COLLABORATION AND VIRTUAL LEARNING IN THE ART MUSEUM: A CASE STUDY OF THE ONLINE HIGH SCHOOL ART COURSES DEVELOPED BY THE NORTH CAROLINA MUSEUM OF ART AND NORTH CAROLINA VIRTUAL PUBLIC SCHOOL

By

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Abstract

For my capstone project, I examined the five online fine art courses offered through the North Carolina Virtual Public School to high school students that were developed by the North Carolina Museum of Art and North Carolina Virtual Public School. The focus of the research includes the initiation, development and implementation of the courses. Information was collected through semi-structured interviews and document analysis, and assembled to create an account of why and how the North Carolina Museum of Art chose to partner with the North Carolina Virtual Public School to create courses that cater exclusively to online high school students of North Carolina. Findings include a look at the demographics and level of outreach,
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sustainability, and the importance of collaboration in the development process. I also created an online publication through ISSUU that serves as a concise visual representation of findings to be used as a resource for museum educators that can be found at:

http://issuu.com/kericson/docs/capstone. My capstone paper describes my research process, findings, and recommendations. First I discuss the body of literature that exists that is relevant to school and museum partnerships and examines the history of distance education. Next, I describe my methodology and the resulting information from interviews with course developers that comprise the case study. Finally, I share my findings and recommendations. I conclude this capstone paper with insights concerning the museum’s decision to cater to a smaller audience with their specific online learning experience.
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Introduction

I have a long-held interest in art education environments outside of the traditional K-12 system, particularly in art museums. I reside in North Carolina where there are a plethora of visual and performing arts organizations throughout the state, as well as a state Department of Cultural Resources. The North Carolina Museum of Art is a public, state-owned art museum, with an extensive collection and a mission to connect and cater to a statewide audience. Having knowledge of the programs for teachers offered by the North Carolina Museum of Art (NCMA) I often look through their resources and collection online when I cannot explore the gallery spaces in person. When looking through their educational programs I came across a web page devoted to online courses that were being offered exclusively to high school students for academic credit across the state of North Carolina- courses that were designed by the museum in collaboration with the North Carolina Virtual Public School (NCVPS).

I am intrigued at the thought of online studio art courses. Online art courses may seem to be counter-intuitive for artists who rely so heavily on the physicality of art making and the courses can raise a lot of questions on how they are actually executed. The courses designed by the North Carolina Museum of Art and North Carolina Virtual Public School utilize digital media and digital production, and handcrafted work, the courses sometimes functioning like a traditional studio art course.

My research examines the initiation and goals of the online art courses. I wanted to know why the North Carolina Museum of Art was designing studio courses specifically for high school students at a time when large art museums like the Museum of Modern Art in New York City were designing Massive Open Online Courses (MOOCs) or other mass educational courses in subjects like art history, art theory, or art appreciation. As an online graduate student through the
University of Florida, I realize and easily acknowledge the high level of commitment and autonomy needed to be successful in an online course. There isn’t a required classroom to attend at a certain time, suddenly class takes place on your couch or a desk in your bedroom and there is no designated time to meet with similarly interested individuals to learn. There rarely a face-to-face relationship with your instructor or classmates, and every aspect of your education is truly dependent on your own initiative.

My graduate experience is not my first with online learning. I did attempt to take an online Advanced Placement Art History course through North Carolina Virtual Public School in fall of 2007, but even as a high school senior with an otherwise successful academic record, I lacked the self-discipline to succeed in the course and dropped it after three weeks. North Carolina Virtual Public School was still a new concept, and my high school personnel provided little support for students taking online courses at the time. Online classes were the complete responsibility of the student, often taken on top of an already full class schedule and extra-curricular activities. It took a substantial amount of devotion and work to complete an online course in high school, let alone succeed in one.

The online courses designed by the North Carolina Museum of Art and the North Carolina Virtual Public School are not a one-day workshop, or an event where one can passively observe. Students need to actively participate and complete real assignments that will be graded for an entire semester. For the courses to be successful it requires a lot of work for everyone involved, the students, museum, and teachers.
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Research Questions

Online courses such as those described above are a unique approach for both museum outreach and art education course development. In order to fully understand how the online courses function, it is important to understand how they were designed, and the roles the NCMA and NCVPS played during the design and implementation of these courses. I have conducted a case study that will specifically address the following questions:

1. Why were the online courses initiated?
2. How were the courses developed, and who developed the courses?
3. How were the courses implemented and how do they currently function?

By conducting interviews, collecting and analyzing relevant program materials and related documents, I was able to better understand how the collaboration of North Carolina Museum of Art and North Carolina Virtual Public School has resulted in new art course options for the students in North Carolina.

Rationale and Significance of the Study

The study provides information about the online courses developed by the North Carolina Museum of Art and North Carolina Virtual Public Schools. This information was intended to highlight the causes and processes that resulted in specially designed online courses for high school students in North Carolina. North Carolina Museum of Art and North Carolina Virtual Public School have combined their skills and knowledge to create online courses that did not previously exist in this specific format. An understanding of how these courses were developed and how they currently function can be integral in inspiring museum educators to be open to new challenges and collaborations, and allow them to consider how the relationship between
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museums and classrooms could be extended into a symbiotic digital learning environment as a form of outreach.

These courses are a way for the museum to reach out to teenagers, who have been a notoriously difficult age group to draw into a museum (M. Harrell, personal communication, February 2, 2014), and provide an active demonstration of advocacy of the role of art in education. This study is meant to inform art museum educators and illustrate how they can take a more active role in widespread arts education programming and advocacy through collaboration and partnerships in their state. In the past, brick and mortar locations confined museum outreach programs, but with the growing utilization of online distance education, museum educators are able to share museum resources with those who may not be able to visit regularly. Teenagers have been a challenging group to draw into a museum, but when a museum can become a part of their everyday experience, a place they can identify with, and a place integrated into their personal reality – it can reach them no matter where they live.

Assumptions

I believe the online courses have the potential to be a positive initiative for the art museum as well as the public school system of North Carolina. Two state institutions are working together to create something that will directly benefit the students, and contribute to the growth of an interest in the arts of North Carolina. The online courses aim to not only engage North Carolina teenagers with the museum, but to fill a perceived gap in art education that exists in North Carolina public schools. Many schools in the state offer Visual Art I through Visual Art IV that focus on fine arts and traditional mediums, but few offer courses that focus specifically on newer art and design practices like designing video games or fashion. These courses could be
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a way for museums to engage teens from their own computers with the collection, art making, and art history.

Limitations

The purpose of the case study is to examine how the North Carolina Museum of Art and North Carolina Virtual Public School created the online art courses. During my study I did not interact with past or participating students, witness the course in action, or examine their work directly. My study will not concentrate on the growth of arts education, or how this program can specifically be implemented at other museums; however, I hope the results might give other museum educators a sense of the possibilities.

Definition of Terms

The following are terms that the reader may be unfamiliar with that will appear throughout this case study:

**Synchronous:** a reference to the delivery style of online learning courses that requires students and instructors to meet online simultaneously in real time, either through video conferencing, instant messaging, posting on an active message board, application sharing or audio conferencing (Hawley, McCormick & Welch, 2013, p. 6).

**Asynchronous:** a reference to the delivery style of online learning courses where students and instructors do not interact simultaneously, it can include “print materials, discussion boards, web logs (blogs), email, recorded and streaming video, narrated slideshows, databases, web books, surveys or polls, shared calendars, and web site links” (Hawley et al., 2013, p. 6).

**Google Docs:** A web-based office suite that offers uses the ability to create and edit word documents, spreadsheets, and presentations online. Collaborators may also work online on the
same document at the same time from a different location. All changes and edits made are visible to all with whom the document is shared.

**Learning Management System (LMS):** A software application that allows users to implement e-learning educational courses or training programs and administer, document, track and report data that are necessary operational components for the online courses.

**MOOC:** Massive Open Online Course, an online course usually hosted by a college, university, or museum, that contains no limitations on the number of participants allowed to enroll, and is free to students. MOOCs provide the student with traditional online learning materials such as videos, recorded lectures, and readings, as well as interactive use forums.

**Literature Review**

The North Carolina Museum of Art has recently designed five online courses in partnership with the North Carolina Virtual Public School that are available for all high school students in the state of North Carolina to take for academic credit. To aid in the analysis of the program, I examined selected research and literature that looks at the history and growth of online learning in the US, the development of an online curricula, and studies the relationship between museums and the standard K-12 classroom in art education.

It is important when examining a new model for collaboration and teaching to be familiar with the history of the subject, so that one can understand when changes were put into place. Looking at what has been studied concerning distance education, and its utilization by schools and museums alike is integral to understanding their success. Crow and Din (2010) address an online presence for museums specifically and the needs they can fill educationally through utilizing online resources. They encourage museums to “consider the potential that online learning can offer as a means to expand, rather than diminish, the museum’s place in society,
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locally and globally” (Crow & Din, 2010, p. 172). Similarly, Kotecki (2013) suggests museums have a potential to truly succeed in distance learning if they are willing to embrace it.

The articles I selected are not only grounded in distance learning technology and educational methods associated with distance learning, but also how the two have joined together to create a unique class experience. This literature review is intended to inform the reader of existing methods and examples, so that one can understand the differences and similarities of the program created by the unique partnership between the North Carolina Museum of Art and North Carolina Virtual Public School. To a lesser extent, my examination of the literature will aid in the familiarization of the history and dramatic growth of distance learning, and how its projected growth will only enable more educational opportunities within both K-12 art education and museums.

Introduction to Distance Learning

Distance learning has been taking place in some form or another for well over a century. Sumner (2000) breaks distance learning down into three forms, or in her terms, generations. The first generation is known as correspondence study and consists primarily of “print-based course materials and the postal service” (Sumner, 2000, p. 273). The second generation, or multimedia distance education combined “…the use of print with broadcast media, cassettes, and – to some degree- computers” (Sumner, 2000, p. 276). The third generation, which people today are most familiar with, is computer-mediated distance education. Computer-mediated distance education is the most widely used currently, but Sumner enforces “this third generation of distance education carries the potential for building the lifeworld through communicative action, it is in its infancy, with many choices and opportunities, and many uncertainties” (Sumner, 2000, p. 278). However, I would note that in the fourteen years since Sumner’s article was published
there has been significant growth in educational technology programs and delivery methods, as computers have become smaller, faster, cheaper, and therefore, more widely accessible. Computer technology is less of a limitation than it was even a decade ago, and people have less hesitancies about learning online than previously.

In third generation distance learning, courses have been broken down even further into smaller categories to distinguish them from one another (Hawley, McCormick & Welch, 2013). When describing an online course, various methods of instruction Sumner (2000) identified overlap with regard to delivery methods and participation levels of the students and instructors. A course can be described as *asynchronous* which can be described as “an interactive process between teacher and student that does not occur simultaneously, can include print materials, discussion boards, web logs (blogs), email, recorded and streaming video, narrated slideshows, databases, web books, surveys or polls, shared calendars, and web site links” (Hawley et al., 2013, p. 6). Alternately, a course may be described as *synchronous*, or an “interactive process between teacher and student that occurs simultaneously” this can include “conferencing via audio, video or the web; real-time chat via an Internet or mobile connection; and instant messaging, white boarding, and application sharing” (Hawley et al., 2013, p. 6).

Courses can also be classified based on the types of participation they require. For example, *technology-enhanced* courses are defined as: “Classes [that] meet primarily face-to-face, but there are online components that allow for continuous interaction” (Din & Crow, 2009, p. 2). In contrast, *hybrid* courses “…combine online interaction with some face-to-face interaction” (Din & Crow, 2009, p. 2). Fully *technology-based* courses, which are becoming more and more popular amongst educational institutions, are classified as “… educational
experiences [that] occur entirely online, and participants may never meet face-to-face” (Din & Crow, 2009, p. 2).

Other Considerations about Distance Learning

With the increasing ease of Internet access over the last two decades, educational institutions have used this seemingly boundless resource as a method for delivering educational materials (Courcier, Lindsey, Karakas, Rademacher, & Wohlpart, 2006). There has been tremendous growth in the field of distance education, now being utilized by universities, secondary schools, museums, and other educational institutions (Courcier, et al., 2006). Authors such as Sumner (2000), and Aubusson, Burden, Kearney and Shuck (2012) briefly examine the history of the content of online courses and the methods in which they were taught. The development of online education has changed rapidly as technology has evolved and methods of interacting and communicating through distance learning have become more readily available and easier to integrate.

Originally most courses were designed asynchronously, where students were presented with material to learn, and were assessed on their knowledge via quiz, test, or some other traditional form of assessment. The first studies of online learning were broad, and not generally subject specific, but they implied that the courses being covered were more academically based, and not interactive or studio-based. Courses in subjects such as history, math, and computer sciences were common in early online education. With advancements in technology subjects that were previously thought too problematic to teach online, such as studio art courses are now considered possible and easier for online educators to provide (Courcier, Lindsey, Karakas, Rademacher & Wohlpart, 2006).
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Writings about the history of distance education leave much to be desired, and can date themselves quite easily due to the rapid nature of the growth in the field. Moreover, online distance education is not without its critics. Some scholars and educators have voiced a concern over the growth of online courses eventually diminishing the role of the educator and offering a product less desired than that of face-to-face methods of traditional educational institutions (Hunkins & Ornstein, 1998) (Sumner, 2000). Critics question how learning this way could change educational viewpoints, claiming that we will be “forced to ask ourselves how technology will affect our learning environments both within and outside the school” (Hunkins & Ornstein, 1998, p. 167). This is an important question to ask, but many people recognize that electronic technologies play such a large role in everyday life; it is necessary to make use of these new technologies part of the educational system (Hunkins & Ornstein, 1998).

Assessment of educational quality and learning by students in online distance education is still a major concern. However, educational institutions are rapidly utilizing online distance learning to help cut costs and reach further audiences (Courcier, et al., 2006). By not having to rely on brick-and-mortar locations, those institutions offering the courses can extend their reach to students who live far away and could not engage otherwise with the educational institutions, such as museums, on a regular basis. Depending on the methods of delivery, online distance learning can provide cheaper routes for students and educational institutions alike. These institutions do not have to pay for a physical location, utilities, or custodial services for online courses. The thought being, if the hypothetical institution does not have to cover the aforementioned costs it can potentially offer the course for a lower fee than traditional courses.
Schools and Museums: Partners in Distance Learning

An unintended benefit of the growing popularity of online distance education is the increase in the variety of partnerships available, specifically between schools and museums (Kotecki, 2013). Schools can utilize museum collections that have been digitized, museum educators can provide pre-designed lessons based on collection pieces for educators, and having students and educators research museum catalogues and information prior to field trips, or even experience digital field trips from their classrooms (Cates & Varisco, 2005).

Schools and museums both exist as educational institutions yet they traditionally approach art education differently: According to Berry (1998) “…in schools, facts and concepts are usually presented sequentially, through verbal communication, and in a structured way. In museum learning, objects from the basis of the less-structured process, which engages the learner’s own interests, ideas and experiences” (p. 9). Berry remarks on partnerships between museums and schools that existed outside of the digital world, which have become the foundation on which these new partnerships are beginning to emerge. With the aid of technology, and in the case of the North Carolina Museum of Art and the North Carolina Virtual Public School, educators can collaborate to create course materials, drawing on the strengths and assets of both institutions.

Using technology to collaborate and develop a stronger curriculum, museums and schools are strengthening their relationships and partnerships in art education. “Learning takes time, contact with and input from others, realistic activities, and support” (Shank, 2007, p. 1). Obviously when collaborations do occur they may not always the easiest relationships to maintain, and do require work. Berry observes, “Most problems centered on time and money. Shortages of time for planning and communication between partners as well as for overseeing
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and assessing programs were cited frequently” (1998, p. 14). These kinds of problems are important to consider when one is attempting to forge a partnership with another educational institution. Funding is often a large hurdle to overcome when developing new programs in the arts where funding always seems to be scarce. Participants often find that demands of their jobs put constraints on their time for collaboration and planning. Evaluating the quality of programs, once developed and implemented, is additional work needed but for which there is little time or funding, given the limited resources of many organizations (Berry, 1998).

Implication of Literature to the Case Study

Understanding how online art education functions is important as our world becomes more wired. Examining relationships between schools and museums can contribute to the question of why the partnership between North Carolina Museum of Art and North Carolina Virtual Public School was initiated and how it may successfully reach its aims. As previously mentioned, collaborations can be cumbersome and difficult to initiate. A study sponsored by the Crystal Bridges Museum of American Art notes that “Museums may prioritize connections with and understanding of their art, while some classroom teachers may expect the art to serve more as a glorified visual aid to content instruction” (Hawley et al., 2013, p. 33). These differences were present between the museum and teachers initially, yet they managed to utilize the professional learning community methods to establish a field of equality and attempt to come to the partnership free from preconceived notions about art education (Personal Communication, Michelle Harrell, 11/07/13).

The resources studied for this review were selected in order to gain a perspective on the basic history of online learning technology, school/museum relationships, and developing online courses in art education, resulting in a deeper understanding of the field and how the online art
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courses offered through the North Carolina Virtual Public School in conjunction with the North Carolina Museum of Art actually work. There is little existing literature to refer to that deals explicitly with museum distance education initiatives, and the case study will add a much-needed contribution to this topic.

**Methodology**

The research I conducted for this capstone project comprises a case study of the North Carolina Museum of Art and the North Carolina Virtual Public Schools in their joint project of offering five new online art courses to North Carolina high school students. In this particular instance, the best methods for data collection were through interviews and document analysis. The semi-structured interviews by definition consisted mostly of open-ended questions, which allowed for interviewer feedback, and topics outside of the line of questioning were introduced if they were relevant (Grindsted, 2005, p. 1017). Through the interviews it was learned why these courses were created, how they were created, what the goals and content of the courses are, who enrolls in these courses, and how the courses now function as part of the North Carolina Virtual Public School. Document analysis allowed me to have concrete examples of collaboration, enrollment, and course materials.

**Subjects**

This study consisted of interviews with three museum educators from the North Carolina Museum of Art, one educator from Crystal Bridges Museum of American Art, and the Art Department Chair from North Carolina Virtual Public School. The online courses were developed over five years, and multiple staff members at the museum were responsible for the courses at various stages of implementation and development. All of the participants were female, mid-career professionals and all had worked with online art courses for an extended
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period of time. Interviews were conducted with key players, and other early developers and participants that may currently have less of a hands-on role in the program. The interviews took place between January 6, 2014, and March 28, 2014.

**Research Site**

While conducting all interviews in person would have been ideal, it proved impractical and some of the interviews had to be conducted through alternative methods. The museum was my central focus; a total of five interviews were conducted, three of which were with North Carolina Museum of Art educators. The initial interview with the Teen and College Programs Coordinator, Michelle Harrell, took place in the West Wing of the North Carolina Museum of Art; and follow-up questions were asked through email. The Teacher Programs Coordinator, one of the initiators of the online courses was interviewed at the North Carolina Museum of Art in the East Wing, in one of the art education studios. The interview with the North Carolina Virtual Public School Art Department Chair, Deb Pylypiw, was conducted via email. The interview with the Associate Coordinator of Teen and College Programs at the North Carolina Museum of Art and the interview with the Distance Project Manager at Crystal Bridges Museum of American Art were both conducted over the phone. Any follow up questions were conducted through email.

**Data Collection Procedures and Instrumentation**

As stated above, interviews were an integral part of collecting information on the design of the online courses. Through interviews that “…can provide rich and in-depth information about the experiences of individuals…” (DiCicco-Bloom & Crabtree, 2006), access was gained to information about the process that would otherwise remain unavailable to those outside of the original development team. It was imperative to understand the nature, focus, and content of the
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courses, and why the Museum initiated the partnership and the online courses with North Carolina Virtual Public School. The beauty of the semi-structured interview is that the interviewer is able to introduce new questions based off of the interviewee’s responses. Some of these questions included: Was the museum trying to fulfill a need in public education that was not being met? Why did this gap exist? Who initially proposed the courses? Who applied for the grants to fund their planning and implementation?

The results of the collaboration, and how the courses functioned were examined. What role do the instructors play? How to the students participate? Are the courses synchronous or asynchronous? In answering these aforementioned questions, it is important to keep in mind the significance of the interview and to acknowledge, “There really is no substitute for face-to-face communication…” (Guion, Diehl, & McDonald, 2011, p. 3) when it comes to analyzing process and product of a group.

In investigating how the courses were developed, the research was broken down into two main areas of interest: understanding the partnership between the North Carolina Museum of Art and North Carolina Virtual Public School, and examining how that partnership facilitated the design and contents of the curriculum for the online art course offerings. These two concerns required a deeper inspection into the process of how the courses were actually created. To aid in document analysis, GoogleDoc documents were provided that housed the Game Design curriculum that noted all changes made to the content by museum educators, NCVPS teachers, and other evaluators, accompanied by the initials of the individual who made the recommended changes. These documents allowed me to explore the course materials and examine the collaborative process of creating and revising the course content with the original documents. The heuristic evaluation report was provided and assessed for the Fashion Design course, and the
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North Carolina Virtual Public School Annual 2012-2013 Report was reviewed to gather information on demographics, pass rates, enrollment information, and the general operations of the public school. These materials provided concrete numbers and data, which was useful in the examination of the online courses.

**Data Analysis Procedures**

The interviews with the North Carolina Museum of Art and North Carolina Virtual Public School were audio-recorded when possible, and transcribed afterwards. With those that were not able to be audio-recorded, the participant’s answers were written in shorthand while the interviews were being conducted. “Written notes include observations of both verbal and non-verbal behaviors as they occur, and immediate personal reflections about the interview” (Guion, Diehl & McDonald, 2011, p. 1). The transcribed conversation and the notes taken during the interview were used to create a chronological history of the program and development of the courses, as well as a measure of consistency in views amongst participants. Once transcribed, and analyzed, useable information was subjected to member checking (Foster, 2004) to allow for the participants to elaborate where they feel is necessary, and ensure the program was represented accurately. Triangulation with “respondent or member validation” (Rothbauer, 2008, p. 894) was utilized for interview, document, and demographic analysis. Triangulation aided in remedying any possible discrepancies in the interpretation of the resources.

In addition to conducting and analyzing interviews with key participants, important documents were reviewed including: syllabi, promotional program materials, lessons and the teaching materials of the courses. The document analysis was primarily through GoogleDocs access and publicly accessible materials. The documents were reviewed, and correlated with the process described during the interviews.
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Findings

This case study examined online high school art courses created by the North Carolina Museum of Art and North Carolina Virtual Public School. In my research my findings included how the courses were initiated, how they were funded, the collaborative development, including the Think Tanks, Power Standards, and assessment of the courses; and finally, how the course materials themselves are structured and delivered.

The Initiation and Funding of the Online Art Courses

The North Carolina Museum of Art and the North Carolina Virtual Public School are both institutions operating under the North Carolina state government. Funding is often tight, and many state projects are notorious for taking a long time to complete. The museum and virtual school decided to collaborate to create these courses in five years, and asked a great deal from both institutions.

The North Carolina Museum of Art educators noted a gap in the attendance and programs catering specifically to the teenage audience of North Carolina. As a state-funded museum, it is part of the museum’s mission to provide educational programming and access to the museum to a statewide audience. North Carolina is over five hundred miles across, and the museum educators had a very specific challenge ahead of them. Noting the growth of online learning and success of the North Carolina Virtual Public School since its implementation in 2007, the North Carolina Museum of Art educators felt it would be a natural fit for their specific needs (C. Tewell, personal communication, March 6, 2014). Research into similar museum online learning initiatives was minimal. At the time, Massive Open Online Courses or MOOCs were not yet being utilized, and creating online learning experiences was still a new frontier for many museums. There were no existing online learning programs to observe that were designed by a
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museum that were similar to what the North Carolina Museum of Art was trying to accomplish. The museum chose to partner with another state institution to not only fill a gap in public arts education but to cater to a statewide audience of teenagers who may not be able to attend the museum on their own due to transportation, distance, or finances.

Examining the Wells Fargo Grant

For the North Carolina Museum of Art and North Carolina Virtual Public School, taking on a project this large required substantial financial resources. The online art courses and supplemental programs were funded through a five-year, $5 million grant. The grant was originally provided by Wachovia, a North Carolina based banking and finance corporation, which has since been acquired and absorbed by Wells Fargo, another financial corporation. The grant is referred to presently as the Wells Fargo grant. The original goals of the grant were to increase the teen audience for the museum, aid the museum in its goals of serving a statewide audience, and allowing the North Carolina Museum of Art to build upon the success of North Carolina Virtual Public School.

The North Carolina Museum of Art does not charge students to take an online course, and the museum’s galleries that house the permanent collection are free of charge to the public. The museum relies on grant funding to sustain and grow the online courses. Any money paid to North Carolina Virtual Public School by home schooled, privately educated, or out-of-state students, does not go towards the museum’s costs, but rather toward NCVPS costs for educators, administrators, multiple Learning Management Systems, and course development.

The grant provided approximately $200,000 per year to fund the courses and related programs. The North Carolina Museum of Art educators also received an additional $50,000 a year from endowments, small gifts, and occasional funding from exhibitions that was used in
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course development and evaluation. The $1 million per year provided a salary for three full-time staff members, a small compensation for the advisory panel and Think Tank members, and contract employees responsible for designing graphics, video production, and additional course writing. The money is also used to cover revisions done by North Carolina Virtual Public School Teachers and the North Carolina Museum of Art staff. Heuristic evaluations were performed by an external company, and were also included in the grant budget. The heuristic evaluations offered feedback on how well the courses were meeting standards and how they could best reach their goals, and revisions were made accordingly.

Collaborative Curriculum Development

Collaborations are never easy and if it is a long-term collaboration between two large state institutions, it takes a lot of work to maintain a healthy and mutually beneficial relationship. The collaboration between the North Carolina Museum of Art and North Carolina Virtual Public School is now effective and beneficial, but that doesn’t mean it was without the occasional struggle in the beginning. Since the partnership is necessary for the courses to continue, any problems were diagnosed, addressed and remedied.

During the first year of the collaboration the North Carolina Museum of Art had four separate project managers who were responsible for the courses within a six-month period through a series of unforeseen events. Each new individual had to learn what had already been covered and established by their predecessor and what still had to be done. It began to cause a strained relationship between the two organizations during this crucial time of development. A solution to mend and rebuild the relationship and communication pathways was to designate a liaison that had the primary responsibility of creating an atmosphere of transparency and trust between the two organizations. The current Teen and College Programs Coordinator has since
assumed the role of the liaison for the museum and the Art Department Chair is the liaison for North Carolina Virtual Public School. Michelle Harrell recalls that, “Passing it off and sometimes not being responsive, you lose a sense of trust and collaboration very early on” (M. Harrell, personal communication, February 2, 2014). Following the initiation of a solution, the collaboration has since been successful. Communication and transparency in the design process are ultimately what have contributed to the unique product. Currently the North Carolina Museum of Art Teen and College Programs Coordinator, and the North Carolina Virtual Public School Art Department Chair serve as representatives of their institutions. When asked how communication remains open Michelle said: “I am careful that I loop her into conversations with North Carolina Virtual Public School and vice versa. That’s building that sense of trust that we share this project from beginning to end” (M. Harrell, personal communication, February, 2, 2014).

The collaboration relied heavily on the North Carolina Museum of Art’s resources, North Carolina Virtual Public School’s technology and students, and on North Carolina art teachers. Aside from maintaining a reliable means of open communication, current museum educators involved in the online courses note how the collaboration helped the online courses remain rigorous, yet realistic in their goals. For example, some of the original coursework was challenging to the point of being too advanced for the high school audience, like *The Art of Persuasion* that has since been redesigned to the *Art of Advertising*. The *Art of Persuasion* originally was so lofty, integrative and interdisciplinary, that it became impractical and confusing for students, and there was a struggle to find any type of course equivalency in the North Carolina Public School System. The course readings and goals were demanding and the material was suited more for an advanced college course.
Utilizing Think Tanks

Inspired in part by the North Carolina Virtual Public School’s electronic Learning Communities, which utilize NCVPS’s teachers as revisers on course curriculum, the museum and virtual school established think tanks and a professional learning community to devise the new curricula.

At NCVPS, our PLCs are actually called eLCs (electronic Learning Communities). These are composed of teachers teaching like courses. They work together to revise courses and to discuss ways of improving courses. The PLC idea convinced me and Michelle to explore the use of Think Tanks to develop courses (D. Pylypiw, personal communication, February 12, 2014)

The Think Tanks and professional learning communities were a way for the museum to learn from virtual educators, who had practical first-hand knowledge of what projects or methods worked well in a virtual classroom, and what aspects of the course students may struggle with. Teachers are now an integral part of the revision process. The museum and North Carolina Virtual Public School host the course curriculums in GoogleDocs, and all revisions can be seen and altered by all participating members, maintaining transparent communication amongst all of the collaborators.

When prompted with the questions: What skills are required to be a game designer? Where do fashion designers get their inspiration? Which artworks really connect with an Advertising curriculum? The North Carolina Museum of Art museum educators felt the best way to answer these questions was to bring in the experts. Think Tanks usually consisted of museum representatives, working professionals in the field, professors, and classroom teachers. The Teen
Collaboration and Virtual Learning in the Art Museum

and College Programs Coordinator invited these individuals to the museum; and selected participants who expressed interest and whom she felt would be invested in the project. They had to be techie people or quick learners. Some of the museum people or college professors had never used GoogleDocs before coming in. Deb pulled some of her teachers; we always had current teachers in NCVPS. We could have brought in more experts in the field – but we didn’t want them to come in share their knowledge and walk out of the room. We wanted game designers and fashion designers who would stay there from the beginning until the end. (M. Harrell, personal communication, February 2, 2014)

Recruitment and scouting for participants began six to nine months prior to a meeting date. Part of the process of finding them is getting them to write a bio. I would start gathering the think-tank 6-9 months prior to the think-tank. I might start off just talking over coffee or lunch and not even mention that they could be involved in the think-tank, just to get a feel of their ideas. They had to have some connection with the field – some prior knowledge. (M. Harrell, personal communication, February 2, 2014)

Think tanks usually lasted multiple days, and included presentations from participants, curators, educators, and interns. Sorting through large amounts of information and materials, participants were given the challenge of deciding what information was considered the most important and most relevant. They were asked to strip down all of the information they had into concise and basic terms, attempting to answer the question: “What are the most important things someone should learn about this topic?”

Each of the five online courses utilized a Think Tank during the early stages of curriculum planning. The Think Tank consisted of a group of experts selected to provide advice
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and ideas for a specific online art course. The Think Tanks, as well as the advisory panel, were put into place as the North Carolina Museum of Art and North Carolina Virtual Public School’s interpretation of a Professional Learning Community. This community of professionals helped ensure the course goals and materials were well informed and offered legitimate experiences that would allow the students to gain practical 21st century skills.

Another aspect of the Think Tank model included selecting which works of art in the museum’s collection would be used for reference in the courses. A museum intern would select sixty to eighty works of art from the museum’s collection that may relate to the topic for the Think Tank to examine. Photographs of the works of art would be printed out, laminated, and hung on a dry erase board with magnets so that all members of the Think Tank could see the images and assess them accordingly. The Think Tank would eventually match works of art with the key concepts for the course that would be covered in each module. The North Carolina Museum of Art highly valued and utilized their interns to aid in the production of materials for the online courses as well as the think tanks.

I had that intern develop a review of literature of every game design course that was in existence, any approach to gamifying education looking at the curriculum of game design courses, and they developed a review of literature that was less like research and more of writing a synopsis of what these resources could provide for us and we brought that into the think-tank. That intern was crucial. They had a specialized knowledge that I was not able to devote the amount of time and work to the specific subject. For 3 courses we were able to fund those interns on a small scale and contracted them afterwards. (M. Harrell, personal communication, February 2, 2014)
The intern would be present at the Think Tank, and would occasionally present their research along with the other experts. All of the information provided by the intern, museum, teachers, and experts was made available to the Think Tank, and then sorted through using the Power Standards.

**The Power Standards**

The Power Standards were put into practice after the construction of the first online course, *Videography with a Renaissance Twist*. The Power Standards were pioneered and developed by Douglas B. Reeves, Ph.D. and Larry Ainsworth as an applicable process that any school district in the country could adapt and formulate their own criteria. Power Standards are meant to help teachers sift through the large amount of content required for the average course, is that it is not practical for teachers to cover every academic standard during an academic year, and therefore the most essential material must be identified and streamlined. The Power Standards focus on:

**Endurance**: standards that focus on knowledge and skills that will be relevant throughout a student’s lifetime (Ainsworth, L. 2003, p.15).

**Leverage**: standards that focus on knowledge and skills used in multiple academic disciplines (Ainsworth, L. 2003, p.15).

**Readiness for the next level of learning**: standards that focus on the knowledge and skills necessary for students to succeed in the next grade level or the next sequential course in an academic subject (Ainsworth, L. 2003, p.15).

These key categories allow information to be streamlined, broken down into the essentials, they provided guidelines to the educators who designed the courses and think tank members as they decided what information should be included in the five courses. The Power Standards are a
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method for the prioritization of material and determine the most important information for the purpose of curriculum design. So many different concepts and so much information could have gone into the courses, but in an attempt to keep the most important information at the forefront of course design, the North Carolina Museum of Art Teen and College Programs Coordinator and North Carolina Virtual Public School Art Department Chair used the Power Standards and North Carolina Essential Standards as guidelines for designing and designating content for the online courses.

We decided very quickly at the first Think Tank that there was so much you could learn about game design there is so much they could learn about each of these artworks that we had to scale back and say, You’re not going to learn everything, What are the most essential things that you want these students to walk out knowing after 18 weeks and have a meaningful understanding of. And that is why it guided that experience because it was such a hybrid of different fields art history, making art, career readiness – just understanding what it takes to be a successful game designer and all of those life skills that are part of the 21st century framework that have influenced this course not only about game design, but the field of game design. (M. Harrell, personal communication, February 2, 2014)

Combining topics like art history, studio art, career readiness, and 21st century life-skills created content rich courses, and the Power Standards served as the method for sifting through that content and emerging with what was deemed the most essential for the student to know after an eighteen week course and provide the student with the most relevant information.
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**How the Courses are Evaluated and Assessed**

Once the curriculum was composed it had to be assessed. Evaluations of content and accessibility of the courses were a major component in how the final versions of the online art courses are now presented to the students. Museum educators, North Carolina Virtual Public School teachers, and contracted evaluators all play a role in the evaluations of the courses; and many of the courses are still being evaluated and are considered a work in progress (E. Kotecki, personal communication, March 3, 2014). Teachers have been an integral part of the evaluative and revision process. North Carolina Virtual Public School requires that their teachers complete professional learning and development hours every summer, and a few NCVPS art instructors have used their professional learning time to contribute to the revisions of the online art courses.

Right now I have teachers who are revising 2 courses (Videography and Game Design) that they wanted to revise completely on their own, I couldn’t pay them but they are using their professional learning time that NCVPS requires of them to study or revise something (M. Harrell, personal communication, February 2, 2014).

Evaluations were done both in house by the museum and through an outside contractor. The contracted evaluator conducted heuristic evaluations, provided recommendations based on the usability of the courses, and assessed how well the assignments meet the goals of the course. Heuristic evaluations assess a project against a checklist of known criteria, but cannot measure the extent to which the outcomes are actually achieved by students (Cherry, Koepfler, 2013 p. 2).

Evaluation of the courses was primarily conducted and initiated by the North Carolina Museum of Art. North Carolina Virtual Public School requires instructors to complete professional development hours where they have the option of revising courses that they teach, but as the Art Department Chair states, “Our only assessment is through pass rates” (D. Pylypiw, personal
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communication, February 12, 2014). The museum educators established goals for the course, and along with teachers, and contracted evaluators were responsible for carrying out multiple assessments of the materials, so that the final product would provide a successful learning experience. The courses were assessed using North Carolina’s Essential Standards for Visual Arts Intermediate Level courses, 21st Century Thinking Skills determined by the Partnership for 21st Century Skills Framework, Art Connections, and the United States Distance Learning Association criteria for online learning.

The Essential Standards were written using the Revised Bloom’s Taxonomy to help North Carolina schools better cater to the more complex thinking expected from contemporary graduates. The Art Education Essential Standards designated as goals for intermediate visual art courses are Visual Literacy, Contextual Relevancy and Critical Response. Visual Literacy asks that students be able to use the language of visual arts to communicate effectively, apply creative and critical thinking skills to artistic expression, and be able to create art using a variety of tools, media, and processes, safely and appropriately. Contextual Relevancy requires students understand the global, historical, societal and cultural contexts of the visual arts, and understand the interdisciplinary connections and life applications of the visual arts and to understand the interdisciplinary connections and life applications of the visual arts. Critical Response asks that students demonstrate critical analysis to generate responses to a variety of prompts. The standards serve as guidelines for educators in course development and evaluation.

The moniker 21st Century Thinking Skills can be quite broad but in the case of these online courses, 21st century skills were determined to include: Creativity and Innovation, Critical Thinking and Problem Solving, Communication and Collaboration, Information Literacy, Media
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Literacy, and Information and Communication Technology Literacy. Each category contains standards that must be met and displayed throughout the length of the course.

Art Connections were specifically established as evaluative criteria to measure the student’s awareness of the artwork and the North Carolina Museum of Art. The aim being for students to create artwork that establishes clear connections to the museum’s permanent collection. The United States Distance Learning Association criteria consists of three categories: Interactivity, Assessment, and Online Design or Course Organization. The USDLA standards are meant as a method for distance educators to evaluate their courses, and were utilized by the contracted evaluator after they were selected by the North Carolina Museum of Art.

These evaluations are the roadmap for our revision. We get feedback from the teachers and students, and we go in and do a database revision based off of UXR’s evaluation. It might be said this module is weakest for how it meets student centered learning for creative thought and we revise accordingly (M. Harrell, personal communication, February 2, 2014).

The evaluative criteria listed ensure that the course content meets high standards and is consistently meeting these standards. Multiple reviewers examine the materials and make suggestions that apply to either the content or practical application of the courses. This collaborative effort is carried over from the design phase, still maintaining a clear line of communication and working towards a common goal.
The Final Product: The Course Materials

Over the course of five years, five online art courses were developed, revised, evaluated by the North Carolina Museum of Art, and made available to high school students through the North Carolina Virtual Public School. The courses serve as a means for the museum to engage teenagers from all corners of North Carolina in locations outside of the museum’s brick-and-mortar location.

The learning management systems are one of the most important aspects of online learning since the LMS can determine the accessibility and usability of a course. North Carolina Virtual Public School utilizes both Moodle and Blackboard as the learning management systems for their online courses. Blackboard and Moodle have different capabilities and formats, and courses have been written and formatted to be used in either Learning Management System, although at this point they are primarily offered using Moodle. The studio art courses created by the North Carolina Museum of Art and North Carolina Virtual Public School are: Art of Videography, Art of Advertising, Art of Photography, Art of Game Design, and Art of Fashion. Every course has Visual Art I as a prerequisite, and is offered through North Carolina Virtual Public School’s Art Department. The courses are listed as Intermediate Art Courses, but do not take the place of courses offered such as Visual Art II or Visual Art III in the Public School system. Each course exists as a different studio experience for students, and aims to create authentic connections to artwork in the museum as well as the knowledge of practical application of fashion design, game design, photography, videography, and advertising. Figure 1 lists all of the descriptions of the courses exactly as they are provided in the North Carolina Virtual Public School catalogue.
<table>
<thead>
<tr>
<th>Course Name</th>
<th>Course Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Art of Videography</strong></td>
<td>In this class you will get hands-on experience developing, producing, and editing videos. You will work collaboratively and individually to hone your skill as a videographer, scriptwriter, director and storyteller. Drawing on inspiration from the collection at the North Carolina Museum of Art, you will also develop creative and critical thinking skills as you engage with influential works of art.</td>
</tr>
<tr>
<td><strong>Art of Advertising</strong></td>
<td>How does advertising influence our behavior? In this course, you will learn about creative concepts, visual design, psychology, and other advertising basics—all of which are important aspects in communicating a message and selling a product. Class projects include designing magazine and billboard ads, photography, product packaging, and a final project in which you create an ad campaign. Use this class to build your portfolio and learn persuasive skills that every ad designer should know.</td>
</tr>
<tr>
<td><strong>Art of Photography</strong></td>
<td>Explore digital photography techniques and learn to enhance your images with photo editing software in this studio-based class. Through weekly photography projects combined with critiques and class discussions, you will examine the technical aspects of your work and discuss your work in personal and meaningful ways. Course topics will include composition, the elements and principles of design, and art history.</td>
</tr>
<tr>
<td><strong>Art of Game Design</strong></td>
<td>This multimedia course teaches the basic elements of designing digital (video) games and non-digital (board/card) games. Using works of art from the North Carolina Museum of Art as catalysts for learning, you will explore game purpose and structure as well as character and story development. Other topics will include the history of games, games from around the world, and troubleshooting common obstacles in game design.</td>
</tr>
<tr>
<td><strong>Art of Fashion</strong></td>
<td>In this course, you will explore the artistic process of fashion design and learn how design concepts evolve over time. Drawing on inspiration from prehistoric to contemporary fashion and art, you will learn to plan and create your own fashion designs. You will be introduced to various types of patterns, fabrics, materials, and drawing techniques that will help you develop your vision as an emerging fashion designer.</td>
</tr>
</tbody>
</table>

Figure 1. 2014. Course Descriptions from the North Carolina Virtual Public School Catalogue
The courses all require students to be in possession of recent and reliable technology. It would be nearly impossible to take an online course and keep up with the required level of participation without it. Figure 2 lists the supplies required outside of the standard technology needed to participate in any of the regular online courses.

<table>
<thead>
<tr>
<th>Course Name</th>
<th>Required Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Art of Videography</td>
<td>+ A DV camcorder or flip cam &amp; firewire cable (IEEE 1394)/ USB cable&lt;br&gt;+ FireWire/USB port.&lt;br&gt;+ An external or internal hard drive&lt;br&gt;+ Space in a file on your school's server&lt;br&gt;+ Access to an editing program (Movie Maker, iMovie, Adobe Premiere Elements 8, Pinnacle Studio etc.)&lt;br&gt;+ Optional: Web Cam&lt;br&gt;+ Video Editing Software</td>
</tr>
<tr>
<td>Art of Advertising</td>
<td>+ Digital Camera or Scanner&lt;br&gt;+ Storage medium (16G or larger)&lt;br&gt;+ Microsoft Office Word and PowerPoint or Open Office&lt;br&gt;+ Firefox or Safari web browser&lt;br&gt;+ Graphic Design software: Adobe InDesign, MS Publisher, or SCRIBUS</td>
</tr>
<tr>
<td>Art of Photography</td>
<td>+ Storage medium (16G or larger)&lt;br&gt;+ Digital Camera or Scanner&lt;br&gt;+ Access to Microsoft Office Word &amp; PowerPoint, or open-source Open Office&lt;br&gt;+ Firefox&lt;br&gt;+ Adobe Photoshop or Photoshop Elements&lt;br&gt;+ Free, open source software such as GIMP&lt;br&gt;+ Graphic Design software: Adobe InDesign, MS Publisher, or SCRIBUS</td>
</tr>
<tr>
<td>Art of Game Design</td>
<td>+A reasonably recent computer or laptop with Internet access&lt;br&gt;+A storage medium such as 16G or larger memory cards, external hard drive and/or sufficient space on computer hard drive to save video files.</td>
</tr>
<tr>
<td>Art of Fashion</td>
<td>+A reasonably recent computer or laptop with Internet access&lt;br&gt;+A storage medium such as 16G or larger memory cards, external hard drive and/or sufficient space on hard drive to save video files.</td>
</tr>
</tbody>
</table>

Figure 2. 2014. Required Course Materials as listed in the NCVPS Catalogue
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The students who take the North Carolina Museum of Art’s online art courses face a unique challenges of interacting with classmates and teachers whom they may have never met in real life; and harnessing their own initiative to complete assigned readings, post responses, and images of their own work by the strict deadlines. So, after all of the work behind the scenes, what do the students actually see and experience when they are participating in an online visual arts course?

The online courses contain a blend of theory and practice. The goals were to create an integrative approach to learning, where students learned history, theory, made connections to existing works of art through the curriculum, and applied this knowledge to their artistic projects. The North Carolina Museum of Art Teen and College Programs Coordinator emphasizes, “It isn’t just art for art’s sake. We didn’t set out to just make studio courses. Making, creating and producing are powerful paths to deeper learning and understanding.” (M. Harrell, personal communication, February 2, 2014). The courses exist as studio classes, with art making being the main focus. As previously stated, the online courses also aim to effectively provide students with art skills that they can apply to a higher education program and a 21st century career. Theory, history, critical thinking and practical application are all emphasized throughout the courses, and the students must demonstrate their understanding of these connections and theories through their artwork.

Course Structure

Each course is broken up into modules, which focus on different aspects of the subject matter, and continuously build upon the information learned in the prior module. For example, in the Art of Game Design course each module contains six sections that contain artistic assignments, conversational assignments and readings. The six sections are: Preview, Explore,
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Connect, Create, Imagine, and Review. Preview usually lists what the students should know by the end of the module, and what will be covered in the succeeding sections. Explore offers the handouts, readings, and highlights the key techniques and concepts.

The Connect sections contain works of art from the North Carolina Museum of Art’s permanent collection that relate directly to the subject matter for the module. Create provides the student with their creative assignment, and where they must demonstrate their understandings of the connections present in the prior sections through art making. Imagine contains enrichment opportunities and extra-credit assignments. Students are also required to participate in several forums or blogs throughout the week by posting a response to a prompt, and then commenting on a minimum of two classmates’ posts. Student generated critiques and comments are required to use legitimate, useful language, and contain multiple sentences that can spark a discussion if the student is to receive credit for their work. The weeks for the course are scheduled to begin on Tuesdays and end on Monday of the following week. This schedule is purposefully different from a typical Monday through Friday school week. It attempts to accommodate students’ extra-curricular activities and jobs that they may be juggling along with their normal school day, and busy weekend schedule that may conflict with the amount of time required for the online course.

The courses each have a collaborative project where students from across the state work with one another collaboratively to create group projects. However, because of the unpredictability of student lives and schedules, the length of the collaborative project was recommended by teachers to be extended:

Each of those courses had a collaborative project that our evaluator says is the best thing about those courses, but the teachers say it is what gives them the most problems because you would have students who would just disappear for a week sometimes. So when it is
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collaborative it is so difficult. They are going to revise it to expand to 3-4 modules in the course. (M. Harrell, personal communication, February 2, 2014).

At this time, the courses are a blend of asynchronous and synchronous. They have mostly asynchronous elements that allow the students to take the course anywhere and at anytime. In general, the coursework can be completed any time of day, but the students do have Live Virtual Class sessions they must attend once weekly. Live Virtual Class Sessions are meetings lasting an average of thirty to forty-five minutes between the instructor and the class. Each session is recorded and made available for those students not able to attend, but the students are highly encouraged to be present.

The live weekly class sessions are used to further engage the students in the subject matter, inspire conversation, and provide the students with an opportunity to ask the instructor questions they may have. “Our visual arts department requires students to attend one live session in a virtual classroom per week. This session could be used to teach new techniques, for critiques, or discussion” (D. Pylypiw, personal communication, February 12, 2014). After the Live Virtual Class session, each student is required to write a weekly journal post that assesses their knowledge of the module through prompted questions, and provides another private opportunity for the student to engage with the instructor and ask questions. Journal entries are only visible to the instructor and individual student writing the post.

The courses are user friendly and aim to engage the students in the coursework and with their fellow classmates. By requiring interaction, the students are able to build relationships with one another through message boards, and engage in meaningful conversation about the module’s topic. The North Carolina Museum of Art and North Carolina Virtual Public School have created
a product that allows students to interact with the museum’s collection on an in-depth level and provide a high quality education in contemporary artistic practice.

**Summary Across Findings**

My goals in conducting this research were to better understand how the online program was initiated, how the courses were developed, who developed the courses, and how the courses were implemented. I explored why the courses were created, how they were funded, the collaborative process between North Carolina Museum of Art and North Carolina Virtual Public School, the curricula produced and how it all affected the final product.

**Demographics and Outreach**

One of the initial goals of the museum in the online course development was to be able to provide educational programming to teens in rural and distant counties who would not normally have access to the North Carolina Museum of Art. North Carolina Virtual Public School has been operating since the 2007-2008 school year, and has had a total of 47,715 enrollees in online courses during the 2012-2013 school year. Out of that number, 33,217 were unique students which accounted for approximately 7.6% ADM of students in 9th-12th grades statewide (“2012-2013 Annual Report North Carolina Virtual Public School,” 2013). The rural counties and many of those farthest away from the museum have the lowest enrollment numbers of individual students in North Carolina Virtual Public School courses, yet tend to account for a larger percentage of the overall population of the student body enrolled in that county due to a smaller student population. The specific courses designed with the North Carolina Museum of Art had enrollees from over seventy-eight of the one hundred counties in North Carolina since implementation. The total number of enrollees and program participants since the school year 2010-2011 school year is 1,737. Figure 3 below lists the participant numbers for each year since
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the courses were made available. The numbers reflect a positive growth, with attendance beginning at 128 and rising to 740 in only four years. The course numbers are anticipated to continue to grow with the implementation of the virtual learning requirement.

<table>
<thead>
<tr>
<th>Academic School Year</th>
<th>Number of Students</th>
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<tbody>
<tr>
<td>2010-2011</td>
<td>128 students</td>
</tr>
<tr>
<td>2011-2012</td>
<td>235 students</td>
</tr>
<tr>
<td>2012-2013</td>
<td>634 students</td>
</tr>
<tr>
<td>2013-2014</td>
<td>740 students</td>
</tr>
<tr>
<td><strong>Total as of Spring '14</strong></td>
<td><strong>1,737 students</strong></td>
</tr>
</tbody>
</table>

Figure 3. 2014. Enrollment numbers for online courses and programs funded by Wells Fargo grant.

**Collaboration as a Method of Course Development**

Collaboration was a constant and necessary tool for the design and implementation of the online art courses. The North Carolina Museum of Art relied on North Carolina Virtual public School and their established pool of North Carolinian teenagers, and without the museum’s extensive work by their staff and contracted educators there would be no way the courses could exist in the same manner in which they do today. The collaborative practices included Think Tanks, transparent and constant communication, multiple evaluations and the invitation of outside experts. Working collaboratively and cross-institutionally is not an easy task; measures must be put into place to ensure success and mutual respect. Communication protocols were set to prevent the educators from having to hunt a response down, or lose details along the way. Clear, concise, and transparent communication allowed the team working together on the online
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art courses to be comfortable with sharing ideas and voicing their opinions on how the courses should be constructed and what should be included.

The courses were initially developed by educators and Think Tank members, and then revised and edited. The revision process allowed for adjustments to be made, and for the collaborative process to continue. The results were online studio art courses that met the state and national standards, and provided the high school students in the state of North Carolina with art education options that were not available in their brick and mortar school. The collaborative practice is easily the most significant portion of the course development, as it ultimately determined what the resulting product would consist of, how the students could engage with the museum and how an arts education could be delivered online.

**Sustainability of the Courses**

The five online art courses were funded through a five-year grant. The challenge many museums face is funding and how they can procure it to maintain a high level of programming and operations. The unfortunate reality with grants is that they exist as a limited amount of money for a limited amount of time. When the funds and designated time span run out, a museum is left looking for a way to compensate for the sudden gaping void in their budget.

This is a current concern on the Teen and College Programs Coordinator. How can a grant-funded project remain sustainable for a time that would extend beyond the grants limits? The five courses are currently developed and evaluated to the point where they could operate as self-sustaining courses for a while on their own. However, after time has passed the courses would need to be updated. The staff is currently hoping that the North Carolina Museum of Art will be the recipient of new grants that will be able to continue funding these courses, and to potentially fund the development of online courses for middle school students as well.
Discussion and Conclusion

The courses as a whole have been examined closely and are upheld to extraordinarily high standards by the state of North Carolina, the North Carolina Museum of Art, and North Carolina Virtual Public School. The resulting product provides an in-depth experience connecting students across the state to the North Carolina Museum of Art, their collection, and inspiring new approaches to visual art. Collaboration throughout the development of the courses and the resulting materials was key when examining how the North Carolina Museum of Art and North Carolina Virtual Public School executed their partnership, and how the students complete collaborative projects with one another and work through the collaborative process in their assignments and projects. Instructors maintain an active role of participation, as do the students, and interaction between the instructor and classmates is not only encouraged, it is required.

When creating online classes, the teachers, professionals and museum educators seemed to strike a unique balancing act between new technology and the human element in their attempt to bring studio art courses online. The collaborative process has resulted a strong team that have created virtual courses that encourage the social aspect of learning through critiques, message boards, and live video feeds. The resulting product can be engaging and inviting enough for a student to be willing to participate in the challenge of an online high school art course.

The goal of this research was to provide a close examination of how the online high school studio art courses were designed, developed and implemented by the North Carolina Museum of Art and North Carolina Virtual Public School. Scholarly literature provided a brief history of distance learning, and how it has grown from its initial state to the current interpretation of virtual learning. Articles were examined that illustrated how museums and schools have partnered in the past, in person and virtually, and how those relationships can be
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both beneficial and sometimes difficult to maintain. I sought to answer why the program was initiated, how the courses were developed, and how the courses were implemented. The courses cater to a large group of teenage students across the state, and the development of the courses was successful in large part due to the collaboration between the two state organizations and professionals in the field. The courses are grant funded and the long-term sustainability of the courses is still in question. In the following paragraphs I will interpret my findings, discuss the significance, implications, and recommendations of this case study.

Discussion and Interpretation of Findings

The online courses designed and developed by the North Carolina Museum of Art and the North Carolina Virtual Public School courses have the potential of offering the students of North Carolina a positive and meaningful learning experience. The courses are well developed due to the extensive collaborative and evaluative processes, and ask teens to make direct and relevant connections to the works of art in the museum through their assignments and projects.

Practically speaking, the collaboration was necessary and served many purposes in the course development. Despite being a state institution, the museum would not have been able to make the offer of courses for academic credit to the teens across the state without going through North Carolina Virtual Public School. Museums like the Museum of Modern Art and Crystal Bridges Museum of American Art have been creating and implementing MOOCs, and while MOOCs did not really exist at the time of conception of NCMA’s courses it is unlikely that very many teen students would have participated in MOOCs if NCMA had alternatively chosen that route. Many teenagers only have very small windows of free time that the museum is competing to occupy. A regular full academic schedule, athletics, clubs, extra-curricular activities, part-time jobs, friends and family are all competing for a small amount of allotted time in an average
Collaboration and Virtual Learning in the Art Museum

teenager’s day. By creating courses that provided the students with academic credit, the North Carolina Museum of Art and North Carolina Virtual Public School offer the incentive of academic credit to take the courses, which can occupy a large portion of their otherwise free time. The contemporary teenager is far more tech savvy than teenagers from previous generations, and tend to spend what little free time they do have online (M. Harrell, personal communication, February 5, 2014). So reaching out to a teenage audience online seemed like a natural way to guide the teens to make authentic connections to the museum through their own artwork.

In order to create and maintain a harmonious and functioning relationship the North Carolina Museum of Art and North Carolina Virtual Public School were actively involved with one another in every step of course development, and that involvement resulted in an engaging and challenging educational experience for students. This type of partnership requires multiple staff members, commitments set into place, and lots of time spent communicating and clarifying goals. The staff commitments produced exceptional work. The Teen and College Programs Coordinator and North Carolina Virtual Public School’s Art Department chair felt very passionately about the success of these courses, and it was due in part to their passion for the project that the course are of such a high quality.

The courses have been assessed, evaluated, over and over again. The content is strong and the primary concern is to really engage and teach the students through virtual project and object-based learning. The courses are grant funded and without adequate continual funding, the courses will suffer in the future. This is of a particular concern because after so much effort and resources have been put forth into the courses, that it would be a disservice to the museum if the courses were to become potentially antiquated in a few years. The courses have a certain level of
sustainability because the content is strong, but technology is such a rapidly growing and changing field, the courses have to be able to keep up with the growth in order to remain up to date and still be an attractive and relevant option for students to engage in their online learning experience. Ideally, the museum would continue to receive funding for the project, and as they plan to expand online learning options to middle school students, online learning courses would be able to be kept up to date and become a long-standing option for preteens and teenagers throughout the state. But as the grant runs out this year, museum staff members are currently examining new ways for the courses to be funded and continuously developed.

The art courses took five years to develop, evaluate, and implement. Various museum educators, interns, contract employees, public school teachers, designers, artists, and professors were all a part of the heavily collaborative process used to design the online courses for high school students in North Carolina. The courses are an in-depth method for the students to form a connection with the museum, artwork, and each other from across the state. Providing a high quality virtual art education experience online for high school students was a high priority for the collaborative team, and by making that priority clear from the beginning of the process, the results were truly impressive.

Significance, Implications, and Recommendations

The online art courses are on the surface an interesting approach for a museum to use as a form of outreach. Compared to MOOCs, these courses are offered to an extraordinarily small group of students, yet have enrollment numbers that have displayed continuous growth. At this point the courses are only offered to high school students in North Carolina who have already taken Art I as a prerequisite as opposed to MOOCs, which can pull in an international group of many thousands of students enrolled in just one class. Museums generally favor programs that
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will ensure high attendance numbers (Harrell, M., personal communication, 2014 February 5). The North Carolina Museum of Art specifically chose a smaller target audience, opting for a highly work intensive project that required large amounts of funding to reach their target audience. These courses created an extensive immersion for the teenage participants in the museum’s educational programming that the teens can intertwine into their academic career by receiving class credit for their online participation.

The museum and virtual school had a very cohesive collaboration and shared common goals, and I would recommend that large institutions taking on similar long-term partnerships use similar methods for ensuring a beneficial and mutually respectful environment. The museum and virtual school had communication protocol put into place and made a concerted effort to make sure all parties were involved and informed in decision making processes and the course development. Without the communication between the two organizations, the partnership would have easily become strained or difficult to maintain. The museum and school respected the other’s opinions, making participants feel valued and allowing for the collaboration to succeed in its goals.

Reflecting on my own experiences with online education, I question if the courses would create a stronger creative environment for the students if it had more synchronous elements. As of now, the course materials are written to accommodate busy student lifestyles. Since most schools in North Carolina do not have a block in the school day that caters to online learning, students need to take the courses on their own time. With the current average learning environment of teens learning on their own time, the synchronous/asynchronous blend works well. New legislation in North Carolina students will be required to complete an online course as part of their high school graduation requirements, schools will have to make online learning
options available throughout the school day to cater to students who may not have access to the required technology at home. If these courses continue and are still being offered when the average student has access during their school day to work, I would recommend that the model become more synchronous. I feel as though this would enhance the student experience, and mirror a traditional studio art course more closely with more opportunities for student exploration and instructor feedback on projects.

I would also recommend that other museums take this route only if it would be beneficial to their mission and goals. Catering exclusively to in-state high school students provides a special relationship between the teens and the museums, but museums should aim for MOOCs if they are specifically looking for exceptionally large enrollment numbers. Recently the Crystal Bridges Museum of American Art decided to pursue the design of online art education courses, but chose to design the courses to be delivered nation-wide. They plan to utilize nationwide online education providers for their students. One of their major goals was to have MOOC-like enrollment, which could ultimately lead to more funding for further online learning initiatives when competing with other museums for similar projects. However, the NCMA has the distinct mission of catering to their state, and they have done so through these courses, providing course topics rarely available in North Carolina high schools. If the museum has a sincere desire to generate a very deep connection between the students and the museum, these courses should be referenced and analyzed. With semester-length courses, students are able to connect with the museum’s permanent collection in ways that may not be possible with more traditional museum programming due to time and financial constraints.

Understanding the process can aid any museum educators who have an interest in developing virtual learning programs within their museum, or even those who wish to fill a gap
in arts education that may exist in certain areas. By creating a visual summation of my research and publishing it through ISSUU it can be used as a public resource for other museum educators who are considering expanding their educational outreach into online learning. Figure 4 displays an excerpt from the document that reviews the process and product of the collaboration.

![Screenshot of Excerpt from ISSUU Document](http://issuu.com/kericson/docs/capstone/1)

The document covers the topics of the case study and the major research questions present in the study, as well as methods and reasoning behind choosing to cater to a much smaller audience than would have been achievable by other means on online learning. By making the document public through ISSUU.com it is easily available to anyone who is interested in museums and online learning, or museum and school partnerships.

North Carolina Museum of Art and North Carolina Virtual Public School came together to create a unique partnership between two state institutions that has proved mutually beneficial. Not all states or museums will have similar resources, but a functioning collaboration, pooling of
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resources, and sharing a common vision can be exceptionally inspiring for those who wish to extend their art educational programming.

Conclusion

Ultimately the online art courses designed by the North Carolina Museum of Art and North Carolina Virtual Public School have proven to be a successful way for the museum to reach out to teens across the state and engage in in-depth, practical, contemporary arts education. This case study documents how the courses were developed and why, and specifically to examine the unique partnership between North Carolina Museum of Art and North Carolina Virtual Public School. These courses were designed and executed collaboratively, and have made the North Carolina Museum of Art a pioneer in museum distance learning programming.
References


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Harrell, M. (2014, February 5). Personal Interview


Kotecki, E. (2014, March 3). Telephone Interview


http://artmuseumteaching.com/2013/05/04/why-museums-can-excel-in-online-learning/


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Pylypiw, D. (2014, February 12). Email interview


Appendix A

Initial Interview Questions:

1. How did you become involved in creating the courses?
2. What was your role in the initial collaboration?
3. Have you participated in anything similar to the creation of these online courses?
4. What were the goals in creating these courses and the partnership?
5. Do you feel as though the goals have been achieved? How so?
6. What prior research went into the program before it was initiated?
7. Did you look at other online art courses as a reference?
8. Museums like MOMA and well-respected universities have created classes in the form of Massive Open Online Courses, or MOOCs. Why did NCMA opt to partner with NCVPS and offer the courses only to high school students, as opposed MOOCs?
9. How are these courses being funded?
10. How much does each course cost to design and operate?
11. Can you describe to me how the Professional Learning Community functioned and organized the collaboration between NCMA and NCVPS?
12. How were committee members selected? (What were their qualifications/contributions?)
13. How would you measure expertise?
14. What kind of references did you examine when deciding how the courses should be organized?
15. Why were the Power Standards chosen over other learning models?
16. Are the courses synchronous or asynchronous?
17. Would you consider the focus to be more on studio practice or art theory? What type of work do the students produce?

18. How did you determine what subjects you wanted to cover?

19. What was the procedure for adding new courses over the years?

20. How were the courses assessed? Student and materials

21. Does the museum play a role in which instructors are selected?

22. Do you see these courses as something other art museums should attempt?

23. Do you think it’s easier to do these courses because you are a state institution?
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Appendix B

IRB Protocol Submission Form

<table>
<thead>
<tr>
<th>Title of Protocol:</th>
<th>A Study of Online High School Art Courses Designed by the North Carolina Museum of Art and North Carolina Virtual Public School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principal Investigator:</td>
<td>Katherine Ericson</td>
</tr>
<tr>
<td>Degree / Title:</td>
<td>MA Art Education</td>
</tr>
<tr>
<td>Department:</td>
<td>School of Art and Art History – Art Education</td>
</tr>
<tr>
<td>Co-Investigator(s):</td>
<td>Craig Roland</td>
</tr>
<tr>
<td>Supervisor (If PI is student):</td>
<td></td>
</tr>
<tr>
<td>Degree / Title:</td>
<td></td>
</tr>
<tr>
<td>Department:</td>
<td></td>
</tr>
<tr>
<td>Date of Proposed Research:</td>
<td>January 6, 2014 – May 30, 2014</td>
</tr>
</tbody>
</table>
**Source of Funding**: (A copy of the grant proposal must be submitted with this protocol if funding is involved):

Principal Researcher

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**Scientific Purpose of the Study**: A case study that explores the initiation, development, content, and implementation of the online courses designed by the North Carolina Museum of Art (NCMA) and North Carolina Virtual Public Schools (NCVPS). The goals of this study are to illustrate how two state institutions collaborated to create online art courses that are available to all high school students in the state of North Carolina.

---

**Describe the Research Methodology in Non-Technical Language**: (Explain what will be done with or to the research participant.)

Participants will take part in semi-structured interviews concerning the online art courses designed by the North Carolina Museum of Art and North Carolina Virtual Public School. I will combine information gleaned from these conversations with review and analysis of teaching materials to create a case study of the program.

---

**Describe Potential Benefits**: Aiding in the greater understanding of the courses by the K-12 art education and art museum communities.

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**Describe Potential Risks**: (If risk of physical, psychological or economic harm may be involved, describe the steps taken to protect participant.)

There are no potential risks or discomfort for participants.

---

**Describe How Participant(s) Will Be Recruited**: Participants will be invited on a one-on-one basis based on their involvement in the development of the online art courses designed by the North Carolina Museum of Art and North Carolina Virtual Public School.

<table>
<thead>
<tr>
<th>Maximum Number of Participants (to be approached with consent)</th>
<th>30</th>
<th>Age Range of Participants:</th>
<th>18+</th>
<th>Amount of Compensation/course credit:</th>
<th>None</th>
</tr>
</thead>
</table>

Describe the Informed Consent Process. (Attach a Copy of the Informed Consent Document. See [http://irb.ufl.edu/irb02/samples.html](http://irb.ufl.edu/irb02/samples.html) for examples of consent.)
<table>
<thead>
<tr>
<th>(SIGNATURE SECTION)</th>
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<tbody>
<tr>
<td>Principal Investigator(s) Signature: Katherine L. Ericson</td>
</tr>
<tr>
<td>Co-Investigator(s) Signature(s):</td>
</tr>
<tr>
<td>Supervisor’s Signature (if PI is a student):</td>
</tr>
<tr>
<td>Department Chair Signature:</td>
</tr>
</tbody>
</table>
List of Figures with Figure Captions

Figure 1. 2014. Course Descriptions from the North Carolina Virtual Public School Catalogue.

Figure 2. 2014. Required Course Materials as listed in the NCVPS Catalogue.

Figure 3. 2014. Enrollment for online courses and programs funded by Wells Fargo grant.

Figure 4. Ericson, Katherine. 2014. Screenshot of Excerpt from ISSUU Document found at: http://issuu.com/kericson/docs/capstone/1
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Author Biography

Katherine Ericson completed this research as part of her Masters of Arts in Art Education from the University of Florida. She completed her Bachelor’s of Science in Art Management from Appalachian State University in Boone, North Carolina, in a traditional classroom environment. Her interest in online distance education stems from her personal experience earning a graduate degree in the arts online.

Katherine Ericson previously worked as an Arts Counselor in an after school program in Durham, North Carolina, at a school that focuses on child-directed, project-based learning, with a special emphasis on arts integration. In the past she has worked in museum exhibitions at the Turchin Center for the Visual Arts in Boone, North Carolina, and interned with the Family Programs Coordinator at the Mint Museum in Charlotte, North Carolina. Working in alternative educational sites has given her an appreciation of place and collaboration, and how the arts can be utilized to strengthen these assets within the community. Experiencing a behind the scenes environment in museums in exhibitions and education allowed for constant interaction with local, national, and international artists, as well as an appreciation for a variety of aesthetics and desire to engage the public in the dialogue of aesthetic appreciation and art making. Katherine Ericson has recently accepted the 2014-2015 GlaxoSmithKline Education Fellowship at the North Carolina Museum of Art.