Learning about Teamwork in an Online Study Environment

Linzi J. Kemp
Area Coordinator, Business Management and Economics
State University of New York, Empire State College
Saratoga Springs, NY, 12866   USA
linzi.kemp@esc.edu

Abstract

This case study incorporates quantitative and qualitative research from a teamwork activity in a lower level online management course. The information gained is used to discuss the benefits to students in terms of learning about teamwork and offers suggestions for improving the effectiveness of such online activities. The added value gained by the learner from studying teamwork and participating in teamwork online, is anticipated to offer improved team performance in the workplace.

Introduction

From the late 1980s, the word 'teams' became a buzzword in organizations, and teamwork became 'THE way to organize these days' (Barker, 1999, Borgatti, 1996, p 1). Thus, when business students learn about teamwork, it prepares them for their organizational life. An instructional challenge we face is how we teach teamwork in a virtual environment, of increasing relevance as more students are studying online. A recent survey (Sloan Consortium, 2004, p.6) reveals that there were 1.9 million students studying online in 2003, a number that was anticipated to increase to over 2.6 million by the fall of 2004. To address that challenge, an objective for the online environment is to incorporate multimedia resources to support student centered, experiential learning in effective teamwork.

The case study is from a course offered by the Center for Distance Learning (CDL); a center within the Empire State College, one of 64 institutions of the State University of New York (SUNY). In 2003-4, 4,118 students were enrolled in CDL, where more than 200 instructors teach 700 web-based courses using the SUNY Learning Network (SLN) (Kemp, Ostrov and Smith, 2005 and Carnevale, Kemp, Martinez and Oaks, 2005). SLN provides online degree and certificate programs through 4,300 online college courses (SLN, 2005).

The average age of CDL students is 37 years and 72% of registered CDL students are adults. The majority study on a part-time basis, as 73.3% of Empire State College students are employed full-time**,** and 11.6% are employed part-time (Council for the Adult and Experiential Learning (CAEL) student survey, 2002; Office of Institutional Research, 2004).   Students' reasons for enrolling for an undergraduate or associate degree vary but the,

'major sources of our students' interest in coming to Empire State College have been desires for new jobs, for more challenging work, for credentials, for mobility within their companies, and for transition from one kind of work to another' (Empire State College, 2004).

As adult workers they are studying for their degrees and probably juggling various domestic arrangements. The choice for these students is an asynchronous online study environment where commitments to work, study and family life can be maintained (Froomkin, 2005).   The majority of CDL courses are delivered asynchronously. This mode of instruction fits within the time and space needs of the students, as students and instructors access the activities at different times to suit their time frame. The asynchronous study environment offers these students the benefit of being able to overcome time, space and distance barriers in traveling to the traditional face-to-face (F2F) classroom (Anderson and Kanuka, 1997; Hawk, 2000).

The Case Study

This case study focuses on the online teamwork in the CDL course, *'Management Principles'*; an undergraduate, introductory level, four-credit course within the Business, Management and Economics (BME) program. The majority of students enrolled in this course have a concentration (similar to a major) in a business area. However, some may also be studying in other programs e.g. Community and Human Services with a concentration in hospital management. As indicated by its lower level or introductory status, for some students it may be their first online course and for some it may be their first management course.

In general, literature accepts that the effectiveness of teams is paramount for the successful future of organizations, no matter what the organization (Banner, 1993; Belbin, 1981; Handy, 1995; Harvey-Jones, 1994; Mayo, 1949; Meyer, 1994; Miller, Pons, and Naude, 1996). Acquiring knowledge about teamwork is justified in management education, because of the value added to managerial skills (Barker, 1999; Leith, 1995; Tannen, 1995; Webb and Hoddell, 1980; Kemp, 2003). Organizations have moved to conducting work at a distance, thus necessitating employees' competence in performing as virtual teams.   The tools that facilitate the innovation of virtual teams include group emails, online discussion boards, bulletin boards, shared folders and access to shared information on the World Wide Web (WWW).   A reason why an online educational environment can be successful for teamwork activities is that these same tools can be utilized to bring students together who are studying separately. In this way, technology is an enabler for student learning, adding value to the quality of their experience (O'Cree cited in Anderson, 2005, p. 1).

Teamwork Framework

To set a clear direction for student learning, the objectives for the teamwork module are clearly stated in a section entitled "What's Due When":

  1) Reflect on the stages of team development
  2) Identify essential characteristics of groups and teams
  3) Describe how organizations manage conflict

In the same section is the opportunity for students to self-assess their knowledge of teamwork skills, via a link to the publisher's website (Houghton Mifflin, 2003). The link remains active for the duration of the module; students can reassess and reflect on their

learning. Reading is directed to sections on teamwork in the course textbooks (Griffin, 2003, Chapter 3. and Maidment, 2004, Unit 4). There is an online resources section in the course where students are given links to articles and journals in the Empire State College online library and to selected articles on the WWW. Within the course template there is an area where students can post references relating to teamwork. That section is to encourage the development of an online knowledge community about teamwork (Easterby-Smith and Lyles, 2003).

Three mini-lectures are incorporated, titled respectively "Why Teams?," "Stages of Team Development," and "Management and Leadership." These mini-lectures overview definitions of teamwork and research e.g. that of Roethlisberger and Dickson (1939 as cited in Mayo, 1949) at the Western Electric Company and the applicability of teamwork in today's organizations. The mini-lectures on "'Stages" and "Leadership" teach Tuckman's (1965) stages of team development and Kotter's (2001) work on the differences between management and leadership.   Learning objects, such as photographs, tables, rollovers and presentations are designed into the module, to engage each student as they study the material. Throughout the module, there is an emphasis on the benefits of teamwork for the organization, manager and individual.

Online Teamwork Activity

At this point in the study of teamwork, the importance of teamwork skills in the workplace has been taught and students have self-assessed their teamwork skills. Dede (2005) foresees a future when student collaboration will happen in "far-flung, loosely bounded virtual communities" (p.10). Online team activities can prepare students for this future, and so we move forward to an online teamwork event.

The particular activity in the Management Principles course, of focus for this case study is the "Wilderness Survival" (Monroe County, 1976; NASAGA, 2006). Other team activities exist including "Lost at Sea" (Woodcock, 1998) and "Lost in the Desert" (Evans, 2002). These activities have similar learning aims and tasks and the differences are in the scenarios and the problems to be faced. In each activity, the participants are given a scenario where they are left stranded with a group of people in an unknown environment. The value of these teamwork activities is in their relative ease to organize as scenarios, tasks, questions and answers are pre-prepared. Within the simplicity is a wealth of potential stimulation for students; access to 'real' planning; problem solving; collaborative decision-making and communication.

In each case, there are three tasks:

1)   Individual - to select the best choice from given alternatives or to prioritize alternatives in order to survive.
2)   Team – to decide on the choices as a group.
3)   Class – to discuss the approaches to teamwork taken (abilities of members), skills learned through the exercise and knowledge gained about decision making, communication, negotiation, planning etc.

The SLN online course environment has a facility to form a test/self test. This is where the individual part of the Wilderness Survival is set up. Posed are 10 survival questions with three alternative answers for each question. The student answers by clicking on a checkbox. Once the test is complete, the instructor randomly assigns the students to groups. The students can see which group they are assigned to, and only the instructor and the members of a group can see the online (threaded) discussion.

To initiate and sustain an online discussion, Harasim (1995) suggests that "discussion groups of about fifteen to twenty five seem to work best in general, while teams of two to four people are effective in complex group projects" (p. 180). In the Wilderness Survival activity there were 6 or 7 members in each group (Table 1.) A consideration when teaching online is that the fewer members of a team, the more groups there are and consequent extra monitoring for a instructor. Team discussion continues for 10 days, with the objective to reach a consensus decision on the team answer to the Wilderness Survival activity. One member of each team posts that decision on behalf of the group. No input from the instructor is expected during the decision-making process, although instructor 'lurking' occurs for possible problems e.g. a contravention of netiquette; protocol on this is contained in course information.

After each team decision is posted, the instructor can release the answers and the individual scores to the individuals. The scoring of the activity is simplified as the test component automatically compares the individual score with that of the previously inputted experts' answers. The experts in this case are the Monroe County Parks Department's wilderness survival group, who provide the answers to the exercise. The instructor also releases the team scores to the whole class. The students can thus compare their individual scores with those of the group, and each team can compare the team score against those of the other teams.

Analysis of Team Activity

Tables 1 and 2 offer an analysis of the discussion for one section of the Management Principles course. Table 1 analyses the communication between team members and Table 2 offers an analysis of the decision making in each team.

Table 1. Analysis of Wilderness Survival Activity – Communication

Team No.	No. of Team Members	Student ID	Postings per student	Average No. of posts per team
1		P	39	
		M	9	Lowest
		J	29	
		Jo	49	Highest
		E	28	
		Ju	17	
Total	**6**		**171**	**28.4**
2		K	5	
		S	5	
		St	2	Lowest
		Se	6	
		Stn	6	
		A	14	Highest
		Y	5	
Total	**7**		**43**	**6.1**

3		C	20	
		T	14	Lowest
		Sh	16	
		Tm	32	Highest
		Ja	14	
		D	14	
Total	**6**		**110**	**18.3**
Class Total	**19**		**324**	**17.0**

([Kemp, 2005](#)).

Table 1 reveals that Team 1 had the most online discussion (171 postings), the highest average posting of all teams (28.4) and member (Jo) with the highest number of postings in the class (49). One of the skills of teamwork is effective communication and here is evidence of that. Team 1 was the team that communicated the most, and was also the team that was most effective in the task, i.e., came closest to the experts' score (70)) (Table 2).

Table 2 Wilderness Survival Activity – decision making

Team No.	No. of Team Members	Student ID	Individual Score /100	Team Score /100
1		P	70	Highest
		M	30	
		J	40	
		Jo	40	
		E	30	
		Ju	40	
Total	**6**	**Average**	**40**	**70**
2		K	60	
		S	30	
		St	40	
		Se	20	Lowest
		Stn	50	
		A	40	
		Y	30	
Total	**7**	**Average**	**40**	**40**
3		C	40	
		T	40	
		Sh	40	

		Tm	60	
		Ja	50	
		D	30	
Total	**6**	**Average**	**40**	**50**
Class Total	**19**	**Average**	**40**	**50**

(Kemp, 2005).

Team 1 contained member (P) with the nearest score of all the class to the experts' opinion (70). I suggest that P may have influenced Team 1 significantly as his score and the group score both equaled 70. Table 2 also shows that 26% of the students scored higher as individuals than the team decision. For the majority of students (74%), they achieved the same or a higher score with the team than they did as individuals.   Thus, it can be proposed that the online teamwork activity had shown a positive effect of teamwork. The effect is that, for the majority of people, working together as a team creates a 'better' decision than the individual decision.

A comment about the Wilderness Survival exercise, from an instructor, was positive as to its benefits on student learning,

> *"I think that the Wilderness exercise was very beneficial to my group as they learned how to make decisions, listen to the opinions of others and how to develop strategies as a group. The students learned to have patience and became empathetic too. I think they saw the real values of group decision making through this exercise"* (P. Zayciak, personal communication, November 2004).

Student Evaluation of Online Teamwork Activity

The final task is for students to evaluate their learning about teamwork from their experience as a member of an online team. They are invited to consider:

1) What stages of development did you see in your small group? In the class?
2) How closely did that experience fit with what you had learned about stages of development in teams?
3) If we were to run the Wilderness Survival exercise/discussion again, what suggestions would you make to improve the group's effectiveness?

Table 3 contains the analysis of the class discussion postings.

Table 3. Wilderness Survival Activity – class discussion

Team No.	No. of Team Members	Student ID	Individual Postings	Team Postings
1		P	17	
		M	4	
		J	22	
		Jo	33	Highest
		E	8	
		Ju	15	
Total	**6**	**Average**	**16**	**99**
2		K	17	
		S	10	
		St	4	
		Se	6	
		Stn	0	Lowest
		A	5	
		Y	1	
Total	**7**	**Average**	**6**	**43**
3		C	19	
		T	10	
		Sh	10	
		Tm	15	
		Ja	1	
		D	1	
Total	**6**	**Average**	**9**	**56**
Class Total	**19**	**Average**	**66**	**198**

(Kemp, 2005).

For this final task of the activity, there were 198 submissions over 20 days from 18 students in the class. Again, Team 1 had the highest number of postings and the same member of the team (Jo) submitted the most discussion (33 postings). It can be noted that in this final task of the Wilderness Activity that the teams maintained their ranking in number of communicative responses. Team 1 discussed the most, followed by Team 3, and Team 2 posted the fewest responses.

The first individual submission from a member of each team is provided below.

> *"I think that group one did a terrific job in the wilderness quiz. We all*
> *worked well together, listened to each others ideas and we all came up*

with the best answers. How better can a group work together". Team 1 participant. (November 1, 2004).

"I actually, thought that my group did well. We researched questions gave our opinion and tried to come up with a solution that everyone could agree on. I think though we could have done better forming are opinions and showing are research to the answers so that we could discuss it in further detail. I think the biggest thing in are group that crippled us was time". Team 2. participant. (November 2, 2004).

"I thought that my group did ok. We researched our questions and gave our opinions to one another. I did think that we could have communicated a little bit better. I did like though the way in which our group was organized though and how we picked our own question to research and give our answers to the group. Time on the other hand was a little tough for me with working overnight full time and trying to keep up with the group. I think the hardest part of this was that working in groups and everyone has an opinion, also when working in groups it's also hard for people to discuss because not everyone is willing to give up there individuality". Team 3. participant. (November 3, 2004).

As heard in the final task discussion quotations above, these particular students commented upon their group achievement, ranging from "terrific" (Team 1), through "did well" (Team 2) to "O.K" (Team 3). Students recognized that teamwork involved listening, research, time management and sharing opinions. These remarks indicated that they had learned something of teamwork through participating in the online team activity.

Instructor Assessment of Online Teamwork Activity

During an online faculty development seminar for online instructors on the subject of assessment (Kemp and Ostrov, 2004), a discussion thread on the topic of evaluating group work began with the question,

"What are some ways to evaluate individual learning that has taken place in the context of a small group project? What are some ways to evaluate group learning?"

Contrary to the positive feedback on teamwork activities presented so far, there was concern by an instructor that students did not enjoy group projects:

"I no longer use group projects, not so much because of the difficulty of evaluating them, but more because of the negative feedback received from students. You could "see" their stress levels escalate when someone stopped participating or was not providing the same quality of work that they expected. I was frequently trying to play mediator and figure out for myself what the right thing to do was" (Participant A, November 28, 2004).

Although, there may be a need to 'play mediator' in the Wilderness Survival, the consequence for an instructor of having to do so (as in this extract) detracts from the ideal of participants being responsible for their own decisions. A consequence of mediation can cause the exercise to become more teacher centric than student centric.

Evaluating teamwork, from the standpoint of fair assessment for individual contribution

to group work, is an issue faced by instructors,

> *"a majority of the students work well together, with a minimum of "loafing" or "free riding." Perhaps only 1-2 students out of a course of 18-20 don't participate -- and they receive "0" for the project, while the rest of the group is not penalized (the group projects are structured so as to not place assigned burdens on each member -- if one member doesn't pull his/her weight, it does not impact the whole effort)"* (G. Ingram, personal communication, 2004).

> *"There are many ways that course instructors can design group work. One way is to assign quite different tasks for each member of the group to be responsible for so that no one person can impact on your own work but the overall quality of the group's work will depend on everyone pulling their own weight"* (B. Smith, personal communication, 2004).

An assessment of online teamwork, experienced by a recent graduate, enabled students to take ownership of their own evaluation, as they developed a rubric with guidance from their instructor (Cunningham, 2005, personal communication). Another instructor, in the Assessment Seminar (Kemp and Ostrov, 2004), recognized that the business world requires employees to collaborate. Collaboration is an element of teamwork and so the instructor recognizes the importance of such activities to the employment prospects of students. The respect for collaboration, mirrors Oblinger's (2005) notion that learning is an 'active, collaborative, and social process' (p. 14),

> "*However, because collaborative work is so important in the business world, I am going to keep it in…. This is something that some of my MBA profs did and it helped keep team members on track: each team member was to evaluate the participation of the other team members* (Participant B, November 28, 2004).

Participant B offers peer evaluation as an element of assessment for group projects. Although a formal peer evaluation was not required in the Management Principles teamwork activity, students did informally peer evaluate in their discussions. In this student submission, the leadership qualities of a fellow team member were acknowledged, *" took the initiative to submit the final responses and this underscores the spirit of teamwork"* (Student, November 2**,** 2004). The student, via her posting, had shared her learning on teamwork with others in the discussion i.e. that somebody needs to take the initiative for task completion.

Conclusion

The case study presented has aimed to provide guidelines, principles and lessons learned in order to address the challenge of shaping and guiding innovations in teamwork in online education. What was learned from this case study was that the online environment can facilitate students in the development of their teamwork abilities. Specifically, multimedia resources offer students:

1. An online self-assessment through the individual Wilderness Survival quiz.
2. Online discussion areas to support communication for negotiation and decision making.
3. Online resources e.g. lectures and links to the virtual library.

Through the use of multimedia resources in the online environment, students are exposed to the study of teamwork, test their skills in the security of a study area**,** and

actively engage in the principles of management including communication, negotiation, planning and decision-making. Ongoing research on teamwork in an online learning environment will contribute to an evaluation of the effectiveness of such learning activities.

Acknowledgments to the following Empire State College colleagues for their contributory comments and work on teams contained in this article:

Glenn Ingram, Instructor.
Joyce McKnight, Area Coordinator.
Bernard Smith, Director of Assessment.
Patricia Wheeler, Developer.
Peter Zayiciek, Instructor.

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