? (This can be personal reasons, philosophical beliefs, relevant interests or other reasons.)
3. How successful or unsuccessful do you feel teaching with technology is in your practice?
Why? What tells you this?
4. In what ways do you think that technology can improve learning outcomes?
5. In what ways do you feel your technological teaching practices benefit or *could* benefit the visual arts education for your students?
6. What are the limitations you see for technological teaching practices?
7. In your opinion, what your ideal vision for technological teaching practices?

Appendix F

Interview Three

I: So, my first question for you is, in what ways do you use technology in your teaching practice?

P: Um, there are quite a few ways, I would say. Um, let's see—where to start. Well maybe, I'll start with my university teaching. So, I'm in a college of education and I teach, uh—teachers—beginning teachers in a teacher education program. There are undergraduate students and I also teach graduate students in education and so I use different assignments that have, um, either a technological component or the possibility for that. So, um, for example, I've got this poster back here [points] on my wall about—one of my undergrad classes I did on critical issues of education—we were out in the community, at different sites learning about community-based learning and then they did little films, like five minute films on their different sites and then we put them all together into a film—or actually they did—it was a group project. So, the whole class got a single grade for that, um assignment and, uh. We then had a community screening for that with uh, you know, city councilor and uh, a local community member that spoke on the film afterwards and, yeah—they found that really helpful. So, I guess, you know, I use it that way in terms of trying to make learning more meaningful—meaningful in the classroom—and in terms of outreach component where students can, um, see—rather than creating something that's for me, that I mark and never goes any further. But, instead, creating assignments that they might be able to use in their own teaching or they might be able to, you know—they can see the effect with the dialogue they create with the community or the effect that they can have on the community. So, um, yeah, that would be one example. Uh, I've had, you know, numerous other kind of inquiry projects where teacher candidates look at, say, a student and—you know, a K through 12 student that they're working with in the various ways they're learning through

education, formal education, through the informal, kind of—in curriculum, through peers, family, you know, community culture—kind of mapping out all the different ways they're learning and some of them have presented that in digital form—various types of digital forms. So, those would be some examples from undergrad teaching. For grad teaching, I have a critical ethnography assignment that I have students do in the community where they go to three different places, um. It's all by—my network is sort of social justice and environmental education for teaching. So, they go out to three places in (area) and around there and kind of do an ethnography of those places. And, quite often they've chosen to represent those in digital forms. So, I guess that's all around just, um, assignments. In terms of teaching, other than assignments, I mean, I show films. I use—at some time, you know, I taught—I just did a blackboard class that was all on Blackboard. Um, but I haven't really, you know—I haven't really implemented, say, web-based implements into my face-to-face classes. But, so, anyway, that's a bit of a snapshot. And, the other thing I'll just mention is, uh, I have—one of my research projects is, uh, it's called a digital media project—in email, I think I mentioned this to you. So, that's working with youth in the community [inaudible] immigrant. Whether they're taking photographs of places important to them and creating videos and using the Youtube—uh, Youtube site—and having a public screening and that sort of thing—so, that's, uh—so, that's another example. And, like my grad students are obviously involved in that project. I'll be fairly brief.

I: Oh, no. You're fine. It's all very interesting and like, I—I could always probably come up with five follow-up questions and we could go forever. But, um, no, I mean we can definitely keep it brief as you like and if there's something that comes to my mind after that fact, which sometimes happens, if there's, um—you know, I could always just contact you and we could set something

else up. But that's all very interesting. Um, I—I thank you for that response because you—you touched on something I've yet to really consider and that's kind of the outreach idea and then this—connecting that to this idea of authorship that they're putting it out there—other than for, um, you know, the safe environment of school and grades. Um, it's out in this other environment from which they can take more in say, meaning, as you were saying, in the meaning making process. That's really neat. So, that kind of feeds into the next question pretty nicely, where I ask you about what you're reasons are behind implementing teaching these technological practices, such as making videos? It can be a personal reason or any sort of philosophical beliefs, um—anything that you care to share on that.

P: Okay. Um, you know, I—I guess it ties into, you know, uh—following up on what you were just saying—you know, a lot of times, education has become very much about assessment rather than the learning, right? We're really focused on the end results and on the exams around the outcomes versus the actual process of learning, which is what education really should be about. Um, so in—I think that I try to model—I'm teaching teachers, right? And—and things that hopefully they're going to be able to pick up and use in their own teaching and trying to get away from education or at least resist or push back against it—education that is focused upon outcomes and standardized testing and, you know, who scored what on the math test or, you know, what really matters in life, kind of on a broader scope. So, um, modeling ways of teaching that, uh, kind of are conducive to that deeper meaning-making around, like, self, culture and community and where we're going in terms of social issues and environmental issues and all those sorts of things. So, yeah, both in terms of community-based and place-based learning, experiential learning, all of that and—and then how that links with technology, as well. A lot of my stuff is around—like, we just have a new course starting here at the—a new required course

that all the teacher candidates will have to take. It's called "Pedagogies of Place." And, it's, uh, divided into the four sections of classroom based learning, um, virtual—virtual—so classroom context, virtual context, outside learning and land-based context. So we'll, um, be working with teachers who think about—yeah, you know, classroom is one place you can teach, but what kind of, you know—what do we learn by sitting in desks, in rows, you know. What's taught in an embodied way through that kind of learning environment—what do we learn—how do we learn in virtual environments and some of the, you know, complexities around that. And then, likewise, with, you know, outside learning, whether it's, you know, urban and then also land-based. And, here we have the high average [inaudible] populations. So, you know, thinking about learning, you know, in relation to this land, on the land and, you know, all that. Yeah, there's different learning contexts, so—and I guess, you know, that idea of, um, voice or, you know—in terms of teaching and learning, being something that goes beyond just sort of reproducing, you know, the status quo but, uh, the role of technology in being able to have a voice and sort of—the new developments of, you know, social media and the role of social media and change—like we saw last year with Eric Spring and all the, you know, developments and the Occupy movement and all the things that are happening in terms of, you know, the potential for social change that's linked to social media. And, I mean, on a more micro level the same thing applies locally, right? So, for, uh, a youth from (the area) to be able to get—get the word out about an issue that they care about here is, you know, very different than 20 years ago, right—the ability of media to enable that. So, just sort of the capacity for anyone to have a voice and educator others, I guess, to generate awareness and—I guess and, uh, education around different issues through media. So—and more—I have another strand of stuff that I'm interested in. A lot of the research I do is participatory research, um. And so, that was one of the things

when I was originally interested in hypermedia stuff and web 2.0 tools, in terms of the possibilities for doing participatory research but also participatory education, you could say, too, in an online environment. So, I have a poster here on my [points] wall—oh, there it is—

I: Oh neat.

P: —“Open Source Researchers’ Detour: Technological Conflicts and Implications for Participatory Research,” [short laugh.]

I: [Short laugh]. That’s great!

P: That project [inaudible] with Alan Reid, who’s also potentially an interesting person who you could talk to. We worked on that a few years ago.

I: Yeah? That’s great. Um, yeah, one of the big things I picked up out of that chapter, um, was this idea of participatory and discursive approaches and like, communication, learning, furthering one’s own education online—um. Yeah, and then the, uh, fact that you’re teaching teachers, um, I think is gonna be so great and valuable for my research, personally because I think that a lot of the issues that come about regarding the limitations of technological teaching practice [sic] has to do with teacher training. So, it’s really nice to have this lens provided to me by, um, someone who is currently training teachers, so to speak.

P: Yeah, I know it’s true. A lot of the training that you see is, you know, on how to use a SmartBoard—like, the sessions that even the college offering for teachers sits around those types of technologies versus more interactive technologies, like how to use, you know, Twitter in teaching. Yeah, interesting—but definitely, you know, one of the—working with the youth group, I was—there were a couple of really interesting things that came up there. I mean, one was that Facebook became a major way of communicating with the youth which I hadn’t expected, you know, even though they’re here locally but just facilitating meetings or setting up

reminders or kind of keeping the momentum of the research going—that was, uh—that was interesting. And also, just the—I kind of made the—you know, it’s pretty obvious now, thinking about it further and in terms of research—but, that “oh, you know they’re youth, therefore they’re going to have good tech—skills in technology,” which wasn’t the case at all with me working with.

I: So, um, with all of that in mind, how successful or unsuccessful do you consider these approaches for you own teaching practice to be with the learners, the future teachers that you’re teaching? You can provide a specific example if you’d like. You can talk about the ways that you’ve noticed—if it’s picking up to be successful by the learners.

I: Hm.

P: That might be going back to the idea of assessment.

I: Yeah. Um, it’s hard to say. I mean... yeah. It’s always hard to know what gets taken up because, you know, a lot of times you don’t see people again or, you know, just some people, um. So you don’t always know what the effect of things is. But, uh, I know, you know—I know that people find it very powerful—kind of the ideas that, um, that education happens in different places, right? That education isn’t just something that happens, uh, sitting in desks in classrooms, right? A lot of times, the more meaningful education, formal and informal, intended and unintended, is happening in other ways and places. So, you know for me that includes in the community or in relation to land but also includes digital contexts, right? I mean, one thing that’s—well, it’s um focused on in that chapter but it’s also been a focus for me elsewhere in my teaching and research—is how learning happens through relationships. So, the relationships that are happening—that are possible through technology and through social media. Just like us

having this conversation now, which, you know, wouldn't have been possible 10 years ago, um, in the same way, um. I think—yeah, maybe 10 years ago, [laughs].

I: [Laughs]. Yeah, no, I think that's a good number.

P: Um, so, yeah—just the different, uh—the role of relationships in—in learning both in technology as well as outside the classroom and we're taking that role more seriously in terms of how we understand learning. So, I think, uh, that teaching—that beginning teachers that really—when people experience it and how powerful it is and how it changes them as people as well as, you know, in relation to their teaching that that—that affects their teaching and then it's successful in that way. Um, so, yeah—and I guess, too that with—it's a different, um, group that I work with, the youth, that were, you know sort of aged 14-21 that we've been working the digital media project with and they've talked about, you know, how, kind of, um, the skills that they've gained and um, you know, technology skills but also just realizing that “oh, I could create a video, I can put it on Youtube and I can have a voice on issues that can be communicated in these ways.” I guess that's been successful, too. Unsuccessful...uh, blackboard—[laughs].

I: Yeah. That seems to be, uh—

P: Why can't we just use Facebook? It's just so, uh, horrible and kind of, you know, um, clunky. So, um, yeah—that's unsuccessful and then some of the things are just, you know difficult to get the skills that you need. So, for example, that stuff on hypermedia, you know, I never really followed that through to its endpoint because, um, it's—there's just a lot, you know, there's lots of research on this in terms of education, not so much in terms of doing research online. But, um, in terms of how you get people onto a site and actually interacting and it's not as easy as just, you know—it's not “create it and they will come,” right? There's got to be a lot of other things

set up in terms of moderating it and making it appealing so that people want to be there. So, you know, that was sort of the grant work—that open source research and, um. The grant was around technological commons implications for participatory research and that was to try and bring a bunch of different people together that have different expertise in this—but,[clears throat] um, because it is such a big, big thing. So, I guess that's one of the barriers or challenges is, you know, not only do I have to be up on my, you know, pedagogical and, you know, teaching theory and practice but also then the technological skills and, um, pretty cutting edge, you know, technology. And gearing your practice around is also [sic] pretty major. So—and that's not my main thing—mine is, you know, environment and education, social justice issues in education. So, I want to use technology as a tool but it's not my main focus for my research, right?

I: Right.

P: So, that's a main barrier, I guess, in terms of education and research.

I: Right. Well, that kind of connects to two really interesting points that I have read about and that has also been shared with me in previous conversation with other individuals—is that this idea or this misconception that if you throw into technology into the classroom, your learners are just going to learn more or better or more successfully, however it's, you know, categorized. And that's just a giant misconception because it shouldn't be an arbitrary add-on, it shouldn't be, um, you know, this ambiguous thing just floating around. If there's not a purpose, if it's not connected to say the learning goal or if it's, um like if it's not the main object of the research, it's a tool—

P: Right.

I: —and in many educational settings that I've read about or have talked about with others, it's, uh—they can be extremely powerful tools but they're—especially in the museum context and

I'm sorry if I digress a bit into the museum stuff. But, digital media is something that is coming into practice with museums. But, um, when it starts to detract away from the object we're looking at or—to bring it back to the classroom—if it detracts away from what the learning goal is or what they're—

P: Right.

I: —what they want to have as a takeaway, then it's not serving the learners, you know. So, it's really neat to hear these ideas start to—I'm really starting to see them connected, [short laugh]—across various, like, disciplines. I'm really starting to see commonalities coming across and it makes me excited.

P: Yeah, that's nice!

I: But, yeah, okay. Good stuff. Let me just look at the questions I have and at where we should go next... So, I think that you touched on this a little bit, speaking about how the teachers, your future teacher students, might or could use technology in their own teaching practice? My question is in what ways do you think that technology, such as hypermedia, can improve learning outcomes for your students?

P: Yeah, um. Well, yeah, I think along those lines of helping people engage in more kind of integrated ways and more meaningful ways and in a way that they create a product that would be on an assignment. One—I have a couple of other papers that you might be interested in. I'm just going to grab something here, [leaves].

I: Okay.

P: [Returns]. See, this is why it's good to do interviews by Skype, [laughs].

I: Most definitely.

P: I guess, you know, technology obviously, if used broadly is not just, you know technology, right? Anything is technology that is a tool that we use, right, in the broader definition of it. This is a book that some teacher candidates, um, created. It's one of the inquiry projects— so, I mentioned some were, you know, like maybe websites, or films but this group did this handmade, hand stitched, leather bound book—that they did interviews which this student and then, um, made this amazing book that's got, you know, like images and connects to the readings and tells a story, um. And it's just this beautiful, you know, book and it's got like photographs and, um. We wrote a paper on this book, um, so this—and there's—you might be interested in the paper because there's an interview with the teacher candidates that made this and they talk about how the assignment went beyond an assignment and was just really powerful and, you know, connected all their learning. It was creative and, you know—they're doing it at midnight in the art room and all that. So yeah, this is not digital, although it's got pictures [sic]. I guess it's not a digital piece, um, of technology. But it's technology that they created that's different than a paper or you know an exam, um that I think exemplifies the same, um, types of outcomes you could get from creating a film or you know creating a real, interactive, sort of hypermedia site to work —other things that enable you to, you know, bring together your learning, be creative, um, you know, link your learning to things beyond, you know, just regurgitating, making something of it and, uh, connecting to other people through it. Whether it's your group members and/or your audience, uh.

I: Yeah. And that gets me thinking about this idea or concept of 21st century literacies

P: Something else I was just thinking of in terms of time. Maybe you think of a traditional assignment is really just stuck in that—in the present—where you like, answer the test or you write your essay and you submit it. Whereas these types of assignments using technology kind of

projects certain point forwards in time, maybe backwards too—and their pulling together resources and memories and whatever they’re integrating across different things. But, you know, certainly that they have an effect or a potential forwards, in a different way, I don’t know, that may be interesting.

I: Wow, man. That’s fabulous, I hadn’t even thought of that. Great, that’s neat. So, it’s really interesting so far that many of, um, the questions and responses and other things that we’re discussing are all in a way overlapping because this next question is about um the visual arts and I just saw a really great example of your students integrating visual arts and using that as a tool in their book—their illustrated book. So, the question is, in what ways do you feel that your technological teaching practices could benefit visual arts education?

P: Hm. Gosh, I don’t really know. I mean, visual arts education [short laugh].

I: I realize that that’s not quite your area at the moment—yeah, with, um, social justice and environmental issues—so, um, if you want to, you know, share an opinion on something like or continue and be purely speculative that’s totally welcome but if you don’t, you know, want to go down that road I would totally understand that also—up to you.

P: Yeah, well I guess, I mean, to a certain extent, a lot of those same things would apply, like in terms of, why do art and—you know, what affect does your art have and all those sorts of things. As well as just learning in general and for it to be more meaningful and integrated and inquiry-based versus just, you know, draw this model, you know, regurgitate it back. But, yeah, on the finer points on how to, you know, actually, draw or you know, take good photographs, I don’t know, um. So, it does make me think, though—one other thing that I didn’t talk about—I’ve done—like, I’ve had some slide shows of, um, you know, Banksy and um, I’m forgetting his name right now, Chris something or the other that has done a bunch of really neat— a bunch of

neat photographs. Anyways, I had some slideshows to music that I use in my teaching, as well—so, that would be another—integrated technology. But, yeah, I guess that I don't have too much additional to say in terms of visual arts education, specifically.

I: That's quite all right. I mean, I simply appreciate anything that you lend. So, um, what are the limitations that you see in integrating technology into a teaching practice?

P: Um... yeah, well, I mean, some of, like, some of the things that you mentioned I think, like, just because you're using technology doesn't make it more interesting or integrated or inquiry-based or participatory or any of those things, right? Like, it could be just as dull as, you know, if you do a paper test or an electronic test, it could be just as dull. Um, you know, sitting, watching, being fed images, uh, that's not any more educative. So, definitely, I think those limitations around, you know, just all the hype around technology and yes, we've got to be including technology in our classrooms, whether it's at the, you know, K through 12 level or the university level and secondary level. But, um, so that's a limitation, I guess. Just, you know, all that hype and then it's kind of 'okay, let's all get Smarboards everywhere, let's get, you know, um, get on blackboard or whatever, it's not necessarily using technology well to engage students—so, um, yeah, what makes for more engaging use. Limitations in terms, you know, instructor knowledge and with technology changing so quickly—like, staying up to date on what's possible. Like, for example, I don't have a cell-phone. I've never had a cell-phone. I try and resist having a cell-phone, but, um, it's—that's, you know—I've been thinking more about it since I was just at a geography conference and they were talking—I'm doing a—I've got a book planned around place-based research methods, critical place inquiry and so, I'm interested in things, you know, expanding into say G.I.S. data, you know, in relation to location or—people were talking about the geo-web. So, mapping, things like Yelp and other programs like that and how those type of,

you know, apps, say, on people's smartphones can be used for research data and it's like, 'well how can I even imagine how—'cause I'm interested in, you know—the research project is on youth orientation to places and sustainability. So, I'm trying to collect data, you know, on youth and their relationships to place and how—kind of thinking about how I can use technology—it's on digital media—we think about how we can use digital media in relation to data collection if I don't know what's possible with things that the youth are using on their cell-phones— if I don't know, how can I imagine the types of research methods that I might be able to develop. So, yeah, those, I guess, limitations around, you know, researchers or educators own knowledge, in terms of how they can imagine engaging their students with.

I: Sure, yeah, I mean, all great things. I mean technology is exponentially evolving. It's mind-boggling sometimes. I myself don't, yeah, have a Smartphone, but all of those apps, um, are just mind blowing and yet, the research that surrounds, like, technology—or someone—I'll backtrack for a moment—someone—an individual that I recently interviewed said that our own research or at least researchers in the technical field, um, the research nowadays hardly can keep up with the technology itself. Which is so different from, of course 10 to 15 years ago but even five years ago. Um, it's just exponential.

P: Yeah, yep. Well and even things like instagrams, like, for example, in terms of visual arts. It's like, you're at the bar and someone's putting filters on their photos, like—you know, and that's one of the things in that article, kind of the design aspect, right? And, it kind of brings out people's creativity, potentially—the inner artist through different apps—people that wouldn't necessarily have been doing that type of thing otherwise. So, that's kind of interesting, too—on a different tangent.

I: Well, no yeah. It's actually pretty related because earlier you—you were, um, speaking of the empowerment of working across multiple formats or media and technology, not necessarily technologically specific but being able to, um, represent or communicate one's own ideas other than in voice or paper—that can be very empowering—

P: Right, yeah.

I: —so, that definitely relates. So, um, my last question for you is, in your own opinion, what's your ideal vision for a technologically infused teaching practice? What's the ideal way you see technology, um, playing a role in teaching?

P: Yeah, I mean, I couldn't give specifics 'cause I think, obviously it's, like you say—technology is—things are always changing, in terms of technology and different developments and uh, you know. Like, I was just saying I can't even imagine what's possible today if never mind in 10 years. So, um, at the same time, I'm always being someone—you know, the environmentalist, I guess, thinking that just because something is new doesn't mean we should take it on, right? So, I think one of the important things, too, is being critical and, um, thinking about, 'well, why are we taking—do we want to take up this technology and why are we taking it up and is it beneficial to take it up—but also what are the—what are the losses? So, obviously, the things like—as the more time we spend online, the less we're, you know, able to sort of cocoon ourselves more easily away from real face-to-face interactions. So, just as an example of the losses—so, yeah, we need to be thoughtful about the decisions about whether to take up technology in our lives and in our teaching practices in terms of the social implications, the environmental implications, um, cultural implications and [inaudible]—people's sense of isolation, as well as the connections and all the potential benefits, too. So, um, yeah—and then, I guess—I don't know what else I have to add—cause I feel like I've talked about already the—

the benefits for teaching in terms of, uh teaching practice and people's learning—capacity to learn in meaningful ways and in terms of, you know, the things that I'm learning that I'd like to think that this true across—that the things I'm teaching—that this is true across the board. You know, the things that are important are things like imagination and critical thinking and creativity and all those sorts of things versus, you know, 'do you know how to—what was the date of that event or [laugh] tell me the steps to do whatever', right? That, with technology, especially again, a lot of those things you can look up, right? So, that, sort of, transmissive model of education or the banking model, like pouring facts into peoples heads isn't, you know, it's—I think it's been found to be irrelevant across the board. It's those other capacities that are more important and, uh. I think technology potentially has, you know—could help build those capacities or help express those capacities—in general terms.

I: Definitely. And, yeah, you had touched a little earlier on—between what the benefits and limitations were, that kind of led to how you would see it ideally and I, um—so I appreciate you hopefully not feeling like you're repeating yourself too much.

P: Yeah. I like that thing you just said about the important of, kind of, enabling or capturing things other than voice or on paper—at least that's something I've thought about and written about in relation to research, right? 'cause if you—going beyond voice in research methods and, um—and, I guess I've never thought about it so explicitly that much in terms of teaching. But, um, certainly in terms of products like this [points] you know, they do go beyond just what you can articulate, right? And then that's a lot of times where the learning or the expression happens—is with things you can't exactly articulate in a written or spoken language.

Appendix G

Interview Four Protocol

1. In what ways do you use technology in your teaching practice?
2. For what reasons do you implement specific technologies in your practice? (This can be personal reasons, philosophical beliefs, relevant interests or other reasons.)
3. How successful or unsuccessful do you feel teaching with technology is in your practice?
Why? What tells you this?
4. In what ways do you think that technology, such as hypermedia, can improve learning outcomes?
5. In what ways do you feel your technological teaching practices benefit the visual arts education for your students? Or *could* benefit visual arts education?
6. What are the limitations you see for technological teaching practices?
7. In your opinion, what your ideal vision for technological teaching practices?

Appendix H

Interview Four

I: The first question is, in what ways do you use technology in your teaching practice?

P: Alright, I have a question right from the start. When you say technology, that can mean anything. Do you want to be more specific?

I: Um, sure. From our previous conversation, I know that you, uh, use and implement Flickr for the students. So, I mean anything that includes an online component or technology that you teach or teach with in the classroom. So, I guess that would also probably cover some of the digital camera stuff. I think you do teach some of that, if I'm correct?

P: Um, yes. So, maybe I'll give you more answer than you do and maybe it will include what you were hoping to find out. I teach in a photography and media program. So, most of my courses involve, um, lens based media—camera equipment, recording equipment, lighting equipment, and, uh, computer software, scanners, um, or the old analog technology such as film processing. And, uh, those are the things that I'm actually teaching students to use. So, there's technology in the courses, uh, in that matter. And then, we are required to use Blackboard for off campus instruction, uh, and we have the option of using other, uh, online media, another software if we chose, to teach our classes. So, I use Flickr. And those are for primarily, not entirely exclusively—but primarily, coursework that occurs off-campus and outside the classroom.

I: Okay. So, a lot of good stuff there, um. For what reasons do you implement these specific technologies in your practice? This can be a personal reason, a philosophical believe, any sort of relevant interests, um. Yeah, go for it.

P: Well, the—the first technology that I mentioned, that is the course content. So, because I teach in a photography and media program, I obviously, uh, that's what I'm paid to teach, um. As far as the instructional technology, I use Blackboard because the college requires it and I use Flickr because it—it is more functionally suitable to what I teach. And uh, I choose these things for practical reasons, uh. The amount of course content that I'm expected to deliver in a semester, I—cannot be delivered in the classroom time allotted and the college requires us to add off campus, online instruction, uh, to, uh, complete the course. In addition to that, we use, uh, online media in the event that the college is closed, if there's an emergency or a snowstorm or problem with the building and we can't hold class in person, uh. Our students are expected to continue with their studies, uh, from home or online, without coming to school. So, these are all practical reasons.

I: Okay. Yeah, you describe many of these as being practical reasons and I'm just curious if you, um, have any personal beliefs towards including technology in your practice—in your teaching practice?

P: You mean, the instructional technology?

I: Yes.

P: I've found it helpful mostly because there's a written record that students can go back to see what I've said. I use Flickr in particular to include a lot of feedback and they can review it, when it suits them. I can also review their work. I don't have to remember everything that went on in the classroom and what was said and neither do they. So, I—I see a benefit and I'd say they possibly—some students respond better in an online environment because they, uh, feel they have, uh—I would say maybe a little bit more privacy. So, they aren't that private, uh. The discussions are in a group, uh, setting, so that other students in the class can read them. But, it—

it may seem to the students to be a little bit more direct. I also can email them and talk to them on the phone privately, but I don't think that's any—I wouldn't really call that any kind of unusual technology. We've had email software for decades.

I: Um, okay, very neat. Yeah, somewhat of a privacy thing online or—or just kind of a different sense of environment, perhaps, that they feel, maybe?

P: That's possible. Um, the privacy may be one-sided, in that they feel when they're working on their own, either from home or from the computer lab or something that they aren't in the classroom with the other students watching and listening to them. That's possible. I've never had anybody say that to me but I can imagine.

I: Okay. How successful or unsuccessful do you feel teaching with this technology is for your practice? Why, why or what tells you this?

P: Could you repeat that so I get the whole thing?

I: Sure. How successful or unsuccessful do you feel that teaching with this technology is for your practice?

P: Um, and for my students?

I: Yes.

P: I—I evaluate success in terms of how well they succeed and, um, how well they get it, um.

I—I don't have a scale on which to rate how successful. I'd say, I've learned to make it work. I revise what I do continuously. I adapt. And, I'd say, hm... certain courses I find it very useful.

Other courses, it isn't quite so practical. I teach some darkroom classes and almost all of that has to go on, uh, in the classroom where they're working in the lab, um. The courses—any course which they can show work that they've done are much more successful than courses in which they are primarily writing. Now, I'm going to have to qualify that even further, that there's two

sides to it: the side of online teaching in which I provide material and I find the tools online, particularly Flickr, very useful. I can add text to things. I can show them images. I can write what I think or what I want them to know. I can remind them of things. I can do a lot of what I consider just, um, ordinary class instruction business, such as providing syllabi, assignments, so on. So, I can do a lot of that online, where they can get it, uh. Sometimes, it may be too much information for them, uh. Sometimes, I think they're overwhelmed [inaudible] too much stuff—as opposed to just having a textbook and a short course outline, um. But, at least it's there if, uh—my students can, to some extent, pick and choose what they spend time on. I hope they'll look at everything I post for them but—then choose the material that they're finding the most, uh, exciting or most strongly related to what they're working on. So, they each have individual projects by the end of each course. So, there's, uh—I think it's fairly successful. They say it is. Getting them to respond or write is less successful. I, uh—I interviewed a few of my classes this past week, asking them what would get them to, uh, spend more time online and do more work online and several said, “well, if it counted more for the grade,” uh. A lot of these students are overworked. They have jobs. They have families and they're trying to do coursework and they're making practical decisions of their own of what to do and where to spend their time and energy. And, uh, if they say—they say that if I made each exercise count towards the final grade, then they would be more likely to do it. I see a lot of the assignments that I don't grade as being preparation for work that is graded. I grad them pretty heavily on their final output, their artist statements, their portfolios, uh, presentation of their work. Those are things that matter in the end to me. And, I think they have trouble seeing that all the material that I provide them with ahead of time is intended to help them make the most of their projects and do the best possible work.

They don't—students don't always make that connection to “well, if you do this, this will help you do that, down the road.”

I: Mhmm.

P: And, I don't mean that all students feel that way.

I: Right, um. I find—I find all that extremely interesting, um. Especially this idea that they're, in a sense picking and choosing what, um, they'll read or what they believe might help them. But, at the same time, many of them—and I understand that this is a generalization, this isn't for everyone—but that many of them—and this is seen in a lot of other classrooms are motivated by, say, the grades or the outcomes. And, um, I believe that what a technology—a technologically infused classroom should ultimately aim to offer is freedom in enhancement. And, you know, I'm still trying to figure out what the strategies would mean for getting students to understand that's not always about the grades. But, that depends on the classroom and content, obviously. Does that make sense?

P: Yes and I—I—I'd say I spend quite a bit of time thinking about how to motivate them or guide them. I think it's my job to make it clear to them that. For example, looking at the work of other artists will help them in their own work. And, I think some of them are so unexperienced [sic] that they can't figure that out. I've had students say, quite bluntly, “well, why do I want to look at the work of other artists?” Now, for somebody that's in art school that might be obvious. But, these are community college students. Some of them have never looked at other artists work. They don't know how to look at it. They don't know why they should. And they—they don't doubt it but they don't understand how to go about it, I think. So, I—I try to show them, uh, by example, uh, by bringing it up in discussion. And, that has to be individualized. It works much better if—I'll give you an example. A student came to—she actually wrote online that she

was stuck in her portfolio project and she, uh, she explained why. And, she fortunately gave a very clear explanation of why and that made me put [sic] online certain artists that had solved that problem. And, I brought a book to her and I made some comments online. So, this, I thought was successful in two ways: it helped her directly but then in class I also described what happened. I asked people “well, did you see this student’s comments? Did you see my reply and do you see what I brought, as an example of looking at an artist’s work can help?” And, she was thrilled with the book. It just—it’s like, “oh, oh, maybe I’m not so stuck.” And, I don’t think she’ll copy what that artist did but she realized that something was possible. It gave her some inspiration. And, I think art teachers are always trying to inspire students, you know, [inaudible]. And, uh, I’m hoping that the rest of the class will note that and see where it’s going for themselves [sic]. But, I may have to come up with books for each of them or online links, either. Was that, uh, example helpful?

I: Yeah. That was great.

P: They do not come to these courses really knowing how to be students, in a lot of cases. People who have finished a Bachelor’s degree already are way ahead of them on this. And happily, I usually have several types of students in each class and I, uh, encourage people to notice how they work and how they approach the material and how they respond, both in the classroom and online, um. The college has a course that new students are supposed to take which is [inaudible] “success in School,” um. I—I don’t think that some of these students get it until they do it. And, sometimes it takes more than one attempt before it starts to sink in, how they can be learning. But that is true not just of online but in the classroom.

I: Sure, yeah.

P: I think it works both ways. And motivation is always an issue. It's always a goal of instruction. Did I answer that question?

I: Yes. And I think that the next question might overlap in a sense because we've talked about, um, how and if you notice it to be successful. "It," meaning your technology infusion, such as the use of Flickr. But, um, I'll go ahead and ask this question. In what ways that technology can improve the learning outcomes for your students?

P: Yeah, uh. That is a very, uh, vague and general question, um. Do you want to be a little bit more specific? We're talking about instructional technology, um, let's say, Flickr in particular.

I: Yes. I would encourage that, yeah, we speak about the Flickr incorporation because, um, I think that's got really great potential and there's really great reasons for your implementation behind it. So, if you want to speak behind why you, you know, inevitably decided to include and if you believe the use of Flickr can improve their learning outcomes towards their photography practice?

P: Okay. I will say this. One, I introduced it, uh, as I've said before because we had our class time on campus cut. So, I obliged to find other ways to instruct outside the classroom and outside the hours scheduled to get all the work done. And, I looked for, um, means of, um—first of all, looking at students work, ways that they can hand in imagery and ways that I could comment on it, um. It's been years now since I've taught without, uh, Flickr and Blackboard, which is required by the school. It's been years since I've taught completely without that, um. Ways that it has improved the outcomes... as I've said before—and you're correct, I think this is where it's starting to repeat some of the ideas expressed but—uh, they can go back and review what I've said. I can go back and review what they've done. And, I did that before in—in class, uh—in certain ways, uh. But, I think in the long run—I keep going back and pointing to things and

remind them of things. And [inaudible] also, sometimes I'm trying to figure out, you know, "what is it that the student is struggling with? What would help this particular student with this particular problem?" And, I can go back and review things that they've said, things that I've said, the work that they've done and, um, often touch on those things to reference them and making further comments. And, to a certain extent, I think the students also feel a little more secure because there is a record of everything they've done, um. So, they feel that I might not be as likely to overlook something. Sometimes, students worry that teachers aren't paying attention, um—we are. And that brings me to the other point about the online work, um. This is—this is not an outcome for student—the outcome for the teacher is it's an incredible amount of work. In the classroom, if you're only meeting with students and interacting with them for the five hours that the course meets during the week, then of course you have course prep and grading and things you do at home. But, interacting with each student individually online, um—it means I'm spending a lot more time on each one. In the end, that improves their outcome. They're getting more individual attention from me.

I: Mhmm. Yeah and I apologize. I don't want you to have to repeat yourself in any—

P: No, no. I don't mind. It's in a new context.

I: Um, alright. Well, a lot ideas that come out of this conversation towards maybe learning outcomes, I don't want it to necessarily seem that it's so much assessment-based but if there's anything you've noticed about maybe, either, they seem to be picking up more skill sets, um.

And, I say that because it flows into the next question. In what ways do you feel that, for example, using Flickr benefits the visual arts education of your students?

P: Okay, and—and in this interview we haven't—I haven't spelled that out. So maybe this is the point to do that and uh, describe what I can do. They upload digital files that I can see and

everyone in the class can see. They can group those files. They can organize them and they can create sets. They can create sequences, uh. I can read the meta-data, in other words the information about what shutter speed, the aperture and ISO and whether the flash fired or not. I can see all of that. So, I have a lot of information about how they made each image. Then, I can write a comment. I ask them to write about each image. They have to either write a description of what they did, if it's a technical class, what they were thinking if it's a not-so technical class or a caption if it's a documentary class. So, they have to write something with each picture and that forces them to think. And they can't write what they are expected to write unless they think about what they're doing. And that may be one of the most useful things because there's a record of it. Now, in class if I weren't teaching—using online tools, such as Flickr and Blackboard, I would try and have the same exchange with them. I would try and make them—and I do this [inaudible] in critiques and in reviews and whatever we've got in class, usually trying to get them to think for themselves. And that would mean I'm encouraging them to use their heads. And doing it online means they can go back and review what they did.

I: Okay, okay. What are the limitations that you see for using these types of specific technologies for your teaching practice? And, you kind of touched on this perhaps with the motivation, when we were talking about that. So, if you want to elaborate on any of the ideas around the limitations that would be great.

P: Well, I think there's an obvious one, is that you're not face-to-face with the student. You can't read their body language, um. You can't tell what—how they're responding emotionally. You have to sort of guess, um. Sometimes, you have to guess in person, too. Some people are okay but in person, um, maybe it's easier. I like to communicate to them that they shouldn't be afraid of me, that, um, I'm not judging them personally, um. So, I try very hard in the way that I write

online to be supportive, um, positive and respectful, um. A lot of what I do online is trying to achieve the same thing I do in person, uh. Limitations... so, I've touched on two things or frustrations with using this kind of media to teach, um. One—well, the main one I've found is that the exhausting amount of time I have to spend and I'm always looking for ways to, uh, be more efficient. But, if I'm too efficient I'm afraid I might shortchange the students when you're dealing with them individually. It seems, in person—would be having a class in which each student gets to see me privately for 15 minutes, uh, or half an hour. And I spend a fair amount of time on each student each week online. The other—the other frustration is getting them to do the things I want to do and that's where we started this interview—the problem of getting students to value what goes on online and put in their share of their time, doing the work—making the effort. And, I have to say usually in each course I teach, by the middle of the course most of the students get it. They know what they're supposed to do. It's at the beginning of the course, um, where they may be a bit reluctant, uh, or I think maybe they're hoping, “oh, well, maybe I don't really have to do this. Maybe I can get by without it.” And usually, after midterms, they're a little more—by that time they're a little bit more aware of how—what they have to do.

I: Okay, gotcha. Um, so moving from one side of the spectrum, talking about the limitations, um. Now we'll move to the other side, which is, what's your ideal vision for using this kind of technology, the instructional technology in your teaching practice?

P: How would I—I ideally like to—to accomplish this, hm, um... Well if—if we're going to talk about the ideal—ideals, um [short laugh]. One of my ideals is to teach without grading. But, that's an ideal that extends to all of education, not just online instruction. And—and maybe, it's almost besides [sic] the point, um. But, ideally I would like online instruction to—I think that—something I do—I didn't specify earlier in this interview. But, online participation is meant to be

self-paced, uh, as we call it. And I think you have said that that's not unlike "self-regulated," that they can spend as much or as little time as they want on the work, um. Ideally, there would be some way for them to know how much—to realize and to self-regulate or self-direct or self-pace themselves so that they know they're succeeding. Now, in a grade-based environment, there's—many of these students are just doing it because, "well, that's five points of their grade, or that's two points or that's ten points." They do the arithmetic and then it all adds up in the end, in their mind, uh. I'm always looking for a way to provide the inspiration not as numbers adding up to a "C" or a "B" or an "A" or an "F." But, ideas and thinking and understanding and accomplishment that add up to a rich experience. Is that idealistic enough?

I: Yeah, those are all really great things. It's always kind of difficult when talking about, like, the ideal vision because it usually involves suspending, you know, the current, say, administrative implications or, say, any of those sort of those teaching context implications. But, it's still very interesting to me, in the types of interviews I've been conducting, to hear what the ideal vision for many of the education and the, uh, individuals who are currently practicing in teaching—'cause there's a lot of similar overlaps and I'm starting to see a lot of commonalities as I do these interviews.

Appendix I

Interview Five Protocol

1. In what ways do you use technology in your teaching practice? (For your museum teaching practice.)
2. For what reasons do you teach with/through technology in your practice? (This can be personal reasons, philosophical beliefs, relevant interests or other reasons.)
3. How successful or unsuccessful do you feel teaching with/through technology is for your learners? Why or why not? What tells you that?
4. In what ways do you feel your technological teaching benefit the visual arts education of your students?
5. Are you familiar with the term 'hypermedia'? (If answer is yes, ask for elaboration and proceed to question #6. If answer is no, follow up with,

(Hypermedia is an assortment of information, formatted variously such as text, audio, video, animation, etcetera and is while spread across a vast area, is interconnected by associative links or nodes.)
6. Do you see your own teaching practice as similar or contrasting to this? How so? This can be conceptual or literal.
7. What are the limitations you see for technological teaching practices?
8. In your opinion, what your ideal vision for technological teaching practices?

Appendix J

Interview Five

I: So, my first question that I have for is, in what ways do you use technology for your teaching practice? We can call it the museum teaching practice.

P: um, I think, first it's really important to say that technology is a tool in that while—the nice thing about technology in how we—how we're using it with (the program) is that it's a draw for our audiences because it's technology they either use themselves like Smartphones or flip cams or things that are accessible out there—um, laptops and social media, all of that people are using in their daily life, um. We look at it as a tool for learning about art or to become civically engaged or to amplify their expression of themselves. So, there's a process of—of trying to get them to understand, um, that technology is—the importance of technology is how you use it as opposed to just in technology itself. A lot of technology programs—programs that use technology get excited about the technology itself, um, and just want to help people just build skills. But, we're really interested in like, using digital literacy to get back to ideas about expression or, um, our community engagement or other uses that go beyond just the technology. So, I don't know if that answers the question but I can say that we use—we basically, um—a lot of museums use technology in the galleries like audio tours or cell phone tours and that my program is a more, um, community based and more, um, community responsive in that it is working with D.C. area teens and has created programs that serve those teams in media creation. So, rather than using media to teach some content, they learn the content through the creation of media, if that makes sense, um. Because a lot of times, to, um—you have to know the content even better to be able to express it others. Does that make sense?

I: Yes.

P: So, it's like learning through teaching, in a sort of way. You could think of it that way. So, they're not necessarily teaching but a lot of times we'll ask them to do—is concentrate on themes that are related to our exhibitions or themes related to, um, their own expression and, um, ideas about identity or community and things that are kind of thematic staples that have run through museum education for a long time, um. They concentrate on those things but they think about how to use the digital tools to serve them and that's how they learn digital skills. So, we are—we basically do an afterschool program, um. It runs from three to seven every day. We do a weekend, Saturday program that runs from 12 to 5 and those, um—those are drop-in center [sic] and the idea is rather than the institution telling them how they—how they should learn, they give them access like a library to resources and we have mentors there to, um, encourage them, to, uh, show them how to do things that they may want to do. But, it's really on an as needed basis programmatically. We do offer workshops and we offer, like, structured clubs, um, and those workshops I think are often how people, I think—think of, technology being used in museums. But, a big part of what, um, is really been [sic] important is to create the environment where, um, teens can see each other using technology in different ways and influence each other in a studio kind of environment. We also work with school programs and we do more structured workshops, um. They're usually four or five day workshops. We do those during the summer and we also do them during, um—summer is open enrollment. But, uh, during the school year we work with three different charter schools and they come in and they use us during their intersessions and we do workshops called “Community Design,” which is that they analyze their community, do interviews, figure out the issues that are impacting those communities, look at it architecturally and then come up with, kind of, solutions, using Google Sketch-Up. So Google Sketch-Up is a free, um—free application they can use on their own but, um, this is an example

of where the content is more important than the tool. It's more about having them think about community and then learning the digital skills to support that, um. We also have done, um, workshops about representation of women, workshops about, um, the idea of appropriation and hacking and, um, modification. We do things on game design, um, using the collection, um. I could go on and on. It's really—but, uh, we use all kinds of technologies. We also have a sound booth where kids can come in and record their own music. But, we, um, have been encouraging them to make sound art where they, um, go into the communities and record sounds from those communities that can be used more as a soundscape and we also have an artist program, where the artists work with them. So, the artists bring in the kinds of ways they use technology and work with the kids that way, as well. So, you work with what kids know but you also expose them to things that are outside of their comfort zone and that's where the art part comes in, if that makes sense. Sorry that was a long answer.

I: It's okay.

P: It was kind of a broad question.

I: I find it fabulously interesting. I could probably come up with a million follow-ups to that as well. We could probably talk the entire afternoon but I don't want to take too much of your time. But a lot of really good things—um, so I was curious, with the schools—you said the charter schools come in, is that correct, during the school year, during their intersession—so does that mean spring break?

P: Um, sometimes it's around spring break, um. We work—the most we work with is (school name) and (school name) which are both charter schools, um. (School), I'm not sure how that works. I think they just come in, uh, for a week and do the same workshop and then (school), it's—they're—they are—I guess they go to school all year round and then there's breaks in

between in between times and so then they can take—they can take the workshop as part of digital school credit. And that's one of the most, kind of, um... rewarding things for us is to start to become a part of how schools give credit, um, for things that they don't usually teach, like digital media. So, that's been a really good thing.

I: Yeah, definitely. Um, you probably addressed a little bit of this next question with the—with your great response and that is, uh, for what reasons do you teach with and through this technology? And, I think that you touched on that a little bit when you talked about digital literacy and expression. So, if there's any other thoughts you want to throw out there—

P: Yeah, uh. It's kind of—kind of a couple of different things. Part of our funding is based on the mission of encouraging digital literacy and 21st century skills, um, and the 21st century skills, they're not all digital but all of our workshops and the way that we work are based on those—we are also based on some ideas that come out of Mimi Ito's research for the MacArthur Foundation about how, um, teens are using digital media. So, part of it is working with media that teens are already using so that they can understand how to use them in ways that are productive and creative as opposed to as consumers. So, that's a really important thing, that we want to take kids from being consumers to being creators and this has a couple of different ramifications. One of them is that it helps them develop their own investment and their own—their own entrepreneurial kind of sense, um, which can lead to either college—'cause we work a lot with at risk youth. It can either lead to college or to a specialization in that field of interested that they've developed during our workshops or it can lead to kind—kind of an identity as an entrepreneur, as someone that wants to work in an industry and both of these things are important for America because to become competitive within 21st century industries means that they have to be able to—to start to create digital media, um. And, you know, the American

workforce is not being trained to that through school. So, it's kind of happening on the side and that's what—you find out that there are these kids that are doing it on their own but they're not really—they're not really learning how to do it in school.

I: Right.

P: So, one of the nice things that we have been able to do is to kind of give them access to that, um. So, there's—it's professional development. It's, um, artistic expression. It's, um, using media to amplify the issues and, um—that they feel are important and give them a forum and, um. It's to help them become better participants in digital creation and, um, and civic engagement.

I: Right. There's a fabulous book that I've read recently about participatory culture and especially the youth and then they break it down, essentially, by skill sets and then by like purpose about how our culture is becoming increasingly participatory and we're not just consuming what's put out there anymore. We're like remixing it and like, you know, mashing it up and putting it back out there. But, the unfortunate thing is that while these skills are really, um, beneficial to most everyone, they're not necessarily being pushed or advocated for in a lot of our educational systems—

P: Oh, yeah, educational systems, but—

I: —educational contexts.

P: Yeah and that's because the educational system is slower to change and it has a lot to do with, um, kind of, systems of authority. And I think authorship is a really important thing that's going on right now which is that people are authoring their own media and this is why what's happening with media is more revolutionary is because people are not—it's so easy now to create either an identity as a business, to contribute to, you know, um, Wikipedia, to—to kind of

become an amateur expert. And, that threatens a lot of institutions that have an investment in maintaining authority. So, what ends up happening is, institutions that are trying to maintain authority are not always serving their audiences.

I: Yeah.

P: And so, until institutions are able to do that, um, the audiences will go other places. I mean, I think culture is always been participatory. What's happened is that, it has more to do with authorship. It's the same thing that happened with like, um, you know, was the Guttenberg Press? The invention of the press and how that completely changed the way people had access to information. It's the same thing. People have more access to information that used to be, um, uh, specialized and they also have access to authorship in ways they never did before.

I: Yeah, that's a great—a good way to put it, yeah. How successful or unsuccessful do you feel teaching with or through these technologies have been for your learners?

P: I think, um, our learners come in because they want to learn the technology and I think that sometimes it's harder to get them to think about issues that are, kind of, more universal, um, that go beyond just learning the technology. What—so that's one thing, which is to get them from wanting to just play a video game to wanting to learn about videos as, you know, visual media, um. So, that's a little bit harder. If you think of it as a funnel [draws funnel], the majority of people that come into our programs come in, um, with just a social interest. And then, there's self-selection through the social interest into people who want to experiment. And then, there's self-selection from there to a more narrow [sic] group of people who actually are interested in developing expertise. And, museums have concentrated in people who are already invested, um, in terms of wanting to have expertise. But, what museums haven't focused on are the social and the experimental, the “play” part of it, as much. And, those parts are really conducive and get

bigger audiences. I think the most challenging thing is to focus on the social and experimental parts of peoples' interests, the part where people are curious and then move them towards the expertise—is harder. In the past, it's always been that museums have only provided things for experts—people who are already in the know—

I: Yeah.

P: —um, and I think the more challenging thing is to move them more from, uh, like the social kind of interest into finding out what's going to make them more invested so that you can create a group of people who are invested in media creation, um. But, right now, it—it's just usually folks who have the right conditions at home, right, conditions in their community and, um, have that identity already, um, that are—are becoming more invested. And, it's been harder to encourage folks that don't have those kinds of resources at home or in school to start to think of themselves and their creativity the same way. So, that's the only challenge and that's the challenge that every museum faces whether it's with technology or not. I think the other thing that impacts museums with technology is that it's changing all the time and you have to have a very healthy budge to keep up with all the changes. And, the expectation from the audience is, you know, if you have dated—if you have dated equipment—I mean, right now, our equipment is super sexy and new. But, at some point it's going to become dated and—and people may not be as excited about using it, as—as they are now.

I: Right, I was at a conference recently, the NAEA conference in New York and they had a speaker I heard about. I think it was Seb—Sebastian Chan of the Cooper Hewitt and, um. Among other various points I heard that he made, one of them was that some museums, you know, when they're trying to implement a digital media practice for educational practice—whether it's cell phones or audio tours or tablet apps, um. Some museums just literally aren't, um, made for that.

Like, depending on the institution's structure, like, architecturally, if they're really old museums, um, wiring, you know, access, there's all of those, like, seemingly easy but get overlooked so often [sic], um. So, the museum itself just as a structural place, um, plays such a big role in being able to, you know, have that opportunity for learners and for visitors.

I: It has to be kind of a priority of the building, you know and it has to be something that everything from a director through an architect has to have a conversation about, which is if we're going to be a new building—21st century building, then we have to think that people are going to be using it differently. I just read an article that said that people's homes are changing, that because people aren't collecting books, because people aren't collecting CD's or records or anything, that storage space is now in the cloud as opposed to in people's homes. So, our physical spaces are really changing—

I: They are.

P: —and, um, and—and yeah, in order to support that change, you've gotta have completely—you have to be on an electronic grid and be able to—

I: Have to re-think everything.

P: Right, right.

I: Yeah, I mean, I consider myself more so a digital person or a “techie” but I still love my books, you know. I still have an extensive bookshelf and I wonder what—when the day is gonna [sic] come when I actually have to get rid of them or just have to part with them.

P: Yeah, I mean, that's like when people parted with the phone, you know. At some point, they just weren't using those phones hanging on the—on the wall, right?

I: I saw a typewriter recently at a thrift shop the other day and I was like, “I just kind of want to have that as, just like, this nostalgic piece.” But, I digress.

P: Yeah, no, I mean, I, um—you know, I'm involved with music and, um, one of the things that's really interesting is that I design a lot of, um, album covers and what's interesting about that is there's a re-investment in vinyl, again because it's an object. They just like it as an object—

I: Right.

P: —there's a ritualistic aspect of flipping the disc. But, it's almost like an art book now. It's not the same as just—we just have it.

I: Yes. The function of it has kind of changed cause it's—

P: —it's more rarified.

I: Yeah.

P: People like that and people collect old books, too.

I: But, good stuff, I digressed a bit, um. So, in what ways do you feel that this, uh, technology that you're infusing with the teaching benefits the visual arts education? And, I know you've kind of touched on this a little bit and I don't want you to have to repeat yourself. If there's any *new* thoughts that you might have about them learning [sic] visual arts.

P: Yeah, I mean, I think we live in a visual culture and basically people—a lot of teens that we work with, their entry point into culture is pop culture and we're trying to open up their comfort zone with how pop culture uses media to include artistic expression and things that artists make. So, um, to be able to have them look at a music video and say, “okay, right now—right here you see there's some techniques in this video that actually have been influenced by art filmmaker Kenneth Anger or Stan Brakhage or other filmmakers who were artists but that get co-opted into commercial video usage as a style. So, um, it—what's nice about it is that you can use pop culture and lead—it can lead back to art, you know. And, if you have art that is more

contemporary, um and has, kind of continued—has continued relevance to issues today, you can make those connections, too, um. Does that make sense?

I: It does. It has me thinking about, um, less so visual arts content but more of the skills that get from point a to point b in that respect. Meaning—skills meaning, creative thinking skills—

P: Yeah.

I: —critical thinking skills.

P: We definitely do—we definitely, you know—you can really exercises critical thinking skills when you look at art and have them starting there and then going back to look at media as visual—as a visual expression, also, is really, you know—you can talk about framing with anything. You can talk about composition with anything. You can talk about mood with anything. So, those are more formal looking that goes across the board whether it's media or, uh, static art, um. But, we also have, depending on the exhibition—so, for instance, we have a workshop that's called "Digital Plus Physical" and it's the idea of how do you take—how do you make digital work physical, you know, through projections or through interacting with performers and it's being taught by a dancer. So, but—it's—but it's also about creating media that you can work with as someone who performs, um. Interestingly enough, we have also (an exhibition) which is up, which are these environments that are created by artists that kind of imply different ways of interacting with it. So, that exhibit can be really helpful for them—to get kids to start thinking about the staging of what they do, the ways that they use light or projections. We also have a Doug—a Doug Aiken projection that's going to happen on the outside of our building. So, again, it's—there's some really nice dovetailing between what artists do with projections and then what people do with, you know, pop culture and staging and all of

that can, kind of, come into play and give them a variety of things to draw upon when they're in the workshop.

I: Yeah, that (exhibition) show is really great. So, you kind of touched on this a little earlier as far as, um, the limitations or the challenges when you spoke of the audience that perhaps the museum is aiming for and how that's changed as far as the learners. So, the question is, what are the limitations for teaching with and through technology, at least in your practice?

P: Well, you have to change your expectations, as to what you want to see happening in an education program, um. Because, I think that people are more interested in having social experiences and more experiences—and are more used to, rather than going into an institution and saying, “teach me something,” to coming into an institution and saying, “well, okay, why should this fit into my life? How is this useful to me, in terms of how my life is?” So, it's a little bit different. It's a different, kind of, way of thinking, um. So, interactivity is something I think that happens a lot with technology that before, um, wasn't happening as much. And, so the limitations are, um, basically—maybe a gap between the audience expectation and the institution's expectation and what the institution wants to see happen and what the audience wants to see happen. And, the more that an institution can know what—who it's audience is and what their audience wants, um, to get out of the experience, the more meaningful they'll be to their community. I mean, we're lucky being in the (institution) because we feel like we can be academically modeled and people will just come to us as if, you know, I mean—we're not surviving off of ticket sales, our admissions. But, if you go to the museums that are surviving off of ticket sales, you'll see that the completely different take on their audience, a very different way of marketing to them, a very different way of hanging their exhibitions, every aspect of

those aspects is—there have been conversations about their audience in a way that, um, a lot of—at least art museums that are federally funded haven't had.

I: Right. Oh, for sure, I would definitely agree with that. Um, you know, this—this gap between expectations of the audience and role of the educator, facilitator, you were speaking on, it's interesting that, um—I'm starting to see the commonality even in, um, educational contexts, such as schools, high schools, colleges, community colleges, in different ways that may manifest itself. But, it's still—I'm still starting to see it as this commonality because many times when it's adult learners or older, um—younger adults like teenagers, um, sometimes they approach it very practically and they want to know, “well, why do I need to know this? Where is this going to fit into my life?”—um—“When am I going to use this?” Or, what have you, etcetera, um, it's just neat to hear that even in a museum setting, that is still another obstacle or just consideration, if you will.

P: Yeah. I think it's a generational thing, too. Because, basically Baby—the Baby Boomers have come out of it—what—what you would call a “Big Society” generation, which was the idea that society through the 50's and even into the 60's, even though it was challenged, um, shared these major ideals. So, you'd always just go to school because you were supposed to go school because that's what made you a good citizen. Now, people aren't really believing in that, people are looking at High School and College as, “how will this help me survive?” We're in a different economic climate. There's different expectations [sic]. There's also very sensibilities between Baby Boomers who are far more ideal—idealistic, who have come from a far wealthier kind of, um, um, history and, um. They're also staying in their jobs longer, which means that, um, we now have—instead of having Baby Boomers retiring out we have a whole—we have generations of workers who have less mobility, um. And so, what that does is that it impacts them in ways

that are much more practical and less idealistic. You know, idealism is this certain, uh, luxury to have it, you know. And the reason why I think the Baby Boomers were able to have it is they came out of a time...

I: It was prosperous.

P: Very prosperous and it allowed them the luxury of—of thinking in ways that were far more idealistic. So—so much of the 60's and the 70's were a great, um, privilege for people to think that way, [laughs].

I: Yeah.

P: But, I also think that the two—we're looking at a generation with a very different model. There's much more of a corporate model being used for measuring what success is. So, it's just different. There's different sensibilities. I don't know if I answered your question, thought.

I: As far—oh, the limitations? We've spoken on it at various times. I mean, we've talked about access, at one point, um, how the museum gears their, um, uh, goals towards certain learners, um. We've talked about the limitations as far as just simply a general—a generalization, obviously, but it's a generation thing. As far as, just generally speaking, characteristic of the audience. And, there's nothing wrong with generalizations. They do help build theories.

P: I would say that Baby Boomers are not super great multi-taskers. But, there's generations that are multi-taskers who are really changing the way things happen. And, it's very different—it's a very different world.

I: Yeah, I mean—off track a little bit. My pops he's been at the same for almost 30 years and he's not planning to retire for probably a few more and he could have a few years back but he chose not to.

P: I would say that your generation usually goes from job to job, like, every four years. And that's just because people are looking for mobility in ways that can't happen in their job. But, also, too I think the—the attitude now is to not trust institutions to take care of you like they—like people used to. Because institutions are always merging and changing anyway.

I: True.

P: It depends. And, I'm generalizing quite a lot.

I: It's okay. It's kind of unavoidable with these kinds of questions.

P: Okay.

I: And so, we've talked about limitations and this is actually the last formal question I have for you. What's your ideal vision, as far as teaching through and with technology, in your practice?

P: Um... My ideal vision to teach in—

I: And, here we are, talking about idealism.

P: And I can't come up with anything. No, um, ideal—um, ideal vision. We're pretty close to it, I think, you know, um. I—I would love for more buy-in. I wish institutions could see that none of their content is compromised by making these kinds of programs happen and that the content is, in fact, enriched by being responsive to communities as opposed to not. So, um, I—I guess, what I would like to see, um, is people creating more and consuming less. And, you know, I'm a product of the early 80's and there—there's a whole movement, kind of D.I.Y movement which is you just kind of made it yourself. If you couldn't make it happen, you just make it. And, I think there's an opportunity for that to happen again. I mean, now, even with things like 3-D printers—

I: The "Maker-Bot."

P: Yeah, you can make whatever you really want, um, and to have access to anything is really within people's, you know, potential. So, ideally, I would like to have less policy and law, uh, infiltrate what I can do with my teens and, uh. I'd like to, uh—definitely I'd like to see school's working with museums and working with libraries and actually filling out—filling out learning to not just be something that happens at school but everywhere, you know. And, that people are more invested at seeing, um, what they—seeing what they do as just—education not just happening at schools but everywhere. I mean, I'm really dedicated to informal learning and I think that's the nice thing about informal learning situations—let people know that, um—that it's not—that they're part of a larger way of knowing than just curriculum.

I: Definitely, yeah, well said. I mean, I myself, also am very much interested in non-formal and informal learning settings. I think that's, in a way, why I approached this kind of topic. And, interestingly, I interviewed an individual in Canada who shared a view that, like, “learning doesn't just happen anymore sitting behind desks and sitting in rows inside of the walls of a classroom.” And another individual has said, um, also, academia or “academic texts don't just live in journals and publications and print anymore,”—TEDTalks for example, a lot of them live online, now. So, just to limit a learner to, say, a physicalized [sic] room or a physicalized [sic] book is really doing a disservice.

P: Yeah. But, the thing I think that you're bringing up is that technology has really just brought a lot of this on because it makes the information available no matter where you are.

I: right.

P: Which is amazing because it used to be that going to college or having access to this information was something that was rarified and something only an elite could have access to.

I: right. It's changed the power, in a way.

P: Yeah. So, really what's happening now, which is so interesting, is that the power structures are changing whether people like it or not and we're just going through these kind of growing pains, you know. And—and institutional infrastructures, um, have to either be able to change very quickly to adapt to them or they will become, kind of, antiquated. I mean, look at what's going on with newspapers and magazines and books and—

I: The encyclopedia of Britannica stopped printing.

P: They're going to stop printing but they want to become like Wikipedia. But, they're going to have to figure out how they do that. What do they have to—how can they change the way they're thinking?

I: It's going to be a whole new framework, for sure.

P: So, it's interesting how much technology has changed but it—it's brought change in ways that people who have revolutions before [sic] were trying to change—like, you know, in the 60's and 70's, people were trying to change the school systems. Well, now the school systems are going to have to change.

I: And, just to bring it back, like, full circle. Something that you began—at the beginning of this—it should be more so approached as a tool. It shouldn't be sought to be as a replacement, at least in my own words, um. If you just throw technology into the classroom or into a learning context, arbitrarily, you know what I mean—and expect the learners to get it just because, “oh, it's technology.” Yeah, there has to be, like, purpose behind it. It has to be like—

P: That's why all the education theory about people being invested or more mission- and project-based kinds of learning makes sense with technology because someone's already invested in it the content before they even go to the technology. So, they want to keep—also that's why things like, um, video games have become so important in terms of game playing and video games

become so important in terms of learning and technology because, um, it encourages an [inaudible] process where you keep going back to the same technology to learn it or keep going back to the same subject to become better at it. And so, they're looking at how games do that and they're trying to figure out ways to structure education in the same sort of way. And, part of it is, just like in a game, having a mission, part of it is also where there's elements in the game where you get, uh, immediate feedback, in terms of how well you're doing, how well you're playing. These are things that weren't thought about in education theory before. But, with gaming theory really changing—because it's really that—that approach is—is works [sic] better with how people are—are learning now.

Appendix K

Interview Six Protocol

1. In what ways do you use technology in your teaching practice?
2. For what reasons do you implement specific technologies in your practice?
3. How successful or unsuccessful do you feel teaching with technology is in your practice?
Why?
4. In what ways do you feel your technological teaching practices benefit the visual arts education for your students?
5. Are you familiar with the term ‘hypermedia’? (If answer is yes, ask for elaboration and proceed to question #6. If answer is no, follow up with:

(Hypermedia is an assortment of information, formatted variously such as text, audio, video, animation, etcetera and is while spread across a vast area, is interconnected by associative links or nodes.)
6. Do you see your own teaching practice as similar or contrasting to this? How so? This can be conceptual or literal.
7. In your opinion, what your ideal vision for technological teaching practices?

Appendix L

Interview Six

I: In what ways do you use technology in your teaching practice?

P: Uh, a couple of ways, um. At the (institution), I use the (a) Wiki site very much so. I emphasize that in the very first day of class—that that's where the students go to access the readings for the class, to know what the course schedule is and to see updates to it. So, if we have a guest speaker coming all of a sudden, I'll post that on the Wiki. I also have, um, branched out into a couple of different, um, aspects of the site, uh. In "events of interest" portion that I have the students refer to for, uh, an assignment they have which is to actually go to some lecture [clears throat] and do a paper in response to it and then, just in general, to try to get them to think about the ideas in our (Contemporary History) course and see how they're playing out in a contemporary space, outside of the classroom. Then, I also have a blog, which is hosted through the Wiki. So, it's a kind of very different technology but that's what we have here at the (institution). And, on the blog, it's, uh, a place for students to increase their participation in class. So, it's attempting to accommodate those students who aren't as comfortable with speaking in a classroom setting, face-to-face. They can do it asynchronously, kind of in their own time—as well as, to continue the course discussion and to encourage students as they're going about, like, their daily life to be hopefully critically reflecting on the material for the course and as they come across different news articles that relate, they can then go back to that space and post them in—other students can comment and, um. I dip in there, provide comments and then more questions and, um. I think I mentioned this before, um—did I send you a link to the site, to—

I: No, I don't think so.

P: —okay. Bug me again, if I haven't done that by Friday. But yeah that way you can kind of go and see what's happening. It's—it's sort of like hit or miss and I actually have a lot more of the talkers doing the talking through the blog—so, not exactly supporting those students that it was, kind of intended for, um, as a nicety to help their participation grade, um. But, I think that's find and a lot of times I'll try to refer to things that students' posted in relationship to class discussion. Something else I do is, every week, um, that we have class—prior to the actual class or a few days after our class, I go in and I post a new image with a link to an article or a video or something like that, that loosely relates to or directly relates to our next week [sic] topic and I sort of call that the “Easter egg.”

I: The “Easter egg.”

P: Yeah. So, I start out class by referring to that and kind of getting some students to kind of warm up the conversation about the material for the week that we'll be talking about.

I: And that is posted to the Wiki or the blog?

P: To the Wiki.

I: And the courses that you teach currently are?

P: Just (contemporary history). Yeah, but I taught a studio class, um, on video production and post-production at (college name) before and for that we used Blackboard. I use the Grade book for that, um. It was really just to post notes and links—similar to what I do at (institution). So, after each class, I freely share my PowerPoint presentation and then I take notes during the class of what are [sic] different examples that the students' brought up, other things that came up in conversation and then I put that, as like a link to—for each one of those topics.

I: Gotcha.

P: So, I have a pretty, I think, broad—maybe compared to other professors or at least the ones in the contemporary culture class, so far, um—use of it. And, to me, that's really because I know students are busy and there's only so much you can absorb during class. So, there's always that—that point of reference they can go back to and see what was talked about. And, I, um—every time I post something in site, I automatically send an email message to the students. So, it kind of, like, floods their email box but to me, that's a way to remind them that, “hey, just because class ended—you should still be engaging with the course and the topics.” Rather than just saying, “okay, it's the day before class or a few hours before class, what was I suppose to read,” and go in and quickly download it. I try to get them thinking about it.

I: Yeah. I like this idea of, um, continuing the discussion afterwards. ‘Cause, yeah, nine times out of ten, we just don't have enough time or there's just a lot of really good things being said. They don't all get said in a, um, physical space. So, that's actually the first time I've heard that, um, as a reason to be described [sic] for that kind of practice. So, that's really interesting and I like that idea a lot.

P: Yeah, if I had my way, I'd have a Twitter account for the class and I'd have all my students subscribe to it. But, not everyone is familiar with Twitter or has that type of technology access [sic]. So, I also have to kind of be democratic with the use of technology and not assume that students have, like, mobile phones that support a Twitter app, for example, ‘cause if I was just posting things to Twitter, then that would be exclusionary, perhaps.

I: Sure, yeah. You mentioned that, um, some of the students that seem to be participating a little bit more are the ones that do engage in class, typically—maybe that's a generalization, um. I'm just curious why you think that may be?

P: I think you always have some students that are more interested and I think it tends to skew a bit towards—this semester—with the talkers being the ones who are, perhaps, a little bit more advanced than the other students in their studies, not just by age—this is supposed to be a sophomore, core class but I have a mixed group in there. Some students, even like a freshman, uh. So, I think it has something to do with their, just, education, comfort and background as well as, um—for the students that, maybe aren't as advanced and they are sophomores, this is the right time, according to the schedule that they're supposed to be taking this class. I think they're engaged with it because I try to bring up, um, examples that are really relevant to everyday life and so, if you're already a consumer of media and culture, I think those students tend to, like, understand references I'm—I'm using because, yeah, they also read that New York Times article or they also saw that post on Facebook or something like that. So, I think it really has to do with the subject itself.

I: Okay. Now, you might have touched on this a little bit with, um—with some of the response to the previous questions but my next question is kind of like—it can be a personal reason or a philosophical belief of like—what reason—for what reasons do you use technology in your practice—if any of them are person, if any of them might be administrative, um—if you just want to elaborate on that.

P: Um, okay, so, from my own educational background and research and just, I guess my philosophy, um, the brains of students these days are very different then, let's say, my generation and previous generations and so there's a lot more, um—I can't remember the exact term for this because I'm trying to remember it. But, there's a lot more brain patterning that shows that students or just, in general, this demographic—younger set of millennials, whatever they call

them. But, um, they're minds are literally wired differently than their elders and that is because of their exposure to technology.

I: Yeah.

P: So, to me, that presents a challenge and an opportunity as a professor, and that is to modify how I teach, to speak in a way that speaks to that style of brain or structure of a brain then, um, like what I was used to, for the most part, uh, in school, which was much more linear and we have these containers of knowledge and things that were supposed to be taught in this way 'cause they follow the succession, etcetera. It's much more associative, literally, like, hyperlinking out. It's more of a web then, um, then what was previous modes for education.

I: Yeah, definitely. I think I read somewhere, the term—there was a term, the—the “internet age.” But, even that's not even a—the best way to describe the nature of the learners that are coming up now because the internet's been around a long time, um, even individuals that are five to ten years younger than me are coming up with different technological, um, exposures. So, I mean it changes every year, [laughs].

P: Yeah and they have different—they have very different uses for the internet and different media and they have different levels of comfort for it, not just from a user perspective but what they're willing to personally engage with. So, my younger cousins, for example, share way more information that's personal than I do. So, and that's just—I think it has something to do with—I didn't grow up with the Internet. I mean, I did, but not 'til later. I wasn't born with it like, kind of these folks are.

I: Yeah, I mean, just on a side tangent, anytime I see someone that's posting their address or stuff, I'm like “oh my god.”

P: I don't even put what school [laughs] I went to 'cause it's all just, yeah.

I: And, also, I think, as I've gotten older—if you've had like, a Facebook or even back in the days of Myspace and before the days of Myspace, it was another one I can't even remember at this point. But, yeah, just as the succession changes, I'm taking look—outlooks on them and social media aside, um, the types of technologies for learning. So, yeah, all of that just continues to change. It's very fascinating.

P: Yeah. One other piece of technology, I think I mentioned before but I'll just say it again. But, I have the students doing a field trip next week and we're doing a project where they have to bring their digital cameras, they have to take photos and they have to write, um—basically there's some, like, questions—this exercise that engage [sic], um, the photos that they're taking and they have to post them to Tumblr site 'cause it's just easier to do it then through the Wiki. So, that's my, like, one foot outside of the (institution) domain of technology, [laughs].

I: And that is perfectly fine. My experience with the Wiki, so far, has been, um, somewhat challenging. It's good that they are attempting to have this space where they can have a—all this information disseminated, so to speak. But, it's still has a long way to go and that can be a tangent in and of itself, um. So, you can—the next question is, how successful or unsuccessful do you feel that teaching with and through this technology has been for your learners?

P: Um, I think it has been because—very successful because they can always refer to the notes and I know that's also a thing where not all professors give their notes. They think of it more as their intellectual property. I do, as well, but for me, I just care about the students getting the information and I was—when I was in school, a voracious note-taker. That's also my learning style and not every student is like that, um. So, for those students who don't take notes or they need that visual cue of that image that was on that slide to reference back with whatever notes they've taken, I think that that helps provide that [clears throat] better than if I were just—and I

would not want to print multiple copies of things and that way, too, I can also say, you know “it’s on the Wiki, it’s on the Wiki, don’t ask me to chase it down and like hand-hold you through the semester.”

I: Find yourself repeating that, “it’s on the Wiki?”

P: Absolutely. It’s a little more of an early in the semester thing. But, it’s still—yeah.

I: So, yeah, um. I think another—another issue that comes up about, especially related to the question of how successful or unsuccessful—it’s like, how do you always assess that? I think it—it becomes a difficulty or just measuring, um, digital media, um, content master, etcetera.

P: Yeah, we have, um, an evaluation at the end of the semester and having taught this class last year and implemented [sic] the same things with the Wiki last year, um—as I am this year. There was very positive response from the students in that survey about the Wiki. So, I think even if it is a notes container for them, that I feel like is fine. But, one thing that I did not really touch on too much yet but is my use of media, um, outside of the Wiki, um, technology and, um. That would be, I use a lot of video and sometimes video that, um, is directly from the sources. So, we might actually listen to [inaudible] speak through, like, a downloaded video that I got off the Internet and, um. I think sometimes hearing and seeing the source of the theorists can be helpful and then, of course, there’s always, um, the idea of just, you know, pulling in examples in but presenting it in the moving image form—is, I think, a lot more digestible for students than just, you know, they’ve come out of—so far, if they’re sophomores, they’ve come out three semesters of Art History where it’s “slide, slide, slide, image, image, image” and this class is (Contemporary History) and they’re supposed to be gaining skills in reading visual images and reading contemporary culture and so, I like to bring in the video of, you know, the Rick

Santorum kiss that disrupted his campaign, you know, that sort of thing and then we actually have that conversation.

I: Yeah, I mean, that makes a lot of sense, in that sense. It's connected to, I mean—so to speak—to learning goals, if you will.

P: Yeah and it's so much better when they can have the artist whose work I'm showing maybe as a slide, as an image, actually talk about the project. So, that's something, I think, that I benefit from [clears throat] being a teacher of the generation where we have the generation to teach with.

I: Yeah, I mean, I would agree with that.

P: And, there's one thing that, because the Internet access, is so spotty there, I always have to download everything. But, there was an opportunity where we would have had to actually have one of the artists' who—well, two of the artists that we talked about in class, um. They were both talking on a panel up in New York during the same time that class was being conducted and I tried it beforehand and it wouldn't stream well. So, that was unfortunate, 'cause I would have loved to have us together live, you know. It would be, like, together going to an artist's lecture, which we also did earlier in the semester, um, when William Pope L. was (somewhere), uh. That was kind of a bummer for me 'cause it would have been great to be able to have that experience with them but the technology—so, that's where I would say that the resources are limiting in that aspect.

I: Sure, yeah and I actually have—actually have a similar question that we can actually jump to, since it's flowing like that. I was going to ask you about, what are the limitations for using technology in your practice?

P: There are definitely what's [sic] available through the (institution). What's sanctioned—I have a lot of students who, last year, used their personal email addresses for the Wiki and the

(institution) set out this rule this year that it has to be their (institutional) email address and so, you know, how often do students dip into that address—I don't know. So, I may think, "oh great, I think I'm being so proactive," 'cause I'm sending out these emails that say, "look at this on the Wiki—I just posted this on the Wiki." But, they might not get it until two weeks later when they finally log back in. So, that part is unfortunate, that policy, um. And then, yeah, the WiFi access and it—I think even, like—I know the rooms are improved from last year. But, um, it's just a pain to have to, like, check out a DVD and "duhduhdahdahdah." It would be great if all the videos were—and by segments, were by chapters, even—in my ideal world—that were at the (institution) library, would be accessible online and I could just download them to the desktop and—

I: Streamline.

P: Yeah.

I: How about for the learners? As far as limitations go.

P: Oh, so, again, like I was saying before about, "do they have regular internet access when they're not at school? Do they have phones that they could access content from?"

I: Smartphones?

P: Yes. Smartphones, um, you know, so, mobility is an issue and access at home.

I: Yeah. I'm absorbing that. Yeah, and I have found that a lot of these concerns and issues are some of the frequent ones and, um—concerns around access not even just at home but, "can they go to a library and how much of a practical thing is that?" —for specific learners. Because, um, especially at, like, a community college setting with the learners that are working full time and have all sorts of—

P: Well, like you said it before, you know, everything is competing for your time and attention. So, as much as I'd like to continue the class outside of the class, even if for my own self, it can be a challenge.

I: So, um, since you're pretty tech-savvy, I wrote this into the questions. And, I necessarily—I don't necessarily write this in with everyone because not everyone is familiar with the term "hypermedia." I end up having to define it for just, you know—your average conversation. So, I was going to ask if you're familiar with the term "hypermedia," um, and if so, if you don't mind, sharing a few quick words about what your understanding of it is.

P: So, hypermedia is one of those, excuse my French, but, like, bastardized terms that we, us being the academics, came up with in, like, you know, the 80's, 90's and 2000's and—and it's, you know, we've used different terms. Like, you spewed them all earlier, "new media,"—like, when is media not new? You know? Or, when do we say, "okay, new media, you're no longer new." People say video is "new media." And, I'm like, I'm sorry, but that's been around at a consumer grade since the 60's. So, you know—if not earlier.

I: Yeah, you know, it's tough. As much as, like, an interesting topic it—it initiated my whole interest for this. Throughout it, my learning is really starting to synthesize all of this and I'm starting to see that it's not hypermedia, necessarily, that is what's benefitting or what I claim to be benefitting, um. I think hypermedia, just as a term is becoming more of a conceptualization of how I would see an ideal vision for an arts education. It represents the synthesizing of many different representations.

P: See, it's interesting if you break down the word, hypermedia. There's "hypertext," and you know "hyper," in its own right of what it's suppose mean. So, when I think of "hypertext," I think of dynamic and I'm not sure if that's what you would say hypermedia is—is dynamic. But,

to me, underlying that, if you were to take dynamic as the underpinning thing with hypermedia, I would say then that is the way that the teaching should be now. It should be more collaborative. It should be more creative. It should definitely not, um, create a structure that's so rigid that it can't go off into other directions based off of students' interests.

I: Of course. Non-linearity.

P: Exactly.

I: Definitely. But, the reason I—I go about asking you that is, um—

P: Oh. Hyperrealism.

I: That's a good one. That's more real than real.

P: That's my classroom, hyper-real. I'm just kidding.

I: Yeah, um. But, I'm just curious because some of the individuals who have more of a technological or a media background—and are more in a place to field these kinds of questions, um. I'm just curious if, in your opinion—if you see, um, hypermedia as being similar or dissimilar to your teaching practice?

P: If hypermedia means dynamic and collaborative, I would say that—yes, it is similar, at least—what—the spirit in my intention is and collaboration is always a challenge to do in a classroom when you have a specific set curriculum. It's not, you know, a Masters' course where you really get to direct everything—either students' are at a certain point in their academic career. So, there's ways you can be collaborative and interactive. But, it might not necessarily involve the use of media.

I: Sure, yeah. I mean, media aside, I was starting to get on this—the conceptualization of what that stands for—of maybe leaning towards a structure—of viewing the structure for the education in a visual arts program.

P: If you don't mind me giving a little bit of, like, you know, ad—not advice but, just, my personal perspective on it? Is that I think your work, your research, your thesis would be better directed if part of what you do is, is you spell the use of these kinds of terms and you talk more about collaboration *or* you talk about the collaborative dynamic aspect and say how they're supported through technology and I would just get rid of the idea of "hypermedia." It's [inaudible].

I: That's how—that's how it's starting to go now. It started out with the term—

P: I mean, it's a sexy, flashy term that the, you know, college art association would probably love to see that in a proposal some day. But, where does that really get us, except more confusion. I mean, we don't need a conference on hypermedia. We need a conference on using technology for engagement to enhance the students' user experience of the class.

I: Totally and I've—that's how—that's where my research has changed. It started out with, "how can hypermedia do this, how can hypermedia do that, what is hypermedia?" And then, throughout the interviews, it's more about, "what is technology doing for our learners, in these kinds of settings?"

P: Mhmm.

I: Yeah, but I mean, it's just been one giant learning process.

P: And, something else—I threw out the term "user experience," and this, again goes more for my technology background and my current outside of work job [sic]. But, user experience is really about knowing your audience and creating opportunities for engagement and collaboration, interactivity and just, in general—whatever your frame is, and experience for those audiences that serve their needs and intentions with the engagement—the frame that they're engaging with. So, um, if you're following that, um, to me, if hypermedia is going to be

successful as an approach for learn—for teaching in this learning environment—professors have to do a better job of—at understanding their audience, understanding where these students are coming from, understanding some of the things that we talked about before and that’s the connections with the mind, um, that are different in the way their brains are patterned. And, they have to start thinking about pulling apart their neat little syllabi and really looking for opportunities to approach their audience in a way that will be more effective for their overall learning experience.

I: Well said.

P: That’s my soapbox.

I: No, I mean, that’s well said. Yeah, there’s a lot of learning characteristics about this—the audience but another thing is, why lump them into, like, learn—we learn so much about learning styles in a teacher education program. But, in a way that’s almost limiting ‘cause it’s like, and I’m quoting another individual here, “Mary’s a visual learner, Johnny’s an auditory learner.” But, it’s so much more complex than that.

P: Well, when was the last time those learning styles got revised?

I: That’s a good point.

P: I don’t know, I’m asking you because you’re the one that’s actually going to school for this and my challenge to that doctrine, would be—great, you’ve done first legs’ work on this and that’s been true. But, look at neuroscience research right now and just, for a second, think about how some of that discipline’s work can better inform pedagogy and

I: For sure and I honestly—I think it could be slow to change as far as the education world [sic] is concerned but I’m personally so fascinated by neuroeducation and neurocognitive students and it’s just this—I mean it’s not brand new. But, it’s really starting to come out, um, and be

available as information to people that aren't in that field and it's just fascinating stuff. There's so much in there that we can pull from.

P: Tonight—this is like—I wish they were doing a live stream of this 'cause I would try to figure out how to get it to go with my student's. But, tonight there's this guy, John E. Laird—he's actually spoken at the (institution) a few years ago. But, he's a great, sort of, like, neuroscience background—talks about a lot of different topics, has a lot of different books out there, um. But, he's speaking on creativity and how it relates to the workplace. There was just an NPR fresh air story on him, um— of him speaking up in Boston about that tonight and, you know, I think, along the lines with, um—does our education research need to be refreshed? Where can it pull from neuroscience? Where can it pull from other studies that are going on in the realm of creativity, the way that people are thinking about creativity now? I think there's a lot that education can learn from those studies and the results of their research.

I: Right, yeah. Well, um, I really only have one more formal question and that's—and we've kind of touched on it when you were saying, ideally—there was a point you were making about—I think it was the DVD's and the media. But, I mean, it's—it's your opinion. It's, um, in your opinion what's the ideal vision for a technologically infused teaching practice?

P: All my students would be robots and we'd be wired together. No, I'm just kidding [laughs].

I: [Laughs].

P: Um, I would like to have two things. I would like learning to be more distributed and user-driven and by learning distributed [sic], I mean the information more distributed so that a learner can go out and discover to learn and piece together their own parts, um. There's this really good essay called “The Radicant” that talks about how the mind, um, of artists today—and it's in relationship to whether or not copying or, um, not just copying but appropriation—talking about

contemporary appropriation and it goes into, you know, well who is this artist today that thinks that he can just appropriate and he's like, whatever, it's the Internet. It's the web. We're associative thinkers these days and that's what a lot of artists practices are and you just kind of have to go with it and I think that's the way that this, sort of, new student mind is wired. So, if you create an opportunity to have just little nuggets of information and then—not necessarily say, “okay, here's a whole big candy store. Go in and get whatever you want.” But, you say, “okay, look for all the chocolate candies or look for all gumdrops and, you know, if gumdrops make you think of licorice then go grab that and what can you get when you combine those two?” That sort of thing.

I: Gotcha, so, um, seek and discover, with some guidance.