Shifting Paradigms: The Technology-Infused Visual Arts Curriculum

by

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ABSTRACT

This qualitative research study has been constructed as a springboard to start and delve more deeply in the discussion about the integration of digital technologies into the Visual Arts classroom. Further, this study provides practical examples of technologically rich Visual Arts projects along with analyses pertinent to the implications embedded in such practices. The discussions, questions and conclusions found in this research paper stem from a dialogue based on information gathered through an extensive study of academic literature pertaining to this topic, face-to-face interviews with educators who use digital technologies in their own Visual Arts classrooms, as well as my own experiences with such practices both as media artist and as an educator. The main findings of the study include: (a) the use of technology in Visual Arts education generates opportunities for cross-curricular development, that is, to foster skills that transcend the Visual Arts domain; (b) digital technologies allow Visual Arts students’ work to be assessed more effectively. (c) the integrating of digital technologies into the Visual Arts classroom may be both challenging and rewarding; and (d) technology-rich Visual Arts programming speaks to students in a language which is highly familiar to them. The true meaning of these findings and this paper, in general, lies in the need for educators, administrators and other community members to remain informed with regards to the ways in which Arts education can make the most powerful and empowering impact in the lives of 21st century learners.

Keywords: 21st century learners, artist-teacher, cloud computing, digital media, digital technology, Media Arts; technological, pedagogical content knowledge (TPACK).
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“Collectively, technologies create a new genre of contemporary art forms […] that challenge art educators in search of meaningful practices.”

-Sheng Kuan Chung, *Digital Story Telling*, 2007
Chapter 1: INTRODUCTION

The emergence of new technologies in the 21\textsuperscript{st} century has led to new ways of understanding and making art (Ontario Ministry of Education, 2009), positioning the incorporation of technology into the Visual Arts classroom as a critical, and yet, unmapped area of inquiry and discussion for educators, administrators and academics. Looking to expand on the research pertaining to this topic, this qualitative study investigates different initiatives whereby digital technologies have been integrated into the K-12 Visual Arts curriculum in Ontario, Canada. As such, this study shines a light on exemplary models for technology infusion into Visual Arts classrooms with the goal of providing educators and administrators with a constructive and practical resource to inform their own practices in regards to this phenomenon.

Before plunging into examples of some of the best practices in this field, it is crucial that we reconsider some of the concepts and practices involved in art making in the 21\textsuperscript{st} century. Because the emergence of new technologies calls for a shift, not just in educational practices but also in philosophical thought in relation to art, in the proceeding paragraphs I begin my research by examining the interplay of relationships between the learner and 21\textsuperscript{st} century digital media, the (re)definition and (re)contextualization of the visual arts, and the role of the Visual Arts educator in the new millennium. In later chapters, I discuss some of the most noteworthy ideas found in academic discourse related to this topic; a discussion which is be followed by my own research findings and a set of concluding notes and recommendations for readers, particularly educators and researchers.
Redefining and Re-contextualizing Visual Art Practices

While art making is often associated with the idea of self-expression as an isolated practice exercised by a single individual, the digital age that we live in demands that this notion be re-examined. The utilization of media technologies as tools for viewing, crafting and exhibiting artwork, ingrains these practices with a variety of social – rather than simply personal – implications. In other words, digital artworks have a tendency to transcend the selfness inherent in traditional modes of artistic expression. Digital artworks make the interaction between viewer and artwork an essential part of the creative and exhibition process (Langill, 2011). This implies that understanding the far-reaching discursive faculties of the places in which digital media artworks exist, is understanding their vast potential to influence and generate not only public opinion but works of art that reflect their discursive entourage. As such, media arts practices are deeply political and democratic. It is thus that the stakes involved in a well-informed technologically infused application of the Visual Arts curriculum are high; and it is the responsibility of educators to take these implications both seriously and pragmatically.

As a student teacher and beginner researcher, I have come across an academic discourse which defines 21st century learners as global citizens, digital learners, team players, etc; and while these notions about 21st century learners are relatively common and almost self-evident, educators should avoid assuming that students are born with the skills necessary to exercise these roles even as they begin to show evidence of relevant and empowering thinking habits such as critical thinking, ethical considerations and deliberate intent. Rather, it is the role of educators to facilitate purposeful educational
programming to excite and enable 21st century learners to acquire the set of skills necessary to live out the complex roles as goal-driven, creative citizens.

There has been relatively little research work done around technology-infused Visual Arts education. However, previous research studies dealing with the use of digital technologies in different areas of study, including the Visual Arts, conclude that technology-infused education poses a visionary practice that can help 21st century students gain and develop skills of professional competency (Franson and Holmberg, 2012). 21st century learners’ skills include global awareness, self-directed learning, critical thinking, collaboration, economic and financial literacy as well as communication and information literacy (Rocky View Schools, 2014).

Once thought by many to be a field completely isolated from all other disciplines, technology has come to occupy a place of evident influence on almost every domain of society, especially in economically privileged societies such as Canada. And today more than ever before, we can see that visual arts and technology have had an influence on each other, and that in many cases, they have also become inseparable. 21st century Art educators should therefore facilitate learning opportunities that are reflective of such a reality (Mayo, 2007).

If research studies endorse the notion that the use of digital technologies positively impacts education, why aren’t more Visual Arts educators dedicated to using digital technologies in their classrooms? In approaching this question from a comprehensive
point of view, it is important to acknowledge that taking on the task of integrating digital
technologies into a unit of study in Visual Arts can be terribly daunting for many
teachers, and there are several reasons for this (Black and Browning, 2011). One of the
greatest challenges for educators in this regard is to possess a high level of preparedness
(Gregory, 2009). Many educators lack relevant background experience or have scarce
technology literacy skills. And although most younger teachers may possess a significant
level of familiarity with certain technologies, the assortment of learning styles that are
usually present in the classroom (Hobbie, 2011), often outweighs a teacher’s capacity to
engage the class through variety of methods that offer students choice (Mayo, 2007). Let
us also keep in mind that the field of technology is always changing. This means that it is
extremely difficult to keep an updated familiarity with emerging software and digital
devices alike (Black and Browning, 2011). Additionally, the availability of technology in
schools may vary tremendously, and this factor is usually determined by variables like
socio-economical setting, school vision, board direction and policy, administrative
commitment, and teacher advocacy. The numerous complexities at work in promoting
technology-rich classrooms stand as limiting barriers, which tend to deviate educators
from adopting this practice – an unfortunate fact because, as mentioned above, research
studies show that technology integration dramatically increases student performance
(Gregory, 2009).

Because the integration of technology in the Visual Arts classroom represents such a
significant challenge for educators, this research paper is intended to incentivize this
practice through an analysis and diffusion of models where educators have successfully
designed and implemented technologically rich Visual Arts programming into their classrooms. More specifically, this research study will survey the information provided by my participants regarding resources, models, prerequisites, techniques and routines that they have come across and experimented with, with the goal of making technology integration into the Visual Arts classroom a more accessible and manageable practice that enriches student learning. Subsequently, this study will examine the predominant peculiarities and commonalities found in such initiatives with the goal of creating new areas for inquiry as well expanding on the existing discourse around this topic. In a way, this is a dual attempt to shine a spotlight on concrete examples of technology integration in the Art classroom and to amplify the discourse about intersection points between the inherently innovative visions of art making and technology.

We live in an exciting time when the most popular artistic medium, namely digital devices, are constantly at our fingertips. It is paramount that educators help students perceive technology as a highly accessible, versatile and powerful channel for expressing and sharing new and meaningful ideas! Take video cameras for example, one of the most popular artistic mediums in the last 40 years. Today video cameras happen to be so accessible that one may say that every child who has a smart phone or camera phone also has an art-making device at his or her disposal. Even more interestingly, if or when a cellular phone has any sort of Internet connection, video recordings may be instantly shared with the world. Given the overwhelming presence of digital tools in our lives, at least in urban settings of the western world, most art practices of today are done in a do-it-yourself (DIY) fashion. This way of making art gives students a voice, turning art -
making into a truly meaningful and appealing experience for schoolchildren. With so much technology at our disposal, art can be created almost by anyone, anywhere and at any time; therefore educators must continuously promote a responsible, purposeful and creative use of technology.

**Purpose of the Study**

The availability of academic research featuring authentic models of successful and groundbreaking examples of technology integration in the Visual Arts classroom is scarce. This research study is intended to help bridge that gap, however, based on a critical and constructive platform. There is a great deal of relevant ideas found in the research of art and technology integration, and among those, the promising impact of wisely directed technology-based learning environments, the need for current educators to become savvy technology users themselves, and the potential that current students have as technology natives to perform roles based on the expectations previously mentioned. However, despite the abundance of literature that illustrates opinions and facts related to this subject, in general, researchers in this field have steered away from the articulation and analysis of concrete examples of successful and noteworthy case studies, and moreover, the redefinition of art practices in the 21st century. My intention as such is to fill these gaps.

As a pre-service teacher, my own experience observing teachers facilitating lessons and students demonstrating evidence of learning, tells me that the discourse and research about the integration of digital technologies into the Art classroom is not changing the way
educators actually use technologies as tools for teaching and learning. The correlation between the large amounts of digital technologies available far outweighs their present use. As such, this research takes a step back to position both the potential and the limitations of this process on a scale, in order to look at what has been done recently and what could be done in the future to address successful approaches to technology integration in this discipline. Art educators must become cognizant of issues that affect and/or impede the potential associated with learning technologies in general, in the same way that they must know the needs and capabilities of their pupils to creatively utilize these tools. And becoming familiar with research that offers case studies that explore the hurdles and potential involved in this complex but essential learning process is an advantageous alternative to build on an informed practice knowledge base.

**Research Topic and Questions**

At the center of my research are essential questions that are related to the pragmatics of a technology-infused curriculum; such as, what do exemplary Art programs that have adopted technology as a way to enhance learning and widen student choice look like? How do these examples reflect socio-cultural trends of today and the future? What aspects of those initiatives can serve to form a practical system for other educators to implement, experiment with and/or build on? Other than technical skills, what type of skills and experiences do teachers hope that their students learn from a technologically rich Visual Arts curriculum? And what, if anything, have educators and administrators done successfully when trying to meaningfully integrate technology into the Visual Arts classroom?
**Background of the Researcher**

My motivation to investigate the introduction and creative use of media technologies into the classroom from a fine arts stance, comes from my view of technology as a dynamic, versatile and innovative field, which when fused with an artistic approach, could potentially provide humanity with positive, far-reaching and game-changing contributions – advances that have the power to shape our culture(s) in significant ways, especially in the areas of communication, freedom of expression, and social interaction.

As the subsequent chapters reveal, this type of motivation is common amongst visual arts practitioners and educators. It is note-worthy mentioning that I am a male of Hispanic background, raised in a lower middle-class family and currently residing in Canada as a Canadian citizen. I have found in the visual arts, a place for refuge and escape, but also a common ground for formulating, probing and exchanging ideas with individuals whose gender, political views, ethnicity and social class may or may not match my own.

In addition, I am an active media arts practitioner with a background in art criticism and curatorial practice. Community engagement, democratic empowerment and cultural diversity are overarching strands in my own artwork. In combining these factors I have formed a view of the artist-teacher as one with the privileged position to enable and promote social change and self-expression. And as a media artist I understand, though perhaps not fully, the immersive, versatile and outreaching potentials of the arts and today’s technologies to support these visions.
Chapter 2: LITERATURE REVIEW

As mentioned previously, the relatively small amount academic research available on this topic offers a limited selection of insights. However, in terms of what is available, I have carefully selected and studied a series of literary pieces, and I have noticed two imbalances. The first one, as I have previously pointed out, has to do with the disparity between the amount of literature written on the potential benefits of infusing more learning technologies into the Visual Art classroom, and the extents to which educators and schools actually deploy digital technologies as a means to enhance students’ learning experiences in the Visual Arts. And the second imbalance has to do with the scarce amount of publications on this topic by primary and secondary school educators. Notably, it is university professors, perhaps due to their research-driven professions, who have become more actively involved in addressing these issues and who have written all of the articles that I am about to discuss. This raises several critical questions to which I draw attention in later chapters.

Potential, Potential, Potential

In her article *Boxes with Fires: Wisely Integrating Learning Technologies into the Art Classroom*, Diane Gregory (2009) builds on the idea of integrating technology into the Art classroom by emphasizing the importance of centering the focus of education on the learners themselves. This article also places the use of technology as a threshold through which educators can offer students the tools to acquire the competent skills necessary to become successful agents in their own endeavors. These skills include key concepts such as creative thinking and creative production, collaborative learning, problem-solving and
higher order leaning. Gregory adds that whether it is through a student-centered or social constructivist approach, infusing computer-technology learning into art education can provide a model for the reformation of education. In her article, much like in other texts written on this subject, no clear distinction between the definition of computer technologies and learning technologies is made. As it becomes evident in the final two chapters of this study, these two concepts deal with two different aspects of the use of technology in education.

Gregory also demonstrates a high level of awareness of the fact that educational systems of today have not quite reached the point where a substantial use of technology in the classroom is wisely or widely applied. Her article also refers to Art teachers as model figures who possess the capacities that it takes to inject life into this vision; that is, Art teachers are, generally speaking, capable creative thinkers, problem-solvers and risk-takers. Based on reports by the U.S. Department of Education which show a correlation between technology-infused education in the traditional disciplines and a rise in student academic performance in such disciplines (United States, 2004), Gregory implicitly concludes that a technologically rich Art classroom can help improve overall student success throughout the academic spectrum (p. 48).

This article’s lack of examples makes evident the need for research where concrete case studies of successful and inspiring examples allow readers to explore this phenomenon from an experience-enriched position as it only offers one example to support the author’s vision of the issue in question.
Nobody Said It’d Be Easy

Like most new endeavors in education, shifting towards a technology-infused practice is not easy and needs to happen gradually. Although one of the goals of integrating technology into any classroom is so that learning takes place in a more authentic and engaging way, to have an effective system in place that facilitates that type of learning can be excruciatingly difficult for educators and administrators. In a way, this is ironic given the abundance of research studies and critical writing, produced in the last 15 years, which deal with issues related to media technologies integration in general education classrooms.

The importance of technological literacy is such that today’s educators from all disciplines and grade levels constantly seek to infuse their lessons with technology-rich activities, but roadblocks and impediments to this mission are numerous (Gregory, 2009). Academic literature that shows that educators and researchers are well aware of the challenges posed by the integration of technology into the Visual Arts curriculum is widely available. The most common thread in such body of research indicates that researchers and pedagogues themselves agree that the main challenge faced by 21st century educators is possessing a proficient level of technical knowledge operating digital technologies in order to be able to effectively facilitate student learning in (or through) such media (Polly et al. 2010; Black and Browning, 2011). And as a result, many teacher education programs have started to address this issue by implementing pedagogical strategies that require student teachers to make use of information and
communication technologies (ICTs) in completing a well of open-ended academic assignments (see Fransson and Holmberg’s research study, 2012).

Extracted from conversation with an OISE professor and seasoned Arts teacher, another barrier that teachers may face, and this is something I have witnessed as a teacher candidate, is that the great majority of teachers and schools lack financial support to acquire new technologies. This is particularly true in the primary, junior and intermediate levels. In other words, assuming that most educators would like to achieve that proficiency level described previously, often times their school communities may not be able to allocate the resources necessary to support such initiatives. Notably, in my literature investigation I did not encounter evidence to dismiss this an isolated issue.

Since the emergence of this technology-savvy mentality within teacher education, a theoretical framework has been used to help educators maintain a clear focus of the key necessities in meeting a well-balanced set of guidelines (e.g. Polly, 2010; Fransson and Holmberg, 2012). Known as technological, pedagogical and content knowledge (TPACK), this framework proposes that effective technologically-infused education requires educators to possess certain skills related to three different areas of knowledge at the same time that they should understand the relationship between the three: (a) a technical capacity to operate a certain learning medium such as book or a computer (Technological Knowledge); (b) appropriate teaching methods and assessment strategies to ensure learning in the classroom (Pedagogical Knowledge); and (c) content familiarity
necessary to instigate a rich learning experience among students (Content Knowledge) (Koehler et al., 2007)

**Advisory**

Amongst other common themes found in literature that pertains to this topic, practical pointers may be found in a scattered but persistent trend. One could even make a reasonable claim that the goal of most of the research work being done in this field is geared towards prescribing a set of ways in which effective technology integration in the classroom is achieved. And although most of the suggestion that I have come across while directing this literature review are detached from case studies or concrete examples, becoming familiar with such suggestions certainly can have more advantages than disadvantages.

**The Oracles**

Another academic who has written extensively about current issues in Art education such as technology integration in the Art classroom, Sherry Mayo discusses different approaches and implications of accommodating computer technology in Art education (Mayo, 2007). Mayo highlights the need for students to be introduced to media theorist and multimedia artists “so that they can harness data sets, realize their power as media manipulators, and participate by building their own constructions” (p. 46). In her article *Implications for Art Education in the Third Millennium* (2007), Mayo acknowledges that the challenge is not linked to the availability of learning technologies, but that it is rather posed by the question of how to assemble the vast amount of information that those
technologies offer in a meaningful manner. Towards the end of her article, Mayo explicitly lists a series of “points to consider when teaching arts technology” such as:

- To focus on the content rather than the technical aspects of the project;
- Creating a mentality of flexibility when using computer software, for it tends to change often;
- Putting an emphasis on planning and drafting; and amongst others,
- Generating a dialogue about technology in the classroom.

In addition she offers a list of “things to have” in the classroom which include technologies such as digital cameras and a laptop with Adobe Suite software.

I will continue to add other key figures whose work around the use of technology have helped to shape this discourse from different but nonetheless relevant perspectives. Some of these figures include Karl Marx and Michele Foucault.

**System Error!**

Looking at literature on this topic that was done after 2008, a set of common characteristics become apparent including that teachers wanting to adopt the use of digital technologies into the classroom have been challenged to go outside of their comfort zones and to expand their abilities as educators.

On one hand, one of the roadblocks to using digital technologies in the classroom is related to overcoming the huge learning curve that introducing students to new software
represents (Coleman, 2004). And on the other hand, as mentioned before, teachers themselves generally have to take on the challenge of staying up-to-date with the new technologies, which is a highly demanding endeavor for a demographic that enjoys very limited spare time at work or outside of it.

However in any case, we are entering a time in which the digital arts are predominant as both artistic medium and practice, and it is expected that teachers embrace and forester this art form through the curriculum they deliver in class.

In considering these ideas one should also ponder the question ‘what are today’s Art teachers doing to offer their students a curriculum that consists of a balance between the engaging, the pragmatic, the creative, the context and the relevant? These ideas pose a demanding and perhaps endless task, but despite the seemingly inconvenient situations educators may face when trying to infuse the use of technology into the Arts curriculum, it is a critical undertaking loaded with an endless surplus of social rewards. Accommodating your instruction to better suit the needs of 21st century learners means making the teaching profession count as a relevant endeavor.

**Digital Kids**

A critical examination of the current state of affairs in regards to technology, Pamela Taylor (2007) analyzes cognitive and behavioral processes from the perspective of modern schoolchildren (also referred to in this article as “digital kids”). This text is charged with an abundance of ideas from not-so-recent publications by different authors.
who were evidently preoccupied with this issue. Such references stand as an evolutionary account of changes in the way humans have gone from being overwhelmed by the continuous emergence of new technologies to a state of coexistence with and dependency on digital media. It is as though through constant interaction with technology, new generations of children have morphed cognitively into humans who make sense of and interact with the world around them through the means established by digital technologies.

Another provocative idea coming from this article is that historically, technology has helped to change how the world works; and in this digital era in particular the number of changes are endless. The most critical ones being (a) our view of ourselves – through metaphor, technology allows us to create and nurture multiple identities; (b) the way people interact and connect with one another; and (c) the way we receive, process and transform information. Taylor’s article therefore provides a fundamental analytical vision to enhance our understanding of the true meaning of shifting in thought vis-à-vis ways of learning.

As a highly theoretical article, this piece of literature is also useful in creating a familiarity with the vocabulary often associated with this issue. Amongst other things, it provides a concrete definition of new media, illustrating examples that are most useful to readers who might not be familiar with the term. Part of the title itself, “digital natives” alludes as a synonym of children whose complete existence has been mediated by digital technologies. As a juxtaposition to this distinctive term, the author alludes to Digital as
Second Language (DSL) in order to reference generations prior to this digital era. One of the most evident differences between these two demographics being that digital kids want to have instant access to information, places and possibilities, fearless to explore new technologies such as software, videogames, and any other types of digital equipment. This leads one to the conclusion that 21st century learners expect a different way of being engaged and educated, and rightfully so.
Charter 3: METHODOLOGIES

The design of the set of research methods I deployed in this study was fundamentally informed by my findings in the literature pertaining to the existing research on the integration of digital media in the Visual Arts curriculum. Because the compilation of first-hand narratives focusing on technology integration in the Visual Arts classroom is the primary gap that this research study attempts to fill, the main method used for data collection took on the form of interviews of educators with relevant experience in this area. Adopting a constructivist approach (Creswell, 2007), the interviews in turn were transcribed, framed as case studies and subsequently analyzed for common characteristics by way of induction.

Participants

Two individuals formed the group of educators taking part in this research. These participants possessed recent experience facilitating a Visual Arts curriculum, including the use of technology as a central medium in the Creative and Critical Analysis Process of their study units (Ontario Ministry of Education, 2009). The members of the participating group were teaching professionals in the area of Visual Arts working in primary, junior, and intermediate in the Greater Toronto Area. However, initially, my intention was to include participants from the elementary and secondary school levels in order to provide a wider spectrum of paradigms in the field.

Participants for this study were selected by reference from other professionals and through connections made through the Ontario Institute for Studies in Education. Once
the participants were identified, I disclosed their background as educators including their teaching levels, additional teaching subjects and years of experience, and I used pseudonyms to ensure their anonymity.

Procedure

During the recruitment stage, I began by explaining the focus of my research to the participants so that they could gain a better sense of the scope of my research. In both cases I had a discussion with participants about their perceptions of the meaning of new media and digital technologies. When possible I used resorted to the literature to help clarify the meaning of the terms and provided them with examples that fell under the definitions provided therein. I also encouraged participants to incorporate their own examples of new digital technologies, which they deemed as legitimate additions to the list of existing examples. In addition, each participant was required to read and sign a letter of consent, which allowed him or her to withdraw from the study at any time even after signing the form (see Appendix A). Once the participants were informed of those details, I then set up meeting times and locations for the interviews to take place. These interviews ran from approximately 60 to 80 minutes in duration, and took place at a location convenient to each participant and where privacy was guaranteed.

The content of the interviews included open-ended questions about the educators’ professional background, specific experiences integrating technology into their lessons or units of study, specific details about the kinds of technologies used, students’ approach to self-expression and details about the environment in which the learning process took
place (see Appendix B). One of the primary goals of this research project was to provide examples of “what works” in the process of integrating technology into the Art classroom; therefore, my research questions focused on the pragmatics at work in each case study (Patton, 1990 in Creswell).

Interview questions were divided into five themes as follows:

1. Academic background,
2. Classroom practice,
3. Types of technologies involved,
4. Common themes in students’ artistic practice, and
5. Context.

The questions from the first three categories were designed based on themes found in my literature review on this topic, whereas the last two categories were based on themes that are not sufficiently addressed in academic studies.

**Data Collection and Analysis**

The data collected was transcribed word by word and kept in a password-protected folder in my personal computer. This data was then analyzed for common themes; it was compared and contrasted to the information and themes found in my literature review. Both the data and my analysis of it were revised three times over in order to achieve the highest degree of accuracy possible. The common themes were arranged by comprehensively cross-referencing information collected under recurring questions as well as the data found in the literature review. Examples of answer-to-answer included
similar technologies used to complete an in-class project, and instances of answer-to-literature commonalities included cases where the instructor lacked sufficient knowledge about a specific technology intended to be a key part of a student’s assignment. Again, these examples were only meant to provide a loose illustration of how the data was analyzed during this investigation.

I colour-coded different sets of data that overlapped with information found elsewhere in the collected data. However, to maintain the authorship of each piece of information, accounts, narratives and answers to questions remained labeled with the respective participant’s name. In chapter 4, after a final revision of all the data, I disclose the findings, which are presented under overarching themes where applicable.

**Ethical Review Procedures**

I provided participants with information regarding the scope of this research project with a least one-week’s time anticipation with the goal of allowing time for meditation and preparation on their side. Within a week’s time, those participants received a formal letter of consent which further outlined the details of their involvement such as expectations for and from both parties – the interviewees and the interviewer (see Appendix A). Consequently, participants were given explicit freedom to opt-out of individual questions or the project as a whole at any time without consequence.

The interviews took place in a face-to-face fashion. I immediately addressed any questions the participants had before, during or after the interview process.
Participants were participants and were not offered any monetary compensation for their time. However, I offered each participant the option to receive a copy of the final research report upon completion and approval, which they accepted.

**Limitations**

There were several anticipated shortcomings present in this research project; however, I would not have conducted this research investigation had these shortcomings guaranteed to outweigh the value of the information—namely, the opportunity to gather information that may help educators in the Visual Arts become better informed with effective and diverse ways to integrate technology into the Arts curriculum. In my opinion, those foreseen shortcomings were moderately common to research coming from masters-level researchers.

Due to the time frame in which it took place, the scope of the investigation remained relatively narrow in different areas (i.e. the research study took place in a rather confined geographical location, and the number of participants was relatively low). As a result, the number of different accounts does not do justice to the work being done by many professionals in this field.

With reference to the geographical restrictions of the project, the quality and details of the findings may have limited applicability. For example, resources that are available to teachers and students in a certain part of North America (or even a certain area of
Toronto itself) may not be available elsewhere. For that reason my investigation may be
deemed as a socio-economically biased one.

Arguably, another limitation affecting this research investigation may have to do with the
correlation between the value allotted to the Arts by the Ministry of Education – which is
reflected in the minimal amount of hours assigned to the intensity of Visual Arts
instruction – and the completion of technology-based, in-school projects, which usually
take up a significant length of time. The assumed correlation itself is based on a short
supply of narratives and/or participants.
Chapter 4: FINDINGS

The contents of this chapter derive from the analysis of the data collected during the research study interviews (see appendix B for the complete list of questions). As such this chapter is divided into different sections including an overview of the participants’ profiles, their experiences integrating technology into the classroom, and new implications around this type of educational practice. In this chapter I also draw parallels between each of the participants’ perception(s) of digital media and how they then utilize digital media in their lessons. Based on these findings I argue that there are some evident correlations between how educators perceive digital media and how they promote its use in the classroom. Subsequently, an overview of such findings provides a conclusion to this chapter.

Participant Profiles

The study gathered information from two participants–two female middle school teachers with a minimum of 12 years of teaching experience in public schools in Toronto and other locations of Southern Ontario. Neither of these participants had received formal training as visual artists or digital media technologists prior to becoming certified educators. Interestingly enough, each of these teachers holds different views of the concept of digital technologies. At the time when the study took place, they were both coursing PhD degrees at the Ontario Institute for Studies in Education. The next section outlines individual characteristics and experiences in regards to the topic of this study. To ensure their anonymity the participants will go by pseudonyms: Participant A, Alma; and Participant B, Vida—respectively.
**Alma**

While in her four over five leave, Alma is currently pursuing a PhD degree as previously mentioned. She has been teaching for 15 years in Toronto’s public school system mainly as a Visual Arts teacher. Her academic background includes a degree in Art History; however, she has not had any formal training in artistic studio practice. In terms of training in digital media, she has attended several board workshops for professional development where the focus was on the use of technology in general education. Alma’s perception of digital media consists of an operational duality; one in which digital media serve as presentation tools (i.e. image and file libraries such as PowerPoint). This view of digital media includes hardware such as projectors, SMARTBoards and document cameras, for instance. And on the other hand, she also sees digital media as tools for making art. This perception includes digital cameras and editing software for example.

**Vida**

Similar to Alma, Vida is currently couring a PhD degree where the focus of her studies is on the use of technology in the general classroom. She has taught Visual Arts and Music for 13 years, 12 of them in primary and middle public schools. Her academic background includes degrees in Piano Performance, Religious Studies, Philosophy and an undergraduate degree in Education. Her most recent workplace is a public middle school located in a “non-affluent” community in Southern Ontario where the Arts are highly valued but are not officially instituted as the central focus of educational programming. Vida’s perception of digital media is based on what digital mediums actually are. This includes digital devices, tools, gadgets, software and the Internet. Under this view, digital
media is a category of tools that share similar characteristics in common such as usage purpose and the period in time in which they emerged.

The Overarching Themes

While analyzing the research findings, the following themes have formed while creating an overlap of common ideas; however, in order to highlight the relevance that each theme holds, I have given them descriptive subtitles. The first theme deals with the need for educators to get to know and address the existing limitations and possible alternatives around the availability and usage of technology supplies. The section titled “Practical Models” provides a detailed series of accounts transcribed in verbatim style in which both participants share some successful experiences integrating technology into the Visual Arts curriculum.

Beware, Strategize and Advocate

Having worked in newcomer, lower middle class and non-affluent communities, both Alma and Vida have reported having a fair amount of access to technology devices in order to support student learning. When asked about availability of technology supplies that exist in the school where she has implemented media arts activities, Alma responded that in general the student to device ratio was between 2:1 and 3:1—these numbers exclusively refer to school-owned iPads. While this relative shortage in resources may be thought to be a limiting disadvantage, Alma has found ways to turn this disadvantage into an opportunity to promote collaboration where students successfully share the existing devices in order to complete class activities. The implication here is that in some cases
teachers have to work with what’s available, often having to resort to planning strategies that encourage collaboration so that digital devices can be shared when scarce. Alma also discloses that some school boards, like the TDSB, offer specialized technology lab facilities that teachers and their respective student groups from across the board can visit to carry out in-class projects. Additionally, both participants reported on students being able to use their own digital devices as a go-to strategy to help them complete school-related activities where necessary.

In summary, while acknowledging that the allotment of technology resources to certain schools poses a challenging concern for educators seeking to implement technology in their classrooms, it is my hope that these findings help to provide some solutions to address this issue. However, because of the fast-paced evolution and emergence of new digital technologies, it is important that educators, administrators, policy officials and parents continuously advocate for an equitable distribution of technological resources in their school. Notably, so as to get passed seemingly limiting barriers such as the one aforementioned, it is important to keep a positive and flexible mentality about how to conceive and apply ideas when searching for opportunities to integrate technology into the Visual Arts curriculum.

**Up for Grabs**

Most of the terminology and definitions used to talk about 21st century technology pose a set of perceptions that vary from person to person. Some, if not most of the terms used to refer to digital media have become interchangeable. Part of this is due to the fast and vast
growth of the emergence and use of these mediums. In considering this issue, this research study dedicates an open room to share the perceptions of each of its participating subjects. The unique views about the definition and use of technology held by each of the participants are arguably reflected in their practices as educators (see Practical Models).

When asked to define their perception of digital media, Alma stated that she sees digital media, as used in Visual Arts education, playing two roles; on the one hand, she included devices and software that can be used for presentational purposes such as the document camera and the Internet. And on the other hand, she referred to devices and software that students can use to make works of art such as iPads, laptops, desktops, and even personal devices as well as software like Photoshop or iMotion. These definitions and examples are on par with some of the activities that she has implemented in her Visual Arts classroom. And those activities include using the document camera to give demos of painting techniques (see “From the Toolkit”), as well as having her students use iPads and stop-motion software to make animated videos.

In the case of Vida, her definition was geared towards encompassing contemporary digital devices and software such as “computers, tablets and smart phones; and software applications and websites”, respectively. While these examples are less directly associated with her use of technology for educational purposes, Vida’s definition of her perception of digital media implies an open use of technology that may vary from person to person and may be adapted to any context. In Vida’s reports of application models around the use of digital technology in the classroom, she included two scenarios; one
where students use Sound Cloud to record oral self-assessment, and the other describing student peer-assessment and exhibition practices through blogging.

**Teacher-Technology Relation**

As discussed in the introduction and literature review of this research paper, reaching a fair level of confidence to plunge into incorporating technology into the Visual Arts curriculum is an essential asset—one that in many cases deters educators from pursuing this task. Through the data gathered in this research study, I have tried to analyze this issue with the goal of making informed suggestions about effective ways for overcoming this challenge. One possible solution stood out.

Although formal training may be an effective way for educators to establish a personal relationship with technology, it is only a supplementary step in that direction. The evidence for this argument lies in that none of the participants in this study had had formal training in using digital media before starting their careers as educators; however, both of them reported a constant use of digital technologies for routinely personal and non-personal purposes such as staying organized, communicating with relatives, students and student parents, developing lessons plans, learning, and even having fun. This suggests that the participants’ significant personal relationship with technology has played an essential role in helping them feel comfortable incorporating technology in their practices as educators. When looking at the demands that the aforementioned habits pose for educators, reaching a fair level of confidence and readiness for using technology in their classrooms should be a relatively manageable challenge. The ultimate goal in
pointing out this finding is for educators looking to engage in technology infused classrooms (in Visual Arts and beyond) to understand that there’s a correlation between how much and how educators use digital media in their lives and how prone they are to use these media in their own teaching practices.

**Practical Models**

As mentioned in the introductory chapter of this research paper, one of the main goals of this study is to put a spotlight on some of the practical approaches that 21st century educators are taking in order to enhance Visual Arts programming with the use of digital media. As such, the following accounts are meant to provide researchers with useful ideas to inform their own practices and interests in a technology-enriched Visual Arts curriculum. I use the term researchers here as an umbrella term to refer to anyone interested in learning more about this topic. This includes educators, administrators, parents of schoolchildren and/or scholars. Also, as the curator of this information, I have transcribed the following accounts in a verbatim fashion in order to keep the originality of the ideas shared by the research study participants.

**Alma’ Models**

When asked to share some of the initiatives she has taken on in the past wherein digital media has played an important role, Alma brought up the following accounts.

**From the Toolkit**

Alma’s examples of use of digital media for presentation purposes include this model:
I have a document camera, which I really like for demonstrating art techniques. A document camera is a little bit of a new version of an overhead projector; you do something and it gets projected unto the screen. [...] Basically it’s like a camera on an arm. So for example, if you’re doing a painting and you want to show a painting technique, you could do it here, and then it gets projected there so kids can see. And the nice thing about the document camera to use is that you can actually take pictures, so you can photograph [your work], and then you can show it again later if you need to—so you don’t have to do the demonstration over and over again. If somebody missed it or you want to review a part of it. [...] if you didn’t have a document camera you could just take a picture of it and then show it. But with the document camera you can just plug something under there, and it’s projected—real time right there. [...] So I use that a lot for presentations.

Stop Motion and the Integrated Curriculum

I think the stop motion animation actually is a really successful [example]. The kids love it. They totally love it. And I’ve done stop motion as a Visual Arts project but I’ve also done it in History class or in Science class. So it’s pretty flexible. [...] You can do it with whatever subject matter you want.

[...] There are really great examples of stop motion animation made by professionals. And there are such a variety of [techniques] that you can use like claymation, drawing, chalkboard drawings, and paper cutouts. So it’s visually very stunning, and you can look at really sophisticated examples so you can set
the bar high on what the expectations are and what is possible – with what is really a pretty simple technology.

[…] You can do it on an iPad, which I did the last couple of years. That’s a really great thing; kids love the iPads, and it’s easy. So it’s really super engaging. And I like the fact that you can deal with lots of subject matter. For example, I did it once looking at The Arrival, which is a picture book by Shaun Tan […]. He’s a really lovely, lovely graphic novelist.

[…] The Arrivals is a book about […] a person who comes from one country, comes to a new land. So it’s got themes that resonate with a lot of the students downtown who may have [immigrated] themselves or their parents. It’s [about] the idea of cultural dislocation, and being kind of confused by a new culture and language barriers. But it’s totally wordless, this book. So I took this book and the students made a stop motion based on the book.

There were options of really just dramatizing exactly what was in the book, or just taking the theme and making something based on that idea of moving from one place to a new place. I was pretty free with the materials in that one; so some people did actually use legos, some people made a plasticine claymation, some people incorporated drawing. So it was really neat to see the variety of things that people chose, and [students] can go with their own skills set. Like the kids that did the lego, they were not big at drawing and they were really frustrated with that, but they did this really awesome thing with lego, which was […] very sophisticated.
So it was so nice because everybody was engaged – it took a million years to do it—really longer than I thought. But it was so exciting see them all really interested, and really dealing with the text, and sophisticated ideas –and being able to create this really neat, finished piece. That was, I would say, really hugely successful.

**Vida’s Models**

When asked to share some of the initiatives she has taken on in the past wherein digital media has played an important role, Vida brought up the following accounts:

**Assessment Made Easy**

... I used [this model] when I was teaching grades 3, 4, and 5 most recently, last year. I had 100 students coming into the Arts classroom learning all of The Arts: Visual Art, Drama and Music. [...] When the students were part-way through an art project, and then again when they were finished in our project, they would use their phone, iPad, tablet or computer [...] to record a reflection using Sound Cloud—an audio reflection of where they were at with the art project, what they were thinking, what their goals were, and how far they got with them. And when they were finished they would repeat this.

This is a way for a lot of students, hundreds of students to reflect, but reflect quickly without needing extra materials, without needing extra paper, without taking time to write down. So they could just easily talk about their art and say—“okay, I put this over here, I was thinking this. I started with this but it
didn’t work so I shifted to something else”, kind of telling a story of what went into creating the art. […] This is really important, because what ends up looking like the end product does not necessarily reflect all the learning that happened with the student.

The reason why they use Sound Cloud like a web-based tool [is that] it can be used on mobile or desktop, and it doesn’t allow for much editing of the sound. You record the sound and you’re done. So the students aren’t thinking—“I have to create this amazing recording”. They’re just talking—it’s like you’re just talking to your teacher and then basically it automatically saves also.

So one of the challenges would be to have the students rename their recordings so that it would be a meaningful name. Students would sometimes forget to do that. If they didn’t rename it, it would be called something like Sound from Monday at 3:45pm. That’s what it automatically gets saved as, so at least there’s some identifying information and when you hear your students voice you usually identify their work when they start talking about their art. So I would use these recordings as additional assessment tools in order to evaluate the student’s work.

An Authentic Task

[…] We had, in the last school, a blog. It was a blog where all the art that students were producing would show up. My inspiration for using technology is to give students this authentic audience. So on the blog the art goes up and then parents can look at it. So parents can see their child’s art and how it is progressing. It’s
like a digital portfolio that’s obvious to parents. But then also, most of the times when I post art, it would be with some kind of interactive invitation. So one time, my grade fives, I had them look at a famous painting and we talked about the elements of art and we discussed the painting – how we felt about it. And then I put it down and said—“sketch the painting. What can you remember about and what details?” And they really enjoyed this activity.

The sketches were posted online asking visitors to vote [using Google Forms] for who they think best captured the details of the painting. So on the blog post was the picture of the actual painting along with the student sketches and then you could vote. [With this type of activity] not only are the students creating art that they will see and maybe hang on the wall of the school, but also goes online where anyone could see their work, and also people can comment on [it]. They can vote – voting I wouldn’t do a lot. I wouldn’t do “okay, everybody try your best, pour your heart in this artwork, now lets’ vote for the best” – I wouldn’t do that. But in terms of the sketch assignment, that worked well because it wasn’t necessarily about the best person who could draw but […] who remembered the details. So in that case we voted.

In a lot of cases we would say “what does this art remind you of?” Then there would either be options there to choose from or there would be this open box for people to respond. So what this allows is not just any anyone who happens to stumble upon the website to interact with students’ artifacts, but also I would have other classes in the school interact. In the Art classroom you would

have a group over here working on some project, you would have a group working on some other project and there’s various [digital] devices around the classroom. We [also] have one stand-alone desktop,. So I would put a blog post there so whenever you have a chance you go back and give feedback to this other class on their art. The students in that classroom, they probably know the students who created the art. That’s authentic audience—not in the sense of worldwide audience—but it’s that connected classroom, getting beyond just that exact classroom.

If art’s hanging on walls as students sometimes react to it and make comments. [Those comments are] not necessarily perceived—either [either the student who created it is] not aware of it or there’s no chance to respond or reflect. So once feedback has been given in the Google Form then you know you can pull up the visual statistics as a class and say—“this is what people are saying about our art. Do we agree with what their saying? How do we feel this project should be graded?”—And ask for that type of reflection. So [yes], authentic audience.

**Further Analysis**

Looking at these examples, it is worth noting that even though neither of these participants received formal training as visual artists or digital media technologists, as mentioned previously; and they both mentioned or demonstrated through practice an interest in using technology – part of it due to their desire to educate and engage students, but also as teacher preparation or communication tools. Furthermore, the extent of the success achieved by both of the research participants in integrating the use of technology
into the Visual Arts curriculum is connected to their passion for the arts, which they have readily exhibited during the interviews.

In the second set of case studies Vida describes scenarios where digital media have not been used by students to create artworks per se, but rather to disseminate, exhibit and assess their work. These examples provided by Vida focus on the utilization of digital media for purposes other than making art are evidence that digital media provide powerful alternative tools to facilitate the creative and critical analysis processes for students (Ontario Ministry of Education, 2010), as well as the assessment practices of the teacher. Furthermore, based on the model “An Authentic Task” described above, Vida also draws attention to the fact that digital media such as blogs, which provide public access, can act as a bridge to “continue artistic practices beyond the classroom, linking informal learning with formal education”.

On a different note, while designing the interview questions I intended to gather insightful information about emerging new trends in the themes explored by students when using digital media. As a result of such questions, both participants reported an interest based on their own identity and themes from nature such as animals and landscapes. Both participants concluded that this is directly connected to their students’ developmental age.

In terms of thematic content, Alma highlighted being able to easily incorporate Media Arts components into other study subjects such as language, science and math. Alma
reported on her students’ high levels of excitement when given these kinds of opportunities as well as on their striking capacity to produce class work in interested and sophisticated ways. These dynamics are illustrated in the “Practical Models” section titled “Stop Motion and the Integrated Curriculum”.

When considering some of the challenges involved in the aforementioned practices, the research participants disclosed or implied several pragmatic issues, some of which have been previously alluded to in the Literature Review and Methods chapters of this paper:

- Although professional development in the area of technology is provided to teachers in some jurisdictions as reported by Alma, the unavailability of digital devices to support student learning (mentioned in Chapter 2 of this study) remains to be a prominent issue.
- In general Media Arts based projects may take a long time to culminate, due, mostly, to unexpected technical issues and the learning that goes with becoming comfortable using the technologies.
- Teachers also need to be aware that when working with digital files, some students can forget to label their work before saving it to a storage device for later revisions and even before submitting it to the instructor.

Other issues include less explicit details at work in the practical models under discussion. One of those issues has to do with the presumptions I had at the beginning stages of this research project about finding suitable participants for this study. I had anticipated
finding an ample range of experienced candidates available to partake in the interviews. As it turned out, one of the main limiting aspects of the recruitment of participants, besides time and geographic constrains, is that not many Visual Arts teachers possess a significant level of experience integrating technology into the classroom; and as a result, the number of participants surveyed in this study is significantly low. Nonetheless, this finding ostensibly confirms Gregory’s observations about the relative low prevalence of technology use in the Visual Arts classroom (2009).

Also, taking into consideration the ample teaching experience of the participants and the extent to which they have successfully used media technologies to enhance the Creative and Critical Analysis processes (Ontario Ministry of Education, 2009), the practical models provided by both participants help to reinforce the direct correlation between the application of the TPACK framework and potentially exemplary, technology-infused, educational practices (Koehler et al., 2007; Shulman, 1986). In other words, although the application of TPACK looks different in both of the participants’ practical models, the extent of the success to which they have engaged their students in the Creative and Critical Analysis processes—by means of technological, pedagogical and content-knowledge on the part of the participants—is rather remarkable and can be attributed to their rich experience in the teaching profession. This being said, in consideration of the narrow number of participants involved in this study, I do not assume that today’s entry-level educators still do not exhibit a tendency to venture into integrating digital media into student-led Visual Arts projects.
In summary, this chapter provides a practice-based analysis of what it looks like to integrate digital media into the Visual Arts classroom. It outlines an objective set of implications for this type of approach to teaching based on connections between theory and practice. In the next chapter, these analyses will serve to formulate a rich overview of this research study with the goal of providing a set comprehensive answers to the main questions guiding the study, namely, what do exemplary Arts programs that have adopted technology as a way to enhance learning and widen student choice look like? How do these examples reflect socio-cultural trends of today and the future? What aspects of those initiatives can serve to form a practical system for other educators to implement, experiment with and/or build on? Other than technical skills, what type of skills and experiences do teachers hope that their students learn from a technologically rich visual Arts curriculum? And what, if anything, have educators and administrators done successfully when trying to meaningfully integrate technology into the arts classroom?
Chapter 5: DISCUSSION

This chapter summarizes some of the most important points of discussion stemming from this study. And in an attempt to provide a deeper understanding about the variety of critical lenses I used as researcher, in this section also includes a reflection that captures some of my thoughts about the lessons I have learned through the execution of this study. Finally, this chapter also poses questions and suggestions both for educators and education administrators, as well as for further research opportunities pertaining to the integration of digital technologies into the Visual Arts curriculum.

Reflection

This research study has been a fabulous and enriching journey for me as a first-time academic researcher and artist-teacher. As a curious individual who has been making art for over twenty years, I have conducted research in less traditional ways; that is, borrowing ideas from philosophers and other artists alike to inquire into different modes of art making. This type of creative process has been a way for me to reinvent and establish myself as a creative individual. Similarly, I feel that this research project has enabled me to become familiar with theories and artistic practices which have already begun to influence my teaching approaches, in some cases as a result of avoiding certain practices, and in other cases, as a result of making deliberate efforts to mirror certain experiences. And even though no experience can be repeated in the exact same way, using some of the models set forth in the content of this research paper, I have encountered new experiences, which have helped me become a more informed and better prepared educator.
Implications and Take-Home Considerations

Through the study of literature and the analysis of teacher accounts pertaining to this research topic, I have come to make, what to me, are some meaningful realizations. Those realizations include: (a) the use of technology in Visual Arts education generates opportunities for cross-curricular development; that is, to foster skills that transcend the Visual Arts domain—this statement also applies to non-academic scenarios, which positions media arts practices as one of the main characteristics of 21st century culture. The concrete examples provided by both of my research participants in Chapter 4, namely, the stop-motion animation project, the assessment task involving the analytical process using SoundCloud, and the utilization of blogs to exhibit and generate authentic feedback on student work, point towards a set of practices that open up numerous opportunities for cross-curricular applications; (b) digital technologies allow Visual Arts students’ work to be assessed more effectively, as previously indicated through the SoundCloud and blogging examples. Once a student’s work can be accessed via cloud computing or online platforms through which teachers, classmates and other community members can provide different levels of feedback (i.e. as diagnostic, formative assessments), and can do so in a timely manner. Once again, theses models could be applied in the assessment of student-generated work in other areas of study as well; (c) integrating digital technologies into the Visual Arts classroom can be challenging. In order to ensure positive learning experiences for their students, instructors need to be as prepared as possible. For example, instructors must have a significant level of familiarity with the technology being used in order to support student learning. One of the events complicating this pursuit is that technologies evolve relatively quickly and constantly,
making it particularly difficult for educators to be highly familiar with the use of the most current technologies. Further, the TPACK framework suggests that even a significant amount of content knowledge and the wisdom and/or ability to use the right pedagogical approaches are necessary assets for teachers to guarantee a successful learning experience when using technology in (any) classroom. Also included in this framework is the notion that educators using digital technologies in their classrooms must consider the particularities of the context in which the learning is to take place. This includes taking into account particulars like students’ exceptionalities and levels of ability to use the applicable technologies, as well as the human and physical resources at their disposal such as the number of technological devices available, as well as the readiness of any teaching assistants and technology specialists that can potentially be involved in the lesson(s) and creative tasks. As suggested by TPACK’s consideration of context, this will play a part on how a learning experience may unroll and whether such an experience is feasible at all. For example, in some cases, not every school is fully equipped to support technologically rich Visual Arts programming due to the socio-economic context. Lastly, instructors using technology in the classroom must also be flexible to be able to navigate and troubleshoot unforeseen technical issues. From my own experience, in a group of 20 or more students who are using digital devices to complete a task, technical difficulties will always arise. For most educators, being able to confront these challenges will require, among other things, a rather simple asset: practice; and (d) Technology-rich Visual Arts programming speaks to students in a language they understand and can speak, (fluently, in most cases); and without exaggerating, learning through the use of digital technologies is amazingly engaging to them. Although this concept was not
directly talked about previously in this paper, I have added it as part of my personal experience using digital technologies in and beyond and Visual Arts classroom. In my opinion, because one of the most important goals of artistic expression from an educational perspective is to place the student at the centre of the creative process—and the use digital technologies help to crystallize this goal—the integration of such technologies into the Visual Arts curriculum is a topic well worth understanding.

**Limitations**

In hindsight, this research project satisfactorily fulfills the goal of showcasing meaningful ideas and concepts related to the incorporation of technology into the Visual Arts. It is self-evident, however, that it is a rather small study and because of that, it only scratches the surface of an extensive, highly dynamic, current and relevant field of education. Notably, examples of use of digital technologies in secondary school scenarios and in different educational and socio-economic settings such as specialized and independent schools, which are missing from this study, would offer a more comprehensive vision of what can be achieved in this realm. Additionally, perhaps the most important perspectives missing from this study are those of the students themselves – schoolchildren and their abilities to thrive in their communities being the primary reasons why this study matters at all. However, it is also certain that examining teacher practices and accounts in relation to this subject can help both to facilitate insightful realizations and to forge a future of informed and relevant teaching practices.
Closing Remarks

The use of technology in educational settings has become one of the central points of discussion amongst teachers, administrators, and pedagogical scholars in the 21st century. The amount of research available on this subject is therefore extensive and substantial to the point that a great deal of the available research focuses on how technology can be integrated into very specific areas of study. However, after conducting a rigorous study of academic literature about the technologically infused Visual Arts curriculum, I was surprised to find a meaningful gap therein. As a pre-service artist-educator currently involved in a masters degree, I found this void in academic literature to be both an alarming fact and, at the same time, a promising opportunity for researchers in this field. This research paper represents my hard-earned ten cents towards bridging this gap. Having said that, however, it is only a relatively small contribution to Media and Visual Arts education; and as an individual who understands the importance of providing 21st century students with authentic 21st century learning experiences, I hope to continue to contribute to this body of knowledge.
REFERENCES

Black, J. and Browning, K. (2011). Creativity in Digital Art Education Teaching Practices. *Art Education;* Sep 2011; 64, 5; ProQuest Central. p 19

http://www.jstor.org/stable/27696201


   Educational Researcher, 15(4).


United States. (2004). Toward a new golden age in American education: How the Internet, the law and today's students are revolutionizing expectations.

   Washington, D.C: U.S. Dept. of Education, Office of Educational Technology
APPENDICES

Appendix A: Letter of Consent for Interview

Date: ___________________

Dear ___________________,

I am a graduate student at OISE, University of Toronto, and am currently enrolled as a Master of Teaching candidate. I am studying the Facilitation of Expression in the Visual Art Classroom through Digital Media for the purposes of researching an educational topic as a major assignment for my program. I think that your knowledge and experience will provide valuable insights into this topic.

I am writing a report on this study as a requirement of the Master of Teaching Program. My course instructor who is providing support for the process this year is Arlo Kempf. The purpose of this requirement is to allow us to become familiar with a variety of ways to do research. My data collection consists of a 45 minute interview that will be tape-recorded. I would be grateful if you would allow me to interview you at a place and time convenient to you. I can conduct the interview at your office or workplace, in a public place, or anywhere else that you might prefer.

The contents of this interview will be used for my assignment, which will include a final paper, as well as informal presentations to my classmates and/or potentially at a conference or publication. I will not use your name or anything else that might identify you in my written work, oral presentations, or publications. This information remains
confidential. The only people who will have access to my assignment work will be my research supervisor and my course instructor. You are free to change your mind at any time, and to withdraw even after you have consented to participate. You may decline to answer any specific questions. I will destroy the sound recording after the paper has been presented and/or published which may take up to five years after the data has been collected. There are no known risks or benefits to you for assisting in the project, and I will share with you a copy of my notes to ensure accuracy.

Please sign the attached form, if you agree to be interviewed. The second copy is for your records. Thank you very much for your help.

Yours sincerely,

Researcher name: Edison Osorio

Phone number and email: (647) 760-6565
osorio@theedisons.ca

Instructor’s Name: Arlo Kempf, PhD

Email address: arlo.kempf@utoronto.ca

Consent Form

I acknowledge that the topic of this interview has been explained to me and that any questions that I have asked have been answered to my satisfaction. I understand that I can
withdraw at any time without penalty. I have read the letter provided to me by Edison Osorio and agree to participate in an interview for the purposes described.

Signature: ______________________________________

Name (printed): ___________________________________

Date: ______________________
Appendix B: Interview Questions

Interview Questions

In interviewing teachers who have experience in integrating digital technologies into the Visual Arts classroom, I will ask the following questions:

Section 1: Background Information

1. What is your definition of digital media?
2. What grade(s) are you currently teaching?
3. How many years have you been teaching? What grades and subjects?
4. What prompted you to begin to integrate digital technologies into your classroom?
5. In your own educational background, did you have a teacher who integrated digital technologies into class activities, projects and assignments?
6. Have you read research articles about the integration of technology in the Visual Arts classroom? And if so, what have you learned from it?
7. Have you received any training to integrate digital technologies into the Visual Arts classroom?
8. How do you update your knowledge about the use of digital technologies in the Visual Art classroom?
Section 2: Classroom Practice

1. Can you tell me about the experiences you've had in your own Art classroom incorporating the use of digital technologies into the curriculum?

2. Can you give me an example of a lesson or unit you've taught that incorporated the use of digital technologies that you found to be successful? What do you think made it successful?

3. Can you tell me about one or two resources that you have used to incorporate digital technologies into your Visual Arts classroom?

4. What steps do you take when introducing your students to the idea of digital arts?

5. What do you believe students can gain from the integration of digital technologies into art-related class activities, projects and assignments?

6. How do your students respond to lessons and assignments that require them to incorporate digital technologies into their work?

7. What kind of feedback have you had from students, parents, colleagues or other community members regarding your practice of integrating digital technologies into the Visual Art classroom?

8. Have you faced any obstacles or challenges when integrating digital technologies into the Visual Arts classroom?
Section 3: Types of Technologies Involved

1. What are technologies that have been used by students in your Art class to complete learning activities?

2. What digital media do you feel best allow students to exercise self-expression? Why?

Section 4: Common Themes in Students’ Artistic Practice

1. What are the common themes that students choose to explore when using digital technologies to execute art-related projects?

2. What is the level of freedom given to your students when working with digital technologies to execute class activities or assignments?

Section 5: Context

1. What is the socioeconomic environment in which your instruction takes place?

2. How do the school mandate and mission help support your practice as a teacher who integrates technology in the Arts curriculum?