Multiplicity & Flexibility as Design and Implementation Features – A Case Study of a Web-Based CL Community for Diverse Learners

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ABSTRACT

This presentation describes multiplicity and flexibility as important factors in designing online collaborative learning environments. The presentation: (1) describes the design features of an award-winning Web-based course using extensive online collaborative learning; (2) examines and discusses four aspects and specific features of the course that supported multiplicity in design, development, implementation, and assessment; (3) discusses implications for future course design and research of online collaborative learning environments.

Keywords

Multiplicity, flexibility, Web-based learning, collaborative-learning, design, community, diversity

INTRODUCTION

John Dewey said, "The main purpose of instruction is to prepare the young for future responsibilities and for success in life." (Dewey, 1938, p. 17) In Asia, Confucius said, "Education should be provided indiscriminately. Teaching should be tailored discriminately."

The Internet provides unique opportunities to prepare learners for "future responsibilities" and "success in life," as well as tailoring instruction to meet individual learner's needs, interests, and strengths from diverse backgrounds.

The presentation describes the context, assumptions, objectives, and structure of an award-winning Web-based collaborative-learning course, *Instructional Technology Management and Planning (ITPM),* offered in the spring of 2001. This course received the "National Distance Learning Course Award" from the University Continuing Education Association and the instructor received the "2001 Excellence in Distance Learning Teaching Award for Higher Education" from the U.S. Distance Learning Association.

This presentation describes how and why multiplicity and flexibility were incorporated in the design, development, and implementation of an online course that emphasized collaborative learning. Essential features addressing multiplicity and flexibility will be discussed including: multiple course representations, tools, communication types and channels, support, interactions, flexible course structure, personalized communication and feedback system, and cultural-sensitivity to better meet the needs of learners from diverse backgrounds.

ONLINE COLLABORATIVE LEARNING

Collaborative learning strategies and online learning communities are increasingly incorporated within Web-based courses. Within these communities learning is derived from the negotiation and construction of knowledge among members. Based on emergent instructional needs, this curriculum is not static, but evolves throughout the design, development, implementation, and course revision process. One of the challenges in creating cooperative and collaborative learning communities is how to engage students' participation and interaction. To engage learners, the tasks should satisfy individual and group goals. The presentation describes the ways multiplicity and flexibility can help facilitate learner engagement and participation in the collaborative learning process.

SUMMARY

THE COURSE CONTEXT

The ITPM course was situated in a virtual environment where students met through online interactions. An authentic virtual environment with authentic tasks was created based on the metaphor of a hypothetical school district, Mustang Independent School District (MISD), composed of five schools. Data were derived from actual U.S. school districts, while problem- and project-based approaches to learning were employed. The major product was the "technology plan" that students produced collaboratively. In order to learn how to obtain funding support, each group also wrote a grant proposal based on their technology plan.

To accomplish course requirements, online socialization and communication were essential, as were extensive cooperation and collaboration among learners of diverse backgrounds. Authentic tools were employed to support the development of the strategic technology plan including the TechBuilder suite of tools and survey forms. In addition special spreadsheet

forms were used for budget development, hardware and software inventories, as well as other tools such as GANNT charts for project scheduling. WebCT and Vcampus courseware were employed to provide access to course content and virtual environment. FirstClass groupware was also used to support the collaborative activites of the virtual planning teams. For synchronous interaction, the online chat function was used. Learners participated in monthly videoconferences on campus (face-to-face) or by way of network Webcasts, which served as a monthly forum for guest experts' discussion of relevant topics, teams to share their work, and instructor to answer student questions or give advice. The course contained eight modules; module tasks progressed from simple to complex.

Learners were either on-campus students at University of Texas, Austin or distance-learning students employing "TeleCampus" from across Texas, Georgia, and New York. On-campus students had the option of meeting the instructor, staff, and peers face-to-face or through the Internet while off-campus students could only connect via the network and phone communication.

MULTIPLICITY AND FLEXIBILITY: DESIGN FEATURES FOR DIVERSE LEARNERS
Multiplicity refers to the multiple ways of presenting and delivering course material, channels of communication, activity offerings, and learning strategies. Flexibility refers to the welcoming of and openness to questions and suggestions, timely support, options for learning tasks, and provision of individualized feedback throughout the course. Four major course aspects were observed to address multiplicity and flexibility including: course content and structure; communication tools, channels, and types; support, accessibility, and feedback; and performance assessment.

Multiple learning contexts and activities were provided in the ITPM course, such as self-learning, small group, cross-group learning, and whole class forums and interactions. Multimedia (text, audio, video, simulation) and multiple tools (TechBuilder, StaR Chart, Technology Profile Tool, and Milken Professional Competency Assessment) were structured for aesthetic representations and cognitive task engagement. Multiple course activity options were provided in consideration of divergent interests, values, and backgrounds of students. Multiple sources and kinds of support and feedback – as well as multiple channels of communication – were made available, including the instructor, a teaching assistant, administrative and technical staff, outsourcing consultants, area experts, and community members. Multiple assessment methods used to maintain student accountability included evaluations by the instructor, by self-evaluation, and by peers. Multiple instruction approaches were employed to motivate students of various cultures, intellectual levels, motivation, and interest.

Flexibility in design involves knowledge of and sensitivity to cultural diversity. It also requires enhanced understanding, communication, and instructional content and options tailored to the needs of the individual learner. In the ITPM course, students were encouraged to think "outside of the box" in looking beyond the obvious, and to value multiple perspectives. This entailed students seeking out relevant resources and utilizing their knowledge and creativity rather than confining themselves to traditional ways of thinking and learning. Because no plan is perfect, course content and schedule adjustments were made as necessary throughout the implementation process. Flexibility in meeting emergent needs of diverse learners required careful monitoring of the learning processes and individual student progress in order to make appropriate adjustments and modifications in schedule, approaches, and methods employed. For example, when technological failures or technical setbacks occurred, individual support and scaffolding was provided to accommodate learners' unforeseen personal problems and difficulties. A weekly newsletter provided announcements, clarifications, information updates, and reminders.

Students' end-of-course evaluations revealed positive results and feedback, as did students' peer and product evaluations. ITPM students' end-of-module reflections expressed enthusiasm about their learning throughout the semester. Students expressed their satisfaction with the tools they were exposed to, tasks they had accomplished, and the online social and collaborative skills acquired through group interactions. Based on our experience with the course, we have found that considerations of multiplicity and flexibility on various aspects of design, development, and implementation phases are important elements in the success in online collaborative learning environments.

REFERENCES
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