

## STUDENT-CENTERED COLLABORATIVE LEARNING IN THE ONLINE CLASSROOM: PERCEPTIONS OF VIRTUAL GROUP PROJECTS

By

B. JEAN MANDERNACH\*

EMILY DONNELLI\*\*

AMBER DAILEY\*\*\*

### ABSTRACT

*In early models of online instruction, learning activities and assessments relied primarily on threaded discussions or papers. But advances in online technology, and a growing trend to incorporate collaborative learning strategies, have led to the emergence of online group projects. While student-centered learning activities such as group projects have a well-established history in traditional educational environments, the value of group work in the online classroom is less clear. A survey of experienced online students and faculty revealed inconsistent perceptions between these two groups concerning the value of group projects in virtual education. Online faculty report that group projects are a valuable tool as group work, that provides a realistic assessment of requisite professional skills. In contrast, online students indicate that group projects are counterproductive to their choice to pursue online education. Discussion examines unique challenges in incorporating student-centered collaborative projects in the virtual classroom.*

### INTRODUCTION

The shift in higher education from traditional, instructor centered teaching to more interactive, student-centered learning environments is based on the notion that individuals must be active participants in the learning process to effectively create, organize and utilize knowledge (Barr & Tagg, 1995; Cross, 1999; Greene, 1988; Howell, 2002). As explained by Howell (2006), "students must adjust their expectations of what happens in a college classroom and take greater responsibility for their own learning in order to progress towards self direction and autonomy" (p. 4).

As such, a student-centered learning environment requires modified instructional and assessment activities to include the student as an active component of the learning process. Effective student engagement requires the faculty to refrain from their familiar role as information-providers and instead strive to "create environments and experiences that bring students to discover and construct knowledge for themselves, to make students members of learning communities, who make discoveries and solve problems" (Barr & Tagg, 1995, p. 15).

One of the key instructional tactics for engaging students and fostering their active learning is the integration of collaborative learning techniques. It can be defined, as,

"collaborative learning has come to mean students working in pairs or small groups to achieve shared learning goals. It is learning through group work rather than learning by working alone" (Barkley, Cross & Majors, 2005, p. 4). Barkley, Cross and Majors (2005) highlight three key features of collaborative learning as 1) focus on intentional design and structure of activities, 2) collaborating in which all members of the group are actively engaged towards the group goal, and 3) meaningful learning must take place as students increase their knowledge to deepen their understanding. When these three features are present, collaborative learning can transform the classroom from a community of passive consumers to a community of active and engaged learners.

The educational and social value of collaborative learning in the face-to-face classroom is well-established (Barkley, Cross & Major, 2005; Halpern, 2004; Panitz, n.d.). Collaborative learning promotes critical thinking, actively engages students in the learning process, improves and motivates learning, models problem-solving techniques, and creates natural learning communities (see Appendix A for a more comprehensive list of the benefits of collaborative learning). In addition to the cognitive benefits, collaborative learning also encourages a number of social and psychological benefits including

increased social support, enhanced appreciation of student diversity, decreased anxiety and increased self-esteem (Barkley, Cross & Major, 2005; Halpern, 2004; Panitz, n.d.).

Despite the learning gains attributed to collaborative and student-centered learning environments, the shift to student-centered learning has been met with resistance from instructors and learners in the face-to-face classroom (Barr, 1998; Beane, 1997; Felder & Brent, 1996; Hansen & Stephens, 2000; Hassel & Lourey, 2005; Mezeske, 2004; Weimer, 2002). Key to this resistance is the familiar teacher-learner didactic that characterizes most face-to-face classrooms. Students in traditional classes are accustomed to rely on the instructor to present and explain key information; in this environment, responsibility for learning (through teaching) rests on the instructor. When one shifts the locus of responsibility back to the students, a change in the learning paradigm occurs. As the student-centered classroom is unfamiliar and may require more student effort, learners may feel threatened, anxious and lack confidence in their ability to succeed (Weimer, 2002).

In contrast to the face-to-face classroom, students entering online learning environments are not accustomed to the same level of reliance on the instructor for facilitating all learning activities. Because online learning is asynchronous, and typically a self-initiated educational experience where students are being prepared to take a more active role in the learning experience. Thus, the nature of online education makes it a prime candidate for fostering the learner mindset necessary to incorporate student-centered learning strategies. The dual opportunity and challenge with online learning lies in unifying a geographically diverse classroom in order to take advantage of the benefits of collaborative, student-centered learning. Creating an online environment to support this collaboration, however, relies on more than simply acquainting students with the necessary tools for communication. The content, organization and facilitation of the course must be designed intentionally to promote effective collaborative learning.

## **Incorporating Student-Centered Learning Environments Online**

While collaborative group projects have a well-established history in traditional classrooms, the value and role of collaborative work in the online classroom is less established. In fact, in the infancy of online education, learning activities and assessments consisted primarily of threaded discussions and traditional essays or papers. But advances in online technology, paired with a growing trend to incorporate collaborative learning strategies, has led to the emergence of online group projects. Because collaborative projects enhance learning by promoting organization of knowledge, integration of divergent points-of-view and shared exploration and virtual group projects have the potential to enhance the value and effectiveness of online learning. In an attempt to take advantage of these educational opportunities, many online instructors now incorporate group projects into the assessment strategies in their virtual classrooms.

The online educational technology is now in place to facilitate collaborative work online; most online course management systems provide built-in opportunities for group-based activities through various tools, features, and functionality. Specifically, instructors can utilize administrative features to create workgroups that automatically populate a private chat room, discussion thread, dropbox, and email list serve for each group. At the same time, online instructors are being encouraged to use the advanced system features to integrate online group activities such as debates, service-learning and experiential projects, management work teams, and peer-review assignments.

Emerging research provides some support for the educational value of collaborative learning in the online classroom. Online courses that are designed to facilitate collaborative learning show learning gains that are comparable to or better than (Hall, 1997; Uribe, Klein & Sullivan, 2003) their face-to-face counterparts. But while a number of theoretical studies discuss the potential for student-centered learning in online education, there is little information on the actual use of collaborative, group

projects in the online classroom. What is needed is, an inquiry into faculty and student perception dynamics in the online classroom. The purpose of the current study was to examine online faculty and student perceptions about the implementation of group work in the online classroom.

## Method

### Participants

Participants of this study included 72 faculty members and 183 undergraduate students in a large, online degree-completion program based out of a small, liberal arts college in the Midwest. All faculty participants were experienced online instructors and indicated a minimum of one year of online teaching experience, with an average of 4.2 years of online experience. Fifteen percent of participants were full-time faculty while the remaining 85% of participants were adjunct instructors. All instructors reported teaching a minimum of one undergraduate course online; 11% indicated teaching responsibilities at the graduate level as well. For the purposes of this survey, participants were asked to report their attitudes and views concerning group work in *undergraduate* online education only. Students were primarily non-traditional learners with a mean age of 26.3 years. The majority of students (73%) indicated military affiliation (active duty, civilian dependent or retired). Students were experienced with virtual education and reported completion of a minimum of 3 online courses; on average, students had completed 13 online courses. All online classes at the target university are offered in an accelerated, 8-week format. No information was collected on gender or ethnicity of participants.

### Materials and Procedures

An e-mail request to complete an online survey was sent to a randomly selected set of faculty and students. One hundred and fifty faculty and 500 students received the initial email request; the resultant 72 faculty and 183 student respondents indicates a 48% and 37% response rate, respectively, which qualifies as an acceptable response rate for email surveys (Sheehan, 2001). Participants electing to complete the survey were

provided a link for an anonymous HTML survey. The online survey asked general demographic information and two open-ended questions:

- What are the advantages to group work in the online classroom?
- What are the disadvantages to group work in the online classroom?

A qualitative content analysis was completed on the open-ended survey responses to identify common themes in the data. Following traditional exploratory content analysis guidelines (Auerbach & Silverstein, 2003), responses were coded and categorized based on emerging trends.

## Results

### Faculty Perceptions

Figure 1 identifies the nine themes based on faculty responses.

Of the nine themes that emerged in the faculty responses, six favored the use of group work in the online classroom due to its ability to foster student learning gains. Faculty believed that requiring students to complete group work provides an authentic means of measuring learning and realistic skills as well as promoting a critical evaluation of complex issues. In addition, faculty valued online group works as it encourages collaboration and mastery of electronic communication.

The three faculty themes that reflect disadvantages to group work in the online classroom were centered on the

Theme	Percentage of Faculty
Valuable authentic assessment strategy	73%
Realistic measure of necessary professional skills	61%
Important to promote collaboration	60%
Important to master electronic communication	58%
Encourages deeper investigation of relevant course material	26%
Allows investigation of complex issues	19%
Difficult to facilitate and coordinate	78%
Takes a considerable amount of administrative time	57%
Students dislike	41%

Figure 1. Faculty Perception

administrative challenges of facilitating this type of interaction. Faculty reported that it was difficult and time-consuming to structure online group activities and that students did not respond favorably to group activities.

### **Student Perceptions**

An analysis of the main student themes are indicated as shown in Figure 2.

Of the seven themes that emerged in the student perceptions, five did not support the use of group activities in the online classroom. Interestingly, four of these concerns seem to be unique to the online environment. While challenges with social loafing are found in all group project activities, concerns about communication, time and the asynchronous nature of interactions are particularly relevant to the virtual classroom.

Students did report some value in online group work in that it encourages peer collaboration and enhanced peer relationships. None of the student comments focused on the educational value or cognitive benefits of group projects.

### **Discussion and Conclusion**

Perhaps the most surprising and potentially significant outcome of this study was the disparity between faculty and student perceptions of the learning value of online group projects. Whereas both parties agreed to varying degrees about the value of collaborative assignments to promote interaction and relationship-building in the online classroom, students did not perceive benefits to their understanding of and engagement with the course material. The results can be understood in the light of the

factors that motivate students to learn online.

Faculty responses indicated a belief in group work as a valuable assessment of realistic and requisite professional job skills. As the current workplace relies more and more on electronic communication and electronically-mediated collaboration, the ability to undertake this type of work is seen as valuable preparation for the workplace. In addition, professional environments continue to emphasize the integrative, communal nature of project development. As such, online group work provides a valuable means of authentic assessment in the online classroom.

In contrast, online students report that group work in the online environment is counterproductive, not necessarily to their learning gains but to their choice to pursue an online education. Specifically, many online students choose the online environment due to the flexibility and convenience it provides. As such, mandatory group work requires a fixed, set schedule of interaction that defeats the flexible nature of the online classroom. In addition, online students report that the variability of schedules and time zones makes synchronous interaction especially challenging in this classroom environment. As many online learners choose this format due to the obligations to full-time work, it can be argued that, in some cases, faculty pedagogical goals are mismatched with the needs of their student populations.

It is important to note that many individuals commented on the lack of time available to complete group projects. While communication delays may be attributed to the nature of email communication, concerns about time constraints also may reflect the particular students who choose to learn online and in accelerated formats. Online students, often constrained by professional and personal obligations, frequently comment that collaborative work is difficult due to their own lack of time. This lack of personal time in conjunction with the pace of accelerated courses may be a stronger explanation of their negative response of group work than the online nature of the interaction. Future investigations may want to examine perceptions of online group work with traditional student populations or with non-accelerated

<i>Theme</i>	<i>Percentage of Students</i>
Difficult to communicate with online peers	64%
Asynchronous nature of online learning not conducive to group work	58%
Lack of accountability leads to social loafing	46%
Hard to make progress on group projects due to delays in communication	45%
Not enough time available	38%
Good mechanism for generating collaboration	41%
Provides a means of creating closer peer relations	18%

Figure 2. Student Perception

online programs.

While faculty and students disagree on the value of group work in the online classroom to promote deeper learning, both groups report that the scheduling and administration of online group work is time-intensive. As such, the practical aspects of facilitating group work in the online classroom may be a particular concern when integrating this type of assessment.

In summary, faculty considering the use of group projects in the online classroom need to balance the professional and academic advantages gained through collaborative interaction with the practical constraints of students choosing to work in an asynchronous, online environment. While group work can be an important tool for authentic assessment, it must be utilized in a manner that is amenable to the unique demands of the online classroom.

## References

- [1]. Auerbach, C.F. & Silverstein, L.B. (2003). *Qualitative data: An introduction to coding and analysis*. New York: New York University Press.
- [2]. Barkley, E. F., Cross, K. P., & Major, C. H. (2005). *Collaborative learning techniques: A handbook for college faculty*. San Francisco, CA: Jossey-Bass.
- [3]. Barr, R.B. (1998). Obstacles to implementing the learning paradigm: What it takes to overcome them [Electronic Version]. *About Campus* 3(4), 18-25.
- [4]. Barr, R.B. & Tagg, J. (1995). From teaching to learning: A new paradigm for undergraduate education [Electronic Version]. *Change*, 27(6), 12-25. (EJ 516 385)
- [5]. Beane, A. L. (1997). A teaching model that promotes commitment, accountability, and responsibility. *Educational Horizons*, 76, 45-52.
- [6]. Cross, K. P. (1999). What do we know about students' learning and how do we know it? *Innovative Higher Education*, 23, 255-269.
- [7]. Felder, R. M. & Brent, R. (1996). Navigating the bumpy road to student-centered instruction [Electronic Version]. *College Teaching*, 44(2), 43-48.
- [8]. Greene, M. (1988). *The dialectic of freedom*. New York: Teachers College Press.
- [9]. Hall, D. (1997). Computer mediated communication in post-compulsory teacher education. *Open Learning*, 12(3), 54-56.
- [10]. Halpern, D. F. (2004). Creating cooperative learning environments. In B. Perlman, L. I. McCann, & S. H. McFadden (Eds). *Lessons learned: Practical advice for the teaching of psychology* (Vol. 2) (pp. 165-173). Washington, DC: American Psychological Association.
- [11]. Hansen, E. J., & Stephens, J. A. (2000). The ethics of learner-centered education: Dynamics that impede the process [Electronic Version]. *Change*, 33(5), 41-47.
- [12]. Hassel, H. & Lourey, J. (2005) The dea(r)th of student responsibility [Electronic Version]. *College Teaching*, 53(1), 2-13.
- [13]. Howell, C. L. (2002). Reforming higher education curriculum to emphasize student responsibility: Waves of rhetoric but glacial change. *College Teaching*, 50(3), 116-118.
- [14]. Howell, C. L. (2006). Student perceptions of learner-centered education. Presentation at the Annual Conference of the Northern Rocky Mountain Educational Research Association.
- [15]. Panitz, T. (n.d.). Cooperative learning (electronic book). Retrieved September 9, 2007 from <http://home.capecod.net/~tpanitz/>.
- [16]. Sheehan, K. (2001). Email survey response rates: A review. *Journal of Computer Mediated Communication*, 6(2).
- [17]. Mezeske, B. (2004). Shifting paradigms? Don't forget to tell your students [Electronic Version]. *The Teaching Professor*, 18(7), 1.
- [18]. Uribe, D., Klein, J.D., & Sullivan, H. (2003). The effect of computer mediated collaborative learning on solving ill-defined problems. *Educational Technology Research and Development*, 51(1), 5-19.
- [19]. Weimer, M. (2002). *Learner-centered teaching*. San Francisco: Jossey-Bass.

## Appendix A: Benefits of Collaborative Learning (Panitz, n.d.)

1. Develops higher level thinking skills
2. Promotes student-faculty interaction and familiarity
3. Increases student retention
4. Builds self esteem in students
5. Enhances student satisfaction with the learning experience
6. Promotes a positive attitude toward the subject matter
7. Develops oral communication skills
8. Develops social interaction skills
9. Promotes positive race relations
10. Creates an environment of active, involved, exploratory learning
11. Uses a team approach to problem solving while maintaining individual accountability
12. Encourages diversity understanding
13. Encourages student responsibility for learning
14. Involves students in developing curriculum and class procedures
15. Students explore alternate problem solutions in a safe environment
16. Stimulates critical thinking and helps students clarify ideas through discussion and debate
17. Enhances self management skills
18. Fits in well with the constructivist approach
19. Establishes an atmosphere of cooperation and helping school wide
20. Students develop responsibility for each other
21. Builds more positive heterogeneous relationships
22. Encourages alternate student assessment techniques
23. Fosters and develops interpersonal relationships
24. Modeling problem solving techniques by students' peers
25. Students are taught how to criticize ideas, not people
26. Sets high expectations for students and teachers
27. Promotes higher achievement and class attendance.
28. Students stay on task more and are less disruptive
29. Greater ability of students to view situations from others' perspectives (development of empathy)
30. Creates a stronger social support system
31. Creates a more positive attitude toward teachers, principals and other school personnel by students and creates a more positive attitude by teachers toward their students
32. Addresses learning style differences among students
33. Promotes innovation in teaching and classroom techniques
34. Classroom anxiety is significantly reduced
35. Test anxiety is significantly reduced
36. Classroom resembles real life social and employment situations
37. Students practice modeling societal and work related roles
38. Collaborative learning is synergistic with writing across the curriculum
39. Collaborative learning activities can be used to personalize large lecture classes
40. Skill building and practice can be enhanced and made less tedious through collaborative learning activities in and out of class.
41. Collaborative learning activities promote social and academic relationships well beyond the classroom and individual course
42. Collaborative learning processes create environments where students can practice building leadership skills.
43. Collaborative learning increases leadership skills of female students
44. In colleges where students commute to school and do not remain on campus to participate in campus life activities, collaborative learning creates a community environment within the classroom.

## ABOUT THE AUTHORS

\* Associate Professor, Park University.

\*\* Assistant Professor, Park University

\*\*\* Assistant Professor, Park University

Jean has served as an Associate Professor of Psychology and Online Learning at Park University since 2001. She received her B.S. in Psychology from the University of Nebraska at Kearney, an M.S. in experimental psychology from Western Illinois University, and Ph.D in social psychology from University of Nebraska at Lincoln. Her reserach focuses on enhancing student learning through assessment and innovative online instructional strategies. She can be reached at [Jean.mandernach@park.edu](mailto:Jean.mandernach@park.edu)

Emily is an Assistant Professor of English at Park University and has been teaching at Park since 2003. She received her BA from William Jewell College and her MA from the University of Kansas. She is currently working on her dissertation in English at the University of Kansas. She can be contacted at [emilyd@park.edu](mailto:emilyd@park.edu)

Amber is an Assistant Professor of Education at Park University and has been teaching at Park since 2000. She received her BS, MS from Texas A&M University, and a Ph.D in Education from Cornell University. Dailey teaches graduate courses, and serves as an online course developer, lead instructor / mentor, and is currently conducting research in teaching best practices. Her contact id is [Amber.dailey@park.edu](mailto:Amber.dailey@park.edu)

