Participatory Culture and an Animal Anatomy & Physiology eLearning Application

Final Report

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PTC 629 Theory and Practice of Social Media

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Report Heading

The *Social Media – Animal Anatomy & Physiology* eLearning project is implemented in WordPress at the URL http://www.andrewklobucar.com/msptc629/lll3/. The project takes both a practical and theoretical approach to Social Media and an Animal Anatomy and Physiology eLearning application as they relate to Participatory Culture and serves two major communities, games designers and learners.

Background

The animal anatomy and physiology eLearning application this project relates to is currently in the concept-preliminary design phase. (The goal is to make it into a viable commercial product.) The application's content is geared toward the undergraduate student who wants to work in the veterinary sciences. What sets this application apart is the state-of-the art multimedia and interactivity made possible by the recent advances in technology, such as Web 2.0, whereby biological structures and processes can be illustrated like never before, and delivered on demand via the internet anywhere, anytime. As such, the application consists of three main sections; the first includes text-based information, photography, and multimedia centered upon the academic discourses of anatomy and physiology as it pertains to the dog. The second includes specialized interactive functionality that expands upon the multimedia dimension of the academic discourses by providing three Web 2.0 interfaces:

- *Cross-Section*: interactively zoom in and out of body structures, rotate them to see various views, and 'dissect' them to see inside,
- *Color*: interactively color and label anatomical diagrams, and
- *Pathogens Against the Body*, an educational game: interactively 'infect' the dog body world with a pathogen avatar.

And the third section is devoted to clinical information, experiences and advice.

Social Media – Animal Anatomy & Physiology eLearning Project

The project comprises a *Home* page and three supporting pages, *Create Your Pathogen Avatar*, *eLearning Design*, and *Participatory Learning in Anatomy and Physiology*. The main focus of the project is the *Pathogens Against the Body* interactive educational game; two of the supporting pages devoted to it, *eLearning Design* and *Create Your Pathogen Avatar*. The third supporting page, *Participatory Learning in Anatomy and Physiology* explores the theoretical side of social media. All pages solicit relevant comments from readers.

The *Hom*e page provides an overview of the site. It discusses the animal anatomy and physiology eLearning application on which the project is based. It also briefly introduces the site's three supporting pages.

The *eLearning Design* page, targeted towards the educational game and eLearning designer communities, discusses ways social media can be incorporated into an eLearning application. Ways listed include educational games, a wiki, blogs and forums, and a bulletin board:

- The educational game, *Pathogens Against the Body*, is detailed. In this game, learners interact as pathogen avatars in the world of a dog's body. Learners construct their own pathogen avatars and interact with the system, depicted as a dog body world, in a way

analogous to how the pathogen would interact in the real world. The dog body defends itself as it would in the real world. Although the game is educational, and based upon real life anatomy and physiology as it relates to pathology, there is room for the creative construction of pathogen avatars, and possession of special powers by both the pathogen avatars and the dog body system. The ultimate goal of the game is for the pathogen avatar to inflict maximum damage on the dog body.

- A Wiki would allow learners to edit academic anatomy and physiology information focusing on putting in their own words the principles they find most important or challenging.
- Blogs and Forums as related to the clinical information portion of the application would allow learners to ask questions, offer advice, and share experiences.
- An interactive Bulletin Board would serve as a study aid on an individual and shared basis. Snippets of information from the application and web could be dragged and dropped onto the bulletin board; notes could be attached.

The *Create Your Pathogen Avatar* page which is targeted toward the learner community details the dynamics of the *Pathogens Against the Body* game. Inspirational illustrations as well as guidance for creating a pathogen avatar are shown, including a list of computer-based graphic design tools such as Photoshop and Poses and web-based tutorials on constructing a character.

Participatory Learning in Anatomy and Physiology explores the theoretical as applied to Participatory Culture in Social Media. Discussion on this page revolves around my Flickr Gallery on Participatory Culture with references to Jenkins white paper on Participatory Culture in education and Brian Soulis' acronym KISS applied to Social Media. This theoretical approach takes the view that educational games designer, eLearning designer, and learner communities contribute to the participatory culture that makes up the social media world of games and learning.

Report Audience

The project audience consists of two major communities and one minor community. Learners fit into the popular category while Educational Games Designers and eLearning Application Designers fit into the commercial category.

Learners

This major community consists of individuals, at the undergraduate level, who have a curiosity and eagerness to learn about small animal anatomy and physiology, particularly that of the dog. They are aspiring veterinarians, pathologists, and veterinary technologists; they enjoy their hands on work in veterinary hospitals and laboratories but want to expand their veterinary knowledge base and transcend it into their personal lives. Together they make up the 'pathogen' community.

Educational Games Designers

This major community consists of games designers who focus on educational games within scientific disciplines, particularly the biological sciences.

eLearning Application Designers

This minor community consists of designers interested in developing science-related eLearning applications using the latest interactive technologies.

Report Purpose

The three communities the project centers around, Learners, Educational Games Designers, and eLearning Application Designers, would be interested in the project.

Learners

Learners would be interested in my work, specifically the *Pathogens Against the Body* game, not only because it is unlike any game currently on the market, but because it's challenging in an educational way, creative and fun. As a group, they are intellectual, and in tune with social media and games. Creation of a pathogen avatar involves learning about the morphology of bacteria, viruses, parasites, and the like which cause disease in dogs; and applying that knowledge to construct a creative rendition of a pathogen. Once the playing has begun, the learner is challenged to strategize and use mechanisms in the dog body game world that a pathogen would use in real life as well as other powers the pathogen avatar might possess. In any case, the learner could go it alone, or collaborate with friends. The idea of fighting a resistant dog body to inflict maximum damage, death, is fun.

This learner community would also be interested in contributing to the design of the game, especially how to make it fun. They would want to share their ideas on what special powers their pathogen avatar should possess and how they imagine using those powers in the context of the game. They would also like to help define the reward structure of the game.

Learners enjoy being creative and sharing with their friends; my work would give them the opportunity to create and share their pathogen avatars.

Educational Games Designers

Educational Games Designers, specifically those involved in designing games related to the biological sciences, would be interested in my work on the *Pathogens Against the Body* game. Like the learner community, they would take interest because it is unlike any game currently on the market. In addition, the blog structure of the project would be of interest as it relates to the sharing of ideas amongst and between communities – the educational games designer community amongst themselves, and between the learner and eLearning application designer communities. In order for games designers to meet the expectations of their game players, they must understand what those players want. As such, the comments posted by learners to the project would be a great primary resource.

eLearning Application Designers

Designers of eLearning applications would be interested in my project because it offers opportunities to share ideas about incorporating Social Media into eLearning applications. Like the Educational Games Designer community, the blog structure of the project would be of interest as it relates to the sharing of ideas amongst and between communities – the eLearning application designer community amongst themselves, and between the educational games designer and learner communities

Perhaps a designer, of either games or eLearning applications, who sees the project will want to work with me to make it into a viable commercial product.

Final Recommendations

I believe that the project is feasible, but does need some tweeking. The two most important items on the To Do list are first, making the communities of interest aware of the project; and second, building in an application that allows easy creation of a pathogen avatar.

Community Awareness of the Project

The requirement to exploit vehicles through which the relevant communities can come to know of the project is crucial to its success.

The most obvious vehicle is the Search Engine, and Search Engine Optimization is a top priority. Under the current implementation, there is an extraordinary slim chance that the project will be found through use of a search engine like Google or Bing. For example, when I searched for the keywords 'animal anatomy and physiology', I got 1,060,000 hits with Google and 7,760,000 hits with Bing.

Other vehicles such as Twitter and Facebook could be used as well as linking to blogs created by community members. But, research is required to identify these blogs and other vehicles used by the communities.

Avatar Creation

For those who are not computer graphics savvy, availability of avatar creation websites, other than in the likeness of a human, is limited. All the options mentioned in the 'Things you'll need' list on the *Create Your Pathogen Avatar* page have a steep learning curve, and some are expensive.

It would be ideal if an easy-to-use, intuitive pathogen avatar creation program were built into the project. Avatar creation websites for kids, such as Pop Art Pixies (http://www.popartpixies.com/) could be used as a model. These sites allow users to choose the particular avatar type and add characteristics to make the avatar unique.

'Second Life' Type of Experience

Perhaps a 'Second Life' experience as first envisioned could be implemented into the project.