

Reflection: Internship Experience

Internship with 1uffakind Design

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Introduction

For this internship, I worked with Craig Goldsmith, of luffakind design, to fulfill contractual obligations to create an online educational game simulation (Load the Wagon) for the jointly administered National Park Service/ Bureau of Land Management National Historic Trails Office. This game, which will be publicly available at <http://elcaminoreal.org>, will be an important part of educating visitors about the historic significance of El Camino Real National Historic Trail.

My main mission in this endeavor was to apply the planning and evaluation principles to my job, which is to envision, secure funding for, organize and prepare all the content (pictures, text, instructions) for a multimedia project. When we first contracted with the BLM and the NPS to do this project, I proposed a very broad (one-sentence) idea for this game. During the funding cycle which coincided with the beginning of the OLIT program, we finally received the go-ahead to make a game, and I did not have any idea of how to go about doing such a thing.

Almost immediately, issues arose about the nature of games, what makes learning fun, and the degree of accuracy allowable or possible in such a simulation. My studies for the OLIT degree helped to answer these questions, and we realized the optimal project for my internship would be to apply my findings to this contract.

Description of work projects

The first project was coming up with a design for the game, and communicating that design in a useful manner to the development team (graphic design & programming). I couldn't find any existing model for creating an educational, interpretive game anywhere, so I went back through all my research and culled the concepts which seemed

most appropriate. I painstakingly compiled this list into an ADDIE-like structure (more like ADEDEDEIE, due to the cyclic evaluation process), with each section containing a list of considerations for each aspect. Unsure of the validity of my model, I extended the outline into a paper, submitted the paper to a peer-reviewed forum, incorporated the reader comments, and used that final model as the basis for my game design.

The model improved my planning, and defined the criteria for evaluation at each step. The next step was translating the design outline into something the development team could use. I applied my understanding of concept maps from OLIT 540 to the problem, and built a graphical outline for the designer, as well as a “script” which set base values for game variables and defined the formulas used to calculate change in game states. Using the concept map structure helped me ensure logical completeness (e.g. considering all possible game states), which is difficult for me, as concrete sequential thinking does not come easily to me, much less when applied to a nonlinear process. The concept map also helped me narrow down the number of algorithms required for player interaction (although I underestimated the number finally required), and to identify the extent and the type of player activity required in the game. I also offered to write a Flash outline with “stubs” or blocked in areas of dummy code, but Mr. Goldsmith preferred to work together on the Flash programming process.

In the end, the design process was mostly successful for my own purposes, but the format of multiple documents was still too cumbersome for the rest of the development team. I overlooked a few areas which had to be negotiated during development, such as how to treat destination/location information, and how to handle dialogue in the database.

Once the design was complete, and I had an online administrative interface built to my specifications, I tackled the pre-production work of researching and gathering content. As I gathered graphic content (for the characters and the backgrounds), I built mockups of all major gameplay states, which proved to be the most useful tool for development. I also assembled audio, vector art, and geographic data (for the dynamic game map). I hired a photographer to originate images of artifacts, and negotiated permissions from other organizations for use of existing art. I would also like to have hired voice talent to record the dialogue, but budget did not allow for this.

Most critically, I did historical research to get accurate values and provenances for trade goods. I soon realized that the political balance of life in colonial New Mexico was very much swayed by the kinds of goods each group produced. I decided that this would be the focus of the game lesson, which also fit in with one of the identified interpretive themes for El Camino Real: “The Camino Real facilitated cultural exchange and change among North American Indians, Spaniards, Mexicans, and Anglos, and represents the shared patrimony of nations and cultures.”

This focus also tied into social studies and history standards for New Mexican elementary and middle school students. I developed the lesson plan for 4th or 7th graders, the grades at which New Mexican students study El Camino Real. As I learned from OLIT 533, a critical tool for the teacher was transparency of the simulation model, so I added a full description of the model in the teacher’s guide.

Content management was not just processing media & text. From my studies of the craft of game development, I knew that the character interaction should do more than simply communicate the need for a decision, but also communicate game context and

personality. Creating characters also required a great deal of consideration for avoiding cultural stereotypes and opportunities for offense, particularly with the slave trader character.

Finally, I worked with Mr. Goldsmith to develop the Flash programming. Although I wrote none of the actual programming, I helped to error-check logic and make decisions about how certain variables would be set. We negotiated the minutiae of each interaction. We disagreed on several points, and generally Mr. Goldsmith prevailed.

Two examples included the issue of slavery (whether to allow trading slaves or not), and the user's experience while "traveling" from city to city. On the first point, Mr. Goldsmith argued that slavery was an important part of the colonial economy and should not be left out for the sake of political correctness. He even threatened to back out of the entire project if it was.

Another issue was how to make the game fun and challenging. At first I considered simply inserting a number of random events as the player moves north and south along the trail, but according to the literature on game design, this model still lacked a player arc, where the player makes decisions which cause him or her to reflect. The nature of this dramatic interaction remained hazy until I realized that I could solve the sticky problem of whether to make the game historically accurate by including slaves as a trade good. The new game model allows the player to choose slavery or not, then penalizes the player who does choose to trade slaves. This solution neither trivializes nor rewards the practice of slavery, but does compel the player to grapple with the conflict of morals and economics. I outlined this strategy to the client, who approved the treatment.

Another conflict arose with the potential versatility of the data structure. El Camino Real de Tierra Adentro officially begins in Mexico City and ends in Santa Fe, but trading occurred at many points along the route: El Paso supplied wine and brandy to the region, Chihuahua represented the nearest major market for commercial goods, Zacatecas was an important destination for agricultural products because of the many workers in the silver mines, and so forth. Mr. Goldsmith asserted that incorporating these destinations would add to the verisimilitude of the simulation, and also vary game play, but adding additional goods, destinations, and information was more work than I was willing to do in the scope of this project. Mr. Goldsmith compromised by building an expandable database of places, which could be associated with events and trade goods as needed.

Although I dedicated as much time as I expected to preproduction, production of the game took much more of my time than I had anticipated. Mr. Goldsmith wanted me to have a much deeper learning experience than I had anticipated, and we spent a great deal of time working together onscreen, verbally discussing changes in structure, and debating points of gameplay. Over the past year, Mr. Goldsmith had read much of the same literature as I had, about interactivity and game development, and often challenged my planned structure, in order to improve the challenge, the coherence of the gameworld, and the narrative flow. Debating these points always brought me clearer understanding of the project goals and how existing theories applied in reaching them.

The aspect of the internship that I did not anticipate was the complexity of the Flash programming process. Mr. Goldsmith builds each function as a separate object, so it is reusable in other applications and also so important functions are globally available

in the game. I learned about manipulating data arrays, about accessing global versus local variables, and about building in error-checking to each function. Although I had anticipated following the convention of outlining the entire game with “stubs” or dummy functions, we built each function one at a time, meticulously debugging each function before moving on to the next.

Mr. Goldsmith’s schedule did not permit us to finish production in time to do the final stages of evaluation, but I plan to finish that before I publicly launch the site.

Developing Skills and Professional Goals

Before I had even begun my internship, outlining the design process helped to crystallize the disparate literature I had read, and to clarify both the role of the content developer in the multimedia development process, and the step-by-step process of applying game principles in creating meaningful interpretive interactive media. The positive reception of my online paper has encouraged me to start building bridges between communities: between gamers and interpreters; between “traditional” multimedia communities (mostly graphic designers and programmers) and content developers; and between educators and multimedia developers. I am developing a workshop for interpreters and museum professionals to introduce them to these ideas, and I am also helping form a local professional organization for the full spectrum of multimedia developers.

This project represents the first fully interpretive multimedia project I have attempted as a project leader. A core tenet of interpretation is that it is a storytelling activity more than a simple presentation of facts. Merging narrative with multimedia is difficult with traditional hypertext, as the interpreter cannot guess which order a visitor

will view the pages, or indeed if the visitor will view all the pages within a site. I had constructed a theory for applying game principles to multimedia interpretation, which was a good exercise, but meaningless until applied. This internship bore out my theories on the process, and provided me with extremely useful experience in managing this kind of project. The part of the process that I hope to improve in the future is passing on design criteria to the development team.

Professionally, the most important lesson I learned in OLIT is about the importance of planning an educational activity. The somewhat idiosyncratic nature of my work required me to invent a new process, intended not only to improve the product, but simultaneously to improve my workflow. This project clarified the order of the steps required to execute an interpretive multimedia project, and identified the responsible party at each step. On the whole, the process worked well in application, and one of the happy results was improved team communication. The process could be improved by collaboration from the earliest stages; on this project, Mr. Goldsmith was unable to coordinate with me on any but the broadest details until the production of the game was underway.

The other aspect of this project which helped me professionally was planning and executing evaluations during the development process. I was able to set firm standards for success (e.g. meeting the client goals) and easily measure if I had met them.

Relation of work to program emphasis area

As with everything I have studied in OLIT, my independent studies in the program (including the internship as well as problems and field experience courses) have included a careful examination of theory and a application of theory in practice. I have

also used the independent work and internship to answer the questions I asked the very first semester in OLIT: how can you teach values through a computer-based medium?

The internship represents a practical application of a synthesis of available literature in interactive media design, computer-based education, game design, meaningful interpretation, visitor satisfaction, and interactive storytelling. I used the synthesis to adapt the ADDIE model, then used the model to create a product, which can be evaluated at many stages both during and after development for its effectiveness as an interpretive program. I can foresee that this model will be flexible enough for any application to interpretive multimedia, and not just to game development.

Self-evaluation of work undertaken

My careful planning helped me more than it ended up helping the intended audience (the graphic designer & programmer). The design documents helped me think through variable game factors, characterization, and internal logic, but failed to communicate these solutions effectively. This is partly due to the method of delivery, and partly due to reluctance (on the part of the developer) to study the documents. In addition, there were many factors I had not considered, due to my unfamiliarity with the development of functions in object-oriented programming. The planning did help when production began, as I had thought through the game carefully enough that I was able to provide considered arguments for . The planning also guided me in assembling adequate appropriate content.

The one comment that I consistently got from Mr. Goldsmith is that I often fail to see the big picture, which is a criticism I have received from other instructors in my life. I hope that continued awareness of this shortcoming will help me eventually overcome it,

but we also agreed that as partners, my job is to handle all the thousands of tiny details, while his is to extrapolate broad abstractions.

I am also pleased with my advances in understanding programming requirements. In the literature, I kept coming across stipulations that game designers understand programming, and I was somewhat apprehensive about my own abilities on that front. Thanks to this internship experience, I am much more familiar with the basic structures of object-oriented programming (arrays, functions, variables), and how to combine them to make a powerful engine for handling the content I assembled.

Although I expect that I will continue in my role as planner and content developer, I am much better prepared to coordinate my efforts with the rest of the multimedia development process. I do not yet feel I am ready to tackle a programming project on my own, but planning for my next collaborative project with Iuffakind Design will benefit from this experience, and take into consideration many of the factors I overlooked this time around.

Overall evaluation of the experience as a whole

Nothing about this internship came easily to me, and the outcome is far from perfect, as the project has not yet been completed. However, I feel I have made a promising start in an unexplored field.

I want to spread the word both in the games community and in the interpretive community about the potential for cross-disciplinary development, and I expect that the summative evaluation of Load the Wagon (as well as the game itself) will help to illustrate my point. I am planning to adapt my ISD model to a workshop format and will

submit it to several upcoming conferences, including Museums and the Web 2006 and the 2006 National Interpreters Workshop.

I made several errors in the development process, primarily in underestimating the level of complexity required for programming a game, but I learned from my mistakes, and anticipate that the next interpretive project will go that much more smoothly.

Perhaps as important as anything else, I have learned significant lessons about communication and collaboration in my own workplace. Mr. Goldsmith's methods are idiosyncratic, and I appreciate the time he took to explain each step of his programming process, so that I can understand how he works. Mr. Goldsmith is adept at extracting general principles from specifics, and spent hours explaining the theories behind his work, and comparing their application cross a broad spectrum of languages (e.g. Perl, php, and XML).

This internship filled in an important gap in my coursework, by offering me a challenging technical application of the theories I have been studying. I am grateful for the opportunity to broaden my horizons in this important area, and confidently anticipate my next professional opportunity to exercise and refine these skills.