Constructivist Values for Web-based Instruction: University and NSA Collaboration

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Abstract

CSULA was charged with assisting the NSA in the research, development, documentation and the necessary expertise to convert a face-to-face course to a multimedia web-based course called "EEO 100: Equal Employment Opportunity Law and Diversity Training for Selection Boards." The focus of our work was on ways to encourage interactive learning and the use of motivational strategies online.

CONSTRUCTIVIST APPROACHES TO LEARNING AND RESEARCH

In July 1998 CSULA began a 3-year research and courseware conversion project sponsored by the National Security Agency (NSA) to convert a face-to-face course to a multimedia web-based course using "constructivist" approaches as the basic foundation for organizing and developing the project. It involved two professors and an interdisciplinary team of graduate and undergraduate students from Instructional Technology, Art Education, Computer Science, and Graphic Design. Recent studies in education have promoted the constructivist approach to learning "...where students develop their knowledge through team collaboration, discuss different interpretations of a problem, and negotiate and synthesize ideas drawing from various disciplines" (Boyer & Semrau, 1995, 14). Ultimately, students will be engaged in their learning, see relevance in it, and take on an ownership in it. To meet the needs and interests of students, education must emphasize problem solving and applications of information, instead of memorization of facts.

YEAR ONE OF PROJECT: INITIATING THE PROJECT

The NSA provided one of their platform-based courses called “EEO 100: Equal Employment Opportunity Law and Diversity Training for Selection Boards” for the CSULA group to convert. NSA included course material and a ½” VHS videotape of an instructor answering questions and discussing material related to the course content. EEO 100 is directed to employees of the NSA who serve or who may serve on boards, panels, or committees charged with the responsibility of rating workers for selection purposes.

Training was provided to the CSULA student team on the basics of html coding, Adobe Photoshop, Premiere, Pagemill and WebCT. WebCT is an authoring and course management tool for web-based courses. The students were instructed regarding the overall "look & feel" of the website layout and screen designs. For a foundation in working collaboratively in building a website the students first designed a demonstration site on streaming media using RealAudio and RealVideo.

YEAR TWO OF PROJECT: CONVERSION STAGE

During the fall, 1999 we moved onto converting the EEO 100 course content into a web-based course. The EEO 100 content was subdivided into the following main topic areas: Current requirements, additional requirements, definitions of discrimination, disparate impact, harassment, affirmative action review, and tools. It was necessary to rewrite and revise the content, as
well as integrate multimedia to accommodate a web-based learning environment.

A focus was to keep the web course interactive with an emphasis on learner control. It was also important that there be a balance between text and the use of graphics, diagrams, video and audio to reinforce the learning. Another significant area was the focus on culturally diverse distance learners. Sanchez and Gunawardena (1998) identified the challenge of recognizing both the diversity of culture and individual learning styles with diversity in the learners, cultures, and learning styles — variety in learning may be the solution (p. 61).

In the spring of 2000 and into early summer, we synthesized various course components (content, video, test items) into a final course website and designed visual learning aids (diagrams, charts, and pictures) and tools (glossary, law books, and court cases) to enhance learning of the course content.

CONCLUSION

As Boettcher and Cartwright (1997) emphasized, web course designers must realize that the “individual learner must be viewed as the key design element.” The focus of our work was on ways to encourage interactive learning and the use of motivational strategies online.

The new web-based version of this course will make the content accessible to more NSA employees worldwide. Plus, the online version includes interactive pop quizzes with immediate scoring and feedback as well as streaming media lectures to complement the course content, which is presented as text on the web pages.

Through this project the students became constructively involved in their own learning and have acquired in-depth experiences in collaborative learning and team approaches. The students became empowered to be developers of their own curricular materials and course websites instead of being passive viewers of others’. All of Bloom’s higher-level taxonomies were implemented in this project — the students analyzed websites, synthesized criteria that they collected, compared and contrasted their criteria, designed and produced their own web pages with a focus on sound educational practices. As Gibson (1998) noted “…we, as distance educators, need to be learner-centered reflective practitioners” (p. 143).

REFERENCES


