Application for Teaching Innovation Grant

Project: Department of Biology BIO110-111 Website Project

Project Manager:
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Project Name:
SUNY Cortland BIO110-111 Lab Website Project

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Problem/Significance:

The Biology department at SUNY Cortland offers introductory Biology courses (BIO110 and BIO111) for non-majors. The courses serve as GE credits (8A and 8B) and are designed to give students a sense of science literacy and provide them with a general education in some of the principles of the Biological Sciences. Under the current educational system, Principles of Biology I (BIO110) is offered in the Fall semester while Principles of Biology II (BIO111) is offered in the Spring semester. Enrollment in the course ranges from about 500 to about 700 students a semester. Lab sections are offered in order to provide students a smaller learning setting (24 students or less). These lab sections are taught by adjunct instructors. In general, six to seven faculty members participate in teaching the course every semester.

There exists an opportunity at this time to create a permanent web resource that serves the needs and goals of both the students and the faculty involved with the course. Although a current version is already in use, there is a need to implement a more thorough and sustainable web-based resource that meets the common educational goals of the department and contains better message design.

Part of this project proposal is to create a sustainable resource that can be revised as necessary in the future. A software solution has been selected (see below) that will provide faculty members with a non-technical background access to participation in revision of their own portion of the course. This has broad implications for other departments that employ large courses with multiple sections or multiple faculty instructors, to be able to create, integrate, and sustain a web-based resource.

Objectives:

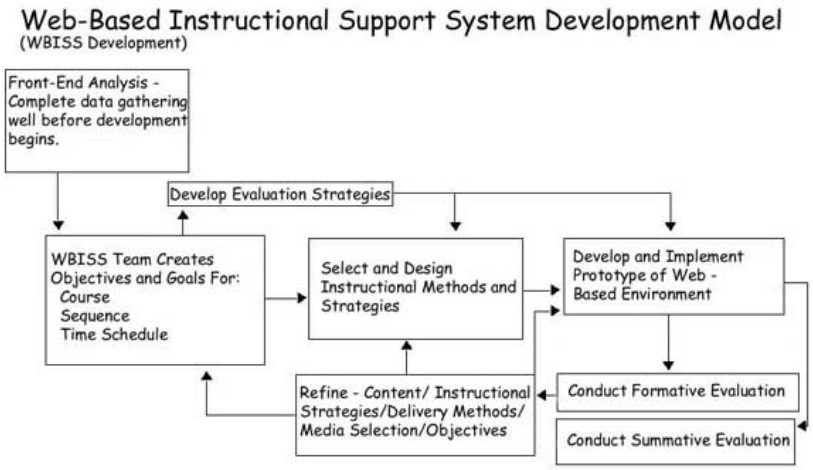
1. Apply the WBISS Development model to select and design instructional interactions on the website.
2. Deploy a department workstation for use in continuing website revision.
3. Create training materials for the use of the department workstation.
4. Evaluate the effectiveness of the newly developed system.
5. Present the findings in a poster presentation or in a sandwich seminar.

Current Instructional Method and Implementation Plan:

Currently, a web-based resource does exist for the courses. It was created by and is maintained by a single faculty member. Included are a variety of resources that are intended to allow students to be able to study materials that are only available in the laboratories (e.g. dissection specimens and models). The site also allows instructors attached to the course to be able to update and add study guides, class outlines, and other materials in PDF format.

Under the current system, all of the revision and support is channeled through one person. Several key changes to the web-based system will address sustainability features:

A. Using the WBISS Development model (below), a new website will be created based on the goals of the department.
B. One computer in the department will be designated as the work terminal for the website.
C. A new long-term web account will be created (currently a faculty member is using their personal account).
D. Two software packages will be implemented in order to help non-technical faculty contribute to the revision and maintenance of the site.
    a. Macromedia's Contribute allows people to update web content using their internet browser and Microsoft Office software.
    b. Macromedia's FlashPaper allows people to save Microsoft Office documents as PDF files or Flash files.



WBISS Model (Fried, 2003; Updated 2005)

Evaluation Plan:

This planned implementation will be considered a success based on its adoption in several groups. First, it will be important that the departmental instructors adopt and use the technologies and second, that the students engage the website as a valuable resource. It will be crucial to measure these adoption standards in the Fall of 2005 and into the Spring of 2006. In order to evaluate these criteria, the following data will be collected:

A. A comparison of the amount of work given by instructors in class as compared to the amount of content that they generate for the website.
B. A survey of the instructors involved that covers both satisfaction with the process and their commitment to the process.
C. A complete understanding of the logged statistical usage of the website measured by an outside party (http://www.nedstat.com).
D. A survey of a sample population from the course in order to understand both why students are using the website and why students are not using the website.

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Aaron Fried 25 Jan 2004
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Brief Timeline:

Dates	Task
Jan – Feb 2005	**Front-End Analysis** *Sub Tasks* o *Needs Assessment* o *Learner Analysis* o *Technology/Media Analysis* o *Situational Analysis* o *Objective Analysis* o *Extant Data Analysis*
Feb – Mar 2005	1. Create Objectives for Website 2. Develop Formative Evaluation Strategies 3. Select Instructional Strategies 4. Design Instruction and Website
Mar – Jul 2005	1. Develop instructional materials 2. Develop website 3. Evaluate and revise instructional materials 4. Implement departmental workstation
Aug – Dec 2005	Pilot Test Website along with BIO110 Labs Conduct Formative Evaluation of Website Revise Website as necessary

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Current Design Team

- Aaron Fried, M.S., Instructional Designer, Instructor, Department of Biology
- Alaä Craddock, M.S., Biology Department Lab Coordinator
- Mary Beth Voltura, Ph.D., BIO110 Faculty Coordinator
- Brian Rivest, Ph.D., BIO111 Faculty Coordinator

Instructional Design Experience:

Aaron Fried – See full vitae at http://web.cortland.edu/frieda

- Currently a Ph.D. student in Instructional Design at Syracuse University's Department of Education
- Curriculum re-design SCI141 course at SUNY Cortland, Biology sections, Summer and Fall 2004
- "Guide to Using Medical Databases" Design, St. Joseph's School of Nursing, Fall 2002, Revised Fall 2004
- Training curriculum revision for Vera House, Syracuse, NY, Fall 2002
- Completed coursework in Instructional Design, Learning Theory, Educational Technologies, Diffusion of Innovations, Educational Project Management, Front-End Analysis, Integrating Technology and Teaching, Internet for Educators, and Message Design for Digital Media
- Vitae contains an electronic portfolio of work samples.

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Further documentation available upon request.

References:

Diamond, R.W. (1998). Designing and assessing courses and curricula, a practical guide. San Francisco: Jossey-Bass Publishers.

Fried, A.P. (2003) Prototyping of web-based instructional support systems for introductory college science environments. *Attached*

Fried, A.P. (2003) Front-end analysis plan for rapid prototyping of web-based instructional support systems for introductory college science environments. *Attached*

Gagné, R.M., Briggs, L.J., Wager, W.W. (1992). Principles of instructional design. 4th Ed. Belmont, CA: Wadsworth/Thomson Learning.

Lee, W.W., Owens, D.L. (2000). Multimedia-based instructional design. San Francisco: Jossey-Bass Publishers.

Morrison, G.R., Ross, S.M., Kemp, J.E. (2001). Designing effective instruction. 3rd Ed. New York: John Wiley & Sons.

Current Websites:

BIO110 – http://web.cortland.edu/frieda/110.html

BIO111 – http://web.cortland.edu/frieda/111.html

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