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Designing Interactive Multimedia for the Anthropology Exhibit Gallery

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DESIGNING INTERACTIVE MULTIMEDIA FOR
THE ANTHROPOLOGY EXHIBIT GALLERY

by

KELLEY CURTIS

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Arts
Department of Anthropology
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Designing Interactive Multimedia for the Anthropology Exhibit Gallery

Kelley Curtis

ABSTRACT

Computer-based multimedia offer an alternative means of providing instruction to learners in two primary, yet disparate, ways. Multimedia can be used to convey information to learners, or alternatively, learners can make use of multimedia to impart information. One example of the use of multimedia technologies at the University of South Florida is an interactive computer kiosk installed in the Anthropology Exhibit Gallery. The development of the educational program featured on the kiosk's touchscreen computer is the subject of this paper.

The purpose of the kiosk's program was twofold: 1) to introduce the field of anthropology to university students and the general public who visit the Anthropology Exhibit Gallery; and 2) to incorporate training in the creation of multimedia materials into two departmental project-based courses, Museum Methods and Visual Anthropology.

Designing effective educational programs that take advantage of multimedia capabilities without losing focus on the user’s needs or on the content being presented is a challenging endeavor. In this paper, I present the process of designing an interactive multimedia program, and discuss the critical issues of audience, hardware and software, programming tools and other technical and design considerations.
The development of the program, furthermore, must be understood within the broader context of several areas, including anthropology and museums, the role of education in museums, and exhibitions as a form of media and communication.

Finally, a summary of the project is presented, including a discussion of the problems and successes encountered and suggested areas for further development.
Introduction

Computer-based multimedia offer an alternative means of providing instruction to learners in two primary, yet disparate, ways. Multimedia can be used to convey information to learners, or alternatively, learners can make use of multimedia to impart information. One example of the use of multimedia technologies at the University of South Florida is an interactive computer kiosk installed in the Anthropology Exhibit Gallery. The development of the educational program featured on the kiosk's touchscreen computer involved both the delivery and the design aspects of the use of multimedia, and is the subject of this thesis.

The “kiosk project” (as it will be referred to throughout this paper) sought to utilize multimedia not just as a method of delivery, but as a tool for practical, hands-on learning. One of the primary goals of the project was to incorporate training in the creation of multimedia materials into two departmental project-based courses, Museum Methods and Visual Anthropology. My intention is for this thesis to aid, in part, in fulfilling that goal of training students in the effective use of the medium by providing an accessible and useful introductory guide for students interested in creating similar multimedia projects. The parallel, fundamental goal of the kiosk was to introduce the field of anthropology to university students and the general public who visit the Anthropology Exhibit Gallery. This goal will be more fully realized as a result of future additions of student-created multimedia projects to the interactive kiosk.
Thesis Organization

This thesis is divided into five parts. The first part (Chapter One: The Context of the Kiosk Project) provides an overview of the kiosk project, the Anthropology Exhibit Gallery, and my role in the kiosk project. Following this introductory chapter are two distinct, yet complementary, parts that comprise the essential content of the thesis. In the first of these two parts (Chapter Two: Theoretical and Pedagogical Background), I will provide an overview of the didactic areas that this project incorporates, which include anthropology, museums, education, and multimedia. The kiosk project is uniquely situated at the convergence of these broad yet interrelated areas, and hence I will focus on the relationships of these areas to one another, specifically as they apply to the development of interactive multimedia used to deliver anthropological content. In the second of the main parts (Chapter Three: Instructional Design for the Kiosk Project), I will present effective ways to design educational programs that take advantage of multimedia capabilities without losing focus on the user’s needs or on the content being presented. I will present examples from the kiosk’s interactive program to illustrate the program’s design and instructional approach, as well as discuss the critical issues of audience, hardware and software, programming tools and other technical and design considerations.

The next part (Chapter Four: Conclusions) will include a discussion of what these new technologies and approaches to teaching mean to the field and application of anthropology. A summary of the project is presented, including a discussion of the project’s pros and cons, the problems and successes encountered, identification of the areas that can be improved upon, and suggested areas for further research. A preliminary
review of user feedback collected to date, observations of visitor use of the kiosk, and informal interviews, will be presented.

The final part of this thesis consists of the Appendices. Included in the appendices are various tools and planning documents that were produced during the process of design and development of the kiosk project. They serve as useful examples that illustrate the process. Examples include a flow chart of the kiosk’s interactive program, sample templates of screen layout, and a mock-up storyboard showing content and navigation, a multimedia interface standards guide, work breakdown structure and time table. A brief discussion of copyright law as it applies to the project is also included.
Chapter One:
The Context of the Kiosk Project

The Anthropology Exhibit Gallery

The Anthropology Exhibit Gallery at the University of South Florida features student-created exhibits about the broad field of anthropology. These physical displays are created by undergraduate and graduate students enrolled in Museums Methods, a 4-credit class offered in the spring semester every 2-3 years. The course format includes lectures and class discussions on contemporary issues in the management of anthropology museums, as well as practical, hands-on experience designing and fabricating an exhibit. In the future, students may also extend their skills to the development of computer-based multimedia exhibits that will be presented on the gallery’s kiosk, via the internet, or on stand-alone CD-Rom programs.

The Anthropology Exhibit Gallery houses between 13 and 15 display cases, depending on the gallery’s arrangement. The exhibits represent all areas of anthropology, including cultural, biological, linguistics and archaeology. Objects are drawn from the department’s ethnographic and archaeological collections, but increasingly the exhibits are becoming more thematic and less dependent upon the department’s collections. This continuing transition makes the electronic format an ideal mode for the display of new exhibits, since “virtual exhibits” don’t contain any real artifacts. This new direction in
exhibit development was a key factor in the decision to add an interactive kiosk to the gallery’s offerings.

The Anthropology Exhibit Gallery is recognized as one of USF’s “hidden treasures” (Rodmell 2002: 8). The gallery is used primarily as a teaching resource by Anthropology faculty and instructors in other disciplines university-wide. In addition, an estimated average of 30 visitors attend the gallery each day. Visitors include university students (not just students of anthropology), guests to the university, and occasional groups of school-aged children.

A pen-and-paper visitor log allows visitors to record their name, address, and comments. A review of the log reveals that almost half of the entries include remarks along with the visitor’s name. The overwhelming majority of the comments recorded, over 90%, are positive feedback, describing the gallery exhibits as “cool,” “insightful,” and “fascinating.” In addition, typical comments such as “great job,” “beautiful displays,” and “impressive” express praise for the professional quality of the exhibits. Only 3% of all comments are negative, and nearly half of these comments contain reference to a specific exhibit (“I didn’t like the exhibit on…”). By contrast, only about 15% of all comments mention a specific exhibit by name. In addition, a small percentage of the comments are either neutral or somehow irrelevant (“My cousin is an anthropology major”).

“I never knew this was here!” and “I’ll be back!” are frequent entries in the gallery’s visitor log, and recurring comments like “Very interesting and informative!,” “I loved it!,” indicate that the gallery is overwhelmingly found to be an enjoyable and educational experience by its visitors. Perhaps the most significant contribution of the
gallery that can be gleaned from visitor comments is that the exhibits seem to
successfully acquaint visitors with the scope of the field of anthropology; as one visitor
put it, “there was a lot of information I was not aware of.”

In general, visitor comments and feedback from class assignments suggest that
many of the visitors enter the gallery with the popular misconception that anthropology is
merely about “stones and bones,” yet leave with an awareness of the breadth of the field
and a better appreciation of how anthropology relates to the real world outside the
gallery’s display cases. I will return to a consideration of visitor response in my
concluding chapter.

The Kiosk Project

Through a grant awarded by Center for Teaching Enhancement and the University
of South Florida, anthropology professors Dr. Elizabeth Bird and Dr. Brent Weisman
sought to introduce interactive media to the teaching of anthropology. The grant was
used to set up an interactive computer kiosk in the Anthropology Exhibit Gallery, funding
both the equipment purchases and the cost of the development of the multimedia
program. I was hired as a graduate assistant to work on the project.

The kiosk project had two primary, parallel goals. The first essential aim of the
kiosk was to introduce the broad field of anthropology to the general public, including
students, by means of an interactive program delivered via a touchscreen interface. The
second aim of the project, which functions to support the first, was to incorporate training
in the making of educational materials into two project-based courses, Visual
Anthropology and Museum Methods. Students would receive practical training in the
creation of multimedia programs, and the resulting student projects would be included on
the kiosk, thus continuing to develop the kiosk as a teaching resource.

A prototypical program was created during Spring 2001, and in the Fall of 2001
the touchscreen computer kiosk was installed in the Anthropology Exhibit Gallery,
adding a new dimension to the gallery’s offerings. Additional components were added
during the Fall of 2002 and will continue to be added in future semesters.

The contents of the kiosk program serve as an introduction to, and complementary
extension of, the physical displays on exhibit in the gallery. However, these "e-Exhibits"
may or may not be based on actual gallery exhibits. For example, an introductory
module entitled “What is Anthropology?,” was created independent of any specific
gallery exhibit. The module presents basic anthropological concepts, acquainting visitors
with the range of anthropological inquiry and providing a disciplinary context for the
objects on display. The module “Race: A Biological Reality or Social Construct?”
reintroduces the topic of an exhibit that was displayed several years ago. The electronic
version of the exhibit is able to include visitor interactions that were not possible in the
static form. In addition, several modules serve to augment exhibits that are currently on
display. (Note: by the time this thesis is published, these physical gallery exhibits will no
longer be on display.) For example, brief video clips provide additional information
about select artifacts from two exhibits, “Potsherds to People,” and “Florida Aflame.”
The “Imagined Indian Image Gallery” module complements its gallery counterpart
through the inclusion of movie clips that portray American Indians. It also adds a
“virtual gallery” of supplementary images of American Indians of a wider variety than is
possible in the gallery exhibit. By means of the electronic medium, the Anthropology
Exhibit Gallery is able to include far more images and information than can be crammed into a single display case, in addition to multimedia components and interactives that engage the visitor in new ways.

The kiosk project was an ambitious undertaking, and ultimately required an extended timeline for its completion. The following tasks relating to the instructional design of the kiosk program were outlined in the original grant proposal:

a) identify appropriate interactive media;
b) outline educational content of the interactive medium, including physical layout, intent, scope, and main message of the educational content;
c) in consultation with project directors, compile and draft educational content relevant to the field of anthropology, incorporate appropriate graphic content and links to other resources;
d) identify, photograph and videotape selected aspects of the museum exhibits, archaeological and ethnographic collections of the USF anthropology department, and faculty research for “virtual” interactive access by the user,
e) after review and revision, install content an the interactive computer, troubleshoot any bugs in the system;
f) prepare supplementary written materials for classroom use (in coordination with classroom instructors);
g) prepare evaluative materials for student and faculty use; and
h) train faculty and students in the effective use of the interactive medium.
In the following chapters, I will explore the theoretical issues surrounding museum representation, and their place in the larger discourse of anthropology, and will discuss the process of “making the kiosk happen.”
Chapter Two: Theoretical and Pedagogical Background

Introduction

In order to effectively realize the potential of the computer as an educational medium for anthropology in the setting of a small teaching gallery, the use of multimedia must be understood in the larger context of the field of anthropology, museum practice, and public education. In particular, it is important to recognize the relationships between these multifaceted areas. It is beyond the scope of this thesis to provide a complete review of these associations. Instead, I will focus on the key issues within each area that are most relevant to the development of computer-based multimedia of anthropological content. I must emphasize that the divisions presented below are somewhat arbitrary, as the central issues are common to the many inextricably interrelated areas discussed.

Along with the practical, technical considerations that will be presented in the following chapter, an awareness of these critical issues is necessary to create multimedia programs that make use of interactive educational strategies which will enable visitors to connect with objects and collections, and engage in an enjoyable learning experience.
Museums and Anthropology

Museums and anthropology have had a long-standing and interdependent relationship that has shaped both the present state of museum practice and the field of anthropology, though it is not possible to trace fully this historical association here (for complete reviews of this topic see Alexander 1979, Stocking 1985). Instead, in this section, I will provide an overview of the current state of museum practice and what implications it has on the future relationship between museums and the field and practice of anthropology.

Museums and universities, in particular, have experienced a markedly close association. Some of the earliest and most prominent museums with the largest and most significant anthropological collections were established within, and continue to be operated by, universities (Boylan 1999: 43; see also Solinger 1990, Hinsley 1981). University museums, even rather modest ones like USF’s Anthropology Exhibit Gallery that serve primarily as teaching galleries, are important symbols of academic merit and a valued part of the learning and cultural experience of students and the university’s wider community.

Museums, both those within and outside of universities, are dynamic institutions, highly variable in their size, specialties and structure. (It should be noted that throughout this discussion, when referring to museums, I am mainly concerned with, and speaking about, museums of anthropology, natural history, history, and other museums with ethnographic collections.) Regardless of their differences, all museums are popularly equated with the collection, preservation, and exhibition of objects. These key terms are to be found in any definition of a museum that is encountered and are routinely included.
in museum mission statements worldwide. It is exhibitions, however, that dominate the public perception of museums (Lord 2002: 12), and overshadow the other functions of museums.

Museums are often the first, and sometimes the only, place in which many people experience “foreign” or “exotic” objects and concepts. For this chief reason, museums bear the responsibility of presenting cultural materials and education about them in interesting and stimulating, yet uncomplicated ways. Museums must also remain conscientious of their power to interpret and assign meaning and must therefore strive to provide sensitive and accurate information. These sentiments resonate within the museum professional community, as evidenced in journals, conferences and exhibitions. A critical reflexive turn in museology, as in anthropology generally (Clifford and Marcus 1986), has brought the issues of representation and voice to the forefront.

It is because of their power to construct meanings that museums, rather than being seen as preservers of cultural heritage, are being accused by some groups of being brigandeers of others’ objects of cultural patrimony. As Ames puts it

“Museums are cannibalistic in appropriating other peoples’ materials for their own study and interpretation, and they confine their representations to glass box display cases” (Ames 1992: 3).

In response to these concerns, and attempt to make relevant their offerings to a multicultural society, museums are proactively exploring and incorporating ways in which they can collaborate and meet the needs of the public they serve. Some museums are doing this better than others. The current reorganization of Native American and African exhibits at many museums, the Smithsonian Institute’s Museum of Natural
History and forthcoming Museum of the American Indian are exemplary models, demonstrating that conscientious attention is being given to living representatives of the cultures presented. Populations are increasingly being given opportunities to exert control over the way they are presented in museums. A thorough review of the ample examples is not possible in the scope of this paper; suffice it to say that involvement in exhibition development is just one way in which audiences actively shape exhibitions.

Museums and Media

The 20th century has witnessed unparalleled advances in public communication – radio, television, film, music recordings, faxes, cell phones, and the internet. “Yet,” as Lord points out, “there is still another success story in public communication that remains with us and is constantly growing and extending its influence – the museum” (2002: 11).

Museums are generally overlooked as a form of mass media, yet the primary function of museums is to communicate information to large groups of people. As a form of mass media, museums possess particular characteristics that are unique unto themselves. Museum communication is a new and growing area (Hooper-Greenhill 1995: 11), and in fact there are limited references to museums as such in the mass communications, anthropology, or even museum literature (with the exception of the very recent recognition acknowledgement by Lord [2002]), that specifically addresses the issue of the museum as a form of mass media.

A typical mass media introductory text book offers this operational definition of mass communication:
a process whereby professional communicators use technological devices to share messages over long distances to influence large audience (Wilson 1995: 12).

Museums are not among the forms of mass media listed by the author. I would argue however that museums do in fact fit the above description. Clearly museum curators, educators, and other staff, can be considered professional communicators. It is their job to translate the museum’s mission into information that can be enjoyed by the public. Museums use a variety of methods and devices to extend their messages, including several types of media, such as audio tapes, printed brochures, and interactive kiosks. Although it is true that one must (in most cases) attend a museum to view an exhibition, exhibits are not limited to a confined area. In many instances, traveling exhibitions are transferred from museum to museum, thereby increasing the number of visitors who view it.

Further, I would argue that the objects themselves have “traveled” to become part of an exhibition, very often far removed from their place of origin. Historic and prehistoric objects, in addition to actual geographical distances, have also traveled metaphorically through time to reach their audiences. Additionally, more and more museums are developing “virtual tours” that can be accessed entirely via the World Wide Web or CD-Rom, without the visitor ever having to set foot inside the museum. This development promises to reach an even greater number of people. Finally, I will assert that museums do seek to influence their audiences, although their goals may seem somewhat innocuous compared to other forms of mass media. The fundamental goal of any museum exhibition is to provide information, although the specific objectives
established for any exhibition may or may not include a call for action on the part of its visitors. Further, I believe that it can be alleged that museums are in the market of selling ideas, whether or not the ideas presented are overt or even intended.

Plainly, in mass communications terminology (Wilson 1995: 8), the museum can be viewed as a source (sender) that is in the business of delivering a message or messages, which are the objectives of the museum and any given exhibition. Messages are communicated via the medium (channel) of museum displays, publications, presentations, etc., to an audience (receiver).

Museums it can be said, in the terms of Lull, wield a great deal of symbolic and cultural power, as they utilize symbolic forms to produce meanings, construct representations of cultural lives, and influence their audiences (Lull 1995: 66-86). They are unquestionably hegemonic institutions through which identity is transmitted, consciousness formed, and social power is exercised (Lull 1995: 6-43). How museums impart meanings is the subject of great concern in the museum world - issues such as who controls history and the representation of cultures, whose interests are being served by museums, who has the right to interpret meaning, and even who should staff museums are all being actively debated in museums today. Museums, it is recognized, not only create, but also reflect culture. Also as Lull points out, museums carry messages that serve the interests of some groups and not others (Lull 1995: 9).

“Every museum exhibition, whatever its overt subject, inevitably draws upon the cultural assumptions and resources of the people who make it” (Karp and Levine 1991: 1). Further, the practice of museum display has always implied the taking of positions. The gathering of collections to create an exhibit necessarily requires judgments, and
expresses values of various kinds, primarily those of the exhibitions’ organizers (Harris 1995: 37). Exhibitions seem appropriate when visitors share the same attitudes as the exhibits makers, and when the presentation style of the exhibit is familiar.

Museums, long respected as a source of objective authority, are having their authority critically questioned, both within and outside of their walls. The tendentiousness of museum exhibitions has been exposed, as increasingly the “others” that have been the focus of museum exhibits have stepped forward to voice their concerns. Museums, as institutions built up during a colonial era, are criticized for interpretations that impose categories and reify Western values. Museums authenticate those identities on display and contribute to the myth-building as much as other forms of mass media. The inherent reality - that the museum’s objects are removed from chronologically and conceptually from the society for which the items once held meaning - is indeed problematic.

Museums and Education

Today an essential aim of museums is to educate, in other words to convey information, albeit different museums have different ideas of what information is to be relayed and how this is to be accomplished. It is not possible to review here the history of museum development in the U.S., but it should be noted that since the early years of the 20th century, museums have steadily emphasized their public service role, with education being the central concern. Excellence and Equity (1992), a report issued by the American Association of Museums, identifies museums as institutions of public service and education, the term education encompassing a broad range of activities including
“exploration, study, observation, critical thinking, contemplation and dialog” (Hirzy 1992: 6). For museums the principal, but not exclusive, means of fulfilling their educational missions is through exhibitions.

Museums professionals therefore recognize that their audience is of primary significance, since learning cannot occur unless information has been received effectively. In order to ascertain their successes and failures at communication, museums have in recent years made a considerable effort to address the question of who visits museums and why. It can be confidently asserted that the reasons people visit museums fall into the same category system as other forms of mass media as outlined by McQuail et al: diversion, personal relationships, personal identity, and surveillance (in Lull 1995: 93). In a similar manner Kelley uses the terms “sacred, social and cognitive to classify visitors’ personal and social uses of museums” (Kelley 1992: 24-31). It is noteworthy that the primary reason most people attend museums is in order to learn (Falk 1998: 40): an iterative value that is generally reflected in the public images of, and presentations within, museums. Museum-goers typically hold the view that education is a lifelong process, and perceive educational activities as an interesting and important leisure pursuit, regardless of their age, gender, ethnicity, or socioeconomic status (Falk 1998: 40).

Within museums, objects serve as signs (Maroevic 1992: 25). Objects almost without exception are the central feature of exhibits. The primacy of objects stems from the view that objects in and of themselves are representative of an objective reality. They possess inalienable truths. They are valued not only as material documentation, but for the conceptual essences they embody (even if their identities can never be truly revealed).
Granted, any object does not have a purely functional existence but also symbolizes aspects of the ‘parent’ society’s ideological framework (Owen 1996: 202).

The objects combined and presented to the public in exhibitions have changed cultural contexts multiple times before they are displayed, a fact that is usually obscured to the public (Maroevic 1992: 24). Once a component of an exhibition, an object acquires yet other meanings in relation to the other objects and elements of the exhibit. Indisputably, at different times and in different social and museum contexts, the same museum material can therefore convey very different messages. Additionally, each visitor brings his or her own personal history to the museum experience, further confounding and challenging the art and delivery of museum exhibitions. All of these factors contribute to the creation of an “exhibition reality,” if you will.

Still, studies reveal, not surprisingly, that visitors attend museums to see objects, to learn about different cultures and to discover the meaning the objects had for their original owners (Kreamer 1995: 55). “One key to the success of museums,” notes Lord, “is the remarkable fact that visitors who have abandoned religion, don’t believe the press or media, and even question much of what their children are learning in school or university, are often ready to place all of their confidence in the experience that museum exhibitions offer” (Lord 2002: 16). The tenacity of the museum’s perceived authority lies primarily in the presumed authenticity of the objects.

As museums continue to grow larger, more numerous, and more diverse worldwide, there is a need for anthropologists to examine the particularly specific instrument of communication that is unique to museums – the exhibition.
The fact that museums are one of the most popular leisure venues in the U.S., out-drawing even sporting events (Falk 1998: 38) warrants a closer look at the museum and the messages it promotes, as well as how museums relate to other forms of contemporary media. Furthermore, the reality that more people learn about anthropology from museums than universities (Ames 1992: 139) should be recognized as a significant point to note by anthropologists, especially those interested in communication, media, education, and popular culture.

**Museums and Multimedia**

A museum visit is foremost a multimedia experience. Visitors are typically exposed, minimally, to objects displayed near descriptive text. Museums are also interactive in the sense that a visitor need not experience the exhibits in a linear fashion. Visitors can move freely from gallery to gallery, utilizing any of the resources an exhibit provides, such as the objects on display, labels, audio tapes, and mechanical interactives, for example.

Koester points out that in contemporary society, individuals are accustomed to the flood of visual, aural, and written information that bombards them daily through television, radio, video, and print media, that they are not only more accustomed to accepting and selectively interpreting all this stimulus, they increasingly expect multimedia in every environment that they encounter (Koester 1993: 12). Indeed, museums are increasingly dependent on multiple media for the dissemination and communication of information in, as well as outside of, exhibitions. Today standard fare in museums can include audio guides, slide shows, video presentations, live
demonstrations and performances, interactive computer terminals, etc. Taken as a whole, museums are a unique multimedia communication medium.

Within museums a specific communication pattern exists. It is a communication with the past in the present. The narratives in museum exhibitions do not explain past realities, but discuss past material culture in the context of the present audience’s social experiences. “Ethnographic materials posses a compelling power to capture audiences by their intuitive nature,” notes David de la Torre, director of the Mexican Museum, “since many of these objects were made for use in daily or ritual life, the viewer is intuitively in touch with the purpose of these objects” (Garfield 1989: 43). Ames suggests that alienation from the land in Western society cause people to locate meaning in cannibalized cultures (Ames 1992). Whatever the reason people find visits to museums to be meaningful experiences, museums today strive to design exhibits that appeal to a media saturated society.

Museums today are clearly in competition with other leisure pursuits, such as movies, theme parks, sports and recreational activities. Research indicates that an increasing number of museums are acknowledging and capitalizing on the drawing power of having an element of entertainment or fun in their exhibits (Koester 1993: 7). Whenever education seems entertaining, suspicions about accuracy emerge among certain museum-goers and professionals, however the argument can be made that by attracting greater audiences museums can make a greater societal impact (Tramposch 1998: 49). Interactive multimedia displays are an example of the “infotainment” or “edutainment” strategies museums use to attract visitors.
Interestingly, as electronic exhibitions become more commonplace, indications suggest that the ubiquity of these virtual experiences only serves to increase the interest of media users in the “real thing” - the authentic experience that can be enjoyed only on a visit to a real museum. The concern that virtual experiences will replace real museums seems to be unsubstantiated.

Clearly, museums are not located outside of the social processes and structures in which they exist. Ames identifies the museum as an “artefact of our own society,” and thus itself, an object worthy of study (Ames 1992: 44). Museums as a form of mass media are also a valuable subject for close examination. Exhibitions are primarily about communication – communicating aesthetic experiences, ideas or concepts to varied audiences with different learning styles and levels of interest. Multimedia offers a whole new range of communication choices that help museum professionals reach out to visitors, and it is within that larger context that this current project is situated.
Chapter Three:
Instructional Design for the Kiosk Project

Introduction

In this chapter I will address the many practical considerations relating to the development of an interactive multimedia program, like the one installed on the kiosk in the Anthropology Exhibit Gallery. Here I will present the process by which the gallery’s kiosk program was designed and developed. In the following sections, and in the appendices attached, I will review many of the technical elements, such as software and hardware, screen design, copy, typography, color, navigation, and interactions, that are the integral components of multimedia projects. I will also discuss the human factors that determine design, such as organizational needs, audience characteristics, and instructional objectives and content.

This information is intended to serve as a guide, by way of example. I have included examples from the kiosk’s program to illustrate this discussion, as appropriate. This document is not meant to be an all-inclusive reference, nor is it a step-by-step, how-to-do-it manual. However, the information contained herein will be invaluable for any student considering or creating a computer-based multimedia project. In addition, most of the elements of the method I describe here can also inform and guide the production of other types of multimedia projects as well, such as exhibits and videos.
The process of creating a multimedia program is very much the same as the process involved in creating a gallery exhibit or visual anthropology project, like the ones the students in Museum Methods and Visual Anthropology produce as part of their coursework. In all three types of projects, the basic process includes conceptualizing a theme, researching the subject matter, writing clear and engaging text (e.g., text for labels, narration/script, screen copy), and selecting appropriate and compelling visuals (e.g., artifacts, photographs or video, graphics) to “tell the story.” Obviously, there are numerous steps and tasks involved in each of these stages and all three types of projects entail different kinds of communication techniques. I will be discussing these topics as they pertain to the kiosk project in more depth to follow.

Careful planning is critical in the development of multimedia projects, therefore it is important to follow a systematic approach. (Ivers and Barron 1998: 26). Despite, or perhaps because of, the fact that a systematic approach was only haphazardly and inconsistently applied to the kiosk project (due to a number of conditions, but primarily the project team’s inexperience in completing such a project), I am including in this chapter an introductory discussion of two useful planning and development tools - the Kepner-Tregoe system of project management and Instructional Systems Design, a generic model for the production of multimedia programs.

Project Management

A key tool that I discovered and applied in the later stages of the kiosk’s development was the Kepner-Tregoe method of project management. The Kepner-Tregoe method of project management is a practical tool for planning and monitoring any
type of project of considerable magnitude that must be completed within a budget and a by a specific time. Anthropologists Dr. Charles Kepner and Dr. Benjamin Tregoe developed the approach while conducting research on decision making at the U.S. Air Force’s Strategic Air Command. They found that successful decision-making was the result of a logical process employed by those officers who gathered, organized, and analyzed information before taking action. Their findings became the foundation for the Rational Process, the Kepner-Tregoe method for effective organization management and the basis for their project management process (Kepner-Tregoe, Inc. 2001).

It is not possible to expound upon the method in detail here, but the illustration in Appendix A identifies the key phases and steps of their project management model and is reasonably self-explanatory. In a project as complex as the kiosk project, it is easy to get bogged down with minute details, therefore gaining an awareness of the overall process involved in a project like this is beneficial because it helps to illuminate the “big picture.”

In the Appendices, I have also included a set of questions that should guide the project team during each phase and step of the process (see Appendix B). Although not every step or technique presented needs to be applied to every project, the Kepner-Tregoe method is a dynamic and flexible model that can be adapted to the specific needs of any project. Admittedly, this approach would have facilitated the kiosk project if it had been applied at a much earlier stage! Even so, I found that rethinking the kiosk project in project management terms was an invaluable endeavor. I was quickly able to identify and concentrate on the areas that remained deficient and promptly attend to them.

The first steps in the process are to define the project’s purpose and objectives. I should note that the purpose and objectives presented here are different than those of the
program itself, which will be discussed in a later section. In addition, another important part of this initial step is to also recognize the constraints that will impact the project.

The project statement and objectives for the kiosk are:

**Project Statement:**

- Set up an interactive computer kiosk in the Anthropology Exhibit Gallery within two academic semesters at a cost not to exceed $15,000.

**Objectives:**

- Created interactive exhibits that will be displayed on a touch screen monitor.
- Introduced the field of anthropology to visitors, providing a foundation for understanding the gallery’s exhibits.
- Incorporated training in the design of electronic exhibits into two classes: Museum Methods and Visual Anthropology.

**Other Objectives/Constraints:**

- Electronic exhibits designed for use on an iMac computer w/built-in touch screen (with no keyboard or mouse accessible).
- Project completed by the end of the grant period (9 mo.).
- New equipment purchases will not exceed $7,000.
- Graduate Assistant hired to work on this project will be paid $8,000 over the course of two semesters.
- Project completed using already owned computer programs

Another product of the Kepner-Tregoe process that helps to bring into the focus the “big picture” is the Work Breakdown Structure (WBS). The WBS is an outline of all of the tasks and deliverables involved in completing a project. Although the WBS is only one element in the project management process, it serves as the basis for determining the required resources, team members’ responsibilities, and the sequence and scheduling of a project.
The Work Breakdown Structure for the kiosk project contains all of the elements outlined in the original grant proposal, but organizes them in a different manner, according to related activities. A WBS does not necessarily present the jobs to be done in the order of completion, but identifies all of the things that must be accomplished in order to successfully finish the project. The WBS for the kiosk project appears below. I will address some of these items in more detail in the following section.

**Work Breakdown Structure for the Anthropology Gallery Kiosk Project**

1.0 Preliminary Planning  
1.1 Scope of project defined  
1.2 Objectives/constraints identified  
1.3 Audience characteristics identified  
1.3.1 Visitor logs reviewed  
1.3.2 Visitors informally interviewed  
1.4 Equipment needs determined  
1.5 Exhibits for inclusion selected (e-Exhibits)  
1.6 Overall structure and design of program determined  
1.7 Budget and timeline established

2.0 Equipment selected, purchased, set up  
2.1 Equipment options researched (features and pricing compared) and recommendations made  
2.2 Equipment selections made  
2.3 Equipment purchased  
2.3.1 POs obtained  
2.3.2 Equipment orders placed  
2.4 Equipment received  
2.5 Equipment set up  
2.5.1 Equipment (computers and peripherals) unpacked, connected  
2.5.2 Software installed
3.0 Encasement designed, built, installed
3.1 Designer/fabricator hired
   3.1.1 Designer/fabricator contacted
   3.1.2 PO for encasement payment acquired
3.2 Plans for encasement design drawn up/approved
3.3 Equipment purchased
3.4 Encasement fabricated
3.5 Kiosk housing installed

4.0 Educational content designed
4.1 Scope of content of each e-Exhibit defined
4.2 Gallery Exhibits “repurposed” (for each e-Exhibit)
   4.2.1 Exhibit text obtained
   4.2.2 Exhibit text edited for electronic version
   4.2.3 Objects/artifacts photographed
   4.2.4 Images scanned
4.3 Flowcharts created (for each e-Exhibit)
4.4 Storyboards prepared (for each e-Exhibit)
4.5 Additional required elements/graphics obtained
   4.5.1 Needed graphics/elements identified
   4.5.2 Needed images “harvested”
   4.5.3 Needed elements procured

5.0 Program developed
5.1 Needed programs obtained
5.2 e-Exhibit scripts prepared
5.3 Graphics created
5.4 Multimedia components produced
   5.4.1 Audio produced
   5.4.2 Video produced
   5.4.3 Animations produced
5.5 Code authored/programmed
5.6 Components assembled

6.0 Kiosk installed
6.1 Completed program installed on touchscreen
6.2 Program tested (alpha-test) on touchscreen and revised
6.3 Touchscreen installed in gallery
6.4 Beta-test performed; program revised as necessary
6.5 Additional modules installed as they become available
7.0 Evaluation materials prepared
7.1 Online survey designed, installed
7.2 Online survey results report completed
7.3 Instructor questionnaire prepared
7.4 Instructor questionnaire results report completed

8.0 Support materials prepared
8.1 Technical manual prepared
8.2 Instructors’ guide prepared
8.3 Supplementary instructional materials prepared

9.0 Train faculty and students in use of medium
9.1 Faculty training sessions held
9.2 Student training sessions held

10.0 Project successfully managed
10.1 Project team meetings held (bi-weekly)
10.2 Evaluations performed on on-going basis
10.3 Budget monitored
10.4 Progress monitored
10.5 Project plan revised as needed

As this WBS makes clear, there was a great deal of work to do and numerous steps involved in the kiosk project. Typically a multimedia project of this magnitude would involve several people, in which case project management becomes an even more valuable tool for planning, communicating, and coordinating the efforts of the design team. The team for the kiosk should include the roles of Project Manager, Instructional Designer, Graphic Artist, Multimedia Developer, Programmer, Project Advisors, Office Manager, and Cabinet Maker. In reality, I assumed the responsibilities of the first five roles listed above, while Drs. Bird and Weisman served as the Project Advisors. The Office Manager assisted with the remittance of the grant funds, and a Cabinet Maker was hired to design and construct the kiosk’s encasement.
Good project management should guide the entire project, from beginning to end, regardless of the number of people involved. The more effort put into the initial planning and continual monitoring, the smoother the project will go and the better the quality of the final product. I strongly recommend the application of the Kepner-Tregoe method and believe that the steps outlined in their method can greatly improve the chances of project success, even when the undertaking is a class project that has a “team of one.” (Incidentally, project management is a great tool for writing one’s thesis, which is essentially a “project to manage” in itself [see Thomas 1999]).

Instructional Systems Design

Instructional Systems Design, simply stated, is a process of sensible decision making to determine the who, what, when, where, why, and how of instruction or training (Clark 1995). ISD models prescribe a process for the design and development of instructional programs to ensure that progress is made in an effective and efficient manner. There are many ISD models and the different models vary in structure and complexity; however all ISD models stress and include the generic phases of analysis, design, development, and evaluation (Alessi and Trollip 1991; Ivers and Barron 1998: 19). I will present only a generalizable model here that includes these common phases.

Analysis

The Analysis phase lays the groundwork of any multimedia project. Unfortunately, it is also the phase that often goes overlooked or is only superficially
addressed, at best, by inexperienced designers, and even by many experienced designers. It is during the analysis phase that a project is evolves from a “good idea” into a comprehensive plan for the realization of that idea. Most of the tasks outlined by the Kepner-Tregoe method of project management, discussed earlier, take place at this stage.

In the case of the kiosk project, this phase included determining the project’s goals and brainstorming to generate ideas about the project, including what content to include, the overall “look and feel,” and the program’s instructional approach. During this initial phase we also selected and acquired the hardware and software needed to complete the project.

Some aspects of this phase occurred even before the kiosk project was a (funded) reality. During the grant writing stage, much of the project was anticipated and described in the grant proposal. In addition, I had developed a prototype introductory module as my project for the Visual Anthropology class, even before the grant proposal was written.

Two critical aspects of the Analysis phase are assessing the organization’s needs (the Anthropology department, in this case) and the target audience’s characteristics. It is imperative to consider the appropriateness of interactive multimedia presented on a touchscreen as the method of delivery for instruction. Why is the kiosk “needed”? Further, the program’s intended audience is a significant determinant of the program’s goals and design. Therefore, it is crucial to possess a good understanding of the learners’ characteristics, competencies, limitations, and familiarity with the subject area in order to produce effective computer-based instruction. I will discuss these subjects in more detail in later sections of this chapter.
**Design**

The Design phase involves the planning stages of the development of the multimedia program. During this phase the program’s content is determined and described in detail. Storyboards are created that describe the exact text, graphics, audio, interactions, and other multimedia elements of the program. Flow charts that outline the sequence and structure of program are produced. The products of this stage provide the blueprints for the following phase, development.

The kiosk’s program is comprised of several e-Exhibits - the creation of each individual module was a complex subproject unto itself, consisting of multiple activities. For each module, the scope of the content had to be defined and the content created. In the case of previously displayed gallery exhibits, the presentation had to be “repurposed” for the electronic format. There were inherent problems in this endeavor, due to the simple fact that the transition involved taking something that is three-dimensional and converting it into a two-dimensional format. Many exhibit techniques do not translate readily to the limited landscape of a computer screen, and thus the content of the e-Exhibits often had to be reorganized in a new and different manner. A physical exhibit, for example, can employ visual techniques to “guide” the visitor through the information and objects on display, such as, the actual spatial relationships between objects. In addition, copy on an exhibit label can be longer than is possible on a single screen layout of the computer’s monitor. So, in many instances, the exhibit script had to be edited and rewritten. Although it may not seem the case, the process of repurposing an exhibit was equally as time and labor-intensive as creating an entirely new one, designed specifically for the new format.
Admittedly, I did not laboriously produce flowcharts and storyboards for every single e-Exhibit, at least not to an equal degree: To do so would have taken the entire grant period! Storyboards and flowcharts are the detailed plans that are usually passed from a designer (the person that plans the material) to a developer (the person that actually produces that material). Since I already knew what I planned to do, and I would be the one who would be doing it, it wasn’t necessary to document it in detail. However, storyboards and flowcharts are extremely useful tools, even if they are only rough sketches committed to index cards. These tools help to demonstrate the relationships of the components with each other, and with the sequence of the “story.”

**Development**

The Development phase is where all of the elements come together. This stage involves the actual production of the media elements, including text, graphics, audio, animation, and video. During this phase, all of the components are assembled in the actual program and the program itself is written.

For every e-Exhibit, artifacts had to be photographed with a digital camera, documents and other images had to be scanned, and much completely new material had to be collected or produced. Graphics and other media elements were either created or obtained from a variety of sources, including clip art collections and the internet. The kiosk’s program includes several original video sequences and audio segments that had to be recorded and edited. Fortunately, the Florida Center for Instructional Technology had produced several short video segments, based on two of the gallery exhibits, that I was able to incorporate into the program.
For me, the most challenging and rewarding task of the kiosk project was the authoring of the computer program that presents the material in a user-friendly, interactive interface. I spent a significant amount of time learning the program that was used, mostly through a process of trial and error. Solutions to some programming problems were simple, some were very perplexing - most required a creative approach because I am not a “programmer.”

To a certain extent, the design and development phases overlapped while working on the kiosk project. This was because different modules were in different stages of production at the same time. For example, during one week I may have been creating the graphics for one e-Exhibit, while researching the subject matter of another. It would have been impractical to complete one module, followed by another, and another. When I hit a roadblock in one, I was always able to pick up where I left off on another. While this flexible approach was required because some resources were simply not available at the time that they were needed, some modules remain incomplete today.

*Fair Use and Copyright*

One question that inevitably arises at the onset of a project such as this one, is "What about copyright?" Indeed, the interactive computer kiosk installed in the Anthropology Exhibit Gallery contains material that is copyrighted by others, as do the gallery exhibits and other visual anthropology projects created by students. Therefore, it is useful to consider here the four factors that determine Fair Use (See Appendix C for Fair Use Provision of the Copy Right Act) and discuss briefly the application of the Fair
Use Doctrine to this situation. (For more information about Copyright Law, see http://www.benedict.com.)

The goal of the kiosk project is to introduce interactive media to the teaching of anthropology at the University of South Florida, to both students and the general public. Since the kiosk and the student projects featured on it are produced exclusively for nonprofit educational purposes, the provisions of the Fair Use Doctrine are clearly met. Additional projects developed by students enrolled in the Visual Anthropology and Museum Methods classes may be installed on the kiosk for public access and may be used throughout the department to enhance instruction. Student projects may include videos, "virtual" exhibits, web pages, and CD-ROM interactives. It is expected the all projects will contain materials copyrighted by others in some form. Copyrighted text, for example, will be reviewed and may be included for illustrative purposes. Since many of the students are not accomplished artists, most of the graphics and musical selections included will necessarily be copyrighted works. It is anticipated that copyrighted works will not be reproduced in their entirety and will be limited to such elements as photographs, illustrations, brief segments of music or video, etc. Furthermore, the copyrighted materials will be selected, combined, and “refashioned” in unique ways in order to deliver a new message independent of the purpose of the original copyrighted works. Finally, it is unlikely that the reasonable use of copyrighted materials in these projects will affect the value of the original copyrighted works. Included on the kiosk is a Statement on Copyright and Fair Use (see Appendix D)
Evaluation

Evaluation is a process that should ideally occur throughout the entire design and development process, as part of the overall project management efforts. Periodically, the project should be reviewed and, if necessary, revised. Evaluation that occurs throughout the process is referred to as formative evaluation. Summative evaluation, on the other hand, takes place at the end of the project. In this case, due to the constraints of time and resources faced in this project, no formal evaluations were performed, although this would be highly recommended under more favorable circumstances.

Formative evaluation was done on a continuing basis through regular meetings of the project team. The project advisors provided feedback on various aspects of the program, including such things as the wording of the content, the program’s appearance and appropriateness of graphics and other media, and the effectiveness of interactions and instructional approach.

In addition to ongoing evaluations, two major tests of the software are usually conducted. An alpha test is performed by the project team, prior to delivering the program to the client, or as in this case, installing the program on the touchscreen in the gallery. A beta test is a full test of the final program, usually conducted by, or in collaboration with, the client for whom the product had been produced. In the case of the kiosk’s program, we allowed the gallery’s visitors, the end-users, to conduct the beta test. This approach was the most appropriate and practical for us, again, due to time and resource constraints. Furthermore, some issues only arise when the program is actually “put to the test,” since inevitably visitors will use the kiosk in ways not anticipated by the design team. Through the use of the kiosk in the gallery by actual visitors, the program’s
strengths and limitations were identified and several issues and potential problems were brought to my attention and addressed.

**Needs Analysis**

The kiosk project emerged as teaching-oriented initiative proposed to explore the potential of visual approaches to anthropological education, aimed at both gallery visitors and students of the departmental project-based courses, Museum Methods and Visual Anthropology. As mentioned earlier, it is essential to assess the appropriateness of multimedia for the delivery of the content planned in a given context and for a particular audience. In order to justify the addition of the kiosk to the gallery’s offerings, and receive funding for the project, we had to convincingly answer the question “Why include interactive multimedia in the Anthropology Exhibit Gallery?” There are several reasons Drs. Weisman and Bird felt that an interactive kiosk was a desirable feature to include in the gallery.

First, the fact that fewer of the gallery’s displays are based upon the department’s collections was a key factor in the decision to add an interactive kiosk to the gallery. The kiosk allows for the presentation of engaging programs that are unencumbered by physical space and time. Concept-based, virtual exhibits without real, tangible artifacts become possible via the kiosk.

Second, the kiosk would function to extend the life of the gallery exhibits and provide a public showcase for visual anthropology projects, other student projects, and department faculty applied research and work. Many of the student-created gallery exhibits are of exceptional quality and are simply difficult to part with when it is time to
dismantle them to make room for a new group of displays. “Repurposing” select gallery exhibits for the electronic format allows the disassembled exhibits to be preserved beyond their gallery life. In addition, many of the projects created by students in Visual Anthropology, such as videos, photographic expositions, and web pages, can be included in the kiosk’s program, to be enjoyed by persons not enrolled in the class.

In addition, the educational experience of the kiosk also involves the option of creating multimedia projects for students enrolled in Museum Methods or Visual Anthropology. There are a number of learning benefits for students who take on the role of multimedia designer. When creating multimedia projects, like other types of hands-on projects such as exhibits and video, students become producers of knowledge, rather than receivers. Multimedia provides students with a powerful medium of communication and offers students new insights into organizing, synthesizing and evaluating information (Ivers and Barron 1998: 12). Students are given the opportunity to offer their own interpretations of information and employ real–life technology skills. The range of activities involved in creating a multimedia product, including conducting research, creating content, and designing, producing, and authoring multimedia components, incorporates a variety of cognitive skills in ways not typically encountered in traditional lecture-based courses.

Perhaps the principal and most appealing reason for the addition of the kiosk is the nature of the computer-based program itself. Video, audio, and interactions can be used to enhance the various objects or displays in an exhibition. Multimedia is better suited to relay information that is not easily conveyed through print or verbal explanations. The use of multimedia can also provide more and different types of
information than is otherwise possible through traditional exhibition techniques. The kiosk can serve the different information needs of the visitors, as modules can be designed to present a variety of information that can be accessed according to one’s interest.

Finally, the inherent draw of the interactive media was another key reason why we sought to add the kiosk. Museums have but a brief moment to capture a visitor’s interest, and maintain it. The “holding power” of a museum panel with text only is a mere 15 seconds, while a panel with text and an artifact holds the visitors interest for an additional 30 seconds. By contrast, a visitor will spend 6 minutes at a computer interactive (Randi Korn and Associates, Inc. 2000).

**Characteristics of Target Audience**

The primary audience for the kiosk’s program is University of South Florida students, with undergraduate students making up the largest segment of the gallery’s visitors. Furthermore, according to the results of the kiosk’s survey, the majority of undergraduate students visiting the gallery are not anthropology majors, as we had expected. In addition to knowing who our visitors are, we also needed to know what they knew about the subject matter, anthropology.

Dr. Bird and Anthropology graduate student Carolena Von Trapp created an informal survey aimed to produce a snapshot image of anthropology held by students at USF (Bird and Von Trapp 1999). Using a brief, open-ended questionnaire, 100 USF students who had never taken a class in anthropology, were asked about their perceptions of the field. The survey revealed that 20 percent of the students knew nothing about
anthropology. Over half the respondents placed the anthropological focus on the remote past, and nearly 60 percent defined anthropology exclusively in terms of archaeology or physical anthropology. The students viewed anthropologists as anything from the daring Indiana Jones-type to eccentric, unkempt aging academics, and concluded that there are few things one can do with a degree in anthropology.

This study points out the limited and media influenced understanding of anthropology that most undergraduate students possess, and it highlights the areas that the kiosk needed to target. The fact that college students make up the majority of the gallery’s visitors influenced the design of the program in other ways as well. First, the content of the kiosk is written at a reading level appropriate for the average college-level freshman. Second, our audience, regardless of age or college-level, is a computer-literate and media-savvy population, and thus has the prerequisite skills to comfortably operate and interact with the system. In fact, we would expect that our audience (the MTV generation) will demand a sleek sophisticated presentation, delivered to them with appealing visuals, and in a minimum amount of time. A dull “page-turner,” similar to a familiar Power Point Presentation, will simply not suffice.

Furthermore, we were able to presume that the learners’ motivation is intrinsic; as expressed in the kiosk’s online survey, the majority of visitors are either “very interested” or at least “somewhat interested” in the anthropology to begin with, and thus are predisposed to exploring the kiosk’s program. Furthermore, a consistent (though minority) proportion of visitors are likely to be participating as part of a class assignment, and so are additionally motivated to learn from the kiosk.
Delivery Environment

An iMac with a built-in touchscreen, developed by Elotouch Systems, was ultimately chosen to display the multimedia program on the kiosk. The iTouch “touch-on-tube” surface wave technology provides a clear, reliable and durable interface for interactive displays in exposed public access environments. The all-in-one design of the iMac ensures that there are fewer parts that can malfunction and require repair or replacement. In addition, my previous experience using an iMac with iTouch, which had a record of infrequent system crashes, was also a factor in selecting an iMac for the kiosk.

Touch is a natural and efficient method of interaction. “You can’t get more intuitive than touch,” observes Yechiam Halevy, Director of Information Systems at the U.S. Memorial Holocaust Museum, that also employs touchscreens in their galleries. “If you see something that interests you, you touch it” (Elotouch Systems, Inc. 2001). This inherent simplicity is welcome in an environment, like the Anthropology Exhibit Gallery, where the average visitor spends a very limited amount of time. We can’t afford to have visitors waste precious time learning how to use a complicated system.

The touchscreen interface allows us to place a potentially limitless number of a wide variety of artifacts literally at the gallery visitors’ “fingertips.” The kiosk allows visitors examine objects that are otherwise inaccessible to them, such as fragile artifacts and expensive casts. Virtual reality that permits 3-D rotation of virtual objects, proposed for future inclusion on the kiosk, will allow visitors to examine objects from multiple angles and is proposed for future inclusion on the kiosk.

Another decisive factor for selecting a touchscreen was security, since the kiosk and museum are unmonitored throughout the day and accessible to any person who enters
the building. Gallery visitors do not need access to the mouse or keyboard to control the program, therefore there are no external parts that can be broken, vandalized, or removed. The kiosk encasement is locked into place while it is in the gallery, with the iMac secured snugly inside.

However, the fact that there is no keyboard or mouse is also the biggest drawback to using the technology. Touchscreen technology requires a different design strategy. First, the touchscreen interface does not allow for text-entry, limiting the types of user feedback that can be solicited and the types of interactions that are possible. For example, at present, visitors must record their comments in a pen-and-paper log book rather than being able add their comments during completion of an online survey presented on the kiosk. It is also not possible to use standard drop-down menus, radio buttons, or check boxes because the target area for these types of inputs are small and difficult to engage, as they are designed for use with a mouse controlled cursor. Another minor drawback of the iMac is that, aside from memory, upgrades are somewhat more difficult to install than on PCs.

In addition to the touchscreen computer, a second iMac was purchased for the program’s development. The iMac is equipped with superior graphics capabilities, as well as built-in audio and video inputs and outputs needed for the production of digital video. The iMac also offered more hard drive, memory, and upgrade options than PCs of a comparable price. Finally, because we had a very limited budget for the purchase of computer programs, we chose to go with the iMac for the very practical reason that I personally owned many of the programs that we needed. In addition, iMovie, Apple’s proprietary software for editing digital video, came packaged with the computer, thus
allowing us to complete simple video-editing projects without having to purchase additional software, such as the pricey (and complicated) Premiere or Final Cut Pro.

All peripheral devices, such as a digital video camcorder, scanner, CD-burner, zip drive, and DVD-burner (added later) were selected for their dual platform capabilities. All of these hardware components have USB or firewire connections and drivers that allow them to be used with either a Mac or PC-compatible computer. Work produced on either type of computer system can be easily integrated into the program. In addition, the Anthropology department’s media lab now has a PC for the development of media projects.

The touchscreen iMac is housed in a mobile encasement that can be wheeled into a classroom, lab, or office. The encasement was built to accommodate a wheelchair or stool so that visitors may be seated while using the program. In addition, the iMac computer itself is portable and can be removed from the kiosk encasement and taken to any location, even off campus, for demonstration purposes. The iMac also has video-mirroring capabilities so that it can be connected to a projection system, such as a Promixa.

The program itself is a stand-alone application (this means that it does not need a special program to run it) that is stored on the touchscreen computer’s hard drive. The video segments do however require that the computer has QuickTime installed. The program automatically starts up and shuts down at preprogrammed times and will restart automatically in the event of a power interruption.
Authoring Tools

To create the kiosk’s interactive program, I used several multimedia development programs. The program itself was created using Authorware (version 4, for Macintosh). Several support programs were also used to create elements of the program, including, but not limited to, PhotoShop, QuickTime Pro, SoundEdit 16, iMovie, and Premiere. Free trial versions of all of these programs are available for download. With the exception of iMovie, all of these programs are available for both Mac and PC platforms.

I will discuss Authorware in some detail, because it is the program that “makes it all happen” and is the least familiar to new multimedia designers. Authorware was developed specifically to facilitate the development of courseware and instructional programs, like the kiosk program.

Authorware is an authoring tool and not a programming language. Authoring software, different from programming software, are programs that provide on-screen tools (menus, prompts, icons, etc.) to help the user develop an application. The underlying code is interpreted by a runtime system or plug-in and is never seen by the developer unless the developer chooses to view it. Authorware is an iconic, path driven system in which programs are created by placing icons on a flowchart (each icon represents a “procedure” in programming terms). The icons have properties or options that determine what they do that can be set by the programmer. The icons are executed when they are encountered in the linear flow.
Authorware can be used to develop any combination of presentations, tutorial, simulations, drills, tests, games, as well as programs that interact with the World Wide Web. Programs created using Authorware, in addition, can be delivered and interact with the internet, as well as on a CD-Rom or computer’s hard drive.

Authorware has an intuitive environment and is relatively easy to learn and is designed for both Mac and PC. Developers must learn what each icon does, when to use it, and what options are available to it. It is not necessary to have any previous programming experience to create interactive programs using Authorware, however, some knowledge of basic programming concepts and methods extends the functionality of the program. It is necessary to write “code,” for example, if you want to track the users’ progress through a lesson or collect data from user input.

**Methodology for Facilitating Learning**

Developing effective materials that facilitate learning, in any medium, requires an understanding and appreciation of the principles underlying how people learn - yet how people learn is a subject of great debate. There are far too many approaches to learning to even begin to list, let alone summarize or describe, them here. In creating the gallery’s interactive program, I elected to eschew labels and employ an eclectic approach to instruction using a combination of methodologies and instructional strategies. (For a comprehensive discussion of methodologies see Alessi and Trollip 2001.) To design the program, I applied a healthy dose of common sense heuristics and based many design
decisions on prior experience, observation, and anecdotal evidence. Fortunately, my sensibilities are in accordance with generally well-accepted design practices grounded in principles derived from research!

In the case of the Anthropology Exhibit Gallery’s kiosk, the computer is only one element in the learning environment. Therefore, it is not necessary nor expected that the kiosk’s program is responsible for all phases of instruction. The kiosk is foremost a tool meant to enhance the gallery’s displays and the visitor’s experience in general. Visitors to the gallery are not expected to acquire new skills or master content, and this fact determines a great deal of the program’s design. However, it is hoped that the gallery visitors will learn something from the exhibits and from the kiosk, therefore attention must be given to the factors that promote learning.

One approach to designing instruction that is particularly noteworthy is Gagne’s Nine Events of Instruction. Robert Gagne (1985) describes a series of events that he believes must take place in order for learning to occur and this framework is often used for the development of educational multimedia programs. The Nine Events of Instruction are:

1. gaining attention
2. informing the learner of the lesson objective(s) and activating motivation
3. stimulating recall of prior learning
4. presenting the stimulus material
5. providing learning guidance
6. eliciting performance
7. providing feedback
8. assessing performance
9. enhancing retention and learning transfer
Although I did not employ Gagne’s approach in its entirety, it nonetheless served as a useful guide. I should mention, too, that the kiosk’s program does not preclude the inclusion of all elements outlined. Further, I do recommend a more faithful application of this sensible plan to anyone interested in designing computer-based instruction of a more conventional kind than the kiosk’s program. It is intended that the kiosk program is to be used in conjunction with other media and learning activities, such as the gallery exhibits and classroom instruction, and therefore it need not incorporate all elements outlined by Gagne. For example, because it is not necessary for visitors to achieve a mastery of an inventory of facts and data in any of the modules that I have created to date, one will find that “assessing performance” is an aspect that is presently absent from the kiosk’s program.

**Instructional Goals and Objectives**

Succinctly stated, the overall aim of the kiosk is to enrich visitors’ understanding of anthropology. Lord explains that “the purpose of a museum exhibit is to transform some aspect of the visitor’s interests, attitudes or values affectively” (2002: 18). The kiosk functions as an ancillary display, and so, in a similar fashion, is focused on the affective domain of learning. Although the gallery exhibits and the kiosk definitely have goals and objectives, they are not the well-defined and measurable learning objectives associated with discrete lessons to which instructional designers and educators are accustomed.
According to the Anthropology Exhibit Gallery’s mission statement, the mission of the gallery is “...to educate the university community and visiting public about the value and relevance of anthropology to modern life by presenting visually appealing and technically competent exhibit representing anthropology's four-field holistic approach based on high standards of anthropological research and scholarship” (Brent Weisman, spring 2003, personal communication).

Essentially, the exhibits and kiosk are deemed successful when they provoke thought, and promote a desire to know more. Assessing the success of the kiosk program to this end is difficult to measure. For example, it cannot be determined through a multiple choice test that follows a session at the touchscreen – which would be the kind of measurement tool prescribed by most instructional design approaches.

Most of the theories and models of learning place the emphasis on human cognition, however, humans are both thinking and feeling creatures. Vygotsky said that “the separation of affect [feeling] from cognition [thinking] is a major weakness...since it makes the thought process appear as an autonomous flow of ‘thoughts thinking themselves,’ segregated from the fullness of life, from the personal needs and interests, the inclinations and impulses, of the thinker” (Vygotsky in McLeod 2003).

The museum experience is, moreover, embedded in the visitor’s individual experience, inseparable from their “feelings.” In the Anthropology Exhibit Gallery attention to this fact is relevant at two levels; first, although not explicitly expressed, an aim of the gallery is that the visitor feel good about visiting the
gallery - that it was not a waste of time; second, the displays often messages about anthropology that are sometimes at odds with the visitor's views and beliefs. Therefore, it is important for us to consider what Clark (1999) describes as "valuing" - the worth or value a person attaches to a particular object, phenomenon, or behavior. This ranges from simple acceptance to a more complex state of commitment. Valuing is based on the internalization of a specified value, while clues to these values are expressed in the learner’s overt behavior and are often identifiable.

The kiosk program is designed around broad goals that promote discovery about the content, similar to the surrounding gallery exhibits. The kiosk offers visitors the opportunity to explore various topics in anthropology, based on their level of interest and learning style. What specific information the visitor will learn from the kiosk’s program will depend on which particular modules the visitor chooses to explore, and to what extent.

For instance, at one level, the visitor may learn informational content about the subject, such as in the “What is Anthropology?” module, in which the discipline’s four fields are explored and explained. At another level, he or she may learn how archaeologists are able to use artifacts to interpret culture, and will see Dr. Weisman demonstrating that process via video, as in the “Potsherds to People” module. This module is clearly more oriented toward process and method than toward information for its own sake. At yet another level, the “Imagined Indian” module takes the premise of a static exhibit and extend the examples through virtual means, allowing the visitor to learn how issues of
cultural representation relate to the broader anthropological goal of cultural analysis.

Finally, interactive e-Exhibits like “Race: A Biological Reality or Social Construct?” attempt to allow the visitor to explore a complex and controversial topic with the explicit goal of developing an anthropological understanding of the true nature of the concept of race. In this case, the specific lesson outcomes for this module are:

1. Visitors will learn that racial classifications based on biological variation are scientifically invalid.

2. Visitors will gain an understanding of the problems with the scientific use of the racial classification system, including:
   
   a) Scientists cannot agree on the number of races or the placement of human groups within them.

   b) The race concept applies arbitrary classifications to traits that exhibit predominantly continuous variation.

   b) There is a lack of correspondence between the different traits that are used to make racial classifications.

   d) More variation exists within human groups than between them.

3. Visitors will recognize the difference between race as a biological concept and as a social concept.

**Instructional Approach**

Designing effective multimedia for learning requires combining various media in creative ways based on an understanding of the intended learners (Alessi and Trollip 2001: 328). The kiosk program is an amalgamation of approaches in terms of methodologies for designing educational multimedia, and as such might be best described
as an open-learning environment. Hannafin and his associates (1999) use the term open-ended learning environment to describe a program that allows learners to set goals and pursue them using methods they deem appropriate and desirable. The kiosk’s program is foremost a presentation that supports exploration and thus incorporates a wide variety of techniques for facilitating computer-based instruction, integrating elements of other common methodologies such as tutorials, drills, simulations, and games (see Alessi and Trollip 2001).

The first essential requirement of any program is to gain attention; the second, of course, is to maintain it. This is no easy charge, even when learners are intrinsically motivated by a personal interest in the subject, as in the case of most gallery visitors. In fact, because a visit to the gallery and use of the kiosk is entirely voluntary, a balance must be achieved between novelty and familiarity of information, or else the visitor may become disinterested. Users of multimedia programs will quickly lose interest, in any case, if the content is too dense or visually unappealing.

Placing the locus of control with the user is one key to retaining interest. The amount of control, however, can vary. User control might include choosing the path, sequence, content, or pace, or electing to revisit screens, or repeat video segments, for example. In the kiosk’s program, the visitor makes selections based on their interests, and experience as much or as little of the program as they choose at their own pace, ensuring an individual experience for each visitor. However, the degree to which the user has control varies within the kiosk program, and even within individual modules. For example, the visitor may make a selection from the main menu, in a sense determining their own instructional goals, and obviously choosing content. However, once they have
made a selection, the sequence may be determined by the program (through limiting options), as in the case of the “What is Anthropology?” module. The structure of this module is entirely linear.

Interactions are another way to engage the learner. Although touching the “next” button on the screen is in the strict sense “interacting” with the program because it is causing the program to respond to the user’s input, it is not sufficient to maintain learner interest. The “Race: A Biological Reality or Social Construct?” module includes several user interactions. Requesting or requiring user input is one way of keeping the process of learning active.

A variety of media and presentation styles also helps to ensure that the learner will want to explore the program. The kiosk program poses many questions to its learners, a presentation technique that is meant both to engage learners and to underscore the value of inquiry. Overall, the educational emphasis of this program is on understanding, rather than remembering, and the program is designed with this orientation in mind.

Design Considerations and Guidelines

It is the combination of images, text, sounds, and interactivity that make multimedia programs so dynamic and so desirable. But with so much going on, it is especially important to follow some general guidelines for effective design. There are a few qualities that should be present in all educational software, however many of the desirable qualities vary according to the instructional goals of the program and the characteristics of the user. Some of the suggestions I make here may seem like common
sense, but there exists enough poorly designed educational multimedia packages, replete with distracting noises and graphical elements, irrelevant content, confusing interface, and downright ugly design, that caution is justified.

First, it is important to keep in mind that in order to be effective, multimedia must be built on sound human factors. The novelty of multimedia might be appealing, but its appropriateness must be assessed. It is not uncommon for developers to exploit the multimedia capabilities of computers (the “bells and whistles”) to fascinate or dazzle the user, and not because it supports the instructional activity (Johnston 2002).

The heart of any multimedia production is content, yet the nature of the medium means that one must also caution against designing a production that is content-heavy (Lord 2002: 402). On the other hand, one should take advantage of the unlimited capabilities to present multiple layers of information to the learner, based on their level of interest.

It is important to be aware that text is read more 28% slower on screen than print, and comprehension is reduced (Hannafin and Hooper 1989), therefore in computer interactives, text or narration should be condensed into palatable blocks (Lord 2002: 403). In addition, the placement of content also determines whether or not the user attends to it. More important information should generally be placed towards the center of the screen.

With regard to screen design, the primary recommendation is to keep the screen as simple and uncluttered as possible. Presenting too much information at one time can be confusing and overwhelming. Another important aspect of screen design is the
location of various components. The placement of menu options, navigational buttons, and the like, should be consistent throughout the program.

Every element of the graphic design should be carefully considered, and not based on aesthetics or content alone. Consider, for example, the design choice of using a colorful screen design for the “Race” module. The spectrum of colors communicates diversity, while the grey gradient background represents the fact that the issue is not “black or white.” The “What is Anthropology?” module uses a textile theme as the backdrop for the many images of individuals from a variety of cultures, suggesting the diverse tapestry culture that is bound the common threads of human nature.

Examples of screens from the kiosk’s program can be found in Appendix H. In addition, I have prepared a guide for designing programs for the Anthropology Exhibit Gallery to ensure that future projects will integrate smoothly into the current interface. These Multimedia Exhibit Interface Standards can be found in Appendix E.
Chapter Four:

Conclusions

As has been discussed in this thesis, the development of interactive multimedia exhibits builds on many of the core principles of instructional design and more conventional museum exhibitions, but it also requires an understanding of electronic media -- their potential and limitations, and their implications for the presentation of information, interpretation and interactions.

Applied Work in Museums and Multimedia Development

Museums have been the natural home for ethnographic exhibits since explorers, missionaries, and anthropologists began collecting artifacts and displaying them away from their natural context. In the early years of American anthropology, more anthropologists were employed by museums than by universities, and there continues to be a significant number of anthropologists working in museums (see Stocking; Hinsley; for reviews of the history of American anthropology and museums). However, within the profession, anthropologists working in museums tend to be assigned less prestige than their counterparts in higher education. The museum profession has also not been seriously considered as a significant dimension of applied/practicing anthropology, even
though its central task – the interpretation of anthropological material and concepts – is surely a significant task of applied anthropology.

This is slowly changing, especially as anthropologists realize that the survival of the discipline depends on its ability to prove its relevance in a rapidly changing world. Michael Ames suggests that anthropologists working in museums are less insulated from public criticism than are their counterparts working in universities. “Museums,” he says, “have been subjected to the pressures of democratization more than universities because they have been more closely integrated into the daily lives of their communities and therefore more fully appropriated by those communities.” He continues, “Perhaps, therefore, we should look to museums for hints as to how our profession may evolve over the next several decades” (Ames 1992: 37). Similarly Susan S. Bean asserts that “…cultural representation in museums, long relegated to the fringes of anthropology, has become a site of innovation, experimentation and leadership in the proactive era of postmodern ethnography” (Bean 1994: 891).

Museums are pliable educational and social institutions that appear to move in several directions at the same time (Glaser and Zenetou 1996: 27), anthropologists working in museums should be too. Stronger linkages with communities will continue to be a priority of museums, as communities become increasingly involved and interested both in their cultural heritage and in the politics of how that heritage is represented. These relationships can be facilitated by the help of applied/practicing anthropologists, experienced in both issues of representation and appropriate and effective methods of communication, in which multi-media applications are playing an increasingly large role.
The place of multimedia within anthropological teaching and research is one of today's hot topics, although at the present time, there seems to be little real discussion of the implications of these developments. The central debate, as might be expected, hinges on the question of which is a more appropriate use of interactive multimedia in anthropology, research or teaching?

In a somewhat dated presentation, visual anthropologist Marcus Banks (1994) initiates a dialog about interactive multimedia that highlights key ideas that continue to be relevant. Banks voices sharp criticism of interactive multimedia and his claims are not entirely unfounded. He asserts that interactive multimedia “...is above all else a medium of script limitation and bounding [that] …calls on the twin rhetorics of ‘freedom’ and ‘choice’ to disguise its control and command of authority” (Banks 1994). In light of these limitations, Banks advises anthropologists to “forego work on educational interactive multimedia developments and concentrate instead on research applications.”

It is true that the developers of multimedia programs decide “what the user wants to know” and the user can either take it or leave it - and possibly leave without getting what they want. This same argument can be levied against a published book, museum exhibit, or anthropological film. As in all of these methods for the delivery of anthropological content, the learner is interacting with a teacher only second-hand, through an incredibly narrow communicative medium, and moreover, the interaction is essentially one-way.

In response to Banks’ criticisms, Biella (1994) proposes a less skeptical view of interactive multimedia's educational potential in anthropology, though he also focuses on its use primarily as a research tool. Multimedia (specifically hypermedia), he says, is
particularly valuable because the rearrangement of data and the assessment of pertinent new data improves analysis, often in ways that are unanticipated and nonlinear. Further, complex applications (multi/hypermedia that has many alternative paths and interconnecting nodes) exhibit considerable sensitivity and responsiveness to an individual user’s skills and interests.

Despite its limitations, Biella believes that the multimedia format is appropriate and can provide good pedagogic results - given certain instructional goals. In addition, he points to the fact that print-based materials have a relatively modest data-storage capacity and limited interactive capabilities in comparison to that of computer-based hypermedia. Indeed, the instructional goal of an application should always be the ultimate determinant of its form, and while interactive multimedia cannot anticipate its users’ every need, it is not incapable of being helpful to its users.

Banks also anticipates a scenario in which “decisions on classroom instructional materials and curriculum will be decided by faceless people somewhere else in cyberspace.” This development is an evil necessity, he notes, because due to time and financial constraints, a group of specialists (not the instructors of the courses), will “…provide new ‘instructional’ materials that [will] take advantage of the new technology and…speak/visualize to a new generation of students weaned on MTV.” Banks is describing a trend that is, in fact, taking place.

The Future of the Anthropology Exhibit Gallery Kiosk

The present is an opportune time to reassess and reevaluate the kiosk project, and revise its multimedia program. New gallery exhibits will be unveiled in just two short
weeks, necessitating a review of the program’s content and providing the opportunity to add new modules in conjunction with the new gallery exhibits.

The kiosk project can claim both successes and failures. Many, but not all, of the problems and “technical difficulties” experienced were overcome. Circumstances, such as receiving the touchscreen computer a full 8 months after it was originally expected, most definitely hampered the project’s progress. It would not be fruitful to enumerate all events that were encountered that brought about the kiosk as it appears today, more so than I already have. Instead, I will present here my views of what remains to be done to continue to improve the project, while mentioning some of the ways that I think potential future pitfalls may be avoided.

In a sense, it was known that the project would not be “finished” at the end of the grant period. The nature of the project is ongoing and much work remains to be done. However, it should be stated up front that the kiosk project has yet to realize its potential. While it has been widely used by visitors and students, who have clearly learned from it, as yet, no further student-generated projects have been added. The logistics of incorporating multi-media training into Visual Anthropology and Museum Methods classes have proved difficult to achieve, given the enormous demand on instructional time and other resources. It is only when the kiosk is used to create multimedia projects by anthropology students that the true learning potential of the kiosk will be placed in the hands of the users. As I mentioned at the beginning of this thesis, I hope that the information I have presented here is somehow useful toward achieving that ends.

I believe that had I completed a detailed work breakdown structure earlier in the project’s development, we would have likely projected a more realistic and accurate
timeline (the originally proposed timeline appears in Appendix I) and would have redefined the scope of the project as appropriate. A clear conceptualization and statement of a project’s goals is a critical reference point can help keep the project on track and prevent dreaded “scope creep.” Although I was able to complete the overall program, the number of modules included was more limited than we had hoped. We simply had too many “good ideas” but not enough time and resources to realize them.

There are several things that remain to be done in order to more fully realize the potential of the gallery’s kiosk.

- First, the online survey needs to be revised. A significant number of respondents aborted taking the survey without answering all of the questions. It is probable that the screen is simply too crowded and overwhelming (see Appendix J for an image of the current survey). I would propose that the survey be redesigned so that one question is presented per screen. In this way also, the survey can branch to bypass or present questions based on answers to previous questions. For example, visitors to the university need not be questioned about their academic major, and repeat visitors could be asked to indicate the reason they opted to return to the gallery. Furthermore, additional questions, aimed at soliciting feedback specifically about the kiosk’s program, could be included, though the option of whether or not to proceed to more questions should be offered to the respondent.
• It would also be useful to further develop the kiosk’s program so that we could track the user’s path through the program and time spent exploring individual modules. In this way, for example, we could identify popular topics and interactions, or note if learners may be having problems understanding the presentation, indicated by repeated visits to previous pages.

• Of course, more modules need to be added, including the ones already begun, as well as newly-created student projects. There are a limitless number of appropriate topics and creative approaches possible for additional modules. However, additional (and substantial), funding will be needed to further develop the kiosk project. The creation of interactive multimedia is most definitely a labor-intensive, not to mention expensive process. It takes approximately 100 hours of research and production time to put together 50 minutes of real time classroom multi-media instruction. Similarly, it took at least that long to develop each of the modules on the Anthropology Exhibit Gallery’s kiosk.

Ultimately we can gauge the success of the kiosk against its original mission - to employ multimedia to promote real connections to the gallery’s physical exhibits and to the field of anthropology by the gallery’s visitors. At this time, it is difficult to separate its impact from the gallery as a whole; a more formal evaluation is still needed. However some pertinent information and lessons can be learned by examining the visitor log and online survey.
According to the results of the online survey, and the written log, many USF students visit repeatedly and independent of any classroom assignment. As one student visitor noted - “This is my second visit. I came back for a better understanding.” Less than 25% of the respondents were first-time visitors. It seems evident that the gallery exhibits increase visitor interest in the field. It “makes you want to study anthropology,” remarks one student, while another admits after a visit to the gallery, “now I want to take a class in anthropology.” The online survey reveals that only a small minority (4%) of the visitors felt that they did not gain a better understanding of the field of anthropology from the gallery’s exhibits. Another 24% said that they learned a lot, while the majority (72%) indicated that they had learned something about the anthropology during their visit. Comments recorded in the visitor log reveal that the gallery is applauded for presenting many perspectives by some, but also criticized for being biased, by a few. It would be valuable to explore these sentiments further, such as the remarks below, through visitor interviews.

One specific reference to the kiosk suggests that the kiosk is functioning as intended. The student writes, “Right from the start, there is a touchscreen that explains the basis of anthropology, and why it is studied. This opens up a lot of information in just a few screens, then allowing you to automatically be more interested in the exhibit itself.” The student continues, “Given the exhibit I have now seen, I would say that the discipline of anthropology is the study of how we are all one species, but how we all adjust to the same world just based on location. And somehow, we can all figure out a way to interact with each other. I would highly recommend this exhibit to everyone, because in a small space, it gives a great deal of information that is useful to any human.”
Recent historical events have shown that understanding and respect for cultural diversity are sorely needed, and I believe that such views can be successfully communicated in museum exhibits, electronic media, and visual projects, such as those that are and could be created by USF students. Museums have a unique role to fill in society – as resources for life-long informal and supplementary public education for all ages. Glenn Guttleben, of the Exploratorium, San Francisco, suggests that, “If you are looking to do something that is useful to humankind, to make the world a better place… You should think about museums.” (in Glaser & Zenetou 1996: 4). In museum circles, it is often said that museums interpret the past so that we may understand the present in order to meet the challenges of the future. Multimedia, such as the kiosk project, promise to extend and enhance the learning experience of museums, and can make a difference in how people view the world around them.

One student writes, “It made me open my eyes to something new that I didn’t pay attention to before. The exhibits portrayed the people [of other cultures] in a new light and made you want to rethink the way you looked at these people. It showed that a lot of these people that we look at as maybe lower than us or maybe weird they really aren’t too far off from us. The differences are small and few.”

For students engaged in producing projects about anthropological topics that are destined for public presentation, such as the exhibits designed by students in Museum Methods and projects created by students in Visual Anthropology, it is important to recognize that these projects do not merely represent culture; they also construct it -- even if the limited exposure is within the microworld of the Anthropology Exhibit Gallery.
The kiosk is a public showcase where we can challenge the image of anthropology that the average undergraduate student holds. Through the kiosk we can show that anthropology is about more than just “stones and bones,” and that it has significant relevance to the “real world.”
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APPENDICES
Appendix A: Project Management Process
Appendix B: Project Management Process Questions

DEFINITION PHASE
What is the purpose of the project?
What are its objectives?
What results should it achieve?
What resources are needed?

*State the Project*
What is the action and the end result?
Why are we doing this?
When do we need to be done?
How much will/can this cost?

*Develop Objectives*
At the end of the project, what results will we have?
What value will be gained?
What constraints do we face?
What requirements must be met?

*Develop WBS*
What must be delivered or accomplished?
What must we do to meet this objective?
How will we do that?

*Identify Resource Requirements*
What knowledge and skills are needed?
What equipment, facilities, and supplies are needed?
What special or unusual resources are needed?
How much? What cost?

PLANNING PHASE
Who will be responsible?
What’s the project’s sequence and timing?
How and when will resources be allocated?
How will project success be ensured?

*Assign Responsibility*
Who has resources for this terminal element?
Who has knowledge or information?
Whose commitment do we need?
Appendix B: Project Management Process Questions (Continued)

PLANNING PHASE cont.
Sequence Deliverables
In what order must terminal elements be completed?

Schedule Deliverables
How long will each terminal element take to complete?
When, in calendar time, will each terminal element start and end?

Schedule Resources
Are resources committed to meet the schedule?

Protect the Plan
For this terminal element, what could go wrong?
What could cause this potential problem?
How can we make this likely cause less likely?
What will we do if the potential problem happens anyway?
What will trigger the contingent action?

IMPLEMENTATION PHASE
How does the work start?
How is the project progressing?
What actions are needed to either resolve problems or capitalize on opportunities?
How well did we do, and what did we learn?

Start to Implement
How will the project team know to start?
How will the team work together?
How will everyone know what is expected?

Monitor Project
How is project progressing against:
  Objectives?
  Milestones?
  Schedule?
  Budget?

Modify Project
What do we need to do to:
  Maintain/return to schedule?
  Meet objectives?
  Respond to threats and opportunities?
Appendix B: Project Management Process Questions (Continued)

IMPLEMENTATION PHASE cont.
Closeout and Evaluate
Who will be involved in the close out? When? Where?
How did project do against: objectives, plan, WBS?
What was learned?
What will be done differently next time?
Appendix C: Fair Use Provision of the Copyright Act

§107. Limitations on exclusive rights: Fair Use

Notwithstanding the provisions of sections 106 and 106A, the fair use of a copyrighted work, including such use by reproduction in copies or phonorecords or by any other means specified by that section, for purposes such as criticism, comment, news reporting, teaching (including multiple copies for classroom use), scholarship, or research, is not an infringement of copyright. In determining whether the use made of a work in any particular case is a fair use the factors to be considered shall include -

a) the purpose and character of the use, including whether such use is of a commercial nature or is for nonprofit educational purposes;

b) the nature of the copyrighted work;

c) the amount and substantiality of the portion used in relation to the copyrighted work as a whole;

and

d) the effect of the use upon the potential market for or value of the copyrighted work.

The fact that a work is unpublished shall not itself bar a finding of fair use if such finding is made upon consideration of all the above factors.
Appendix D: Kiosk Statement on Copyright

The purpose of this Anthropology Exhibit Gallery kiosk is to introduce interactive media to the teaching of anthropology at the University of South Florida. This kiosk features multimedia educational materials developed by USF students. The copyrighted materials contained herein have been included exclusively for nonprofit educational purposes, and therefore meet the provisions of the Fair Use Doctrine of the U.S. Copyright Law. If you should encounter any materials here that you feel violate the conditions of fair use, please contact the Department of Anthropology. Any materials determined to be wrongfully used in this display will be removed.
Appendix E: Multimedia Exhibit Interface Standards for the Anthropology Exhibit Gallery Program

Program-Wide Features

1. Attraction Screen Loop
2. Welcome Screen
3. Closing Screen
4. Main Menu Screen
5. Menu Button
6. Quit Button
7. Input Feedback
8. Progress Indicator
9. Time-Out Note

Individual Module ("e-Exhibit") Features

10. Next Button
11. Back Button
12. Multimedia Controls

Program-Wide Features

1. Attraction Screen Loop

Goal: The function of the Attraction Screen Loop is to attract visitors to interact with the kiosk. In addition, the Attraction Screen Loop acts as a screen saver, protecting the touchscreen’s monitor from burning-in a static screen image.

Guidelines: The Attraction Screen Loop should be a continuous loop of at most 15 seconds, and consist of a series of different screen images. Any detectable visitor action (touching the screen, or keystroke or mouse click, when keyboard and mouse are accessible) must stop the Attraction Screen Loop and cause the Welcome Screen (see #2 below) to come up. The program must automatically return to the Attraction Screen Loop after a period of user inactivity (timing as appropriate for individual modules).

2. Welcome Screen

Goal: The function of the Welcome Screen is to greet visitors.

Guidelines: The Welcome Screen should include instruction “Touch Screen to Begin”
3. **Closing Screen**

**Goal:** The function of the Closing Screen is to communicate to the visitor gratitude for visiting the gallery, and provide confirmation that they have completed their online session.

**Guidelines:** The Closing Screen appears when the user touches the Quit Button. If the Closing Screen is touched (clicked on) anywhere on the screen, the program will re-start at the Welcome Screen. If the Closing Screen is up for 10 seconds without being pressed, the Attraction Screen Loop sequence must begin automatically. The Closing Screen will point visitors to the Visitor Log to record their comments.

4. **Main Menu Screen**

**Goal:** The function of the Main Menu Screen is to present to the user the available e-exhibits to select from. The user will be taken directly to the first screen of the e-exhibit of their choice upon striking a menu option.

**Guidelines:** The Main Menu Screen appears when the user touches the Welcome Screen. If the Main Menu Screen is up for 90 seconds without being pressed, the Attraction Screen Loop sequence must begin automatically. Each module is represented by a graphical button that is consistent with the "look and feel" of the e-exhibit it corresponds with. The user will be taken directly to the first screen of the e-exhibit of their choice upon striking a menu option.

5. **Menu Button**

**Goal:** Visitors should be able to access the Main Menu at any time from any e-exhibit, or if they approach the kiosk and the program has not been reset (to the Welcome Screen or the Attract Screen) by the most recent user.

**Guidelines:** The Menu Button must display the Main Menu Screen. The Menu Button must be displayed at the same location on the screen within all e-exhibits – top left.
Appendix E: Multimedia Exhibit Interface Standards
for the Anthropology Exhibit Gallery Program (Continued)

6. Quit Button

**Goal:** The function of the Quit Button is to enable visitors to exit the program at anytime.

**Guidelines:** The Quit Button must display the Closing Screen. The Quit Button must be displayed at the same location on the screen within all e-exhibits – top right.

7. Input Feedback (for button presses and object/menu choices)

**Goal:** Visitors should receive feedback when they provide any input so that they always know when they have successfully communicated with the interactive exhibit.

**Guidelines:** Both audible and visual Button Press (or Input) Feedback must be played/displayed at the time of successful visitor input. Audible Button Press (or Input) Feedback must consist of a short sound (same throughout entire program) for actual button presses (e.g., touch screen choices, mouse clicks on objects/menu choices, buttons, etc.). Visual Button Press (or Input) Feedback must consist of a change in the visual representation of the button or object being selected. Possibilities are: thickened border, reverse color, change background color, etc.

8. Progress Indicator

**Goal:** Visitors always should be confident that the exhibit is still functioning correctly. Pauses in a program should not cause a visitor to wonder if it is broken or give them reason to abandon the kiosk due to uncertainty or impatience.

**Guidelines:** Any operation taking longer than 3 seconds must provide a graphical progress indicator or dialogue box with language inviting the visitor to "Please wait."

9. Time-Out Note

**Goal:** Warn visitors before the exhibit re-starts from lack of input - give them a clear notice of how much time until re-start, so that if they want to continue they know they must respond.
Appendix E: Multimedia Exhibit Interface Standards for the Anthropology Exhibit Gallery Program (Continued)

9. **Time-Out Note** (cont.)

**Guidelines:** After a reasonable period with no visitor input (as appropriate for each e-exhibit), the Time-out note must be displayed (when a video or animation is playing, no input is expected). The Time-out Note instructs the user to "touch screen" to continue. If no input is received within 15 seconds, the exhibit resets and returns to the Attraction Screen Loop.

**Individual Module ("e-Exhibit") Features**

10. **Next Button**

**Goal:** The purpose of the Next Button is to allow users to advance to the next screen

**Guidelines:**
The Next Button must advance visitors to the following screen (either the next screen in a sequence, or if a tree-structured navigational model is being used, then "next" may mean "up a level" to the previous menu when it appears on the last screen of a module).

11. **Back Button**

**Goal:** The purpose of the Back Button is to allow users to return to a previous screen or to repeat an interactive or multimedia experience.

**Guidelines:** The Back Button must return visitors to the previous screen (either the previous screen in a sequence, or if a tree-structured navigational model is being used, then "back" may mean "up a level" to the previous menu when it appears on the first screen of a module). The Back button must not be used to replay multimedia within the same screen (see #12 below). The Back Button should also operate as an UNDO function where appropriate. If it is not appropriate or possible to return the visitor to the previous screen, then the Back Button must be disabled and should be dimmed or not visible on the screen.
12. Multimedia Controls

**Goal:** Visitors should be able to stop or to repeat any multimedia experience, including video, audio, and animated segments.

**Guidelines:** Two buttons should be available on all screens that feature multimedia components longer than 10 seconds. The "Stop" button will interrupt the segment and will return the user to the appropriate screen within the e-exhibit (e.g., menu for individual module or previous screen). The "Replay" button will replay the entire segment from the beginning.
## Appendix F: Proposed Timeline for Completion of Project

<table>
<thead>
<tr>
<th>Precedence</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
<th>Notes</th>
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### Appendix F: Proposed Timeline for Completion of Project (Continued)

#### 3.0 Encasement designed, built, installed

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<th>Component</th>
<th>Stage</th>
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#### 4.0 Educational content designed

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### Appendix F: Proposed Timeline for Completion of Project (Continued)

#### 5.0 Program developed

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#### 6.0 Kiosk installed

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#### 6.5 6.3 ---

#### 7.0 Evaluation materials prepared

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#### 7.2 7.1 1 (30 days after 7.1) 3/9 4/13

#### 7.3 6.3 1 4/16 4/16

#### 7.4 7.3 1 (10 days after 7.3) (4/16) 4/30
Appendix F: Proposed Timeline for Completion of Project (Continued)

<table>
<thead>
<tr>
<th>Subproject Description</th>
<th>Task Numbers</th>
<th>Week</th>
<th>Start Date</th>
<th>End Date</th>
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</thead>
<tbody>
<tr>
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<td>5/18</td>
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<table>
<thead>
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<th>Task Numbers</th>
<th>Week</th>
<th>Date</th>
<th>Details</th>
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</thead>
<tbody>
<tr>
<td>9.0 Train faculty and students in use of medium (Subproject)</td>
<td>9.1 8.2</td>
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<tr>
<td>9.2</td>
<td>8.3, 9.1</td>
<td>2</td>
<td>Held in Fall semester 2002</td>
<td></td>
</tr>
</tbody>
</table>

- **Project begin date**: 8/14/00
- **Project end date**: 6/1/01
Appendix G: Online Survey

Please complete the survey, then touch the submit button below:

<table>
<thead>
<tr>
<th>How many times have you visited the Anthropology Exhibit Gallery?</th>
<th>What was your level of interest in anthropology before visiting the gallery?</th>
<th>Do you feel that the exhibits helped you to better understand the field of anthropology?</th>
</tr>
</thead>
<tbody>
<tr>
<td>○ This is my first visit</td>
<td>○ not interested</td>
<td>○ no, not at all</td>
</tr>
<tr>
<td>○ 2-3 times</td>
<td>○ somewhat interested</td>
<td>○ yes, somewhat</td>
</tr>
<tr>
<td>○ 4 or more times</td>
<td>○ very interested</td>
<td>○ yes, I learned a lot</td>
</tr>
</tbody>
</table>

Was today's visit part of a class assignment?  ○ No  ○ Yes

Please check all that apply:

I am...

- ○ an undergraduate student at USF
- ○ an Anthropology major/minor
- ○ an Anthropology graduate student
- ○ a graduate student (another Dept.)
- ○ a USF faculty or staff member
- ○ a visitor to USF

Which exhibit(s) did you like best?

- ○ Mysteries of the First Americans
- ○ Potsherds to People
- ○ Easter Island
- ○ Masked Meaning
- ○ Not Forgotten
- ○ McCulture
- ○ The Jaguar People
- ○ Florida Aflame
- ○ Nor Man Neither Woman
- ○ The Imagined Indian
- ○ Journey to the Grave
- ○ Till Death Do Us Part
- ○ Putting Women Back in Prehistory

Submit survey!

Quit/Return to Menu
Appendix H: Kiosk Screens

Welcome to the Anthropology Exhibit Gallery at USF

touch screen to begin
Please select a menu item:

what is

ANTHROPOLOGY?
an introduction

✔ Fill out our survey!

Learn more about these gallery exhibits

POTSHERDS TO PEOPLE

Florida Aflame

IMAGINED INDIAN IMAGE GALLERY
Anthropologists study humankind throughout time and across the globe— from the prehistoric past to the modern day present; from remote environments to sprawling urban landscapes.
Appendix H: Kiosk Screens (Continued)

The Concept of Race

What race does this person belong to?

How do you know?

Place (drag and drop) this individual into one of the racial categories below.
The Concept of Race

The systems and labels used to describe racial categories have varied in number and acceptability over time.

For example, in 19th century America, Irish immigrants were considered to be racially distinct and inferior to other Europeans. Since then, neither the Irish or non-Irish have changed biologically, but today the idea of a separate Irish race seems ridiculous.

*How many races do you think there are?*

---

Click on the addition (+) or subtraction (−) symbol to increase or decrease the number. When you have reached the number you want, strike NEXT.
The Concept of Race

Much of human variation is continuous, not discrete. Consider skin color, the trait most often used as the basis of racial classifications.

Where would you divide the range of human skin color?

*Slide the divider below so that the shades to the left of the divider are what you consider to be dark, and the shades to the right are what you consider to be light.*

*When you have placed the slider where you want it, strike NEXT...*
Appendix K: Kiosk Screens (Continued)

**Potsherds to People: videos**

- How are archaeological sites in Florida located and excavated? (3:55)
- How did the prehistoric inhabitants of Tick Island use clay? (2:22)
- What techniques do archaeologists use to study pottery artifacts? (3:16)
- How was the fiber-tempered pottery from the St. Johns River area produced? (2:49)
- Who were the prehistoric inhabitants of the St. Johns River area of Tick Island? (3:48)
- What techniques did prehistoric Floridians use to decorate pottery? (3:34)

*Touch an image to view a video clip*