Chapter IX
Designing and Implementing Collaborative Classroom Videoconferences[1]

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ABSTRACT

The chapter introduces collaborative classroom projects implemented through videoconferencing technology as a means of enhancing and enriching classroom instruction. The various applications of collaborative classroom videoconferencing are discussed in the light of social constructivist learning theory. Special attention is devoted to teacher professional development training in designing and implementing collaborative classroom videoconference projects. Distinctive types of collaborative classroom implementation projects with supporting examples, as well as effective outcomes associated with student learning, are presented and discussed. The chapter concludes with a summary of the best practices in the utilization of collaborative classroom projects; directions and recommendations for future research are also offered.

INTRODUCTION

Telecommunications have proven to have a pervasive effect on people's everyday lives; they have been brought in the classroom because of the general belief that they would be beneficial in helping students to realize their own academic potential. Videoconferencing, as implemented for the purposes of classroom instruction, bridges physical distances and provides access to distant educational resources. Among the acknowledged advantages of videoconferencing over traditional classroom instruction are the opportunities provided to students to have authentic experiences through interaction with experts, and to acquire knowledge in a dynamic and visual fashion that is rooted in dialogue and discussion. In addition, collaborative classroom experience can result in the implementation of projects that involve two geographically-distant classrooms using videoconferencing to access, share, or transmit information to each other (Newman, Barbanell, & Falco, 2007).

Collaborative classroom projects are built on the premise that opportunities for interaction and discussion with peers across distances will nurture student interest and motivation, and will eventuate in cognitive gains. Thus, the purpose of any collaborative classroom project is to engage students in the process of instruction and assessment, and to model and support higher-level thinking and problem-solving (Jonassen, 2002).

The overarching goal of this chapter is to provide an overview of best practices in designing and implementing collaborating classroom videoconferencing. The various applications of this form of videoconferencing, from training and teacher preparation to actual implementation and post-videoconference activities, will be delineated so that the information provided here can serve as a means of modeling future collaborative classroom videoconference projects.

THEORETICAL BACKGROUND

Collaborative classroom projects are based on current understanding of how children think and learn and are rooted in the theories of cognitive and social constructivism. Unlike the transmission model of learning and instruction, in which students are assumed to be passive recipients of the existing knowledge, contemporary learning theories emphasize inquiry, critical thinking, and acquisition of the skills of abstraction, experimentation, and collaboration (Awbrey, 1996).

The constructivist approach to learning and instruction stems from Jean Piaget's pivotal theoretical work on a child's cognitive functioning. The underpinning of Piaget's theory is that children construct their own understanding of the world through interaction and free exploration. The child is metaphorically depicted as a little scientist and self-directed problem-solver, who constantly tests, accepts, or refutes hypotheses about the world (Flavell, 1992). According to Piaget, children actively construct their knowledge of the world by acting upon objects in space and time, and by being provided with ample opportunities to generate ideas on their own. The role of a teacher is to facilitate this natural course of cognitive development by exposing a child to other points of views and to conflicting ideas that may encourage a child to rethink or review his/her own conceptions of the world. If children never experience information that contradicts the erroneous ideas that they have constructed by themselves, they would never develop conceptual knowledge. Although Piaget has never articulated the instructional implications of his theory, social scientists and educators have translated their understanding of Piaget into curriculum designs, teaching approaches, and a whole new philosophy of education (Wood, 1988).

Lev Vygotsky's (1978) influential theory of social constructivism posits that children's thinking and learning are shaped by the social activities in which children participate. Learning and instruc-

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