We Can Work Together: Managing Group Work Online

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**Abstract:** Online learning is a preferred option for many students in degree programs, professional development, and life-long learning. The nature of online options can lead to the belief that they preclude the opportunity for students to work collaboratively on project-based assignments and to learn the skills needed to do so from a distance, skills that would serve them well in their personal and professional lives. Requiring students to collaborate online impedes flexibility and raises issues of individual level of contribution, reduced or lack of control over grade received, etc. It can also mean a change of focus from content delivery and assessment through tests or papers to a focus on project-based learning. In addition, collaborative assignments can be difficult for faculty to design, manage, and assess. The data collected over two years of incorporating group work in online learning informs the choice of tools and strategies for successful group work online.

**Background**

 Project-based learning has been recognized as effective and students working in groups in online courses have successfully achieved learning objectives (Carr-Chellman, Dyer, & Breman, 2000). Using collaborative small group activity can reduce the feeling of isolation, sense of anonymity and can motivate student performance in online learning (Brewer, Klein, & Mann, 2003). Additionally, group work can arguably be the best response to those skeptical of distance learning with regard to issues of authentication of student contribution and cheating. This paper presents research-based strategies and practices to address the challenges of group work online and provides the results of data collection and experience of over two years of implementing group projects in an online program.

 Students choose online learning for convenience and flexibility and are generally told that they must be responsible for their own learning. This can translate into a solitary learning. We know that collaborative, project-based group work is an effective learning experience but presents challenges such as how to assemble groups, how to determine and deal with variations in individual levels of contribution, how much influence should a faculty member have in the project management, and -perhaps most challenging- how to determine a shared grade for one assignment. These challenges most often deter faculty. It is essential to have a model that expands upon group work in the traditional classroom and is applicable and adaptable for online learning. Successful implementation and utilization of project-based is dependent upon well designed instructional activities (Yeh, 2010). Research-based strategies were employed to design a collaborative, project-based assignment for groups of three to five students that accounted for 50% of the grade for a graduate course offered online in which in-service K-12 teachers studied distance and emerging technologies.. Students used collaborative tools to complete a group project, reported their concerns and responded to discussions on the experience. They also completed peer assessments and self-assessments of their contribution to the group project and the experience overall.  A unique approach to assessing student work and quality of participation was designed and implemented.

**Purpose**

 The purpose of this research was to investigate the ways in which online courses could make use of collaborative project-based group work as an option for increasing student-to-student interaction and to allow for student acquisition of skills in collaboration and group knowledge creation at a distance. Also, the research investigated the value of project-based, collaborative group work as a response to the challenge of academic integrity, verification of test-taker, and the potential for cheating on assessments in online learning. Finally, the study was designed to investigate the change, if any, in student perception of the value of group work online and the ability to transfer skills to life-long learning and professional practice.

**Laying the Groundwork**

 In order to work together online, students need to have a sense of the persons with whom they are working. They must understand what is expected of them, what they can expect of each other, and of the instructor. (Shea, Pickett, & Peltz, 2003). In the absence of a physical environment, norms define the classroom environment. Before assigning group work, it is essential to establish expectations for both student participation and faculty involvement, to set the norms for the classroom community and establish a sense of identity so that students perceive the real human being behind the text. (Rovai, 2002). To accomplish these underlying and foundational conditions, great care was taken to introduce the students to each other and to establish a social presence (Gunawardena, 1995, Garrison & Anderson, 2003, Tu &McIsaac, 2002, Picciano, 2002). Research indicates that establishing a social presence not only affects student ability to achieve learning outcomes but also affects student satisfaction with an online course. Students with high perceptions of the social presence of others in their online course also report high satisfaction with the learning experience. (Richardson, J. & Swan, K., 2003).

 Students responded to a discussion forum providing general information on their favorite hobby, book, film, TV show, what has made them most proud to date, and one thing they would like to do in the next five years. All responses were optional but students completed nearly all questions and commented on other’s postings even though this was not required. A student directory with photos was also created. The professor also participated in the introductory forum and provided a photo for the directory. In addition, an initial web conference meeting was held in which all students introduced themselves via audio and web cam.

 The norms of the class were guided by key elements of successful online learning communities as identified by Pallof and Pratt (1999) as honesty, responsiveness, relevance, respect, openness, and empowerment. A statement in the syllabus and course website stated that all students participating in this course were asked to be open to all perspectives and empowered to be honest in their timely responses to all questions, conversations, and discussions in a manner that is respectful and remains relevant to the topic or topics under discussion. This statement was repeated in the introductory discussion forum and in the ‘Expectations’ document provided to students in the first week of the course. The ‘Expectations’ document outlined the expectations for student and faculty participation and included information on when to expect review of discussion forums, return of submitted assignments, response time for emails, etc. For students, it described the expectations for participation including the amount of time they could expect to spend on coursework each week, the quality of responses to discussion forums, adherence to the institutional honor code, requirements for academic integrity, and adherence to all institutional policies. In this manner, the sense of classroom community, belonging to that community and perceptions of other students as real people was established early in the course and prior to the group work assignment.

**Structuring the Assignment**

 The group project was actually a collection of carefully designed assignments accounting for 50% of the total grade for the course, each worth either five or 10 points. In addition, group members completed a self evaluation and peer-review of the contributions, activity, participation and attitudes of other team members in a confidential submission to be compared with submitted self-evaluations. These elements were not assessed but provided points toward final grade. In addition to clear, concise, and consistent assignment descriptions and instructions, rubrics were provided for each element of the assignment. These rubrics described the highest level of performance with descending point values indicated as characteristics were missing or inadequate. With these rubrics, time in grading the assignment elements was reduced and is scalable. The rubrics also served to provide clarity and reduced student. A review of the rubrics was included in material and media providing description and overview of assignments.

Assigning Topics, Teams, Roles and Technology Tools

 The time frame for completion of the assignment elements varied from one to two weeks so there was a need for expedited establishment of topic focus, team members and roles within each team group. In order to accomplish this, the teams were selected randomly using the RAND function in Excel. After teams were completed, the topics of the assignments were also randomly assigned to each team. This process was recorded in a screen capture video to share with students and reinforce the randomization.

Roles within the team were defined and included in the assignment description and instructions. These roles included the following with some variation to accommodate smaller groups in which some roles were combined:

* **Time/schedule keeper:** tracks progress and reports to the group what is done, what needs to be done, sends reminders of due dates for task completion, keeps professor informed of progress as requested.
* **Coordinator:** negotiates schedule for task completion, shares schedule with members encouraging participation, schedules meetings if necessary, summarizes the process for professor as requested.
* **Resource manager/recorder**: manages group resources in accessible location, keeps records of meetings or conversations not posted on collaborative spaces and posts those in an accessible place.
* **Proofreader/review coordinator:** checks all work for spelling/grammar, adherence to assignment requirements and makes edits to be approved by team mates prior to submission, ensures that all submissions have been reviewed and agreed upon by team members.
* **Technology and Submissions manager**: responsible for setting up agreed upon technology for collaboration and for uploading, submitting, and providing access to all teamwork

 It is important that these roles were not assigned but were negotiated by group members (Lin, F., Lin, S. & Huang, T., 2007). Students were required to discuss and determine the role of each member within the group as defined in the assignment either via discussion or web conference that was recorded for review.. A description of this negotiation process was specifically required in the group presentation on the experience as well as reports on any conflicts that arose in this process and in any other work in the group including how that conflict was resolved. With the establishment of a strong learning community and a strong sense of belonging to that community, students worked well to resolve conflict.

 Collaborative spaces and technology tools were limited in order to reduce the time required to choose technologies and to minimize the influence of various technologies. The intent was to keep the playing field level and reduce the potential for perceived advantage due to access to technology. The technologies allowed included a group space in the LMS, a class wiki, shared Google space, discussion forums, office software and screen capture video software. All software was available to all students and groups. Groups were required to include the faculty leading the course in all shared and collaborative spaces so that the group interaction could be monitored and data could be collected.

**Data Collection**

 The group work assignment was utilized in a 16-week graduate level course focusing on distance education and emerging technology. Over a period of two years the course was offered four times with 52 students participating in groups of three to five students each. The construction of the assignments and the process for managing the group work was kept scalability in mind so that the structure and process could be applied to a larger class size. Qualitative data was collected from all student submissions and activity in the course. Discussions were conducted both in small groups and with the full class. Any questions that were asked and answered via email were added to the discussion forums. Any web conference sessions held, either facilitated by faculty or strictly for team participation, were recorded and reviewed. Faculty observations of those sessions also contributed data. Two surveys were also utilized to collect data, one just after group assignments were introduced and one after the completion of the group assignments. The first survey established the level of understanding of descriptions and instructions, student perception of the value of the group work assignment, as well as any fears or concerns about the assignment and working in a group. The second survey focused again on the student perception of the value as well as attitudes toward the process and outcomes of the assignment. Both surveys consisted of some rating questions, a section asking why a student chose that rating and open-ended questions allowing for comments.

**Analysis and Results**

 Data from each source was analyzed separately using thematic analysis to identify and codify key terms and phrases in responses. A team of four faculty reviewers worked on the thematic analysis. Guiding questions were created to allow categorization of emerging themes and thematic responses were assigned to one or more categories. The guiding questions pertained to student attitudes prior to, during, and after the activities, the concerns raised by students, evidence of response to or resolution of those concerns, student and group ability to address concerns and resolve conflict, changes in attitudes, perceived value of the activities, perceived value of the approach and design of activities and indications of perceived personal growth in skills including the ability to work collaboratively online in the future.

 Results showed that, prior to the start of the assignment, students had high levels of trepidation and anxiety over the concept of group activity based upon concerns about member contribution, ability to resolve conflicts, personal responsibility, time management and sharing of graded work. Member contribution was graded negatively not only for lack of participation but also for a level of participation that did not allow others to contribute equally. This was a difficult concept for many who preferred to take charge, do the work and not rely on others to contribute. There was also concern over negotiation of roles and responsibilities. However, resolution of conflicts required instructor intervention only twice over the period of this study. Results showed that attitudes and perceptions changed during the process of collaboration and creation of materials for assignments. Students learned to work together, to support and prod each other to contribute, and to view the outcome as jointly owned. Students were candid and honest and were generally kind in their assessment of other group members’ participation. Students indicated that element was very valuable. Students were critical of the time required for the assignments and of the limitations on the use of technology. All but but two of the students involved indicated that the collaborative project-based approach was a valuable learning experience and that they felt more skilled at and better prepared for collaborative online work.

 Results indicate the biggest concerns for students were reduced flexibility, inconvenience, reduced control over grade, and shared responsibility with persons not well known. They were not happy with the percentage of the grade made up by the assignment elements. Results also showed that attitudes and perceptions changed to indicate a perceived value in the group work. Students self-reported an increase in skills and acquisition of new skills related to collaboration at a distance. They viewed the group project as jointly owned and were compelled to contribute in response to teammates concerns. The level of candor with which they expressed their thoughts indicated a level of trust and comfort in a supportive classroom community.

**Conclusions and Recommendations**

 Providing experiences to develop and apply collaborative online learning skills can contribute to life-long learning. The strategies and structure utilized were successful both in allowing the achievement of learning objectives andin developing skills for online collaborative work. It is recommended that the design principles and assessment strategies reported here be adapted for other courses and that continued research be conducted so as to validate and expand upon the finding.

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