Social or Group Learning Theories

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In both computer-based and traditional educational environments, there has been a growing organization of learning in groups with an increased use of teams and group projects (Berg, 2003). Goldman (1999) claims that traditionally education is seen as an activity of isolated thinkers pursuing truth in a spirit of American self-reliance. However, in practice education is very much a social activity, especially the research component that is heavily dependent on colleagues. In fact, some argue that the key to the learning process as a whole is the interaction among students, and between faculty and students (Palloff & Pratt, 1999). Group learning approaches have been widely adopted by many of the leading distance learning institutions, and consequently an understanding of this approach is important.

Theories of the importance of social aspects to learning have become increasingly fashionable in the educational theory literature. Spector (1999) notes that this social-learning-theory perspective draws heavily on Bruner, Lave, Piaget, and Vygotsky. Two of the most discussed current approaches to learning in teams are cooperative and collaborative learning. Each represents opposing ends of constructivist teaching and learning, ranging from an approach that is highly structured by the teacher (cooperative) to one that gives the responsibility for learning primarily to the student (collaborative).

Cooperation is a structure of interaction designed to facilitate the accomplishment of a specific end product or goal through people working together in groups. It is defined by a set of processes to help people interact together in order to accomplish a specific goal or develop an end product that is usually content specific. It is more directive than a collaborative system and closely controlled by the teacher. While there are many mechanisms for group analysis and introspection, the fundamental approach is teacher centered whereas collaborative learning is student centered. Cooperative learning is based on the creation of systematic application of structures or content-free ways of organizing social interaction in the classroom. An important aspect of the approach is the distinction between structures and activities. In terms of student motivation, social theory assumes that cooperative efforts are based on intrinsic motivation generated by a joint aspiration to achieve personally significant goals. Contrary to this, behavioral learning theory assumes that cooperative efforts are powered by extrinsic motivation to achieve rewards.

Collaboration is a philosophy of interaction where individuals are responsible for their actions, including learning, and respect the abilities and contributions of their peers. Collaborative learning is a personal philosophy, not just a classroom technique. In all situations where people come together in groups, it suggests a way of dealing with people that respects and highlights individual group members' abilities and contributions. In this approach there is a sharing of authority and acceptance of responsibility among group members for the group's actions. The underlying premise of collaborative learning is based upon consensus building through cooperation by group members (Bruffee, 1995; Panitz & Panitz, 1998).

Ken Bruffee (1995) argues that what determines which approach is used depends upon the level of sophistication of the students involved, with collaborative learning requiring more advanced student preparation than cooperative learning. He identifies two types of knowledge as a basis for choosing an approach: foundational and nonfoundational. Foundational knowledge is the basic social knowledge generally agreed upon such as spelling and grammar, mathematics, and historical facts. Bruffee claims that this foundational knowledge is best learned using cooperative learning structures in grade school. Nonfoundational knowledge is attained through reasoning and questioning rather than rote memory. The other way nonfoundational education differs from foundational education is that it encourages students not to take their teacher's authority for granted. According to Bruffee, collaborative learning shifts

the responsibility for learning away from the teacher as expert to the student. Using this model, most adult learning lends itself to a collaborative approach. Bruffee sees education as an acculturation process occurring through conversation. Students learn about society by developing the appropriate vocabulary and by exploring norms in conversation. He views the two approaches as connected, with collaborative learning designed to pick up where cooperative learning leaves off. In effect, students learn basic information and processes for interacting socially in the primary grades, and then extend their critical thinking, reasoning skills, and understanding of social interactions as they become more involved and take control of the learning process through collaborative activities. This transition may be viewed as a continuum from a closely controlled, teacher-centered system to a student-centered system where the teacher and students share authority and control of learning.

Although these represent two different approaches, many of the elements of cooperative learning may be used in collaborative situations. If adult learners work in collaborative learning environments, then they must have an understanding of how to work with others and value individual contributions. This suggests that computer software should be designed to support such an understanding and appreciation of learning in groups. Nevertheless, although the research literature on the benefits of students working in groups is deep, Schwartz (1999) claims that over 60 years of research has not shown that the work of the group is stronger than the most capable individual member.

RESEARCH LITERATURE ON GROUP METHOD IN COMPUTER ENVIRONMENTS

Littleton and Hakkinen (1999) argue that computers can form a particularly rich context for understanding collaborative learning, and may assist researchers in better understanding the benefits of learning in groups. Furthermore, computers may lead to a better understanding of human ability to collaborate in learning environments. Computers may provide a mechanism to handle the awkwardness of group work and clarify the importance of representing participant thoughts to others during collaboration.

King (1998) notes that numerous scholars have analyzed the communication occurring in threaded discussions and chat rooms for a better understanding of educational approaches. Analysis has included sociocultural perspectives, levels of interactivity, emergent comment categories, and participant roles. Surprisingly, Kirkley, Savery, and Grabner-Hagen (1998) found that most e-mail interaction was from individuals to groups (19% were from the instructor to the whole class, 68.9% were the student to the whole class). Student-to-instructor and student-to-student interaction only amounted to 3.1% of the communication each. This is a curious data set. Perhaps students are happy with more generalized communication to the group as a whole and do not feel the need for one-to-one communication. There appears to be a difference in the communication that occurs in distance learning courses when compared to the traditional classroom. Rourke, Anderson, Garrison, and Archer (1999) describe this difference in a notion of "social presence" in online courses, defined as the ability of learners to project themselves socially into a community of inquiry.

Dillenbourg (1999) argues that collaborative learning in distance learning is neither a mechanism nor a method. It is a situation whereby specific forms of communication are expected to occur and lead to learning. However, these communications are complex and difficult to understand. He sees the challenge as understanding and controlling interaction in collaborative learning situations. Additionally, asynchronous communication makes understanding the communication even more difficult, adding another wrinkle. Dillenbourg views collaborative learning as dependent on a shared conception of a problem. In collaborative environments it is important to define the situation, interactions, processes, and effects.

According to Duffy, Dueber, and Hawley (1998), student problem-solving abilities can be judged by evaluating and distinguishing significant from insignificant information. This ability of the students is important to understand because, as we saw earlier, there are indications that this sorting of the content is a key instructor role, one that can also occur through interaction with a group of learners. The