

# Assessing Collaborative Learning

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## INTRODUCTION

Collaborative learning is a strategy in which students work together in small groups with minimal guidance from the instructor in order to achieve an outcome or goal which can only be achieved collectively and interdependently (Johnson and Johnson, 1993). Team members are responsible for discussing and explaining content, solving problems, providing feedback, and ensuring mutual success among all members. They depend on one another as knowledge-providers instead of expecting the instructor to be the sole source of knowledge.

Over the last several decades collaborative learning, sometimes referred to as cooperative learning, has been utilized primarily in the classroom environment. It became an instructional strategy in distance and online learning environments soon after the first courses went online as it became clear that more interactive ways of developing knowledge were needed in what could otherwise be a very static learning environment. Since the utilization of online collaborative learning began, research has indicated that online collaboration groups score higher on post-tests than traditional collaborative learning groups (Mukit, Razali, et. al., 2005), reinforcing the notion that a collaborative strategy can be effective online.

Methods of assessing collaboration have always been complicated due to the fact that an instructor cannot always evaluate individual and collective knowledge development that has occurred in the group. It is further complicated in an online learning environment due to the lack of physical proximity not only between instructors and learners but between learners themselves. These issues support the use of multiple perspective assessment, which will be the focal point of this article.

## BACKGROUND

Before discussing assessment of collaborative learning it is important to understand the predominant theory

at the core of collaborative learning, which is social cognition or social learning. Social cognitive theory focuses on the social and cultural interactions that are associated with knowledge acquisition. Throughout the 20th century, theorists from varying perspectives sought to explain the value of interaction in human development.

Some say that the rise of social cognition was not only due to dissatisfaction with behaviorism, but also with the “Piagetian structuralist approach to cognitive development” (Butterworth, 1982, p. 5). Others contend that while Piaget primarily focused on developmental stages and how children acted upon knowledge as individuals, he also believed that peer interaction played a role in cognitive development and “emphasized cooperation as the ideal form of social interaction promoting development” (Tudge and Rogoff, 1989, p. 20).

Piaget’s work is sometimes contrasted with that of Vygotsky who focused on a concept known as the “zone of proximal development” which is the difference between the ability of a learner working alone as opposed to the learner’s potential ability working with help from more experienced colleagues. Vygotsky also championed the concept of intersubjectivity, which is the understanding achieved when people work together to co-construct resolution of a problem and is an important part of effective peer interaction. Piaget emphasized “that infants must **act** to know” while Vygotsky stressed “that they must **share** to know” (Trevanthen, 1982, p. 81).

The educational movement in the 1960’s that sought to prepare students for a more democratic learning experience was inspired by Dewey’s philosophy of “active participation by the learner in defining the learning environment” (Boettcher and Conrad, 2004). Dewey emphasized the value of the individual experience in the learning process as well as collaboration with others in order to define the learning environment.

Bandura in his 1977 work Social Learning Theory, postulated that thoughts and action were fundamentally social in nature and that they in turn influenced cognitive aspects such as motivation, emotions and action.

Bruner embraced the philosophy that humans learn more effectively through interaction with others. Bruner (Bornstein and Bruner, 1989) stated that “development is intrinsically bound up with interaction” (p.13) and went on to describe the aspect of reciprocity as the “deep human need to respond to others and to operate jointly with them toward an objective” (p. 67).

The attributes espoused by these theorists are evident in Johnson and Johnson’s (1993) description of the five key aspects of collaborative groups: face-to-face interaction, positive interdependence, individual accountability, collaborative skills and group processing. Learners should work together in close proximity to one another (face-to-face interaction), believe that all group members must succeed in order for the group to succeed (positive interdependence) with each member’s performance being individually assessed (individual accountability). Per Johnson and Johnson, collaboration will not occur unless learners understand the nature of interaction (collaborative skills) and continually analyze and adjust operational aspects of the group as the project continues (group processing). In a distance or online learning environment, learners must use creative means to work together via various technological tools to simulate the collaborative elements of “face-to-face interaction” and to promote “close proximity.”

The effectiveness of collaborative learning has been heavily researched particularly in the latter half of the 20<sup>th</sup> century. Research has indicated that members of collaborative groups have higher levels of participation, achievement, productivity, self-esteem, peer interaction, group cohesion as well as enhanced critical thinking skills.

There are also aspects that need to be improved. Learners sometimes do not know how to collaborate in a learning environment, particularly in an online learning environment, and need training to do so. If this training is not done, some learners opt out of the collaboration process and let one person do all the work (Salomon, 1995). This can frustrate and de-motivate remaining team members, particularly if all members of the group are assessed on the quality of the final product and receive the same grade. Learners who are accustomed to working individually, will dread the opportunity to collaborate if it is not perceived to be a valuable part of the learning experience and not assessed based on the unique characteristics inherent in collaborative learning.

## **ASSESSING COLLABORATIVE LEARNING**

It has long been contended that assigning the same grade to all team members promotes the interdependency of learners in order to achieve a satisfactory grade (Cohen, 1972). However, this strategy can also result in student dissatisfaction with the collaborative process due to unequal participation by some team members. If a learner is to be dependent on others for successful completion of a course, he or she must feel confident that fellow team members will participate in the collaboration. Unless there is an equal distribution of workload, a sense of commitment to the team by individual team members and belief that the group product is more than a personal reflection of a select few, students will instinctively avoid collaboration (Gummess, Day-Ryan and Papineau, 1996). As early as 1979, Latane, Williams and Harkin found that when people thought they were being held individually accountable, one of the greatest deterrents to collaborative learning, “social loafing,” disappeared. Individual accountability is lost if the same grade is given to all group members based on the quality of the collective product. Assessment of collaborative activities must include an evaluation of individual knowledge development as well as the individual input to the collective knowledge development.

When a collaborative effort results in a product, such as a paper, project, case study analysis, or discussion summary, it is difficult for an instructor to assess individual contributions that largely occur outside the purview of the instructor. Additional assessments are needed to determine individual contributions to the collaborative effort. Assessment of collaborative learning needs to encourage, promote, and maximize individual team member knowledge contributions and the quality of collaboration. It also needs a means to provide feedback to the instructor concerning the contributions of each team member. So while the traditional method of providing a group grade remains important, it should by no means be the only evaluation in a collaborative learning environment.

Assessment of online collaboration should be learner-centered, aligned with learning objectives, based on clearly communicated expectations and feedback guidelines, and designed with student input (Palloff and Pratt, 2005). In addition, it should be based on the

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