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Research Proposal: Measuring Collaboration's Effect on Learning in a Cohort-based Online Course

Christopher L. Wills

Kent State University

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One of the greatest benefits of online courses is the ability for learners to engage in thoughtfully crafted asynchronous discussions and activities, which permit deeper dives into course materials than are possible in either synchronous or face-to-face environments. Teams working collaboratively on a project or activity seek to prove the old adage that "the whole is greater than the sum of its parts" and to understand the concept being studied more deeply than if members had completed the group's assignment individually. Unfortunately, how to collaborate is a skill that learners are infrequently taught; building a strong enough rapport among team members to facilitate good collaboration is often a lengthy and "learn as you go" experience, with a significant learning curve until effective group and interpersonal dynamics to are achieved. Thus, studies involving groups of learners previously unfamiliar with their peers must give consideration to the effect of how time spent on team- and relationship-building activities impacts overall learning. By investigating groups of learners who have already completed part of the relationship-building process with their peers and who have had the experience of working together in the past, either voluntarily or in assigned groups, further study can reduce the effect of time spent on group formation and focus on whether collaboration on course assignments has a greater effect when it is done voluntarily or when learners are assigned to groups.

Literature Review

Edmondson (1999) defines team learning as "an ongoing process of collective reflection and action characterized by (a) exploring, (b) reflecting, (c) discussing errors and unexpected outcomes, (d) seeking feedback, and (e) experimenting within and as a team" (p. 353). That such a process is ongoing is noted by Murphy (2004), who finds that "collaboration begins with interaction—participants show awareness of each other's presence and begin to relate as a group" (p. 422). As group members learn more about one another and about the material under study, they start to see and hear viewpoints that may be drastically different than their own, but this process takes time, and groups

working on assignments often have to balance the extent to which they work on team-building activities rather than actually work on the assignment. However, Cho (2006) notes that "exposing students to practice self-regulated learning skills is not enough to promote their self-regulated learning. They need continuous interactions with peers" (p. 177).

Research has also shown that as learners gain more experiences with coursework and collaboration exercises in the online environment, learner participation increases (Moallem, 2003; Thompson & Savenye, 2007; Wu & Hiltz, 2004). Similarly, learners who have worked together previously tend to exhibit greater self-efficacy and confidence in their roles as part of a group (Scott, 1996, p. 202). Courses offering carefully crafted opportunities for learners to work with each other in completing an activity can demonstrate the effect that collaboration has on learning. Although courses in which groups were formed by learners voluntarily rather than by assignment appear to show no significant difference in assessment measures, studies covering both types of groups in a comparative setting could help to uncover drivers in learner behavior, experience, and performance.

Maximizing opportunities for collaboration while minimizing time spent in the "group formation" stage can best be studied in an environment in which the learners already know and are familiar with one another. A cohort-based graduate program, where learners have already been together in either online or face-to-face classes requiring group work, would therefore seem to be the perfect sample for this test. The research question at hand, therefore, is "Where learners have already undergone the social process of 'getting to know each other' in prior courses and prior group work, is there a difference in attainment and/or improvement levels (as measured by exam scores after completing a group project) when learners are permitted to form their own study groups versus when learners are assigned to a particular study group?" Such a study will have ramifications for both the extent of learner orientation required at the beginning of a cohort-based program, as well as for the design of groupwork and interactions in each course throughout the lockstep sequence.

Methods

Participants and Procedures. To determine the effect collaborative activities and group work have on learning, a mid-program class in an online, cohort-based graduate program should be studied to develop data related to the research question. The class should be one in which critical thinking is a central component, as opposed to a class covering procedural or repetitive-type knowledge. Learners will be responsible for completing two collaborative projects during the term. For one project, they will be permitted to self-select groups of up to three learners; for the other, the instructor will assign groups of three learners. All students in the class are expected to participate in the two group assignments; both will be graded activities.

Materials. The course will be delivered entirely online; in progressing through course content, learners will be able to synchronously and asynchronously collaborate with their peers. The instructor must provide a pre-assessment and a post-assessment for each of the two assignments, to be administered as short examinations on material discovered during the preparation of the project. Learners will be expected to use discussion board postings to design, develop, and complete their two group projects. To develop a more longitudinal view of data, the researcher should consider undertaking this study in sequential terms with the same cohort group; for a larger sample size while maintaining consistency of environment, the researchers may wish to perform the study using the same course but different cohort groups on a yearly rotation.

Data Analysis. (Note – I've not yet taken any statistical methods classes, so this is my best attempt at planning how to evaluate the data, based on samples I've seen in other readings.) Pre-project and post-project assessments will be administered to measure the effect of collaborative activity on learning. For a learner's participation in the self-selected group, the learner will complete a questionnaire asking how the learner chose partners for the group, the extent to which the group members have worked together in the past, the learner's attitude toward group work in general and

group work experience in past classes, expected course grade, and other descriptive factors. For a

learner's participation in the instructor-selected group, the learner will complete a questionnaire asking

the extent to which the group members have worked together in the past, the learner's attitude toward

group work in general and group work experience in past classes, expected course grade, and other

descriptive factors.

Pairing individual learner results with the descriptive data from the questionnaires should

provide insight into how best to plan and implement group activities in online graduate education. At

the same time, a review of the data for the group as a whole can guide course design; if results show

that one type of group generates a better overall performance than the other, then instructors and

course designers will have another research-based best practice to use in their course planning. This

study as it is currently planned is much too small of a sample to accurately make generalizations about

the online learner population as a whole, but it can validate whether or not the research question is a

viable one and can guide future research regarding group dynamics and performance.

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