Chapter XVI

Collaborative Learning in a Web-Based Environment: A Comparison Study

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ABSTRACT

Collaborative learning has long been proven to be an effective approach in the traditional classroom setting. Despite the discussion of the benefits and potential of collaborative learning in a Web-based learning environment, there has been a lack of empirical studies showing whether and how distance learning students may benefit from this learning experience, particularly in comparison to their on-campus peers and from their own perspectives. This chapter reports on a study that uses a comparative approach to evaluate the effectiveness of collaborative learning and related teaching and learning outcomes in both distance learning and on-campus settings. The major findings of this study suggest that distance learning students tend to have more positive perceptions of collaborative learning than their peers in the traditional classroom setting. In addition, distance learning students tend to embrace collaborative learning readily and early compared to their on-campus peers. In terms of student class performance, this study shows that distance learning students can achieve essentially the same learning goals as their on-campus peers. However, there are individual differences in student performance. An analysis of factors contributing to the individual performance differences suggests that engagement is closely correlated to student class performance. This study also shows that, overall, both distance learning and on-campus students provide similar course and instructor evaluations for teaching effectiveness for classes with collaborative learning. Finally, the implications of this study and suggestions for future research are discussed.

INTRODUCTION

Two terms, collaborative learning and cooperative learning, are used to describe experiences in an educational settings in which students work together to achieve a goal. Kirschner (2001) describes collaborative learning as “a personal philosophy, not just a classroom technique” and
cooperative learning as being “defined by a set of processes which help people interact together in order to accomplish a specific goal or develop an end product which is usually content specific” (p. 4). These two terms have been used interchangeably in the literature. In this chapter, no distinction is made between the two terms. For review and discussion of related research, the original term as presented in the literature will be retained. In other cases, the term “collaborative learning” is used throughout for consistency.

Collaborative learning and its impacts on teaching and learning in higher education have been well recognized. Most collaborative learning techniques are developed in the traditional face-to-face educational setting. With the widespread growth of distance education, instructors and researchers have started to explore collaborative learning in a distance learning setting. Despite much discussion regarding the benefits and potential of collaborative learning in this relatively new setting, there has been a lack of related empirical studies focusing on the student perspective and comparing the two distinct learning settings. Filling this gap is part of the calls for research on distance education and is vital to keeping pace with various implementations and practices (e.g., Boling & Robinson, 1999; Gunawardena & Melsaac, 2004; Head, Lockee, & Oliver, 2002; Lock, 2002).

This chapter presents an empirical study that adopts a comparative approach by evaluating collaborative learning in distance education classes in relation to face-to-face classes using a learner-centered approach for assessment and evaluation. Student assessments and evaluations of collaborative learning and overall effectiveness of course and instructor, student class performance, and student participation in class will be the primary source of data for this study. The major questions explored in the study include the following:

1. Do distance learning and on-campus students have different perceptions of collaborative learning activities?
2. Do distance learning and on-campus students’ perceptions of collaborative learning activities change over time?
3. Do distance learning and on-campus students perform differently?
4. What factors contribute to individual differences in class performance?
5. Do distance learning and on-campus students perceive the effectiveness of the overall course and instructor performance differently?

BACKGROUND

Collaborative learning has been well covered in the literature. For the purpose of this study, the literature review will focus on collaborative learning primarily in the distance education environment and, particularly, in web-based education. First, the benefits of collaborative learning are enumerated, followed by suggestions for successful implementation of collaborative learning in distance education. Next, the suitability of collaborative learning in different disciplines and education levels is discussed. Finally, methods for evaluating the effectiveness of collaborative learning are examined.

Benefits of Collaborative Learning

The importance and potential of collaborative learning in the online environment have been recognized and confirmed by many researchers. Harasim (2000) suggests, “The principle of collaborative learning may be the single most important concept for online networked learning, since this principle addresses the strong socio-affective and cognitive power of learning on the Web” (p. 53). The notion of group collaboration