# Videoconferencing? Assessing its Effectiveness as a Teaching Tool in the High School

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The Department

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#### **ABSTRACT**

# Videoconferencing? Assessing its Effectiveness as a Teaching Tool in the High School

#### Carla Sabatino

This study investigates the relationship between distance learning, engagement, and field trips to art museums. The study aims to answer two questions: 1) Are indicators for engagement in museum settings, as identified by Griffin and Symington (1999), being met through videoconferencing technology? and 2) What are the best practices of videoconference field trips to art museums? Two long-range goals for this study are: i) to identify the roles and competencies necessary for conducting effective videoconference field trips to art museums; and ii) to enhance engagement of videoconference field trips to art museums. This research project took place over the course of the 2007/2008 school year and involved the use of videoconferencing in the art classroom at St. Thomas Aquinas Secondary School in Lindsay, Ontario. Four different groups visited a different art museum at a distant location. Fifty-eight students were administered the Rubric for Assessing Student Engagement of Learning in a Museum Setting (Table 5, Appendix A), developed for this study in order to determine students' perception of the program's overall level of engagement qualities. Results reveal that many indicators for engagement are being met but at varying degrees. Although many students responded favorably to the experience and felt that they had learned something new, the opportunity provided by museums to purposefully handle objects, materials and ideas was inconsistent. In addition to including quality hands-on activities in museum settings that are visited from a distance, this study also reveals that students expected to see more of the museum environment, exhibits and artwork.

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# Chapter 1: Introduction

The Ontario Ministry of Education recently introduced the Lighthouse Program which offers grants in support of e-learning and new course options to enhance the 'rural experience.' Apparently rural schools represent 25 per cent of all Ontario schools and serve approximately 15 per cent - or 300,000 students. The McGuinty government recognizes that the funding formula of the previous government does not provide rural and small schools with the same advantages as urban schools. St. Thomas Aquinas Secondary School in Lindsay, Ontario, a high school at which I teach art, was a recipient of the Lighthouse grant. As a result, a new tower was erected to allow for better high speed internet service and videoconferencing equipment was provided. This is part of a \$3.5 million pilot project that aims to increase the diversity of courses and programs available at rural schools by providing a provincial platform to enable students to take the same course from a variety of locations. This study was done in the course of my duties as an art teacher at St. Thomas Aquinas Secondary School and with full knowledge and support of the school administration which had recently received the Lighthouse grant for the purpose of investigating distance education (Appendix B).

# Statement of Problem

It probably does not come as a surprise that most schools will arrange at least one field trip a year to compliment the curriculum. Such field trips usually involve taking students by bus to a distant location. A popular destination is the museum. Students become engaged by their visit as they tour the facilities, listen and talk to educational professionals, view collections, handle artifacts, ask questions, share ideas and complete activities. However,

C.S. 2

when the opportunity to visit a museum does not allow one to be physically on-site, but

rather at a distance through the use of videoconferencing technology, are students as equal-

ly engaged?

Purpose of the Project

The purpose of the project is to investigate the relationship between distance learning,

engagement, and field trips to art museums. This study aims to answer two questions: 1)

Are indicators for engagement in museum settings, as identified by Griffin and Symington

(1999), being met through videoconferencing technology? and 2) What are the best prac-

tices of videoconference field trips to art museums? Griffin and Symington have been

adopted in this study as they have conducted much research on the topic of learning in

museums. Two long-range goals for this study are: i) to identify the roles and competen-

cies necessary for conducting effective videoconference field trips to art museums; and ii)

to enhance engagement of videoconference field trips to art museums.

Definition of Terms

Keywords: Videoconferencing and Student Engagement

A videoconference field trip should not be confused with a virtual field trip. A virtual field

trip is a guided exploration through the Web that organizes a collection of pre-screened,

thematically based web pages into a structured online learning experience (Foley, 2003).

Videoconferencing is a realtime video session of two or more users or between two or

more remote locations. The technological videoconferencing application enables audio,

video and data transfer, whereby users can hear and see each other; they can exchange

written or picture material using a document camera, audiographics or telefax. It was first

explored using traditional analog TV and satellites in the early 1980s. When Compression

Labs were able to digitize video systems, inhouse room systems became popular. The

major companies that provide technology for its use are Polycom, TANDBERG, VCON, RADVISION and VTEL.

Communication delivery is either through ISDN or over internal IP LANS and private lines. Video frames are usually delivered in CIF format. ISDN has been the traditional transport for digital videoconferencing because it provides dedicated channels from end to end and allows bandwidth to be dynamically allocated in multiples of 64 Kbps. Videoconferencing over IP has become popular because the quality can be controlled.

### Student Engagement

There are several definitions of what engagement means. In general terms, engagement might be defined as the observable evidence of meaningful student learning and involvement in an educational setting. Most educators assume that when students are engaged the enjoyment of learning is taking place. Student engagement is often used to describe students' willingness to participate in routine school activities. It may also be used to charaterize curriculum design, classroom management and general school climate. Overall, student engagement has been identified as a desirable trait in the learning process.

More in-depth definitions of engagement usually include a psychological or behavioral component, such as Schlechty's perspective. In *Shaking Up the Schoolhouse* (Schlechty, 2000), the author identifies five types of responses students might make to any school task:

- Authentic engagement: The task, activity, or work that the student is assigned has value and meaning to the student; it is intrinsic and beyond the motivation of completing the task for a mark or a grade.
- Ritual engagement: The task, activity or work that the student is assigned is completed only because the student associates it with extrinisic outcomes, such as passing a test.

- Passive compliance: The task, activity or work that the student is assigned is completed only because the student wants to avoid negative consequences.
- Retreatism: The student does not make any effort to attempt or complete the task, but does not act in ways that disrupt the classroom.
- *Rebellion*: The student refuses to do the task, acts in ways that disrupt the classroom and tries to substitute activities in lieu of those assigned.

Schlechty also goes on to describe three types of classroom settings and identifies the pattern of student engagement in each. In a *Highly Engaged Classroom*, all students are authentically engaged most of the time. There is little or no rebellion, limited retreatism and limited passive compliance. In *The Well-Managed Classroom*, students are ritually engaged and/or passively compliant. There is considerably less authentic engagement. In *The Pathological Classroom*, which may appear to be a well-managed classroom, there is an increase of retreatism and a presence of patterned rebellion. Many students actively reject the task assigned or try to substitute other activities to replace what has been assigned.

Schlechty acknowledges that efforts to measure student engagement are just beginning and that no standard measures exist. He encourages, teachers, principals and administration to begin action research in schools and classrooms to monitor patterns of engagement. Schlechty believes that through such research, teachers will discover that it is the nature of the work assigned that determines the level of engagement. However, one might argue that the relationship between student and teacher could also impact the level of engagement.

Closely tied to Schlechty's theory and definition of engagement, and on in which I have relied for this study, is Griffin and Symington's (1999) idea that the nature of the experience and the number of actions observed during this experience indicates the level of

engagement. In their article, Finding Evidence of Learning in Museum Settings, Griffin and Symington list a number of behaviours related to learning which can be used as useful indicators of learning processes. This list was derived from an extensive literature review. Synthesis of this literature led to the development of a set of indicators for engagement in learning which include both individual and social behaviours. Engagement is defined through the seven observable behaviours shown in Table 1.

# Table 1. BEHAVIOURS INDICATIVE OF FAVOURABLE CONDITIONS FOR LEARNING

- a. showing responsibility for and initiating their own learning;
- b. actively involved in learning;
- c. purposefully manipulating and playing with objects and ideas;
- d. making links and transferring ideas and skills;
- e. sharing learning with peers and experts;
- f. showing confidence in personal learning abilities;
- g. responding to new information or evidence.

By applying these descriptions to learning within a museum environment, each item was expanded to create a set of specific indicators of engagement in learning processes within a museum, shown in Table 2.

# Table 2. INDICATORS OF STUDENT ENGAGEMENT IN LEARNING PROCESSES IN A MUSEUM SETTING

# A) Showing responsibility for and initiating their own learning:

- Know what to look for/making choices
- Writing, drawing, taking photos by choice
- Talking to themselves
- Deciding where and when to move

# B) Actively involved in learning:

- Exhibiting curiosity
- Absorbed, close concentrated examination
- Perservering with a task

# C) <u>Purposefully manipulating and playing with objects and ideas</u>:

- Handling exhibits with care and interest
- Purposefully playing with the exhibit elements/using hands-on exhibits as intended

# D) Making links and transferring ideas:

- Referring to their prepared questions
- Comparing/referring to previous knowledge

# E) Sharing learning with peers and experts:

- Talking and pointing
- Group members talking and listening
- Pulling others to show them something
- Willingness to be pulled to see others' interests
- Asking each other questions
- Talking to adults/experts

#### F) Showing confidence in personal learning abilities:

- Asking questions of displays
- Explaining to peers
- Reading to peers
- Comparing information with another source

#### G) Responding to new information or evidence:

- Evidence of changing views
- Evidence of discovering new ideas.

#### Discussion

Distance education has become a useful option that maintains many of the interactive components we associate with a desirable learning environment, such as, the ability to communicate with the instructor, peers and content in meaningful ways. The technological capabilities for learning and instruction allow for greater freedom in when and where one learns. However, according to Perraton, Creed and Robinson (2002), the "instructor's removal from the learner in terms of space and time presents unique requirements for effectively managing both the pedagogical and the logistical elements of instruction." p. 106. According to Rice (2006), research in distance education in the K-12 context is "limited and many of the studies reviewed...provide only limited insight into the complexities of the field." p. 441. She identifies many areas for further study. One area in particular suggests developing reliable tools for identifying and supporting interactive qualities in course design and instruction. Current studies in distance learning address the relationship between instructor and students in post-secondary institutions. The lack of research that presently exists on the relationship between art education and distance learning, or between museums and distance learning, only reinforces the need to pursue it further. The implications this may have for art education and art museums are even greater due to its studio-based nature, free-choice setting and constructivist approach to learning.

Videoconferencing is a relatively new practice in distance learning, and it is one tool that may compliment art education for online access, as it allows for versatile real-time interaction. Because the technological videoconferencing application enables audio, video and data transfer, the teacher and the pupils can hear and see each other; they can exchange written or picture material using a document camera, audiographics or telefax. However, findings from a recent pilot project that I conducted, in which students participated in a videoconference field trip to the Center for Puppetry Arts in Atlanta, Georgia, U.S.A., indi-

cate that there is still room for improvement in the areas of interactive qualities and engagement. (Sabatino, 2007c). Results from the study reinforce the fact that social and rapport building designs may need to be taken into greater consideration when utilizing videoconferencing. Ease of group discussion was rated as a weakness of videoconferencing in the survey administered. This is not to say it cannot be achieved, but that the instructor needs to design activities that encourage dialogue among participants, whether this occurs among students in a classroom, or as a two-way dialogue, or multi-point engagement between participants in remote areas. Also, videoconferencing does not allow for manipulation of objects and ideas - a significant indicator of student engagement in museum settings (Griffin and Symington, 1998). This may be due to the fact that the students may not have felt the need to participate since they were placed in front of a screen without any surface to work or take notes on or manipulate any materials. Having had puppets and other related materials for use would have helped to bridge the distance between the remote and physical setting. The last observation suggests improvement in the design of videoconferencing technology. Because a remote control is used by the instructor to operate the movement of the camera, it interrupts the teacher's role as facilitator. Also, a stationary camera does not allow for freedom of movement one normally expects to have in a classroom setting or, in this case, visiting a museum and exploring its space and exhibits. A camera that is portable and/or voice activated would be ideal. Even though videoconferencing has the potential to enhance interactive qualities, it is evident that further research is necessary to assist in the development of criteria, regulatory measures and standards for its use in order to support student engagement and components of artistic learning.

# Chapter II: Literature Review

The literature review that follows is divided into four categories. Because I am assessing engagement as it pertains to museum learning, art education, field trips and distance learning, I have included information on each of these topics in order to support the development of criteria that will be used in evaluating the use of videoconferencing when taking a field trip to an art museum.

#### Museum Learning

Visitor learning in a free-choice setting has become the focus of recent studies carried out in the museum environment. The following articles identify ways learning takes place in a museum.

Kelly (2000) in her article, *Making a Difference: What Have We Learned About Visitor Learning?* identifies twelve key themes arising from learning literature, as well as from recent audience research and evaluation undertaken at the Australian Museum Audience Research Centre. Although it does not address *art* museums specifically, it contributes to the existing criteria about how learning takes place in a museum. The twelve themes could be included in my list of criteria when finding the best practices of videoconference field trips to art museums. The concluding message was that visitor studies are important and need to be ongoing so that they "will become truly strategic, actively contributing to the museum's capability for organizational learning and change: making a difference internally and externally...without this museums will fail to stay relevant." p. 5.

The twelve key themes presented were: i) learning is social, ii) learning is a sensory experience, iii) learning is facilitated by real stuff and living exhibits, iv) learning is an active process, v) learning is connecting with prior knowledge, vi) learning is new information,

vii) learning is immediate, viii) learning is changing your point of view, ix) learning is long-term, and x) learning is individual (free-choice, constructivist).

Two models that help to further elaborate on the nature of museum experiences and personal learning are *The Interactive Experience Model* and *The Contextual Model of Learning*. Both models were developed by Falk and Dierking (1992, 2000). *The Interactive Experience Model* assumes all experience is contextual; the three contexts being personal, social and physical. They are interconnected and continually shifting. *The Contextual Model of Learning* is a refined version of the first. There are three overlapping contexts: the personal, socio-cultural and the physical. In addition to these, Falk and Dierking have included a fourth dimension, which is time. They believe that learning is constructed, shaped and reshaped over time as the individual interacts within these contexts.

Griffin and Symington (1999) in their article, Finding Evidence of Learning in Museum Settings argue that the traditional methods of assessment, those we associate with school classrooms, are not applicable to the museum environment for three reasons: 1) visitors are often learning things in museums which are not revealed through formal tests; 2) measuring learning in museums disregards the notion that learning is incremental; and 3) the nature of learning opportunities in museums is unstructured. As a result, the authors propose looking at how students are learning rather than what they have learned. In other words, looking for observable behaviours that indicate that learning is taking place.

To prove that traditional methods of assessment are not applicable in the museum environment, Griffin and Symington first identify the characteristics of the setting in a museum. They describe the setting as informal, intrinsically motivated, involving curiosity, observation and activity; visitors choose their own experiences. They recognize that museums

offer a very special learning opportunity, as it is experiential in nature, based on encounters with real objects. They believe that cognitive and affective learning are fused and that education and enjoyment are linked. They compare the nature of learning in museums to that of the constructivist model and consider the idea of looking for indicators of engagement in the learning process as a more valid possibility.

Researching a variety of literature on the topic, the authors derived descriptions and lists of behaviours that may suggest that active learning is taking place in student participants. They refer to writers, such as, Borun (1996), Perry (1993), Koran (1996), Bentley and Watts (1994), and Faire and Cosgrove (1988). Family group behaviours and adult learning were also investigated, as they make up a large percentage of visitors to museums.

As a result of their research, Griffin and Symington developed four tables that have been useful to my study (Appendix A). Table 1 lists behaviours indicative of favourable conditions for learning. Table 2 lists indicators of student *engagement* in learning processes in a museum setting. Table 3 is intended to be used as an observation tool to track the number of actions which indicate engagement in the learning process. Lastly, Table 4 provides guiding questions to be used for interviews with children 2-1/2 weeks after the visit to the museum.

The tables are very practical and directly applicable to any learning environment, be it the museum or the classroom setting. By knowing what behaviours to look for one can adequately assume that the student is engaged and some form of learning is taking place.

In his article, Constructivist Learning Theory: The Museum and the Needs of People (1991), Hein outlines some principles of learning in a constructivist museum. He believes that learning is active, and dependent on sensory input to help the learner construct mean-

ing. The action of constructing meaning is mental. Hands-on experiences alone are not enough; they must also engage the mind. Learning is a social activity and involves language. The opportunity to interact and dialogue with others, not only aids the learner in synthesizing information, but new perspectives are acquired by differing viewpoints that others offer. This helps to build new knowledge. Learning is not instantaneous. Hein explains that "for significant learning we need to revisit ideas, ponder them, try them out, play with them and use them." p. 3. Repeated exposure and thought aid recall and memory. Lastly, motivation is a key component in learning. Participants need to know the reasons why they are learning something.

George Hein has extensive experience in museum education and has conducted much audience-based research. His book, *Learning in the Museum*, addresses the educational role that museums can have and shows how visitor studies and learning theories, such as those of Dewey, Piaget, Vygotsky, can be applied to meaningful educational experiences in museums. A survey of research methods used in visitor studies is documented with examples taken from museums around the world. Hein concludes that visitors best learn when knowledge is actively constructed in their own minds and provides a model of the "constructivist museum"— one with exhibitions which are physically, socially, and intellectually accessible to every single visitor.

The last article on the topic of museum learning is by Screven (1993). His article, *Museums and Informal Education*, examines the possibilities for informal education within museums, as opposed to formal education associated with schools, and offers some important guidelines.

Informal education is loosely defined as voluntary and self-directed; driven by curiosity, discovery, free exploration and the sharing of experiences with others. However, the qual-

ity of learning is questioned. Studies show that the public often misses many of the ideas and/or attitudes that were the original intentions of the exhibition designers. And attempts at implementing learning theories grounded in formal education do not sustain visitor interest in museum settings. The author aims to bridge the gap between formal and informal learning environments so that exhibitions "can facilitate the voluntary learning of a variety of cognitive skills, such as divergent thinking, critical analysis, better understanding of the past, the complexity of the natural world and critical environment issues" p. 1. Screven identifies four design features that should be taken into consideration when planning exhibitions: 1) include incentives and motivational strategies, such as goal-directed and discovery activities to attend to content; 2) provide opportunities for personal involvement with museum staff; 3) give greater attention to features of displays, such as placement, wording, type size, lighting, etc. to support active and focused attention; and 4) include sensory stimulation that is related to content.

Screven also suggests that further studies in human learning and motivation, developmental psychology, cognitive science, educational psychology and instructional design have important implications for teaching and motivating museum visitors. The following questions are currently being investigated in visitor studies:

- What formats or specific features (i.e., interactive flip labels, question or game strategies) are better suited for particular educational goals?
- What pro-active exhibit strategies are best suited to change non-productive visitor attitudes, or correct visitor misconceptions?
- How can exhibition planning teams work together more effectively?
- What visitor characteristics (i.e., reading level, learning style, time constraints) affect post-visit activities and attention?

#### Art Education

In chapter six of his book, *Educating Artistic Vision - Building Curricula in Art Education:*Some Promising Prospects, Elliott Eisner (1972) identifies two concepts in curriculum planning that are of central importance to a successful art program. These are the concepts of continuity and sequence. A program that utilizes these concepts would consist of both instructional and expressive objectives. "Instructional objectives would be accompanied by instructional activities — activities designed to develop particular skills." p. 160. Expressive objectives would encourage the student to use the skills acquired in instructional contexts for personally expressive and imaginative goals. Both constitute a rhythm in the curriculum that nurtures and supports continuity.

Eisner goes on to describe observable behaviours one might see in an effective art program. When students develop confidence in the use of materials and medium for the purpose of expressing themselves, they tend to be self-motivated. When a spirit, or ethos, is established in the classroom in which working in the visual arts is valued, some observable behaviours might be: i) eagerness to access necessary materials; ii) a comfortable ambiance in the classroom; iii) increased enthusiasm; iv) children motivating one another; v) working on different types of projects; vi) students observing and discussing one another's work; and vii) copying. The last item should be viewed as a positive vehicle for facilitating learning, as this practice makes the creative process available to other students who want to see how it develops. "Children actually provide cues to one another regarding the way in which technical and artistic problems can be resolved...students expand their artistic repertoire." p. 161.

The ways in which the concepts of continuity and sequence can be used in an actual curriculum were examined through a project called Stanford's Kettering Project.<sup>2</sup> The

<sup>2.</sup> See Elliot W. Eisner, Teaching Art to the Young: A Curriculum Development Project in Art Education. (School of Education, Stanford University, 1969).

Kettering Project was designed to develop a curriculum and instructional material for use by elementary school teachers for the purpose of helping children learn to produce art having aesthetic and expressive quality, and responding aesthetically to the visual world. The realms or domains identified for artistic learning were the productive, the critical and the historical. The categories that constituted the structure of the Kettering Project Curriculum were:

1) Domain

6) Motivating Activity

2) Concept or Mode

7) Learning Activity

3) Principle or Medium

8) Instructional Support Media

4) Rationale

- 9) Evaluation Procedures
- 5) Objective (instructional and expressive)

After each category was defined, Eisner concluded that "commitment to an unexamined or untested doctrine is not the most productive way to improve educational practices in art education." p. 178. For example, believing that creativity need be the only focus of an art program compromises the range of educational goals in art, especially those dealing with historical and critical aspects. In other words, an art curriculum developed as a result of systematic research is more credible.

Although reference to Eisner's book and the Kettering Project may be outdated, I feel the realms, domains and categories identified for artistic learning are still relevant and applicable.

Because artistic learning also involves art criticism and aesthetics, I have considered recent theories and models that describe the aesthetic experience of viewers. Csikszentimihalyi and Robinson, authors of *The Art of Seeing: An Interpretation of the Aesthetic Encounter* (1990) identified four major dimensions of an aesthetic experience. These include the intellect, communication, perception and emotion. When the viewer

encounters a work of art, each of these dimensions are used to create meaning. The authors also developed a model called, the *Model of Aesthetic Experience by Interaction*. It describes the aesthetic encounter in terms of the interaction that takes place between the viewer, the work of art and the artist's intentions. An encounter begins with the viewer's skill in aesthetic appreciation, which may be more or less developed depending on the viewer's level of art knowledge and previous viewing experience. The quality of the aesthetic experience depends on the viewer's ability to engage in meaningful dialogue with the work of art. It is my understanding that this encounter is a one-on-one interaction. No mention is made of any external stimuli to aid the viewer's ability to engage in such meaningful dialogue.

Lachapelle, Murray and Neim (2003), in *The Journal of Aesthetic Education*, agree that Csikszentmihalvi and Robinson's Model of Aesthetic Experience by Interaction is a "useful theory for understanding the nature of aesthetic experience on a macrosopic level... however (they recognize) this model does not explain the individual behaviour by which viewers come to interpret and appreciate works of art." p. 82. Lachapelle, Murray and Neim propose a new theory that is presented in *The Model of Aesthetic Understanding as* Informed Experience. This model is made up of two major components: experiential learning and theoretical learning. Experiential learning is comprised of mediating knowledge and objectified knowledge. Mediating knowledge is the prior knowledge of the viewer. It is made up of assumptions, skills, personal experience, and some formal understanding about the art viewing process. Objectified knowledge exists in the artwork itself. The decisions the artist makes about his/her work with regard to its message, the subject matter, stylistic qualities, structure, medium, materials, etc., account for the information the viewer may derive from the work. When these two types of knowledge interact, constructed knowledge results. To contribute to more meaningful advances in viewers' aesthetic development, theoretical learning is recommended, as this will lead to a reconstructed knowledge about an artwork. Theoretical learning is independent of the art and is usually found in text that results in intellectual works by curators, historians, critics and educators. It can take the form of a lecture, hand-out or information alongside the artwork. It is intended to provide the means by which the viewer receives new insight about an art work or the exhibition as a whole. When constructed knowledge from the first phase and theoretical learning from the second phase interact reconstructed knowledge occurs.

Recent theories and models that describe the aesthetic experience of visitors need to be taken into consideration by art museums that offer videoconference field trips, as art criticism and aesthetics are important aspects of art education. A viewers' aesthetic development needs to be included in the criteria when evaluating effective use of videoconferencing for field trips to art museums.

# Field Trips

In their article, Moving from Task-Oriented to Learning-Oriented Strategies on School Excursions to Museums, Griffin and Symington (1997) look at the role of the classroom teacher in facilitating learning during excursions to museums. From this study, the authors develop a basis for a comprehensive learning-oriented approach to school excursions in informal learning environments. It aims to answer two questions about the practices being used by teachers who take school classes to museums:

- 1. What learning purposes, preparation, interactions, and follow-up did teachers provide when they took their classes on excursions to museums and science centers?
- 2. Was there a link between the topics of the excursions and the current classroom topics?

The authors found that when teachers brought classes to a museum there was little evidence of learning orientation. Teachers mainly used task-oriented teaching practices. Formal teaching practices were being imposed on an informal learning environment. A

majority of teachers had no clear idea of how to use the museum as an informal learning resource. Lastly, most visits were poorly linked with topics being studied in school.

As a result of the study, the authors sought an alternative, learning-oriented approach to school museum excursions. This alternative approach is based on a literature review of three sources: previous studies on school visits to museums; literature on the use of museums by family groups; and social constructivist theory of learning.

The authors conclude that there is "a lack of congruence between what can be implied from the literature as appropriate to planning a museum visit... and what was observed in the study." Based on the findings in their study and in the literature, the authors propose a set of guidelines yet to be tested:

- Integrate the museum visit with a classroom-based learning unit.
- Use a learner-centered approach in which the students are finding answers to their own questions, rather than their teacher's or the museum's questions.
- Encourage students to gather questions while at the museum; use the museum visit to stimulate interest in finding out more about a topic.
- Apply natural learning methods and behaviours used by informal groups (i.e., allow orientation period).
- Accommodate learning styles, approaches, and strategies that recognize the importance of social interaction.
- Recognize the need for students and teachers to adapt to this different type of learning setting.

A research paper entitled, Enhancing the Visits of Middle-School Tour Groups to the Smithsonian (Office of Policy and Analysis, 2007), is the result of an initiative by the Smithsonian Center for Education and Museum Studies (SCEMS). This paper looks at

ways to enhance visits to the Smithsonian by middle-school tour groups. This target group was chosen because middle-school groups are viewed as a significant audience that is underserved. It is believed that effective programming could have a positive impact on their lives due to the unique learning needs of this age group.

The methodology was divided into three parts: i) survey of students and discussions, ii) interviews, and iii) literature review. It was recommended that to ensure a successful tour, adequate planning and preparation by both parties be addressed. Teachers and museum staff should understand the audience (i.e., students' level of knowledge, misconceptions and interests). When planning a visit, be realistic about goals, purpose, time available and attention span of students. Ideally, teachers and tour operators should try to collaborate prior to the visit to ensure needs are met. One important observation made concerned the "disconnect between teacher's emphasis on learning that is linked to the curriculum and classroom, and what actually happens with the museum visit." p. 6. This disconnect suggests two strategies: i) having an onsite learning component as part of the tour, and ii) include a follow-up activity that encourages reflection about what the students learned.

Five items that reveal what engages middle-school groups are: i) an inquiry-based approach to learning rather than a lecture format, ii) provide some control of visit and learning by students, iii) help to make connections between exhibition, students and the world, iv) provide opportunity for social interaction and fun, and v) provide a physically comfortable environment.

The above preferences of middle-school groups have a number of implications for strategies. These include: i) provide interactive, sensory experiences, ii) allow for active participation rather than passive observation, iii) assist in making personal connections to the

exhibition, and iv) respond emotionally and intellectually to what students have seen. Students like displays that challenge established values and raise questions about current norms.

Another practical article by Connelly, Groome, Sheppard, and Stroud (2006) is entitled *Tips from the Field: Advice from Museum Experts on Making the Most of Field Trips*. The authors acknowledge that the focus of recent educational research in museums is for the purpose of designing and planning field trips that are effective and provide for optimal impact. However, they ask a more specific and important question: How do teachers design a trip that will enhance students' analytical skills and support classroom learning? Although the article addresses field trips in a science museum setting, the authors provide eight valuable tips, plus a check list, that can be applicable to any museum setting when planning a field trip.

Prior to outlining their eight tips, the authors advise teachers to think of the field trip as an excursion that is inquiry based, providing students with a quest to discover something. Students should hunt for clues through their own observations and questions. They recognize that at the heart of the "expedition" model for a field trip is the social interaction that must accompany such inquiry. During the expedition, small groups of student explorers work together to hunt for clues and bring their observations back for discussion. Fundamental to this kind of inquiry are open-ended questions that can have a variety of answers and ultimately lead to more meaningful learning opportunities.

The last article on the topic of field trips is by Falk and Balling (1980). In *The School Field Trip: Where You Go Makes the Difference*, the authors recognize that most schools will arrange at least one field trip a year to compliment the curriculum. Because little research has been done on field trips the authors pose two questions: What is the value of the field

trip? and What do children learn?

To set about answering these questions, the authors looked for *characteristics* of the field trip experience that apply to all field trips, as they wanted to understand what factors affect student learning and behaviour on field trips. They also looked at several *dimensions* including setting novelty, setting complexity, and the relevance of the setting selected for the trip's objectives in order to isolate key variables that might contribute to learning or to just having a good time. Because the novelty dimension proved the most interesting, the authors refined their research question to ask: What effect does the *novelty* of the field trip setting have on children's learning and behaviour?

The study involved teaching an outdoor science lesson about trees to four groups of elementary school children in different settings. Group A was made up of fifth graders who participated in the lesson outdoors near their school. Group B was comprised of third graders who also participated in the lesson outdoors near their school. Group C involved fifth graders at a nature center for a full day, and Group D was made up of third graders at the nature center for a full day.

The findings suggest that age and setting novelty affect learning. Too familiar a setting in which to learn is boring for older grades. Radically unfamiliar or novel settings may be a distraction to learning for younger groups.

### Distance Learning

Roblyer and Wiencke (2003) in their research paper, Design and Use of a Rubric to Assess and Encourage Interactive Qualities in Distance Courses, describe how findings from theory and research were used to develop a rubric for assessing interactive qualities in distance courses. The rubric was presented, along with data from formative uses of the instru-

ment in distance learning courses. It was anticipated that the rubric would be used by students as an evaluative tool to assess interactive qualities of distance learning courses.

The research findings indicate that interactive qualities are indicative of effective distance learning practices. The authors define interactive qualities according to certain characteristics and factors. There are three qualities necessary to characterize interaction. i) types of interaction (i.e., learner-content, learner-instructor, learner-learner); ii) message transmission (i.e., message source, means of signal transmission, a receiver, interference with message communication); and iii) social and psychological connections. The last item suggests that the interplay between interaction for instructional purposes and interaction based on social connections and perceptions of connections among participants affect the nature of messages and the learning process. It is recommended that distance learning environments be informal and allow for open exchange among students and instructor in order to be more productive from a learning standpoint.

In order to identify the factors that influence interaction in distance learning, the authors looked at different learning theories, instructional theories, instructional design models and instructional delivery systems. It is evident that the authors seem to prefer learning theories and practices that move away from behaviorist models and move toward more constructivist ones, placing emphasis on learner autonomy and collaboration.

Based on the analysis of their research about the topic of interaction, Roblyer and Wiencke concluded that: i) interaction is a complex interplay of social, instructional and technological variables; ii) student engagement in the learning process is the most meaningful to instructors and designers; and iii) student engagement can be increased when learning is structured around collaborative experiences.

Overall, five elements were developed which contributed to the design of a rubric to assess

interactive qualities of distance learning courses. These are: i) social and rapport building; ii) instructional design for interaction; iii) interactivity of technology resources; iv) evidence of student engagement; and v) evidence of instructor engagement.

Two important aspects of this article that are very relevant to my teaching project and report are *engagement* as evidence of learning and the idea that interactivity varies based on the transmission medium (Horn, 1994). The interaction aspect most meaningful to instructors and designers is student engagement in the learning process. It is suggested that technologies that permit more visual and hypermedia presentations and two-way, more-immediate communication also permit higher interactivity. Videoconferencing and virtual environments offer the greatest potential for interactivity. However, my pilot project, which investigates the use of videoconferencing for a field trip to an art-related museum, indicates that users of this technology did not take advantage of its potential for *interactivity* and *engagement*. This may be due to differences between museum and school pedagogical practice and its relation to technology.

Williams (2003) in his article, *Roles and Competencies for Distance Education Programs in Higher Education Institutions*, acknowledges that distance learning has increased and changed in the last decade due to "the integration of telecommunication-based technologies that have allowed many institutions to implement programs." p. 46. As technology continually changes, the author assumes that the roles and competencies for its use will also change.

Based on a review of literature, the author developed a survey consisting of a menu of twelve roles with their accompanying descriptions. Experts, selected using the Delphi technique, were asked to accept or reject each of the roles or make modifications or additions to the list. A questionnaire required participants to select competencies for each of

the roles that had been finalized in round-one. In round-two, experts were asked to rate each competency for criticality and frequency. Lastly, the competencies were compared to an earlier study done in 1994.

The study concludes that thirteen distinct roles are needed to implement and manage distance education programs in higher education. It was found that two new roles emerged since the previous study and several trends were noted. *Interpersonal* and *communication skills* remain necessary across the roles. Basic technology skills become more important than advanced technology skills, such as engineering. Two competencies related to pedagogy emerged. The need for *sound pedagogical practice* in relation to technology was important. This last point is relevant to my teaching project and report as it addresses the idea that effective *artistic learning* may be compromised during a videoconference field trip to an art museum due to limited pedagogical expertise of art education in relation to technology.

The last article on the topic of distance learning is unique in that it is the first I have come across that addresses the relationship between distance learning and art museums. Goldman and Schaller (2004) in *Exploring Motivational Factors and Visitor Satisfaction in On-line Museum Visits* examine why people visit on-line museums and what sort of meaning visitors make when they visit. They define relevant research terms such as instrinsic and extrinsic motivation as well as expectancy and value theories. According to the authors, intrinsic and extrinsic motivation can produce the same amount of effort and thus is difficult to observe.

What gives this article more validity is the review of the contextual model of learning by Falk and Dierking. The authors review the 12 critical suites of factors which influence meaningfulness in free-choice museum settings.

Of interest to me was the methodology. The authors targeted six on-line museums. They arranged to have their surveys placed on each of the websites. When users exited the website, the survey would appear. Unfortunately, the authors admitted that there was a low response rate.

#### Summary

The literature review on the topic of museum learning, art education, field trips and distance learning share many similarities about how visitors/students learn and the requirements necessary for successful engagement. Information from each topic should not be viewed as distinct and separate, but rather as complementary to each other. For example, to accept the museum setting, its exhibits and displays as the primary source for learning is not enough. Studies show that the public often misses many of the ideas and/or attitudes that were the original intentions of the exhibition designers. There is also a disconnect between topics of school excursions and the current classroom topics. To ensure quality of learning in an informal setting, be it a museum or a distance learning course, an alternative learning-oriented approach may complement the experience, increase engagement and contribute to constructed and reconstructed knowledge. As assumed by Griffin and Symington (1997) in their article, Moving from Task-Oriented to Learning-Oriented Strategies on School Excursions to Museums, a learning-oriented approach would exist as external stimuli in addition to a display or artwork. This combined with theoretical learning, as recommended by Lachapelle, Murray and Neim (2003) could contribute to more meaningful advances in visitor learning and aesthetic development.

Museums, art education, field trips and distance courses support learning that is informal, interactive, social and constructivist. Sound pedagogical practice in the form of a learning-oriented and inquiry-based approach enhances engagement.

Chapter III: Methodology

Action Plan and Timeline

trips to art museums.

From the review of literature it is evident that museum learning theory and research holds that *engagement* is an essential characteristic of successful field trips and museum visits. In order to test the effectiveness of videoconference field trips, I developed a rubric for assessing *engagement* of videoconference field trips to art museums (Table 5, Appendix A). The rubric was derived from descriptions and lists of behaviours in Table 2 by Griffin and Symington (1999). This table identifies indicators of student *engagement* in the learning processes in a museum. This table was utilized because it has been tested and become part of published research literature and thus viewed as a valid tool in assessing engagement of the learning process. Also, the descriptions and lists of behaviour are compatible with findings by other authors on the relationship between active learning, art education and field trips. The application of the rubric did include use by students as part of their post-visit evaluation and as a tool to allow for more meaningful examination of the role of

This research project involved the use of videoconferencing in the art classroom at St. Thomas Aquinas Secondary School in Lindsay, Ontario. Four different groups visited a different art museum in a distant location. Each session was videorecorded. The selection of the fine art program and museum was dependent upon availability and compatibility to each grade level and its art curriculum. Over the course of the 2007/2008 school year, the following groups took part in this study:

engagement in enhancing achievement and student satisfaction in videoconference field

Group A was comprised of 25 grade nine students, 20 females and 5 males, who participated in a videoconference field trip to the Los Angeles County Museum of Art. The work-

shop was entitled, *Heroes and Myths in Ancient Art*. Eleven grade eleven students, 7 females and 4 males, made up Group B. They took a trip to the Philadelphia Museum of Art to learn about *The Impressionist Era*. Group C involved a grade ten class, 7 females and 3 males, who visited the Amon Carter Museum in Texas and took part in, *Metaphorically Seeing - It's All About Me*. The last group, Group D was comprised of grade 12 students, 7 females and 5 males, who visited The Cleveland Museum of Art and participated in the workshop, *Contemporary Art*.

#### Classroom Climate

A brief description of each group has been included in order to get a better sense of the dynamics of each class. It may also help to identify correlations between classroom climate, rubric scores and student comments. The four categories used to describe each class are: i) student interactions; ii) discipline environment; iii) learning/assessment; iv) attitude and culture. Descriptors have been borrowed from the Classroom Climate Quality Analytic Assessment Instrument Secondary Student Version produced by Western Alliance for the Study of School Climate (WASSC), Charter College of Education, CSULA. Because I teach all four groups, the discipline environment and learning/assessment is the same for all classes. To avoid repetition, I have described them here as follows:

Descipline Environment: The teacher's classroom management usually features consistency, clear expectations and sensible consequences. The classroom is a positive place and the teacher usually follows through with consequences in a calm and non-personal manner. Teacher-student interactions could be typically described as fair but teacher-directed. Because the students are active and involved most of the time, there are a limited number of behaviour problems.

Learning/Assessment: Assessment targets are usually clear and attainable for learners.

Student-controlled behaviour (effort, listening, etc.) are rewarded. The teacher is aware of learning styles as a concept, and makes some attempt to respond to them. There is also some attempt to incorporate the idea of cooperative learning. The content of lessons/units is meaningful, relevant and attempts to promote the social, personal and intellectual growth of students. Students are usually given the opportunity to reflect on their learning.

Group A: Grade nine students - 20 females and 5 males.

Student Interactions: The teacher has made an effort to promote positive interactions among students, and it has made some difference. Most students feel a sense of personal responsibility for their own learning. Various cultures and sub-groups blend, interrelate and feel like valid members of the classroom community. Students generally feel a sense of community and the classroom is defined by a positive feeling among class members.

Attitude and Culture: Most students believe they are part of a classroom society and work toward independent goals. Most students speak about the class in proud, positive terms. Students sometimes feel safe expressing their ideas and feelings in front of the entire class. The class sometimes includes rituals, games and/or traditions that give the members a sense of identity.

Group B: Grade 11 - 7 females and 4 males.

Social Interactions: Students generally like the teacher but for most the class is just another place to learn some content and get a credit. Although the teacher has made some effort to promote positive interactions various sub-groups avoid each other.

Attitude and Culture: Students believe they are working toward independent goals, but do not see the classroom as a community or society. Students feel safe expressing their ideas and feelings, but only with the teacher and/or a few trusted peers. The class usually includes only activities related to schoolwork. Most of the students lack confidence in their artistic ability but strive to do their best. Students speak about the classroom in neutral or

mixed terms.

Group C: Grade 10 - 7 females and 3 males.

Social Interactions: Some students feel a sense of community, but there is evidence of various sub-groups who avoid each other. Most students feel a sense of responsibility for their own learning.

Attitude and Culture: Students believe they are part of a classroom society and working towards independent goals. Most students usually feel safe expressing their ideas and feelings in front of the entire class. The class usually includes only activities related to schoolwork. Most of the students display creativity and artistic potential. Some students speak about the class in proud, positive terms.

Group D: Grade 12 - 7 females and 5 males.

Social Interactions: Most students feel a sense of community and the classroom is defined by a positive feeling among class members. This may be due to a shared interest and talent in art among students. Various cultures and sub-groups blend, interrelate and feel like valid members of the classroom community. Some students in the class believe their gifts are validated and recognized in a meaningful and systematic ways.

Attitude and Culture: Students believe they are part of a classroom community. Most students feel listened to, represented, and believe they have a voice. Students feel safe expressing their ideas and feelings in front of the entire class. The class includes only activities related to schoolwork. Almost all students display creativity and artistic potential. Students speak about the class in neutral or mixed terms.

Each student completed the Rubric for Assessing Student Engagement of Learning in a Museum Setting (Table 3) following their field trip. They were asked to indicate their grade, gender and field trip title. Scores were tabulated in order to determine the program's

overall level of engagement qualities.

Polycom is the company that has provided our school with videoconferencing technology. Components of the Polycom® VSX<sup>TM</sup> system from Polycom Inc., include: ViewStation®, ImageShare®, PathNavigator<sup>TM</sup>, People+Content<sup>TM</sup>, QSX<sup>TM</sup>, SoundStation VTX1000<sup>TM</sup>, StereoSurround<sup>TM</sup>, Visual Concert<sup>TM</sup>, VS4000<sup>TM</sup>, VSX<sup>TM</sup>, VX Set-Top systems, VSX component systems, VXS3000 executive desktop system and VSX Series Remote Control.

#### Procedure and Analysis

An action research approach involving participant observation, analyses of artworks produced within the group and a rubric designed to assess engagement of student learning in a museum setting provided the raw data for this study. Participant observation involved videotaping the classroom during the live broadcast. From these video tapes observations could be documented using Griffin and Symington's Table 3 which records the number of actions indicative of engagement.

Table 3.
NUMBER OF ACTIONS RECORDED WHICH INDICATED ENGAGEMENT IN LEARNING PROCESSES

# **CATEGORY**

NO. OF INSTANCES NOTED

- a. showing responsibility for and initiating their own learning
- b. actively involved in learning
- c. purposefully manipulating and playing with objects and ideas
- d. making links and transferring skills
- e. sharing learning with peers and experts
- f. showing confidence in personal learning abilities
- g. responding to new information or evidence

A quantitative rubric was used by the students as part of a post-visit evaluation to each of the art museums identified earlier (Table 5, Appendix A). The number and percentage of students' ratings of each field trip was calculated for comparison purpose (Tables 6, 7, 8 and 9). Artworks produced within the group as a result of the field trip were photographed. The rubric is intended to provide useful feedback on how to make a videoconference field trip to an art museum more engaging and supportive of artistic learning.

#### The Amon Carter Museum

The Amon Carter Museum's distance learning programs are live, two-way or multi-point audio and video programs that bring the museum to your classrom. Focusing on the Carter's collection of American art, the programs engage students and teachers with museum staff in discussions and activities exploring art, history, culture, language arts and science.

Most programs are accompanied by pre-broadcast activities that facilitate participation during the broadcast. Teachers receive these by mail in advance of the scheduled program date. Additional information and supporting lesson plans for many of the programs are also available.

The program that my students participated in was called, *Metaphorically Seeing- It's All About Me*. In this program students explored the theme of portraiture. The Distance Learning Coordinator provided the class with two pre-broadcast activities and a hands-on activity during the actual session. She also arranged for another school classroom to be connected at the same time allowing for a three-way dialogue and sharing session. Through pre-broadcast activities, students had the opportunity to refine their knowledge of metaphors and symbolism and experience the use of figurative language in writing and visual art. During the live session, students wrote personal metaphors and expressed their

ideas visually through a collage.

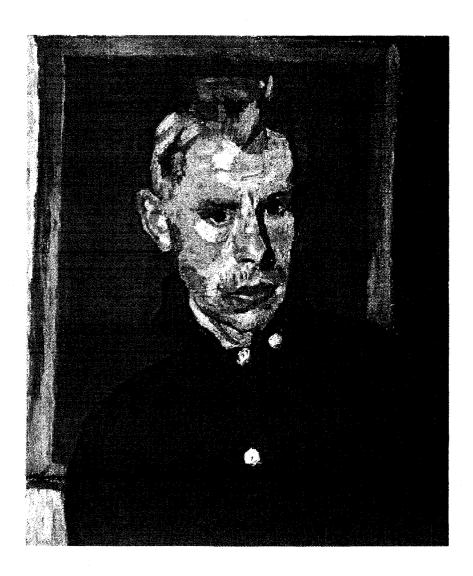
#### Pre-Broadcast Activities

The Distance Learning Coordinator sent pre-broadcast materials by Fed Ex to our school a week prior to our visit. The packet included two pre-broadcast activities, teacher instructions and all of the materials we would need prior to and during the videoconference session. Students carried out Activities 1 and 2 the day before our visit.

Pre-broadcast Activity 1, entitled, *Take Five* (Appendix B) allowed students to choose one or both of the activity boxes. Ideas generated from these activities would assist students to create their own personal visual metaphor during the videoconference session. Choice 1 challenged students to think about themselves through a series of nine questions. Choice 2 asked students to complete each metaphorical statement by identifying something that symbolizes them for each category indicated in the first blank, and then conclude each statement with an action or feeling (e.g., I am a butterfly; therefore, I float from one idea to another).

Pre-broadcast Activity 2, entitled *At First Glance* (Appendix B), required students to briefly view the enclosed portrait and, working as a class, develop a one to two minute presentation about the portrait (Figure 1). The presentation would be part of the videoconference session. Prior to presenting the image, we had a short discussion about portraiture. Students shared some personal experiences they had with traditional portraiture. They were reminded that before photography was invented, people commissioned artists to capture their likenesses in painting and sculpture. Students were then challenged to determine the various reasons why people had their portraits made. We concluded that portraits were made as family heirlooms, as a way of showing one's social status or as a historical record.

When the students were presented with the image, they were asked to look closely at the portrait to see if they could discover clues about the person represented and the time when the artwork was made (Figure 1). Students were only allowed to view the image for sixty seconds. During this brief observation, students were to record details that revealed something about the person depicted or the time in which the artwork was made. I provided a worksheet that prompted student to make observations about the person's clothing, expression, body language, attitude, grooming, health or wellness, social status and also about the objects in the background (Appendix B).



**Figure 1.** Stuart Davis, 1919. *Self-Portrait*. Oil on canvas. Courtesy of the Amon Carter Museum.

#### Chapter IV: Results

What I liked about Pre-broadcast Activity 1 was the free-choice aspect of completing the task. This maintains the characateristic we associate with a museum setting – the opportunity to choose what appeals to the interest of the visitor. Also, the activity supports authentic engagement, one of the five types of responses to any school task, identified earlier by Schlechty in *Shaking Up the Schoolhouse* (2000). Because the students were asked to brainstorm information about themselves, no doubt this provided immediate value to the student. It also satisfies the first two indicators of student engagement in the learning process as identified by Griffin and Symington (1999) in Table 2. When students were writing and talking or thinking to themselves, and persevering with the task, they were actively involved, as well as showing responsibility for and initiating their own learning. All of the students completed Choice 1 of Pre-broadcast Activity 1 and only three students completed both. This may be due to the time constraint and/or the level of difficulty of the tasks.

Pre-broadcast Activity 2 also engaged the students as they were asked to approach the task as detectives, looking for clues that might reveal something about the person being depicted. Absorbed, close concentrated examination is also an indicator of being actively involved in learning. They had no prior knowledge about the picture or the artist, nor did I. Because this information would not be revealed to us until the live broadcast, it may have increased the anticipation of the visit. Also, the information we recorded as a class was documented on chart paper. Two students were asked to volunteer to share this information during the videoconference session. As a result, many criteria associated with indicators E and F from Table 2 were being met through Pre-broadcast Activity 2. Students had the opportunity to share their learning with peers and experts, as well as, display confidence in their own learning abilities.

#### Live Broadcast Activities

It was intended that after my students and the students at the other interactive site gave their brief presentations on their traditional portrait, the latter part of the time would be spent viewing and discussing two oil paintings from the Amon Carter Museum collection that are not technically portraits but could be interpreted as such. The paintings below were to be the focus of our discussion (Figure 2 and 3).

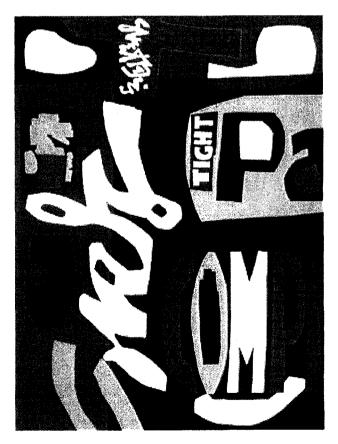
The images and discussion would provide the inspiration for students to create, in the last few minutes of the conference, a collage to serve as a visual metaphor of themselves. We were provided with collage-making materials from the Distance Learner Coordinator. I had to provide plain paper, glue sticks, markers and scissors in addition to these for the broadcast activity.

Unfortunately, our technical connection was poor. Audio and visual reception was delayed and the screen image became bit-mapped. We eventually lost total connection and had to reschedule our visit. The technician on Amon Carter's bridge website, explained that because we did not have a direct connection and were "at the mercy of the internet," the system could not support the multi-point visit and all the data being shared at the same time. We continued the field trip the following week but did not have the opportunity to meet with students from another classroom. Despite the poor audio and visual reception during the second visit, we were able to complete our field trip and the students were able to begin their collages. Although students did not have enough time to finish their broadcast activity, they shared what they were able to complete with other students in our class and with the Distance Learning Coordinator. The images that follow are examples of student work.

When the pre-broadcast tasks were combined with the live broadcast activity, all of the

indicators of student engagement in the learning process as identified by Griffen and Symington (1999) were met. When students handled objects with care and interest and used materials as intended they were manipulating objects and ideas purposefully. Because collage-making materials were available to them, students had the opportunity to respond to new information and/or discover new ideas about themselves through their artwork.

During the live broadcast, it was interesting to observe the different responses of students to the activities. Schlechtys (2000) five types of responses students might make to a school task, as identified in *Shaking Up the Schoolhouse*, became very evident to me.



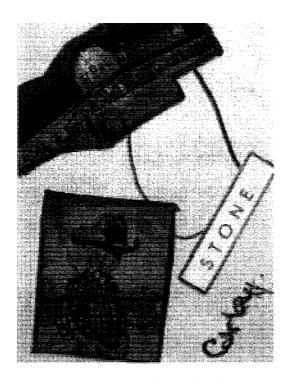
**Figure 2.** Stuart Davis, 1963-64, *Blips and Ifs.* Courtesy of the Amon Carter Museum.



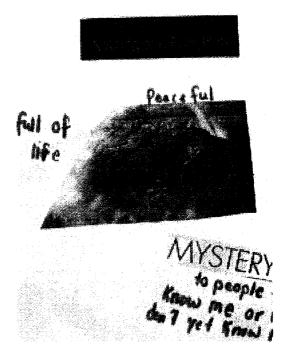
**Figure 3.** William Harnett, 1987, *Ease*. Courtesy of the Amon Carter Museum.

Three out of the 10 students displayed retreatism. They were disengaged from the discussion and did not attempt the collage-making activity. They also tried to stay out of view of the camera. I would assume that most were authentically engaged as this was a new experience, the Distance Learning Coordinator asked questions and the collage-making activity pertained to the personal interests of the student. There was no extrinsic value for completing the task. Students were not being graded and the artwork was not being marked. Some might have been passively compliant and participated in the session only to avoid negative consequences. No students displayed rebellion.

#### Student Artwork

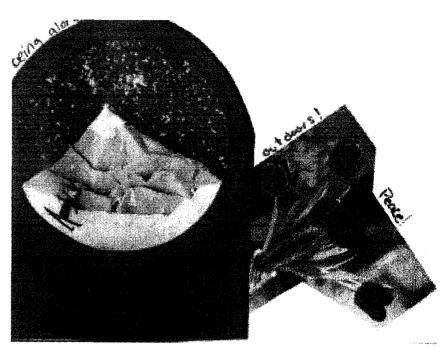


**Figure 4.** S1, *Metaphorical Self-Portrait*, 2008. Mixed media. 8-1/2 x 11"



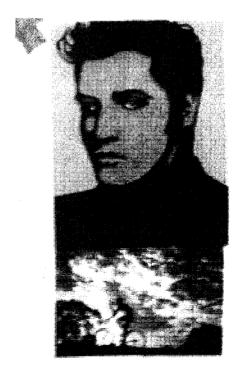
**Figure 5.** S2, *Metaphorical Self-Portrait*, 2008. Mixed media. 8-1/2 x 11"

Figure 6.
S3, Metaphorical
Self-Portrait, 2008.
Mixed media.
8-1/2 x 11"



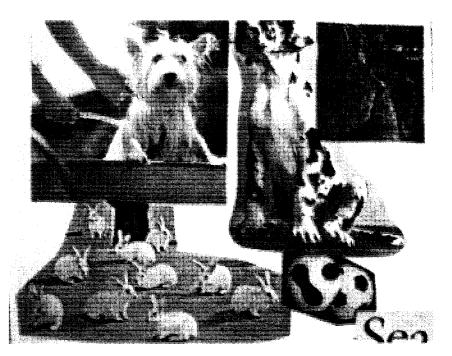


**Figure 7.** S4, *Metaphorical Self-Portrait*, 2008. Mixed media. 8-1/2 x 11"



**Figure 8.** S5, *Metaphorical Self-Portrait*, 2008. Mixed media. 8-1/2 x 11"

Figure 9. S6, Metaphorical Self-Portrait, 2008. Mixed media. 8-1/2 x 11"





**Figure 10.** S7, *Metaphorical Self-Portrait*, 2008. Mixed media. 8-1/2 x 11"

#### Student's Rubric Ratings

The rubric (Table 5, Appendix A) was used by students as part of their post-visit evaluation and is a modified version of Griffin and Symington's (1999) list of indicators of student engagement in learning processes in a museum setting (Table 2, Appendix A). The number and percentage of students' rubric ratings were calculated and organized into data Tables 6 through 9. These tables were then simplified further to show Low, Medium and High scores for each visit. (Tables 10, 11, 12, 13). Finally, a table was organized to compare average scores of the level of engagement qualities at each museum (Table 14). It should be noted that there is a slight methodological problem with the rubric as it exists. Students were made aware of the rubric directions which explains how scores are converted into rankings. This may have governed their responses. Students may have decided how they felt globally about the museum visit and made their responses according to one of the three levels.

Field trip visits for Group A, B and D were similar in structure. The Distance Learning Coordinator welcomed students from a staged studio with props that looked like the inside of a museum setting. A brief introduction of the topic was provided. Discussion was supported by slides of artwork from the museum's collection. Students had the opportunity to ask questions, paper and pencils were provided in case students wanted to take notes, but no broadcast activities were organized by the host museum. The Philadelphia Museum of Art supported the program with a small demonstration of how the Impressionist's would have ground pigments to make oil paint.

For each of the above visits Element #7, Responding to New Information and Evidence, was rated as having moderate to above-average engagement qualities. Most students learned something new, believed the program was important to their learning and were surprised by what they had learned. In addition to these qualities, some changed their view-

Table 6. Number and Percentage of Students' Rubric Ratings of a Videoconference Field Trip To LACMA (Los Angeles County Museum of Art)

			Rubric	Rubric Elements			
Ratings of Elements (N = 25)	Element #1 Initiating Learning	Element #2 Actively Involved	Element #3 Handling Obj/Ideas	Element #4 Making Links	Element #5 Sharing Learning	Element #6 Showing Confidence	Element #7 Responding to New Information
0	0	0	15 (60%)	3 (12%)	1 (4%)	6 (24%)	1 (4%)
1	9 (36%)	8 (32%)	6 (24%)	4 (16%)	12 (48%)	6 (36%)	5 (20%)
2	4 (16%)	6 (24%)	1 (4%)	5 (20%)	2 (8%)	3 (12%)	2 (8%)
3	11 (44%)	7 (28%)	0	7 (28%)	7 (28%)	4 (16%)	6 (24%)
4	1 (4%)	4 (16%)	2 (8%)	5 (20%)	1 (4%)	1 (4%)	7 (28%)
5	0	0	1 (4%)	1 (4%)	2 (8%)	2 (8%)	4 (16%)

Group A. Grade 9 class. Twenty females and five males. 32% rated the visit as having low engagement qualities. 64% rated the visit as having moderate engagement qualities. 4% rated it as high.

Table 7. Number and Percentage of Students' Rubric Ratings of a Videoconference Field Trip To Philadelphia Museum of Art

			Rubric	Rubric Elements			
Ratings of Elements $(N = 11)$	Element #1 Initiating Learning	Element #2 Actively Involved	Element #3 Handling Obj/Ideas	Element #4 Making Links	Element #5 Sharing Learning	Element #6 Showing Confidence	Element #7 Responding to New Information
0	0	0	6 (55%)	0	0	0	0
	6 (55%)	3 (27%)	4 (36%)	7 (64%)	6 (55%)	9 (82%)	3 (27%)
2	1 (9%)	3 (27%)	0	1 (9%)	4 (36%)	2 (18%)	3 (27%)
3	1 (9%)	2 (18%)	1 (9%)	1 (9%)	0	0	4 (36%)
4	3 (27%)	2 (18%)	0	0	1 (9%)	0	0
5	0	1 (9%)	0	2 (18%)	0	0	1 (9%)

Group B. Grade 11 class. Seven females and four males. 64% rated the visit as having low engagement qualities. 36% rated the visit as having moderate engagement qualities. 0% rated it as high.

			Rubric	Rubric Elements			
Ratings of Elements (N = 10)	Element #1 Initiating Learning	Element #2 Actively Involved	Element #3 Handling Obj/Ideas	Element #4 Making Links	Element #5 Sharing Learning	Element #6 Showing Confidence	Element #7 Responding to New Information
0	0	0	0	0	0	0	0
	1 (10%)	0	0	0	0	0	0
2	3 (30%)	2 (20%)	1 (10%)	0	1 (10%)	2 (20%)	0
3	3 (30%)	3 (30%)	5 (50%)	5 (50%)	5 (50%)	2 (20%)	3 (30%)
4	2 (20%)	4 (40%)	2 (20%)	3 (30%)	2 (20%)	3 (30%)	4 (40%)
5	1 (10%)	1 (10%)	2 (20%)	2 (20%)	2 (20%)	3 (30%)	3 (30%)

Group C. Grade 10 class. Seven females and three males. 0% rated the visit as having low engagement qualities. 50% rated the visit as having moderate engagement qualities. 50% rated it as high.

Table 9. Number and Percentage of Students' Rubric Ratings of a Videoconference Field Trip To The Cleveland Museum of Art

			Rubric	Rubric Elements			
Ratings of Elements (N = 12)	Element #1 Initiating Learning	Element #2 Actively Involved	Element #3 Handling Obj/Ideas	Element #4 Making Links	Element #5 Sharing Learning	Element #6 Showing Confidence	Element #7 Responding to New Information
0	0	0	(%99) 8	1 (8%)	2 (17%)	3 (25%)	0
1	5 (42%)	2 (17%)	2 (17%)	3 (25%)	2 (17%)	5 (42%)	3 (25%)
2	0	1 (8%)	2 (17%)	3 (25%)	1 (8%)	2 (17%)	3 (25%)
n	4 (33%)	3 (25%)	0	1 (8%)	5 (42%)	1 (8%)	2 (17%)
4	3 (25%)	(%05) 9	0	3 (25%)	2 (17%)	1 (8%)	4 (33%)
5	0	0	0	1 (8%)	0	0	0

Group D. Grade 12 class. Seven females and four males, 33% rated the visit as having low engagement qualities, 67% rated the visit as having moderate engagement qualities, 0% rated it as high.

Table 10. Number and Percentage of Students' Rubric Ratings of a Videoconference Field Trip To LACMA (Los Angeles County Museum of Art)

			Rubric	Rubric Elements			
Level of Engagement Qualities (N=25)	Element #1 Initiating Learning	Element #2 Actively Involved	Element #3 Handling Obj/Ideas	Element #4 Making Links	Element #5 Sharing Learning	Element #6 Showing Confidence	Element #7 Responding to New Information
Low Medium High	9 (36%) 15 (60%) 1 (4%)	8 (32%) 13 (52%) 4 (16%)	21 (84%) 1 (4%) 3 (12%)	7 (28%) 12 (48%) 6 (24%)	13 (52%) 9 (36%) 3 (12%)	15 (60%) 7 (28%) 3 (12%)	6 (24%) 8 (32%) 11 (44%)

Group A. Grade 9 class. Twenty semales and five males, 32% rated the visit as having low engagement qualities, 64% rated the visit as having moderate engagement qualities. 4% rated it as high.

Table 11. Number and Percentage of Students' Rubric Ratings of a Videoconference Field Trip To Philadelphia Museum of Art

evel of	Element #1	Element #2	Rubric Element #3	Rubric Elements	Element #5	Element #6	Element #7
Engagement Qualities (N=11)	Initiating Learning	Actively Involved	Handling Obj/Ideas	Making Links	Sharing Learning	Showing Confidence	Responding to New Information
Low	6 (55%)	3 (27%)	10 (91%)	7 (64%)	6 (55%)	9 (82%)	3 (27%)
Medium High	2 (18%) 3 (27%)	5 (45%) 3 (27%)	1 (9%) 0	2 (18%) 2 (18%)	4 (36%) 1 (9%)	2 (18%) 0	7 (64%) 1 (9%)

Group B. Grade 11 class. Seven females and four males. 64% rated the visit as having low engagement qualities. 36% rated the visit as having moderate engagement qualities. 0% rated it as high.

Table 12. Number and Percentage of Students' Rubric Ratings of a Videoconference Field Trip To The Amon Carter Museum

			Rubric	Rubric Elements			
Level of Engagement Qualities (N=10)	Element #1 Initiating Learning	Element #2 Actively Involved	Element #3 Handling Obj/Ideas	<u>Element #4</u> Making Links	Element #5 Sharing Learning	Element #6 Showing Confidence	Element #7 Responding to New Information
Low Medium High	1 (10%) 6 (60%) 6 (60%)	0 5 (50%) 5 (50%)	0 6 (60%) 4 (40%)	0 5 (50%) 5 (50%)	0 6 (60%) 4 (40%)	0 4 (40%) 6 (60%)	0 3 (30%) 7 (70%)

Group C. Grade 10 class. Seven females and three males. 0% rated the visit as having low engagement qualities. 50% rated the visit as having moderate engagement qualities. 50% rated it as high.

Table 13. Number and Percentage of Students' Rubric Ratings of a Videoconference Field Trip To The Cleveland Museum of Art

			Rubric	Rubric Elements			:
Level of Engagement Qualities (N=12)	Element #1 Initiating Learning	Element #2 Actively Involved	Element #3 Handling Obj/Ideas	Element #4 Making Links	Element #5 Sharing Learning	Element #6 Showing Confidence	Element #7 Responding to New Information
Low Medium High	5 (42%) 4 (33%) 3 (25%)	2 (17%) 4 (33%) 6 (50%)	10 (83%) 2 (17%) 0	4 (33%) 4 (33%) 4 (33%)	4 (33%) 6 (50%) 2 (17%)	8 (67%) 3 (25%) 1 (8%)	3 (25%) 5 (42%) 4 (33%)

Group D. Grade 12 class. Seven females and four males. 33% rated the visit as having low engagement qualities. 67% rated the visit as having moderate engagement qualities. 0% rated it as high.

Table 14. Comparison of Average Scores of Videoconference Field Trips

			Museum Field Trips	
Level of Engagement Qualities	LACMA	Philadelphia Museum of Art	Amon Carter Museum	Cleveland Museum of Art
Low	3.16	4	0.1	3
Medium	2.6	2.09	3.5	2.3
High	1.24	6.0	3.7	1.6

point about the topic.

However, for each of the same visits, Element #1, #3, #5 and #6 were rated as having low to minimum engagement qualities. When showing responsibility for initiating their own learning, most students knew what the program was about and what to look for, but they did not demonstrate any other of the engagement qualities associated with Element #1. Because there were no pre-broadcast or broadcast activities organized, there were no objects or materials to be handled except for the pencils and paper I provided. Most students assigned a zero to Element #3. Students in Group A who did use the pencils and paper provided, did not use them for what they were intended. Paper airplanes, doodles, notes to friends and paper games made up a small collection on the table after the program was over (Figure 11).



Figure 11.

When sharing learning with peers and experts, few students found themselves pulling others to show them something or a willing to be pulled to see others' interest. This may be due to the physical space in our classroom setting and close proximity to each other. The decreased freedom of movement and the absence of access to exhibit displays may also inhibit high engagement qualities we associate with sharing learning with peers and experts. Students who said they had a willingness to be pulled to see others' interest may have done so for reasons other than those related to the topic.

Showing confidence in personal learning (Element #6) was most consistently rated as having low engagement qualities for each of the same visits listed above. There was opportunity to ask questions about the information being presented, but there was little opportunity to assist peers or compare information with another source, and there was little evidence of students challenging the presenter with their own viewpoint. However, it is interesting to note that thirty-percent of the students who visited the Amon Carter Museum rated Element #6 as having high engagement qualities. This is possibly due to the pre-broadcast activity *At First Glance*. Students came prepared with information to share with the Distance Learning Coordinator. They already felt like experts and, as a result, were confident enough to ask questions and give opinions.

Further responses by students who visited the Amon Carter Museum also indicated many strengths for each of the other elements, particularly #2, #3, #4 and #5. Forty-percent of the students rated Element #2 as having above-average engagement qualities. The program heightened their curiosity, they were absorbed by the presentation, they wanted to concentrate and examine things more closely, and they wanted see and hear more.

The opportunity to handle objects, materials and/or ideas was rated as having moderate engagement qualities by fifty-percent of the students, compared to zero to nine-percent for

the other field trips. Because students at the Amon Carter Museum were required to complete a collage, they were able to purposefully handle objects, materials and ideas. Some students believed that the activity enhanced their understanding and learning, and others wanted to persevere with the task assigned.

It is my belief that because pre-broadcast activities were organized, Elements #4 and #5 were also rated as having moderate to above-average engagement qualities. Students made links and transfered ideas by referring to their prepared questions or previous knowledge related to the topic, and some made new connections between the topic and previous experience.

The Amon Carter Museum program was the only program that was rated as having moderate to high engagement qualities in the overall score, with fifty-percent of the respondents split equally. Students' rubric ratings for LACMA and The Cleveland Museum of Art were very close. Thirty-two to thirty-three percent rated the visit as having low engagement qualities. Sixty-four to sixty-seven percent rated the visit as having moderate engagement qualities.

#### Student Comments

Students from each field trip were asked to respond in writing to the following question: Did the videoconference field trip meet your expectations? Why or why not?

Group A: Comments made by grade 9 students who visited LACMA fell into four different types of responses. Eight percent generally thought it was an interesting presentation: "...hoping to see more of the artwork that was in the museum" (L1, interview 01/23/08). Sixteen percent or four students thought the trip met their expectations because "we got to

see many works of ancient art" and "we were able to see and talk to a person hours away. I wanted to learn something new and I did" (L2, interview 01/23/08).

Another sixteen percent did not think the field trip met their expectations. They described it as boring and thought "that it could be more interesting if the audience was involved," or "if they had gone to the museum and learned all that stuff there, it would have been more exciting" (L3, interview 01/23/08).

Sixty percent did not feel it met their expectations because they expected a tour of the site to see the displays, art work and exhibits. One student said, "I thought the girl (education coordinator) was going to actually walk us through the museum. It was just a slideshow I could have done myself. It was cool though, because we were talking to someone in L.A." (L4, interview 01/23/08).

Another student said, "No, it did not meet my expectations because I thought the program would be more interactive. I thought the lady would walk us through the museum and show us paintings" (L5, interview 01/23/08).

Yet another student wrote, "I thought that the trip would be a tour not just a powerpoint" (L6, interview 01/23/08).

Overall, 95% of the students did not feel it met their expectations.

Group B: The grade 11 students who visited the Philadelphia Museum of Art and participated in the program, *Impressionist Era*, were split in their views as to whether it met their expectations. Forty-five percent were generally pleased with the experience. One student explained that:

"the person presenting was engaging and was persistant with interesting information about several works of art...I also liked the fact that she was able to zoom in on the paintings...to show miniscule details" (P1, interview 01/24/08).

Another student "found it really neat about the things she shared with us and she had little stories that went with them (the paintings)" (P2, interview 01/24/08).

Yet another student "didn't expect it to apply to my other subjects like history and science" (P3, interview 01/24/08).

Fifty-four percent did not think it was interesting or involve them enough, and expected to see more of the museum. One student "wasn't very interested because I wanted to see the museum...I wanted to know if I would ever go there someday" (P4, interview 01/24/08).

Another student said "being at the museum in person and being able to see the paintings would have been more interesting" (P5, interview 01/24/08).

Another student "would have preferred if a hands-on activity was available" (P6, interview 01/24/08).

Group C: Forty-percent of the students who travelled to the Amon Carter museum generally responded favourably to the experience. Others had mixed views about the field trip. They reported that, although it was a good experience, they expected to see and talk with the students at the other school.

One student wrote, "Yes it did meet my expectations in some ways, and not in others

because I liked how we could see something far away and having someone talk to you, but it let me down when we could not see the other school" (A1, interview 05/07/08).

Some students were disappointed with the reception and poor video feed that did not allow for the three-way visit to take place. Only one student mentioned that they expected to see more of the museum.

Group D: Fifty-percent of the grade 12 students who visited the Cleveland Museum of Art responded positively to the experience, stating that:

"it was actually more interesting than I thought it would be. I found the pieces included and information on the artists to be very interesting" (CL1, interview 05/22/08).

Sixteen percent had mixed feelings about the visit. As one student said, "It did and it didn't. There were things that I wanted to know for my project, but I was drawn into what she was saying about the works of art" (CL2, interview 05/22/08).

The remaining students did not feel it met their expectations as they either expressed a desire to have a tour or complete an activity. Overall, it is interesting to note that although most students rated the videoconference field trips as having low to moderate engagement qualities, their responses were generally positive. Even though all of the elements of engagement were not always met, students still enjoyed the experience. Out of the total number of students, thirty-six percent wanted to see more of the museum or expected a tour of the actual site. Those that had the opportunity to be connected in a 3-way visit, wanted to meet the other students in the distant classroom. Surprisingly, the grade nine students were more critical of the videoconference field trip experience than the senior classes. This might possibly be due to maturity level. Maybe this age group requires greater opportuni-

ties to be engaged and to hold their attention. However, this group seemed to know what they wanted as far as their expectations were concerned. I am assuming this age group is exposed to three-dimensional video gaming to a greater degree than the senior students. It leads me to wonder if this experience increases their expectations for engagement.

#### Conclusion

An article by Laura H. Chapman (2005) on the *Status of Elementary Art Education: 1997-2004* helps to demonstrate the significance of this research. She investigates the impact of the *No Child Left Behind Act of 2001* on art education. Chapman traces the change of teaching practices in schools as they respond to the mandate to improve scores in reading, mathematics, and science by 2014. In her concluding observations, Chapman found that:

1) art education in public elementary schools was not routinely treated as a core subject;

2) classroom teachers and parents have low expectations for learning in the arts; 3) a majority of teachers are not prepared to offer standards-based instruction in art; 4) classroom teachers are not receiving professional development activities that inform them about the expectations for learning in art; and 5) art specialists are not being included in the development of art curriculum and in the decisions as to the use of art funds. If the arts aren't cut altogether, the most we can hope for is integrating the arts into the academic subjects or finding alternative methods for keeping the arts alive.

Not only is art education being threatened by proposed mandates, it may also be threatened by the advent of new technologies in education. Distance learning and videoconferencing use may become a reality for many classrooms in the near future, and we need to know about the benefits and drawbacks in order to make recommendations for its use. Failure to investigate the relationship between distance learning and visual art education, may lead to its demise as a subject in the educational system. Exploring possibilities in distance art education using various information and communication technologies, may lead to new

innovations for other subject areas that are also project based. It may also provide positive alternatives for teaching strategies and opportunities for greater collaboration among teachers and museum staff. We may discover new ways of teaching art, new ways of making art, and provide opportunities for creating new forms of art (Sabatino, 2007a).

Additional comments made by teachers from my recent pilot project revealed other significant aspects of distance learning and videoconferencing use:

"It allowed for broader participation, greater subject integration and team teaching approach to lesson planning" (T1, interview 02/20/07).

"A great way to take a field trip without leaving the building... and we were able to visit with a master in their studio for a fraction of the cost of a field trip and zero inconvenience such as, permission slips, head counts, lunches, busing and full day withdrawal of students and missed classes" (T2, interview 02/20/07).

In response to my pilot project presentation, colleagues said:

"Videoconferencing offers the potential for making art studies more accessible especially to outlying areas or for people with special needs" (C1, interview 03/07/07).

"This technology obviously has a place in remote regions and, used in combination with the 'artist in the schools' program, could make for a really rich experience for the students" (C2, interview 03/07/07).

Lastly, this study is significant to the school board and to the Ontario Ministry of Education as distance learning and videoconferencing use may become a common practice in the school setting so that students' education and learning opportunities are increased.

Knowing more about the positive and negative aspects of its use will help us better identify the roles and competencies necessary for effective videoconferencing practice. What may be revealed are ways to provide alternative means of education to support the *Student Success/Learning to 18 Initiative* recently implemented into our system. Students who have difficulty in the regular classroom and require a different learning environment may benefit from this mode of learning. It may provide positive alternatives for teaching strategies and opportunities for greater collaboration among teachers and students nationally and internationally. Additionally, with our current rising gas prices and concern for the environment, busing may not be economically viable. The same holds true to employees who commute. Videoconferencing has the potential to become an alternative means of communication for learning and working.

The focus of this study investigated the relationship between distance learning, engagement and field trips to art museums. I wanted to discover whether or not visiting an art museum at a distance, through the use of videoconferencing technology, could be as engaging as if one was present at the actual site. By using Griffin and Symington's (1999) list of *Indicators of Student Engagement in Learning Processes in a Museum Setting* I was able to design a quantitative rubric that could be used by students as part of their post-visit evaluation and as a tool to allow more meaningful examination of engagement that takes place in art museums at a distance.

The number and percentage of students' rubric responses of videoconference field trips to various art museums reveals that many indicators for engagement are being met but at varying degrees. Although many students responded favorably to the experience and felt that they had learned something new (Element #7), the opportunity provided by museums to purposefully handle objects, materials and ideas was inconsistent. The museum that did provide this engagement quality was rated as having the highest engagement qualities

overall. To guarantee that a high number of engagement qualities are being met consistently, distance learning coordinators should strive to provide opportunities for objects, materials and ideas to be handled in meaningful ways. Objects could be in the form of actual objects related to the historical aspect of art or art materials to produce art works.

Another weakness that presented itself was the lack of opportunity for students to show confidence in their personal learning. Students who were provided with pre-broadcast activities rated this engagement quality as above-average to high. Pre-broadcast activities that allow students to synthesize data prior the actual visit made them feel more prepared and thus more willing to share information, ask questions of experts, and compare information with another source.

Distance Learning Coordinators might also consider providing a three-way or multi-point communication experience with other remote classes. This should also be a new addition to the descriptors of my rubric. When students were provided with this service they looked forward to the visit with greater interest.

From these findings it might be safe to say that students learn more from what they do. Active listening is not enough, nor is busywork. "Busy" students are not necessarily engaged. It is "knowledge work" that needs to be carefully designed. In an excerpt from his book, *Shaking Up the Schoolhouse*, Schlechty (2000) believes that when school districts and schools, and in this case museums, focus on becoming knowledge work organizations, they come to see their primary business as: "....the invention of tasks, activities, and assignments that the students find to be engaging and that bring them into profound interactions with content and processes they will need to have mastered to be judged well educated." p. 1. In Schlechty's view when students are authentically engaged in meaningful, quality work, the likelihood of them learning something new and remembering what

was learned increases.

It is not so much the question of identifying the roles and competencies necessary for conducting effective videoconference field trips to art museums as posed in my abstract, but rather: What are the qualities, or attributes that are likely to make activities more engaging when visiting art museums at a distance?

A survey of 200 middle schoolers identifies what students find most engaging or most memorable (Wasserstein, 1995). The number one choice was a hands-on science activity followed by an independent research project. Stand-up performances like plays, speeches and skits were also mentioned. Few activities involving reading, writing, and math were listed. Surprisingly students did not choose easy activities. They like to be challenged as long as they learn something and achieve success. Students also recognize and despise busywork and they hate work that is repetitive and that requires little or no thought. According to Wasserstein (1995), "Real engagement in learning comes from empowering students, not superficially, but intrinsically" p. 41. How can distance learning coordinators and teachers empower students?

Schlechty's (2001) "Working on the Work" theory or WOW theory offers the following collection of design qualities to enhance student engagement:

- 1. Content and Substance: The content involved, consistent with the standards and benchmarks established by the state and local school boards, is that which teachers, administrators, and the community agree is important for students to know at a particular grade level;
- 2. Organization of Knowledge: Students have the skills to do the work assigned and focus on interests that appeal to the largest possible number of students;
- 3. Product Focus: The work students are assigned to do is connected to an end result that is meaningful to them;

- 4. Clear and Compelling Product Standards: The standards by which the product will be judged are clear and compelling;
- 5. Safe Environment: An environment in which students feel free to take risks to learn new things without fear of failure;
- 6. Affirmation of Performance: People or groups who are significant to the learner verify the importance of the work the student does;
- 7. Affiliation: being given a chance to work with others;
- 8. Novelty and Variety: The range of problems, issues, products, performances, and exhibitions is large and varied, and the technologies students are encouraged to employ are varied as well;
- 9. Choice: Students have some degree of control over learning; and
- 10. Authenticity: Work is genuine to the students.

In addition to including quality hands-on activities in museum settings that are visited from a distance, my study also reveal that students expected to see more of the museum environment, exhibits and artwork. Unfortunately, the opportunity to take students on a tour from a distance are dependent upon new innovations in videoconferencing technology. In a recent article of the Globe and Mail (2008) entitled, *Remote worker? Try remote-controlled*, the possibilities for doing so are already being explored. The article explains how an employee of Sybase iAnywhere in Waterloo, Ontario interacts with co-workers from his home office in Halifax. To avoid becoming a faceless and forgotten remote worker, the employee exists as a remote-controlled robot. The robot is equipped with a tablet computer, two speakers, a webcam and microphone (Figure 12). Skype software allows free, two-way communication over the internet. If there is a way to equip the distance learning coordinator with this technology, or if students could explore the museum via a remote-controlled robot, it might generate additional expectations of students.



Figure 12. Software developer, Ivan Bowman, who works from home, but has a robot in the office to help him keep in contact. Http://en.wikipedia.org/wiki/IvanAnywhere.

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#### APPENDIX A

# Table 1. BEHAVIOURS INDICATIVE OF FAVOURABLE CONDITIONS FOR LEARNING

- a. showing responsibility for and initiating their own learning;
- b. actively involved in learning;
- c. purposefully manipulating and playing with objects and ideas;
- d. making links and transferring ideas and skills;
- e. sharing learning with peers and experts;
- f. showing confidence in personal learning abilities;
- g. responding to new information or evidence.

# Table 2. INDICATORS OF STUDENT ENGAGEMENT IN LEARNING PROCESSES IN A MUSEUM SETTING

#### A) Showing responsibility for and initiating their own learning:

- Know what to look for/making choices
- Writing, drawing, taking photos by choice
- Talking to themselves
- Deciding where and when to move

#### B) Actively involved in learning:

- Exhibiting curiosity
- · Absorbed, close concentrated examination
- Perservering with a task

#### C) Purposefully manipulating and playing with objects and ideas:

- Handling exhibits with care and interest
- Purposefully playing with the exhibit elements/using hands-on exhibits as intended

#### D) Making links and transferring ideas:

- Referring to their prepared questions
- Comparing/referring to previous knowledge

#### E) Sharing learning with peers and experts:

- Talking and pointing
- Group members talking and listening
- Pulling others to show them something
- Willingness to be pulled to see others' interests
- Asking each other questions
- Talking to adults/experts

#### F) Showing confidence in personal learning abilities:

- Asking questions of displays
- Explaining to peers
- Reading to peers
- Comparing information with another source

#### G) Responding to new information or evidence:

- Evidence of changing views
- Evidence of discovering new ideas.

# Table 3. NUMBER OF ACTIONS RECORDED WHICH INDICATED ENGAGEMENT IN LEARNING PROCESSES

#### **CATEGORY**

#### NO. OF INSTANCES NOTED

- a. showing responsibility for and initiating their own learning
- b. actively involved in learning
- c. purposefully manipulating and playing with objects and ideas
- d. making links and transferring skills
- e. sharing learning with peers and experts
- f. showing confidence in personal learning abilities
- g. responding to new information or evidence

### Table 4. GUIDING QUESTIONS FOR INTERVIEW WITH CHILDREN 2 1/2 WEEKS AFTER THE VISIT TO THE MUSEUM

- Why do you think we went to the museum?
- Was the museum as you expected, or different?
- Tell me what you remember about your day at the museum.
- Can you remember any previous excursions, was this different in any way?
- What did you like best about the day?
- What part did you like least? Did you have any disappointments on/about the day?
- Tell me about what you did in the gallery
- Did you find out the answers to any questions that you were interested in?
- How did you find the answers to your questions?
- Were they your questions, or other ones from the sheet?
- Did you use the sheet at all on the day? Did you write anything on the day? or draw anything?
- Are there any things that you saw at the museum that you would like to find out more about?
- Did you learn anything related to the title of the art program?

Grade: \_\_\_\_ Male | Female |

Field Trip Title:

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Table 5. RUBRIC FOR ASSESSING STUDENT ENGAGEMENT OF LEARNING PROCESSES IN A MUSEUM S	١
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	Element #1 Showing Responsibility for Initiating Own Learning	Element #2 Actively Involved In Learning	Element #3 Purposefully Handling Objects and Ideas	Element #4 Making Links and Tranferring Ideas	Element #5 Sharing Learning with Peers and Experts	Element #6 Showing Confidence in Personal Learning	Element #7 Responding to New Information/Evidence
Low Engagement Qualities (1 point)	• I knew what the program was about and what to look for	• The program heightened my curiosity	• There were objects/ materials to be handled	I referred to my prepared questions	• I found myself talking and/or pointing to others	• I asked questions of displays/information being presented	• I learned something new from this program
Minimum Engagement Qualities • I knew what the program (2 points) look for look for • I found myself writing, drawing, taking notes, etc by choice	I knew what the program was about and what to look for  I found myself writing, drawing, taking notes, etc. by choice	The program heightened my curiosity  I was absorbed by the the presentation	There were objects/ materials to be handled I handled the objects/ materials with care and interest	I referred to my prepared questions     I compared/referred to previous knowledge related to the topic	I found myself talking and/or pointing to others     I found myself pulling others to show them something related to the topic	I asked questions of displays/information being presented     I assisted peers by explaining information to them	I learned something new from this program     This program was important to my learning
Moderate Engagement Qualities (3 points)	vs about and what to program was about and what to look for vs. I found myself writing, drawing, taking notes, etc. by choice vs. I was talking or thinking to myself about what I saw or heard	The program heightened my curiosity I was absorbed by the presentation The program made me want to concentrate and examine things more closely	There were objects/ materials to be handled I handled the objects/ materials with care and interest I purposefully handled the objects/materials as they were intended to be used	I referred to my prepared questions     I compared/referred to previous knowledge retained to the topic     I compared/referred to previous experience related to the topic	I found mysclf talking and/or pointing to others and/or pointing to others.     I found mysclf pulling others to show them something related to the topic     There was a willingness on my part to be pulled to see others' interest.	is ask cd questions of displaye/information being presented I assisted my peers by explaining information to them I assisted my peers by reading information to them	I learned something new from this program This program was important to my learning I was surprised by what I learned
Above-Average Engagement Qualties (4 points)	I knew what the program was about and knew what to look for I found myself writing, drawing, taking notes, etc. by choice I was talking or thinking to myself about what I saw or heard I was deciding for myself where and when to move or where and when to ask questions	The program heightened my curiosity I was absorbed by the presentation The program made me want to concentrate and examine things more closely I wanted to see and hear more	• There were objects/ materials to be handled • I handled the objects/ materials with care and interest • I purposefully handled the objects/materials as they were intended to be used to be used • Handling objects/ materials enhanced my understanding and learning	I referred to my prepared questions I compared/referred to previous knowledge related to the topic I compared/referred to previous experience related to the topic  New connections between this topic and my previous knowledge and experience was made	I found myself talking and/or pointing to others I found myself pulling others to show them something related to the tee topic. There was a willingness on my part to be pulled to see others' interest I asked questions of my peers	of displays and information being presented I assisted my peers play explaining information to them I assisted my peers by reading to them I assisted my peers by reading to them I compared information with another source	I carned something new  This program was important to my learning  I amining  I was surprised by what I learned  I have changed my viewpoint about this topic  C.

myscl heard • I was where when	look for or lound myself writing, drawing, taking notes, etc. by choice  I was talking or thinking to myself about what I saw or heard  I was deciding for myself where and when to move or when to ask questions  I asked several questions	I was absorbed by the presentation The program made me want to concentrate end examine things more closely I wanted to sec/hear more I wanted to persevere with the presentation or task assigned	I handled the objects/ materials with care and interest I purposefully handled the objects/ materials as they were intended to be used On Handling the objects/ materials can hanced my understanding and learning	I compared/referred to previous knowledge related to the topic I compared/referred to previous experience related to the topic New connections between this topic and my previous knowledge and experience were made  New connections between this topic and other specimals.	I found myself pulling others to show them something related to the topic     There was a willingness on my part to be pulled to see others' interest on saked questions of my peers     I asked questions of adults and experts related to the topic	information being presented  I assisted my peers by explaining information to them to them to them  I compared information to them with another source  I challenged adults andor experts with my own viewpoint	This program was important to my learning learning I was surprised by what I learned I have changed my viewpoint about the topic I want to share what I learned with others
Eler Sho	Element #1 Showing Responsibility for Initiating Own Learning	Element #2 Actively Involved in Learning	Element #3 Purposefully Handling Objects and Materials	Element #4 Making Links and Transferring Ideas	Element #5 Sharing Leaning with Peers and Experts	Element #6 Showing Confidence in Personal Learning	Element #7 Responding to New Information
Total each  Total Overall	_ points <b>points</b>	points	points	points	points	points	points

Note: Rubric directions: The rubric shown above has seven separate elements that contribute to a museum program's level of engagement. For each of these seven elements, circle a description below it that applies best to your museum visit. After reviewing all elements and circling the appropriate level, add up the points to determine the program's level of engagement qualities.

1-11 points 12-23 points 24-35 points Low Engagement Qualities Moderate Engagement Qualities High Engagement Qualities

#### APPENDIX B



#### Pre-Broadcast Activity 1

#### Take Five

Chose one or both of these activity boxes and take five minutes to brainstorm about yourself. You will use these ideas during the videoconference to create a personal visual metaphor.

#### Choice 1

Use these questions to think about yourself. What makes you laugh?	
What's your biggest challenge or fear?	
What bugs you?	
What is one event that has had a huge impact on you?	
What sports or activities do you like to watch or participate in?	
Which things/people in your life do you feel a special connection to?	
What would you change about yourself?	
What is your greatest accomplishment?	
If you were in charge, what is the first thing you would do?	

#### Choice 2

rself. Complete each metaphorical statement by identifying something that indicated in the first blank, and then conclude each statement with an action or feeling. float from one idea to another.
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### Pre-Broadcast Activity 2 At First Glance

### PLEASE **DO NOT** ALLOW YOUR STUDENTS TO SEE THE ENCLOSED PORTRAIT PRIOR TO YOUR READING ALL OF THESE INSTRUCTIONS.

#### **Overview**

Students will briefly view the enclosed portrait and, working as a class, develop a one to two minute presentation about the portrait. This presentation will be a part of the videoconference. This entire activity should take about twenty minutes to complete.

#### Discussion

Prior to presenting the image to your students for analysis, please have a brief discussion about portraiture. Most of the *personal* experiences that students have had with traditional portraiture are probably with photography, and this can be a good starting point for your discussion.

Remind students that before photography was invented in 1839, people commissioned artists to capture their likenesses in painting and sculpture. Challenge students to determine the various reasons why people had their portraits made. Portraits were made as family heirlooms, as a way of showing one's social standing, or as historical documents. These motivations for having a portrait made still ring true today.

#### Guidelines

Introduce the At First Glance activity by telling students that by looking closely at a portrait, they can discover clues about the person represented and the time when the artwork was made. Tell them they will only be allowed to see a famous portrait for sixty seconds. During this brief observation each student is to make note of the details they notice that tell something about the person depicted or the time in which the artwork was made. If needed, prompt students to make observations or speculations about the person's clothing, expression, body language, attitude, grooming, health or wellness, social class, or economic status. Also note the background in the painting and what it might reveal about the person.

These ideas should then be combined and a class member chosen to make a one to two minute presentation on their findings during the videoconference. The objective of this activity is to sharpen observation skills and to have some fun while crafting a *creative* presentation. Using humor is acceptable and thinking outside the box is encouraged! Please avoid using the Web or other sources in an attempt to discover the actual *facts* about the person depicted in the portrait. Your students may surprise you in their accuracy, and the legitimate facts about the portrait will be provided during the videoconference.