Chapter 2
Approaches for Addressing Student Barriers to Collaborative Learning Success

Robert F. Houghton
Idaho State University, USA

Kevin R. Parker
Idaho State University, USA

Bill Davey
RMIT University, Australia

Karoly Bozan
Idaho State University, USA

ABSTRACT
Collaborative work can provide a valuable learning experience, especially for those preparing to enter the information systems workforce. There have been numerous papers that discuss various effective means of realizing the benefits of collaborative group learning, but the approach still experiences issues stemming from pragmatic environmental factors such as the non-traditional nature of many students. This chapter has identified a range of problems and reports on a longitudinal Action Research study in two universities in Australia and the United States. Over three semesters problems were identified and methods tested using various approaches. Several promising remedies to the identified problems are suggested, including the use of student profiles, ePortfolios, project milestones, and freely available online collaborative tools.

INTRODUCTION
Experience with collaborative work is essential for those intending to enter the information systems profession and is necessary to derive maximum benefit from courses, particularly courses like Systems Analysis and Design or Database Design and Implementation that involve large assignments modeled after projects encountered in the real world. While the benefits of collaborative learning and the very

DOI: 10.4018/978-1-5225-3949-0.ch002
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experience of working in groups have been well discussed (O’Malley, 2012; Barkley, Cross, & Major, 2014; Kaye, 2012), there are common problems that must be addressed (Boud, Cohen, & Sampson, 2014). Gregory and Thorley (2013) contend “[i]f we are to exploit group-based learning fully we need to take into account its complexity, including issues such as structure; delivery; type of material; the basics of group dynamics; extent of preparation; and extent of social interaction” (p. 20).

In this study, academics from a university in the United States and another in Australia first identified common problems of a pragmatic nature and then applied various techniques to determine their efficacy in helping to overcome those problems. Each was evaluated using Action Research principles and those that survived the analysis were refined and reused in following semesters. This chapter shares methods of dealing with each problem that have shown promise in the light of improved student performance.

and elaborates on findings reported in Davey, Bozan, Houghton, and Parker (2016).

BACKGROUND

Theoretical Perspectives

Passive learning approaches like lectures and structured homework assignments are traditionally the mainstay of university education, but lectures in their traditional sense often fail to meet the demand of learners, as lectures can only function in a very limited context (Le, 2002). While students indicate that they are most comfortable with passive learning approaches, many studies have shown that students learn more and retain knowledge longer when active learning approaches such as project-based learning are used (Parker & Davey, 2011).

Therefore, many courses include large assignments modeled after projects encountered in the real world. Such active learning components often take the form of a collaborative semester project. Such projects accomplish two primary purposes:

- To provide students with an opportunity for practical application of knowledge, i.e., a hands-on component,
- To help students develop their collaborative skills.

Projects can be structured in such a way that students are engaged in tasks designed to apply the skills and content learned in class within a real-world context for learning. If planned properly, these projects capitalize on the advantages associated with active learning approaches like project-based learning, cooperative/collaborative learning, and constructivist learning.

Project-based learning is an active learning approach that organizes learning around projects (Thomas, 2000). Project-based learning is based on the premise that the most effective form of professional development is learning by doing (Von Kotz, & Cooper, 2000). Students engaged in project-based learning activities encounter complex questions and undertake projects that require them to synthesize understandings and deal with real-world issues. Opportunities to apply learning to a real-life situation help to facilitate the transfer of learning.

Cooperative/collaborative learning involves instructional methods that require students to work together on academic tasks (Hiltz & Benbunan-Fich, 1997), emphasizing students’ active involvement in their own learning (Hall, Waitz, Brodeur, Soderholm, & Nasr, 2002).