Reflections on the Use of an Integrated Computer-based Collaborative Learning Program in a Curriculum Design Course for Science Teachers

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Abstract: This paper discusses the author's reflections on the use of an integrated computer-based collaborative program in a university-level curriculum design course for science teachers. The program, Daedalus, is composed of a series of modules that work together to help the learner during each phase of the writing process.

A relatively "traditional" curriculum writing and development course was re-designed to enhance the spirit of cooperative learning and curriculum development among teachers enrolled in a graduate level course in science education. The Daedalus module, "Interchange", was used in the course. "Interchange" is a real-time conferencing program in which the learner composes messages privately and then sends them to all members of the class. The newly developed collaborative writing course proved valuable in encouraging collaborative writing and development and in assisting each teacher to construct his/her "personalized" framework for a curriculum project. Perceptions of teachers and the instructor, examples of final curriculum projects, an overview and evolution of the writing process, and strengths and weaknesses of Daedalus will be presented.

This paper discusses the author's reflections on the use of an integrated computer-based collaborative program in a university-level curriculum design course for science teachers. The program, Daedalus, is composed of a series of modules that work together to help the learner during each phase of the writing process.

A relatively traditional curriculum writing and development course was re-designed to enhance the spirit of cooperative learning and curriculum development among teachers enrolled in a graduate level course in science education. The focus of the applied course was designed to enhance students' skill and knowledge base in curriculum writing and development in science education. Two drivers formed the philosophical underpinnings for the course: (1). The course must include activities that encourage the types of learning necessary for critical thinking, reading, and writing, and, (2). The course must focus on situations and opportunities for students to interact in a positive, supportive, collaborative learning environment.

The final product was a "curriculum", a meaningful set of research-based materials that illustrate good science teaching and learning. The course format included seminars, lectures, independent and group work, student presentations and cooperative writing via the Daedalus-Integrated Writing Environment. The Daedalus module, "Interchange", was used in the course. "Interchange" is a real-time conferencing program in which the learner composes messages privately and then sends them to all members of the class.

Based on the analyses of student discourse, seven reflective conclusions were generated: (1). The process of collaborative writing appears to be developmental. (2). It takes time for collaborative groups to construct

understanding. (3). The role of the instructor is the most important factor to ensure success throughout the collaborative writing process. (4). Students learn how to negotiate and manage conflict productively. (5). The process encourages students to see different components of the writing process- invention, pre-writing, composing, and revising. (6). It integrates students and instructors into a collaborative community of learners. and, (7). The process helps to "see" students " in a different way. The newly developed collaborative writing course proved valuable in encouraging collaborative writing and development and in assisting each teacher to construct his/her "personalized" framework for a curriculum project