

The “Dark Side” of Online Project Teams: Challenges and Remedies

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Abstract

Collaborative learning is a hot topic in higher education and the aggregate evidence from research studies is highly positive. However, there appears to be little research on negative learning outcomes in collaborative team projects, especially in the context of online learning and virtual teams. This study uses quantitative data (graded deliverables and a measure of team cohesion) to classify high performing and low performing teams. Then qualitative analysis, drawn from open-ended surveys and one-on-one telephone interviews, is used to compare and contrast the successful and unsuccessful teams to identify the factors that impact performance from the student perspective. Five performance factors emerged from the data: Team Membership, Action Plan, Communication, Goals, and Leadership. The study provides recommendations for instructors on how to help students improve project team performance in an online environment by addressing elements within the five factors.

Introduction

Collaborative learning is a frequently used instructional technique in higher education today and the aggregate research evidence on the efficacy of collaborative learning is highly positive (Barkley, Cross, & Major, 2005). However, in their comprehensive review of the literature, Barkley, Cross, and Major found little research on negative learning outcomes in collaborative projects. In addition, student criticism or dissatisfaction with group work seems to be lacking in the literature, especially in the context of online learning and project teams that are required to do most of their work virtually.

This research project combines quantitative and qualitative research methods to answer the following research questions:

1. In higher education, why do collaborative project teams, working in an online environment, sometimes fail to deliver a quality product? What practices or behaviors contribute to their poor performance when compared to high performing teams?
2. What can an instructor do to help prevent poor collaborative team performance in an online environment?

As the questions indicate, this is a prescriptive study. The purpose is to help instructors improve student team project performance in online classes.

Research on Collaborative Learning in an Online Environment

The literature on virtual project teams in organizations is extensive, ranging from popular books (e.g., Duarte & Snyder, 2001; Gibson & Cohen, 2003; Lipnack & Stamps, 2000) to a robust lineup of empirical articles published in prestigious peer-reviewed journals (e.g., Furst, Reeves, Rosen, & Blackburn, 2004; Kirkman, Rosen, Gibson, Tesluk, & McPherson, 2002; Kirkman, Rosen, Tesluk, & Gibson, 2002; Maznevski & Chudoba, 2000).

Likewise, in higher education, there is a growing body of literature on collaborative (small group or team) learning in the classroom. In addition to assessing the effect of collaborative groups on learning for undergraduates (Springer, Stanne, & Donovan, 1999; Bacon, 2005), researchers have investigated a number of student factors that can affect team performance, such as social loafing (Taggar & Neubert, 2002), cohesion (Deeter-Schmelz, Kennedy, & Ramsey, 2002) and individual ability (Bacon, Stewart, & Stewart-Belle, 1998). In addition, studies have examined factors controlled by the instructor, such as methods of assigning students to teams (Bacon, Stewart, & Anderson, 2001), team size (Cossé, Ashworth, & Weisenberger, 1999), team longevity (Bacon, Stewart, & Silver, 1999), instructor coaching (Bolton, 1999; Kahn, 1995), and the use of peer evaluations (Gueldenzoph & May, 2002).

However, as noted in Barkley, Cross, and Major (2005), there appears to be little empirical research specifically investigating collaborative project teams working in an online environment in higher education. We were able to locate only three studies specific to this context.

Rutkowski, Vogel, Genuchten, Bemelmans, and Favier (2002) summarized a 4 year stream of research on e-collaboration of virtual teams made up of students from Hong Kong, The Netherlands, and, in the last phase of the project, France. Using an action research approach, they examined virtual team dynamics and a variety of group characteristics, such as the role of different cultures and the efficacy of different communication protocols (e.g., email, videoconference, and chat sessions). Teams consisted of two to four members and engaged in structured 6-week projects designed to deliver a report on an assigned issue, such as labor shortages in the IT area. The researchers created an “onion skin” model to present their findings. Their model distinguishes nine categories of problems that can be encountered in virtual teamwork (see Table 1). Each category (i.e., layer of the onion) represents a barrier to effective interaction that has to be addressed and “peeled” away.

Table 1

Layers of Problems Associated with Work in Virtual Teams (Rutkowski et al, 2002)

Categories	Examples
1. Motivational issues	“Why are we doing this; what are the rewards?”
2. Context preparation	Common background materials; cultural awareness
3. Technological	Problems with access
4. Interaction	No communication for a long period
5. Structure	Protocols, agendas
6. Process	Planning methods, rotating leadership, roles
7. National cultural background	Cultural differences such as openness in communication
8. Professional background	Different ways of working, e.g., engineer versus accountant
9. Creative content formation	Differences of opinion on the actual content of deliverables

Dineen (2005) reported on an online team-based project called TeamXchange that was administered in an undergraduate Organizational Behavior course over two 4-week sessions using WebCT support technology. One purpose of the study was to examine the effect of team fluidity (rotating team membership) on a variety of outcomes, including team cohesiveness and social loafing behavior. The online activity was conducted in the context of a large (99 student) campus-based class. Students were placed in stable teams for one 4-week session and fluid teams for a second 4-week session. Teams were required to analyze short cases relevant to course material and answer questions related to the cases each week using the WebCT bulletin board. The study found that team cohesiveness and social loafing were lower in fluid teams when compared to stable teams.

Finally, building on the work of Rutkowski et al. (2002), Qureshi, Liu, and Vogel (2006) used a grounded theory approach to study the effects of electronic collaboration for distributed project management. This study examined participant communication logs of 21 virtual teams comprised of students from universities in the Netherlands and Hong Kong. The research found that effective use of the communication technology had a profound effect on the communication, coordination, and adaptation processes. Positive or poor e-communication practices affected shared understanding and collaboration effectiveness. The ability to coordinate across time zones and deal with delays in response times impacted productivity, degree of involvement, and learning. The ability to adapt to social expectations, to the technology, and to the work itself influenced conflict resolution and the perceived freedom to think creatively.

In summary, given the relative paucity of research on collaborative project teams working in an online academic environment, we can identify two gaps in the research that this study is designed to address. First, there appears to be no study that examines an online team project where the teams are required to complete a complex feasibility study, write a formal report, and deliver an oral presentation. Such a context should provide a richer perspective on why some teams fail to deliver a quality project when working collaboratively in an online environment. Secondly, while most studies included some qualitative data in the form of surveys, we found no studies that included actual interviews with the students about their experiences. Accordingly, we chose to use grounded theory procedures and techniques, with an emphasis on student interviews, to

inductively derive recommendations for instructors to improve student success (Strauss & Corbin, 1990).

Methods

Participant Profile and Team Structure

Subjects. Participants in the study included 45 undergraduates (mostly juniors) from the Fall 2005 and Spring 2006 online sections of the Managerial Communications course in the School of Business of a university in the southeast. Both sections were taught by the first author. The gender mix was 67% female, and 53% were classified as minority students (predominantly African-American). The mean college grade point average (GPA) for the group was 2.84 (on a 4-point scale). The average age was 27, and 51% considered themselves to be “non-traditional” students, i.e., out of school for 4 or more years prior to returning for a degree. The location of the study is a non-residential university and many online students tend to be older, with full-time employment and a family. Most students take a mix of online and campus-based classes.

Project Teams. Teams of 5 members each were formed at the beginning of the semester by using a stratified random method based on GPA, gender, and race. Assignments were then manually adjusted to insure representation of business majors on each team (primarily accounting, marketing, and management). Finally, adjustments were made to make sure each team had members with the requisite skill sets (research, writing, and computer skills) based on self-rated surveys. Over the two semesters, 10 teams participated in the project. Due to withdrawals before midterm, 2 of the teams worked with 4 members, and 2 teams had only 3 members.

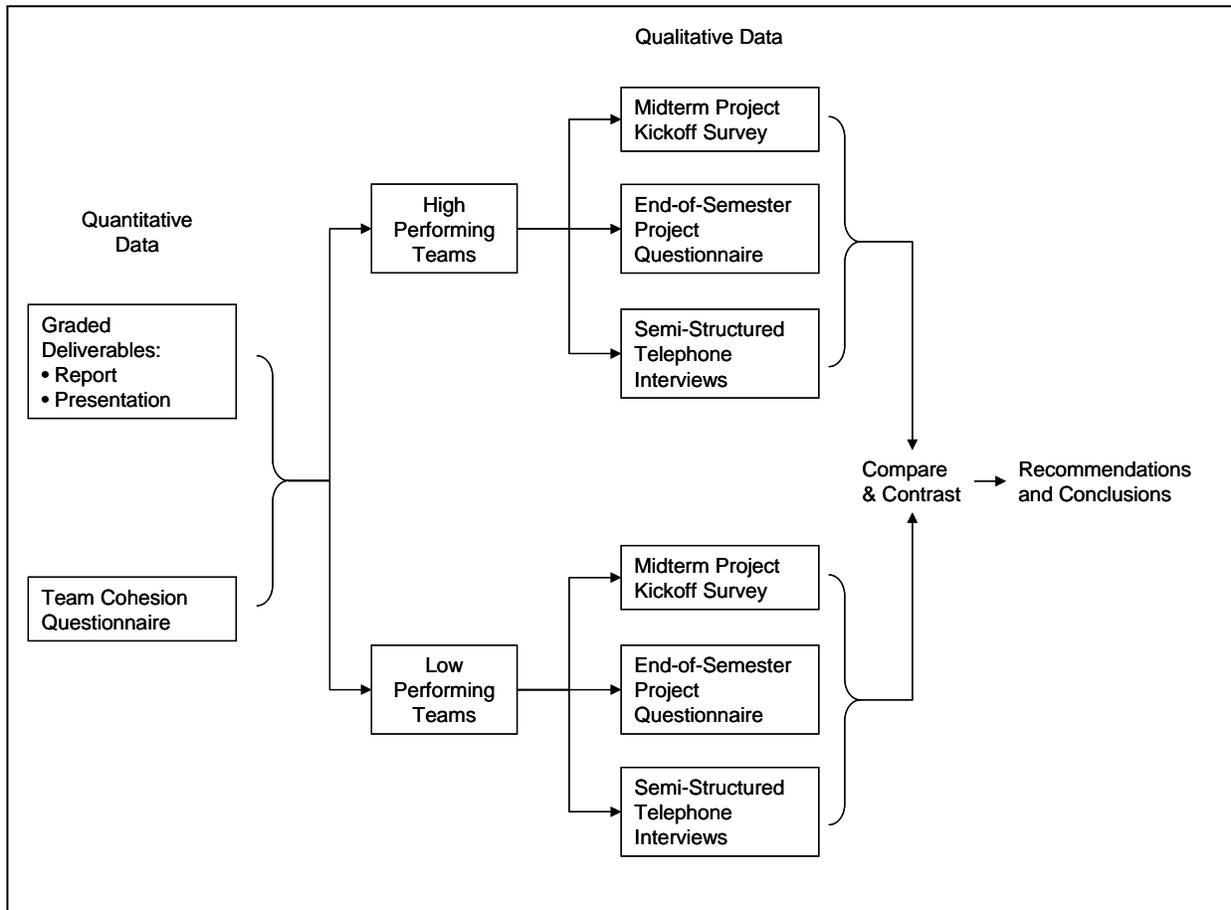
The first half of the semester, students worked collaboratively in their teams on a variety of managerial communication competencies. The project was introduced at midterm and required the students to integrate and apply the skills they had studied the first half of the semester. The project, in the form of a business case feasibility study, required each team to collect data from a variety of sources (Web research, interviews, and surveys), reach consensus on a recommendation to management, prepare a formal report, and make an oral presentation in a conference room setting to a panel of instructors in the role of executives. During the midterm meeting, the teams received guidelines on how to manage the project and were provided time to use an action planning tool to outline the tasks, target dates, responsibilities, and deliverables.

Degree of Virtuality. The teams in this study meet Gibson and Cohen’s (2003) definition of virtual or online teams: a functioning team interdependent in their tasks with shared responsibility for outcomes, geographically dispersed, and relying on technology-mediated communications. However, Gibson and Cohen also note that virtuality is a continuum. A team that does all its work through email, discussion boards, and teleconferences, never meeting face-to-face, is more virtual than a team that meets monthly or quarterly face-to-face. The teams in this study would be about midway on the virtual continuum. They did most of their work online but did meet at midterm to plan the project. In addition, though additional meetings were discouraged, most teams did manage to arrange at least one face-to-face meeting prior to the presentation, and some students had face-to-face contact with their team members during the 8 week project period while on campus for classroom-based courses.

Research Design and Quantitative Measures

Figure 1 provides an overview of the data collection process used for this study. The literature on teams generally defines success in terms of both business outcomes, such as task performance, and human outcomes, such as team member satisfaction with the experience (e.g., Gibson & Cohen, 2003; Stewart, Fulmer, & Barrick, 2005). Therefore, we used quantitative data in the form of graded deliverables to assess task performance and a measure of team cohesion to assess the aspects associated with student satisfaction. We then used the quantitative data to identify high performing and low performing teams. Qualitative analysis, drawn from the Midterm Project Kickoff Survey, the End-of-Semester Project Questionnaire, and the one-on-one, semi-structured telephone interviews, was used to identify the factors that impacted performance from the student perspective.

Figure 1
Data Collection Process



Graded Deliverables. The project deliverables accounted for 100 grade points and consisted of a report (50 points) and oral presentation (50 points). The report and oral presentation were graded by the instructor, and all members within a team received the same points. The report and oral presentation scores were added together to determine overall team performance on the task.

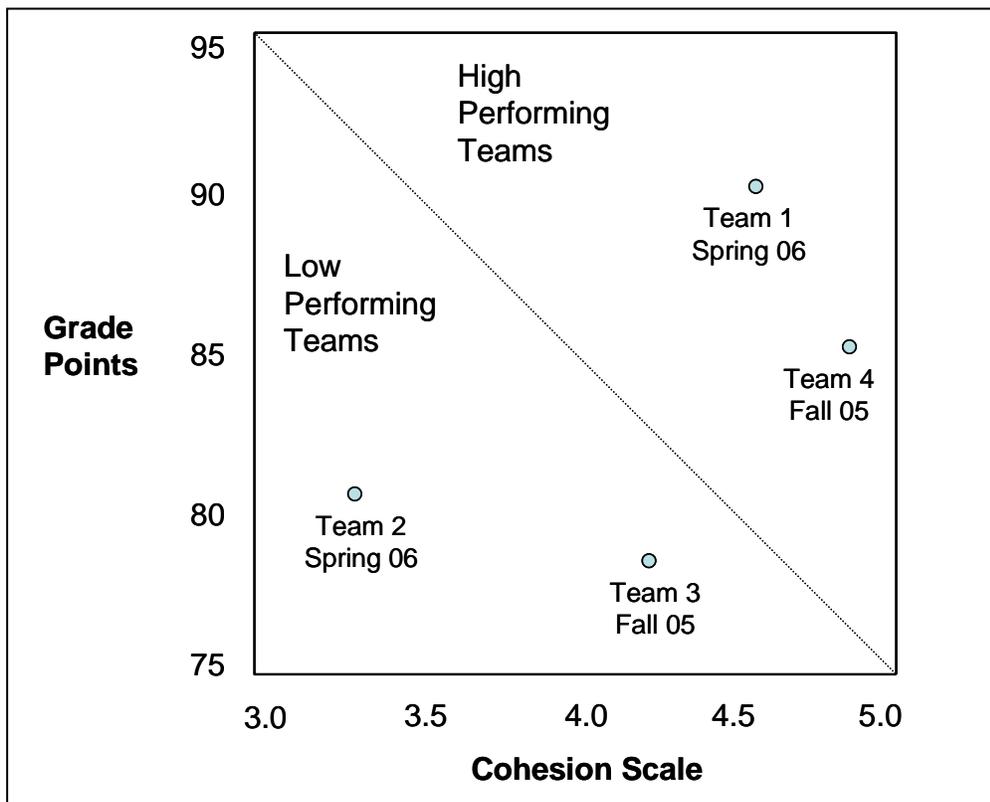
Team Cohesion. Cohesion, defined as the feeling among group members of being closely knit, was assessed with a 6-item measure adapted from Rosenfield and Gilbert’s (1989) Classroom Cohesion Questionnaire. Item examples include “I enjoyed interacting with this team very much,” “I wanted to remain a member of this team,” and “There was a feeling of unity and cohesion in this team.” Individual team members provided ratings with the collective group as the target on a 5-point Likert scale ranging from disagree (1) to agree (5). Cronbach’s alpha estimate of internal consistency for this sample was .91.

Selection of High and Low Performing Teams

After charting the scores for the performance measures, we were able to identify the high and low performing team for each semester. We chose to omit 3-person teams from the selection (one each semester) because, in both cases, the teams lost members due to withdrawals and were at a disadvantage due to the required work load. We defined success as having the highest grade points *and* having comparatively high scores on cohesion. Conversely, the low performing team was designated based on the lowest grade points and lower scores on cohesion. Figure 2 provides a comparative view of the scores by semester for the selected high and low performing teams.

Figure 2

Comparative View of Scores: High Performing versus Low Performing Teams



Qualitative Analysis

Given the selection of high performing and low performing teams, we used a qualitative approach to identify the factors that impacted performance from the student perspective. We collected data from multiple sources at several points in time, guided by protocols recommended by grounded theory (Strauss & Corbin, 1990). Initially, we obtained responses through four open-ended questions at the mid-term project kickoff. At the end of the semester (conclusion of the presentation), we collected responses to four open-ended questions that were included as a part of the project questionnaire. Additionally, after the semester ended, the second author conducted semi-structured one-on-one telephone interviews with members of the high

performing and low performing teams. Table 2 provides the Midterm Project Kickoff Survey open-ended questions, the End-of-Semester Project Questionnaire open-ended questions, as well as the telephone interview questions used to frame the dialogue with each student.

Table 2
Survey and Interview Questions

Midterm Project Kickoff Survey (open-ended questions)

- What expectations do you have for your team? Explain.
- What are the reasons you think your team will be successful? Explain.
- What are your team’s greatest challenges? Explain.
- If you could change one thing about your team, what would it be? Explain.

End-of-Semester Project Questionnaire (open-ended questions)

- What contributed to any failures your team experienced?
- Describe any special challenges you encountered working virtually.
- What one thing, if done differently, would have made your team more successful?
- Do you have suggestions for making this project a better learning experience for future classes?

Semi-Structured Telephone Interview Guide*

- What words would you use to describe your virtual team? Give an example of each.
- What have you learned about working virtually?
- What practices have contributed to your ability to be a successful virtual team?
- What practices have contributed to your failures as a virtual team?
- Describe any special challenges you have encountered working virtually.
- What would you do differently if you could start over?
- What advice would you give to virtual teams to enhance their success?

* Other questions emerged during the interview process.

Qualitative research uses an evolving and emerging inductive process (Lincoln & Guba, 1985). Findings in the form of themes, tentative hypotheses, and grounded theory can emerge from the research. Questions of “how” focusing on discovery of meaning and understanding are predominant rather than questions of “how much” or “how many” (Yin, 1994). This focus yields exploratory data that can support further research.

One of the most important data sources is the interview (Yin, 1994). In the style of the ethnographic interview, the focus of the interview is to learn from people rather than study them (Spradley, 1979). By seeking the knowledge of team members, we could build on their shared experience. To discover this insider view, we took on the role of the student while the interviewee served as our teacher. The focus of this process was to listen for the meaning of actions and events as perceived by those who experienced them.

Analysis involved multiple levels of coding. In open coding (Strauss & Corbin, 1990), data are conceptualized by giving them labels. Then, the concepts are grouped into categories that are more abstract in nature. Their labels can be taken from the literature, created by the researcher, or even lifted from the words of the informants. Categories can be viewed by their properties or attributes and their dimensions.

Data collection and data analysis are iterative, tightly interwoven processes. “Inductive and deductive analyses are mixed. When a theme, hypothesis, or pattern is identified inductively, the researcher then moves into a verification mode, trying to confirm or qualify the finding” (Huberman & Miles, 1994, p. 431). Using the constant comparative method (Glaser & Strauss, 1967) while coding data, we compared data with previous data coded in both the same and different groups. This method of continuous comparison encouraged reflection and facilitated analysis.

The second level of coding is axial coding (Strauss & Corbin, 1990). In this component of the analysis, the researcher “puts those data back together in new ways by making connections between a category and its subcategories” (p. 97). Categories are specified with enhanced precision “in terms of the conditions that give rise to it; the context (its specific set of properties) in which it is embedded; the action/interactional strategies by which it is handled, managed, carried out; and the consequences of those strategies” (p. 97). Through a complex analytical process of deductive and inductive thinking, we not only related subcategories to a broader category in a set of relationships but also connected these relationships to data. The process of proposing and verifying patterns against data, produced patterns that were grounded in data.

Selective coding (Strauss & Corbin, 1990) is the process of identifying the essence of the story revealed through the data and analytically formulating the story line by relating other categories to the core category. This is a complex integration process that relates categories in ways that can produce theory that is grounded in the research data.

Results

Midterm Project Kickoff Survey

The results of the open-ended survey collected at the mid-term project kickoff are presented in two groups—unsuccessful teams and successful teams. In this survey, students described their expectations and anticipated challenges.

Unsuccessful Teams. Unsuccessful teams started with high expectations for their groups. They expected team members to meet all deadlines and put forth good effort. Members believed that

they would work well together. As one stated, “We work well together; we are not shy, and we are very open with what we think we should do.” Some cited as challenges the full schedule of team members and the need to maintain good communication and time management. One member was concerned and foresaw some of the problems. That member commented, “The age of my team members or more so the maturity—some of them are too laid back about work and responsibility for my tastes.”

Successful Teams. Successful teams anticipated good work from their team members. As one stated, “I am confident that we will achieve an ‘A’ on this assignment.” They described their team as mature, open, honest, respectful, responsible, organized and hardworking. Most members anticipated that time management would be one of their greatest challenges.

End-of-Semester Project Questionnaire

The results of the open-ended surveys collected through the end-of-the-semester project questionnaire are presented in two groups—unsuccessful teams and successful teams.

Unsuccessful Teams. Unsuccessful teams knew that they had made many mistakes in the project. They described the following things as contributing to their failures: the need for more rehearsals, inadequate preparation, insufficient face time, procrastination, and the lack of open-mindedness from the leader. Many of their challenges were also related to communication issues. As one person commented, “Sometimes in a discussion board response and e-mail, the tone was misunderstood. This is very important to me, to be able to see someone’s face when agreeing or disagreeing on an issue.” Another stated, “People did not check the discussion board enough or failed to respond to postings and e-mails.”

Successful Teams. Successful teams described their positive team experience, although they also shared their mistakes. Some members said that they did not ask enough questions of the instructor. As one explained, “All of the things we needed improvement on could have been fixed with a few questions.” Some criticized their closing, the need for better graphs, and more extensive research. They also thought they should have spent more time rehearsing the presentation. One member commented on the lack of focus on the “big picture” by saying, “We worried about the individual tasks rather than what needed to be conveyed.” They also mentioned the hazards of virtual classes. One explained, “I believe in-person forms of learning demand a higher level of accountability. We missed certain deadlines because our schedules varied so much.”

Telephone Interviews

The interview data is grouped by the following categories that emerged in the qualitative analysis: Team Membership, Action Plan, Communication, Goals, and Leadership. Under each category, results are presented in two groups—unsuccessful teams and successful teams.

Team Membership: Unsuccessful Teams. Unsuccessful teams described their members as being “too laid back”—either not participating at all or not participating to the necessary degree. No one seemed to care if they were doing their part in a timely way. As one member said, “There

was not enough urgency or commitment to the project.” Procrastination and a lack of motivation was commonplace. As one student explained, “This project was just last on the list.” When they met, they did not stay on topic. As one said, “Other things were on peoples’ minds.” Some stated that they were not motivated because it was not the best group (with immature members) or it was not an interesting topic. The “laid back” style was so common in one group that some said it led to “groupthink.” As one member put it, “Our group was not as diverse; laid back personalities; too similar.” As another said, “We didn’t question each other.” Members described themselves as successful at getting along but an academically unsuccessful group. As one person explained, “You need to respect each other, but you don’t need to be friends. You can be more honest when they’re not your friend.” Being successful requires dedication and commitment—two things lacking in these unsuccessful teams.

Team members also described themselves as being “too trusting” and “too patient.” As one member stated, “When we began, I thought everyone would be dedicated. I got the feeling they would try hard. Everyone said they were doing their work. I didn’t ask to look. By the time I realized it, it was too late.” As another member said, “When face-to-face, people are easier to read.” Members also described themselves as “too patient.” “People did not get upset when deadlines passed and stuff came in late. They acted like it was not a big deal.”

Even members who described themselves as more on task in previous group projects allowed the group to negatively influence them. As one stated, “I didn’t prepare as well; I’m normally not like that; I let them influence me, and I paid for it; I was tired of doing it all myself (in prior groups); I tried the team thing; I will take charge next time.” As another put it, “The challenge is how to deal with team members that don’t take it seriously; maybe I should have done it all myself. I don’t know what would work with those people.”

Team Membership: Successful Teams. Successful teams described themselves as being cohesive, working well together, and being honest. As one explained, “We all just clicked; not very much strife or disagreement; not a lot of poking, prodding, or reminding due to the personalities. When it’s there, it’s there, and when it’s not, it’s not.” They described themselves as being honest with each other: “Especially if we didn’t feel comfortable with the work; we would ask for help.” They understood that virtual teamwork required more discipline and were aware of the pitfalls and the need for good time management. Students seemed to know “in advance” of the challenges, and thus they were ready to put forth more effort. The successful teams described their groups as mature. As one explained, “I’ve been on other teams in the past that were not as successful because people didn’t know how to balance. This team had maturity and knew how to balance; they understood the importance of adhering to deadlines.”

Action Plan: Unsuccessful Teams. Having an Action Plan with tasks appropriately assigned, sequenced, and followed is essential for effective virtual team projects. But as one student stated, “We never referred to the Action Plan after the day we worked on it.” Another said, “I didn’t think to look at it.” And as another said, “We set Action Plan deadlines. We started with the best of intentions, but things got ignored. Things got pushed back; people gave excuses; we did not gauge work at the end.” Also, team members felt that working virtually made it more difficult to determine individual strengths. As one person put it, “People picked tasks that were not their strengths. People just said they would do it.” Teamwork requires effective time management

skills, but as students indicated, procrastination was a common weakness of the unsuccessful teams. As one student indicated, “Many take online classes because they don’t have the time, but, in reality, online classes often take more time.” Students said that they had difficulties getting things done with work, other school classes, and their families. Others also stated, “We delayed too long before getting started.” Having so many weeks to do the project actually encouraged many to delay in starting it. As some explained, “I did things last minute. This class was a low priority in relation to my harder classes that are directly related to my major.” As another said, “Follow through is important. You need to do what you say you’re going to do; you need to take due dates seriously because it affects the whole group.”

Action Plan: Successful Teams. Successful teams had an Action Plan and were better at following it. As one student explained, “Everyone was on the same page. We split the work evenly, and everyone did their part. People just did it; we said we don’t have time to mess around. No one had to pick up anyone’s slack. You didn’t have to remind people.” As another student explained, “I knew what I had to do each night.” Even in successful teams, there were some problems adhering to the timeframe specified in the Action Plan. As one student described, “We got behind and lost track of deadlines. Some did not make it a priority because it was online. We got it done two weeks before; I knew that we had to do it now—not the night before.”

Communication: Unsuccessful Teams. Effective teams function as a team rather than a collection of individuals. In unsuccessful teams, this was lacking. Communication is a major challenge in virtual classes yet a requirement for real teamwork. As one student said, “There’s such a time delay when working with others virtually.” Plus, as another described, “You lose something in relationships when it’s all virtual. It’s hard to read people. It’s like talking to a computer—not a person.” Many shared their frustrations with communication. As one stated, “It was hard to get in touch with everybody. It would be days or a week before you’d hear from some people on the team. I don’t remember the ground rules (respond within two days); we said to be timely; that’s not a week.” There were complaints that no one responded to email. People justified delays because they were preoccupied with other classes. Many felt that meeting face-to-face would have helped their situation although the unsuccessful teams actually met several times. Students described few phone conversations. As one explained, “I always talked to voice mail.” And another commented, “I never took the time to store the numbers. It was not important enough to look up the numbers.” Email was frequently used, but as one said, “I’m not on the computer often so it was hard checking my email frequently enough.” Most said that it just took too long to get responses. They tried using the discussion board, but as a student explained, “Most used the discussion board, but the turnaround time was too slow; it could take days before people got back.” As another explained, “The bulletin board works for some things, but it does not work as well to relay important information.” Being a member of an unsuccessful virtual team can be quite lonely. As one student said, “I didn’t feel as involved because my work was at the end.” Students didn’t have an understanding of what others were doing and were isolated as they individually did their work. One student added, “Virtual teams are on their own; communication within the team is difficult, and there is no dialogue across teams. In a classroom setting, teams can also learn from each other.”

Communication: Successful Teams. Successful teams were significantly better at communicating than the unsuccessful teams. Students seemed diligent in checking emails and the discussion

board and having voice conversations. As one student explained, “We were able to communicate and keep in touch with each other. If I had questions, I could call and would get a response in a timely manner. All got on the phone. Email was our best friend for this project. Our team did well; responded to emails and kept in touch.” One student added, “We had a rule to check email three times a week, and we shared cell phone numbers. Two times people were going out of town so they would call and let us know they would not be responding.” And another said, “We used the discussion board regularly—even 2-3 times a day toward the end.” One added, “Discussion board postings got responses later that day or the next day the latest.” Another stated, “We posted often to the discussion board—at least 5-6 times per week. There was great interaction. It was a good tool.” Another commented, “If I didn’t see something, I posted and got a quick response.” As one student described, “We used the discussion board for most interactions; used email as a back up.” Another said, “We emailed and people responded. We knew the project was important, and it was important to talk.”

Successful team members stressed the point of good communication. As one said, “Communicate, communicate, communicate. Be sure everyone is on the same page. Double-check.”

Successful teams understood the value of genuine teamwork. As one explained, “You must remember that you are a team. It’s not just your project. You must understand that everybody has their thing to do. I knew that if I messed up, it would waste others’ time. We made sure not to waste others’ time.” Successful teams also saw the value of communicating with and working with others. As one explained, “We assigned people to teams of two to do tasks. There was never one person doing a task alone. We had to keep each other accountable. You might have one partner for one task and a different partner for another task. It is important in a team project to have someone to soundboard off of. We caught each other’s mistakes.”

Goals (Guidelines / Grading Criteria): Unsuccessful Teams. Students cited that their lower grades were partially due to not following the guidelines of the project and not being clear on the grading criteria. As one explained, “We didn’t understand the rules; we followed the book example instead of the rules of the instructor. We read rules individually—not together—we didn’t know how to format; it was not what he wanted.” Students cited problems because they did not pay attention to the grading criteria. As one explained, “We did not cover points on the criteria. We forgot about it; just didn’t think about it.” Another stated, “We didn’t know how the paper needed to be done; nobody knew we were doing it wrong.” Another added, “We didn’t realize till the day of the presentation the problem, and then it was too late.” And another explained, “Not reading the assignment/instructions correctly was our biggest downfall.” As one student said, “We didn’t read the rules thoroughly; we were not clear on the overall goal.”

Goals (Guidelines / Grading Criteria): Successful Teams. Even successful teams had some problems following guidelines. As one student admitted, “We had to change our PowerPoint the night before. We didn’t listen to the audio explanation for the PowerPoint until the night before it was due. Only then did our team captain listen to it and realized we had problems.” Another student added, “I was not clear that if we said ‘no’ that we should have recommended another course of action.” And one student commented, “We should have talked to the teacher more to know what he was looking for.”

Leadership: Unsuccessful Teams. A major deficiency in the unsuccessful teams was the lack of good team leadership. As one student explained, “No one took the lead so one overbearing person just did it. That person was not a true leader. She did not delegate; she just did it herself. She gave us stuff to do, and then she changed/edited our work. It almost felt like it was not our work—just hers.” One student commented, “A team should not have a leader like the one in this group: that person hindered us. That one person felt like they could make all the calls.” As another stated, “She was domineering and ignored others’ contributions. Once your ideas got ignored, you thought ‘whatever’—I just didn’t care as much; I didn’t care to go the extra mile.” As another said, “She changed my slides 15 minutes before presenting; she should have left them alone; it was like talking to a brick wall. She didn’t trust others; I was fully capable of being trusted; we were not together as a group to decide; she just decided everything. She took over and wrote the paper and told people what to say.” As another commented, “She got tired of waiting on people.”

Leadership: Successful Teams. In the successful teams, the leadership role was also ineffective. As one student commented, “We did not have a leader who said to get on track. He apologized; he had a full life; he had personal stuff.” But in the successful teams, the group managed successfully by working together. As one explained, “We had no leader: we all made decisions together; we all played a major role.”

Discussion

Midterm Project Kickoff Survey

On the onset of the project there were similar expectations and challenges voiced by both the unsuccessful and successful teams. All started with high expectations and were aware that there were challenges when working virtually.

End-of-Semester Project Questionnaire

Students were realistic about their successes and failures. Most saw online communications classes as a challenge, and some thought a hybrid course would be a better format. Even successful teams conveyed the need for more in-class time.

Telephone Interviews

Team Membership: The Dark Side of virtual teams begins with understanding the attributes of team membership that contribute to failure. Based on unsuccessful team experiences, the following member characteristics contributed to their problems: too laid back, too trusting, too patient, unmotivated, and procrastinating. These laid back virtual teams patiently trusted and tolerated behavior that was detrimental to the team. Bad behaviors were exacerbated in a virtual environment where “out of sight” also contributed to “out of mind” behavior. These unsuccessful virtual teams were neither “on time” nor did they work “to the necessary degree”—the keys to team success. When individuals procrastinate and put the work on the back burner, the whole team is negatively impacted. Students who are not skilled in balancing the requirements of their classes and personal life are not good team members. Also, virtual teams with members who are

too “alike” can also lead to problems. In the unsuccessful teams, they tended to agree too easily with each other. “Getting along” did not contribute to doing good work. These membership traits had an additional destructive component: these “dark” behaviors often negatively impacted others on the team who otherwise would have been more productive members. Additionally, this negative team experience appeared to add to the cloud that many members had of team projects and enhanced their perceptions of the flaws that would predictably emerge in future teams.

Virtual courses require more discipline than traditional courses. Mature students are better able to handle this less structured learning environment. Students skilled in time management tend to be more successful. Additionally, students who were more successful described themselves as being honest with each other.

Action Plan: Establishing a reasonable Action Plan and then sticking to it is essential for team success. An Action Plan provides the structure to guide performance. An Action Plan must indicate tasks required, person (s) responsible, due dates, and deliverables. Having a realistic Action Plan and monitoring the timeline and due dates are vital. Everyone must take deadlines seriously, make alterations in the plan, when necessary, and use the plan to guide their work.

Working virtually can also be challenging because of the lack of face time for members to get to know each other and see individual strengths. Understanding student strengths is key to positioning a virtual team for success. Students do not succeed just because members “pick” their own tasks. Students can pick tasks that are not their strengths. Students were more successful if they chose tasks based on their strengths and preferences. Following this practice, however, could make one question how much students learn in a virtual team project if students only take responsibility for tasks in which they already possess the skills.

Communication. Effective communication is essential in any class, but even more so in a virtual class. Communication seems to be the item most talked about as the source of the unsuccessful teams’ problems. In the successful teams, communication was effective and in the unsuccessful teams, communication was poor. Ironically, the failing virtual teams felt a solution to their problem would have been to meet more face-to-face, but successful virtual teams were successful without meeting face-to-face. These successful teams suggested the need to have more face-to-face time mainly to rehearse their presentation. Virtual communication makes it hard to read people and to learn content. Additionally, without interaction with other teams taking the same course, they missed out on the learning that can be derived from other groups.

Virtual teams must act like teams and not a collection of individuals. Yet, too often, teams divide the work and then work independently with minimal communication. Successful teams understood the value of working together and developed processes to ensure that the necessary interaction took place. By working in pairs, one team encouraged enhanced opportunities for communication and the ability to get feedback. Members in unsuccessful teams were much more isolated.

Goals (Guidelines/Grading Criteria). Communication between students and the teacher to understand all facets of the project is in itself a hurdle when working virtually. A successful project team must understand the project goal and be clear on the guidelines of the project and

the grading criteria. But according to both unsuccessful and successful teams, this information was not clearly understood prior to the day of the presentation. Without frequent teacher feedback, which is typically reduced in a virtual environment, teams can neglect expected guidelines and criteria. Without attention to this essential information, virtual teams are setting themselves up for failure—without even realizing it. Working virtually, without ongoing face-to-face interaction with the instructor puts more pressure on the team members to be sure they are clear on the rules of the game.

Leadership. Leadership is important to virtual team success, and avoiding a bad leader is vital. If there is no single leader, then the function must be distributed among the team members. The key role of the leader is to ensure that everyone understands the guidelines and criteria, follows the ground rules, and adheres to the Action Plan. The leader should avoid nagging and should not act unilaterally or dominate the group.

Recommendations

The purpose of this study was to investigate the “dark side” of project teams in an online environment and identify concrete actions that an instructor can take to improve team performance and satisfaction with the process. Based on the insights gained from this study, we offer the following recommendations organized by the five categories that emerged from the analysis.

Team Membership

Having the right people on a virtual project team is important for effective teamwork. Having the wrong people on the team is a source of ongoing challenges.

1. Send a notice prior to registration that describes course requirements and needed skill sets. Caution students to consider the time demands of the course.
2. Provide teams with strategies for dealing with members who do not take the project seriously. Promote individual accountability as well as team effort through the grading process. For example, a peer assessment that can impact student grades will allow students and the instructor to monitor individual contribution if the assessment is submitted periodically throughout the semester.
3. Ask students to include the role “devil’s advocate” in the team assignments. The person in this role will be responsible for promoting debate and discussion to encourage broader thinking and avoid groupthink.
4. Evaluate the value of the grade assigned to the project. Some laid back and procrastinating traits may be moderated if the project counts more toward the final grade. Individual effort may increase if the consequences are more significant.

Action Plan

1. Create a model Action Plan for students that includes examples of tasks, responsibilities, due dates and deliverables. Require submission of the completed Action Plan for grade points.

2. Schedule due dates throughout the project for drafts of deliverables to earn grade points. For example, research must be submitted by a specific date to earn points.
3. Provide the teams with a structured process that encourages individuals to pick tasks where they genuinely possess strengths and thus can provide the greatest contribution to the team. For example, team members can complete a questionnaire on background and strengths and discuss prior to making project assignments.

Communication

Clear steps must be established to support effective communication.

1. Require students to establish ground rules for communication at the beginning of the project. The ground rules should define the methods that will be used for communicating (e.g., email, phone, discussion board), the times and frequency for using each method, and expected response turnaround times. The team should also decide the consequences for members who violate ground rules (incorporate in the peer evaluation).
2. Provide teams with example guidelines for effective decision making.
3. Ask all team members to exchange telephone numbers and email addresses.
4. Ask teams to assign partners for each task to enhance accountability, interaction, and communication.

Goals (Guidelines/Grading Criteria)

Effective teamwork requires an understanding of the goals, guidelines, and criteria of the project. Teams tend to experience “information overload” because so much information is shared at the beginning of a project. Any confusion in what is expected by the instructor can lead to missed opportunities and unexpected negative outcomes for the team.

1. Post all project guidelines and grading criteria in a central location on the course Web site. At the beginning of the project, special effort should be made to ensure that all guidelines and criteria are distributed, discussed, and understood.
2. Use rubrics to communicate criteria for all graded deliverables.
3. Include the checkpoint “Review Guidelines and Criteria” as an item that occurs periodically on the Action Plan.

Leadership

Leadership facilitates effective teamwork and can be a critical factor for success for a project with a tight timeline and complex deliverables. The role of the leader is typically to help members adhere to guidelines and criteria, follow ground rules, and stick to the Action Plan.

1. Provide a process and suggested criteria for each team to help select the project leader.
2. Provide a suggested list of responsibilities for the team leader and make sure the team discusses and agrees on guidelines for productive leadership behaviors.
3. Arrange for individual coaching of each leader throughout the project.

Limitations of the Study

Several limitations should be noted in relation to the execution and application of this research. First, data was gathered from four teams: two teams in the Fall '05 semester and two teams in the Spring '06 semester. The application of the findings from this research is limited because of the small number of students interviewed (18). Gaining insight through additional semesters and thus more students would enhance learning and transferability. Next, only students taking virtual communications classes were studied. Possibly a different type of course, such as marketing, would have presented different outcomes. Also, virtual classes from only one university were studied. If data had been gathered from students at other universities, additional insights may have emerged.

Conclusion

This study points to the “dark side of online teams and highlights the difficulty that undergraduate students may have with a demanding project in an online environment. Without the face-to-face student interaction and contact with the instructor afforded by the traditional classroom environment, both the students and instructor have to work much harder (and smarter) to insure successful outcomes. The five problem areas that emerged from the student experiences provide a useful framework for planning interventions to improve both student learning and satisfaction.

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