

Virtual Teams in Business and Distance Education: Reflections from an MBA Class

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Abstract

As the business world becomes increasingly connected via Internet technologies, virtual teams continue to increase in number and importance. In addition, the emergence and growth of distance education also supports the increasing use of virtual teams. Both institutions of higher education and businesses are discovering the synergies associated with harnessing expertise from around the country or around the globe in these virtual teams for improved innovation and performance. However, a "build it and they will come" approach to virtual teams is not recommended. This paper explores the literature on virtual teams and examines a qualitative study on the experiences of MBA students working on business consulting projects via virtual teams. The findings from this study are evaluated against the literature to look for emerging trends.

1. Introduction

According to a 2012 study by SHRM (Society for Human Resource Management), almost half of all businesses surveyed were using virtual teams, while 66% of global businesses used them. The primary reasons for using these virtual teams was to access talent in different locations, promote collaboration and brainstorming for problems, decisions or issues. This demonstrates that as the global business climate becomes more competitive, businesses must adapt for continual innovation. In addition, colleges are seeing virtual teams as part of the growing movement in online education. The reality of our shrinking global world is that virtual teams are becoming more prevalent and necessary to harness the talent and expertise across a state, country or the world (Jones, 2015). While many businesses and colleges across the world are starting to embrace these virtual teams, their effectiveness depends on many elements including culture, structure, trust, relationships, and technologies. In addition, virtual team members may live and work in different time zones, speak different languages, and have vastly different cultures, assumptions and expectations (Klitmøller and Lauring, 2013).

Since a "build it and they will come" approach (from "Field of Dreams, 1989) will not usually work, organizations should understand the challenges and processes for successful virtual teams. This article explores the literature on the challenges and benefits of virtual teams in the workplace as well as in distance education. A qualitative study on the experiences of MBA students working on business consulting projects in virtual teams is then presented. The article concludes with reflections on the research compared to prior literature in this area.

2. Literature Review

2.1. Virtual Teams

A virtual team is usually described as a collection of people who are located in different areas, who often have different complementary skills and expertise, and who normally work together using different communication technologies. Virtual teams are often used for specific projects in companies, guided by a mission, vision and a common purpose.

The benefits of virtual teams include cost savings from the ability to communicate without the time and cost of travel. Another huge benefit is the ability to harness different talent and expertise across the world, bringing different perspectives and synergies to the team. According to Freifeld (2012), virtual teams have been shown to increase productivity anywhere from 10 – 43% where “virtual teams offer employers and employees flexibility, reduce time to market, often result in better work outcomes than conventional work teams, attract better talent, and increase knowledge sharing.” A 2009 survey by AON consulting (UNC, 2015) showed that “97 percent of respondents said their organizations either planned to increase virtual work and telework options or keep them at the same level” Another study by SHRM (UNC, 2015) demonstrated that “22 percent of organizations expect the number of their employees who work virtually to increase in the next 12 months. Forty-three percent of HR professionals responding to another SHRM poll predict that a larger proportion of their workforce will be telecommuting within the next five years.”

Another recent report by UNC (2015) summarized the major challenges in virtual teams. Results suggest that without face-to-face communication, it is difficult to build trust and relationships. Similarly, it is more difficult to communicate effectively without the nuances of face-to-face communication. Differences in culture, language, and time zones also contributed to these challenges. Another study by AIM Strategies (2010) found that 52% of global virtual team members tend to work beyond the normal day to accommodate different time zones. In addition, 65% believe that face-to-face communication is important to improve relationships and develop trust. Most (70%) believe that the use of virtual teams will continue to increase.

2.2. Cultural Challenges

Differences in language constitute a huge potential barrier in virtual teams. Not only do people speak different languages, but the nuances and idioms of different languages are difficult to overcome, especially without the body language and feedback of face-to-face communication as well as problems with shared meaning in translation. In addition, national culture exerts influences on perceptions of work time and expectations such as cultures where religious beliefs dictate expected times to work versus pray. In contrast, other cultures create expectations that people should be on-call to work whenever needed (Daim, 2012). Many virtual team members do not fully recognize the huge cultural differences in both language, norms and values until the team is formed and work processes begin which can create conflict and poor team performance (Dekker et al, 2008). Other differences in national culture include the differences in power-distance, collectivist vs. individualist, low or high context or communication style. Furthermore, organizations need to recognize that there are cultural differences between national cultures and organizational cultures in terms of work and time expectations, or levels of risk-taking or knowledge sharing. Even generational differences can cause problems in virtual teams in terms of language, type of media used, expectations of response time and expected involvement in the virtual teams (Daim, 2012, Symons, and Stenzel, 2007).

Most of these authors suggest that planned cultural training as well as actually sending team members to different countries to meet colleagues and learn about the different cultures was essential to the success of multicultural virtual teams. If cultural challenges can be overcome, these virtual teams can be very effective by providing different perspectives and synergies in responding to global markets with innovative strategies.

2.3. Leadership and Trust

Many studies on virtual teams have shown that trust and relationships are crucial to developing effective teams. Virtual teams tend to be more successful if they are supported by trust, an attitude of respect for each other's cultures and a willingness to learn. In addition, effective virtual team leadership is characterized by leaders who can communicate effectively, provide structure and feedback to the team and create an environment of trust and collaboration (Daim, 2012, Salminen-Karlsson, 2013, Symons, and Stenzel, 2007). In addition, because of the increased complexity of virtual teams, effective virtual team leaders must be able to handle even more complexity and diversity than traditional team leaders. Effective virtual team leadership tends to be associated with increased communication among the team, perceptions of caring, empathy, mentoring task and role clarity throughout the project. Team members prefer leaders who communicate promptly, frequently, directly, clearly and unambiguously. Good virtual team leaders also provided clear structure on goals, tasks and expectations with shared goals, mission and vision (Kayworth and Leidner, 2002, El-Sofany et al 2014).

Effective virtual team leaders also need to understand the personality traits of the team members. People who have personalities that are agreeable, poised, secure, calm, conscientious, careful, self-disciplined, flexible, creative, risk-taking and open to new experiences make better virtual team members. Similarly, leaders who have “high agreeableness, high conscientiousness, high openness to experience and high extraversion in order to implement virtual offices and manage a more flexible workforce consisting of remote and mobile workers (page 248)” are more effective with virtual teams (Politis and Politis, 2011).

2.4. Structure

Because people in virtual teams do not have the luxury of face-to-face communications, having structure in the teams becomes more important. Scheduling should be well planned, especially for global teams in different time zones. The work should be task-oriented with clearly defined roles within the team so that the members can work on interconnected tasks in a more efficient manner. With role and mission clarity, the team members are more involved, engaged and work more productively (Hertel et al, 2004, Massey et al., 2003).

2.5. Business Trends in Virtual Teams

According to Kock (2008) virtual environments produce an exclusive space that allows for the interaction between individuals who are physically separated by time and space. Virtual environments according to Kock also offer a “real-time” digital environment for business to transpire between groups and individuals that are also separated by time and space. Businesses then as stated previously are increasingly incorporating the use of virtual environments to facilitate virtual teams to accomplish business goals, complete projects, and create efficiencies related to time and costs.

Research backs this up. According to Zivick (2012) virtual teams have been transforming the way international ventures work because they are able to take advantage of all of the firm’s human resources regardless of their physical location. It no longer matters that your best programmer is in Boston Massachusetts when you need that expertise in Bangladesh. Virtual teams allows that expertise to be in Bangladesh as well. Another benefit of virtual teams according to Zivick is that organizations can assemble staff quickly as virtual teams across large geographic areas with the skills and knowledge needed to accomplish a specific task, or on-going project. Virtual teams have also already demonstrated their value to multi-national firms. For example, PricewaterhouseCoopers regularly uses virtual teams to work on client projects. These virtual teams are gathered using 45,000 employees located in 120 different countries. Hewlett-Packard also used virtual teams to save the company \$800,000 in reduced agreement costs in Argentina, and another \$200,000 in faster cycle times in Korea.

2.6. Technology Trends in Virtual Teams

Since virtual teams depend on information and communication technologies to function, understanding which technologies represent barriers or facilitators is also important. Using the right technologies can mean the success or failure of the virtual team initiative. Studies on virtual teams show that effective communication is difficult with technologies like email or threaded discussion forums where there is little or no context or nuances in the communication. Using video-conferencing technologies or 3-dimensional technologies with avatars like Second Life can help improve the communications within the team. They provide a richer means of communication and help to develop trust and relationships in the teams (Montoya, 2011, Rousseau et al., 2006).

Lin, Standing, and Liu (2008) found that an organization’s success in part is achieved by its ability to process information of suitable richness in order to reduce uncertainty and clarify equivocality. According to Lin et al, uncertainty implies the absence of information while equivocality implies ambiguity. A general understanding of basic business is that greater availability of information will reduce uncertainty whereas better quality of information can decrease equivocality.

This suggests that the virtual environment has to provide a high degree of “information richness” in order to meet the needs of both the virtual team and the organization employing virtual teams. Information richness as described by Daft and Wiginton (1979) is an idea that human languages vary in their ability to convey information. Language was broadly used here to encompass the many ways in which to transmit ideas, emotions, and concepts. Daft and Wiginton gave the examples of high variety languages and low variety languages. In high variety languages, many symbols exist unrestricted to communicate a wide range of ideas. Examples, include art, music, and painting. Low variety languages, such as math and statistics convey exact unequivocal meaning to its users.

The argument that Daft and Wiginton made was that high variety languages are appropriate for communicating topics that can be difficult, momentary, and social phenomena while low variety languages largely communicate well understood, unambiguous subjects.

What this suggests for virtual teams is that the virtual environment must be able to provide a high degree of information richness, both high variety language information and low variety language information. From an electronic perspective, this means that high variety information such as videos, music, pictures, need to be able to be seen, read, downloaded and uploaded in the virtual environment. This is also true of low variety information such as numbers, dates, and statistics. Both types of languages need to be easily and readily available to users of the virtual environment and team.

To accommodate this need, the virtual environment must be able to support content management so workers and virtual team members have access to the resources they need. The Content management systems would need to support low variety language information such as due dates, and calendars and it would need to support high variety language information such as knowledge management so virtual team workers can find the information they need to support decision making.

Google Apps is an example of technology that could work well for virtual teams. According to Herrick (2009) "Google Apps is a suite of web-based applications from Google composed of communication of productivity tools". (p. 55). These communication and collaboration tools include:

- Google Mail
- Google Calendar
- Google Talk
- Google Docs (now called Google Drive)
- Google Sites
- Google Video for education (Herrick, 2009).

These tools provided by Google have many benefits. One of the primary benefits according to Herrick (2009) is the per user storage. This allows for multiple users to store documents and other files such as spreadsheets, videos and pictures in a secured space accessed via the Internet. Another major benefit of using Google Apps in a business environment is the ability to function with the same level of effectiveness in a diverse mix of computing platforms such as Microsoft Windows, Macintosh OS, UNIX, Linux, Solaris, and mobile devices. This ability to operate in a diverse computing environment according to Herrick is because Google Apps is a completely web-based solution that computers and mobile devices access using the Internet.

Google Apps is not the only player in the game of virtual collaboration technologies. Several other applications exist to accommodate virtual teams and virtual collaboration. These tools accommodate everything from file sharing to real-time videoconferencing. Table 1 below outlines a few of these technologies.

Table 1

Collaboration	Project Management	File Sharing / Document Storage	Meeting Tools	Video & Audio Conferencing
Redbooth	MS Project	Dropbox	GotoMeeting	Cisco Telepresence
Huddle	Primavera	Sharepoint	WebEx	Polycom Telepresence
Blackboard Collaborate	Apollo	Box	Adobe Connect	Skype
Goplan	Wrike	Zoho Docs	iMeet	Join Me

2.7. Distance Education Trends in Virtual Teams

Of course businesses are not the only ones benefiting from the use of virtual teams. According to Williams, Duray, and Reddy (2006) distance education is now in widespread use across the United States and world thanks in large part to the improvements in telecommunication technologies. Additionally, Williams et al stated that the use of these technologies has enabled cooperative learning which enriches learning for all participants. This is an important note to make as student performance in project-based assignments have been indicators of future work performance.

For example, Cabrera, Colbeck, and Terenzini (2001) reported that “collaborative learning, grounded in the assumption that the process of engaging in social conversation about a specific task or problem enhances participants reflectiveness and therefore, their acquisition of knowledge.” (p. 334). This collaborative learning is necessary in preparing the students for the demands of the workplace.

It should also be noted that several research studies have used distance education as a medium for investigating the benefits of virtual teams. For example, in one study, Jarvenpaa and Leidner (1998) investigated the challenges of creating and maintaining trust in global virtual teams. The teams were made up of 350 master’s students from 28 different universities on every continent except Antarctica. This study found that trust in virtual teams initially developed quickly but this trust was found to be very fragile and temporal.

A similar study was done by Knoll and Jarvenpaa (1998) using graduate students put together in 12 virtual teams. These students were graduate students in various business programs. The students were challenged to “push the limits of electronic mail” by working together on unstructured tasks with people they would not meet in person. Knoll and Jarvenpaa found that the students were able to develop sufficient structure with electronic mail and were able to bond enough to reduce uncertainty and complete the tasks assigned to them.

In a third study involving the VTS in an academic setting, Johnson, Suriya, Yoon, Berrett, and LaFleur (2002) explored the community-building process of virtual teams as they form, establish norms, and address conflict. The results of the study found that virtual teams were able to collaborate effectively from a distance to accomplish their team tasks. One of the interesting findings in this research study involving students in an academic setting was that leadership within the virtual teams was shared among team members.

These and more studies conducted on the use of virtual teams in distance education has worked to enrich our understanding to most effectively work in virtual teams. Distance education classes by their very nature provide ample opportunities to learn and develop best practices for virtual team effectiveness.

3.0 Method

3.1. Sample and Procedures

Sample: The study participants included 25 MBA students in a required core marketing- MIS class. The class was structured to present concepts in a hybrid format with live classes that were recorded and archived. There were about 6-8 students who mostly attended the live classes with the remaining 17-19 students who mostly participated in the class as online distance students. The students represented a diverse group in terms of age, gender, nationality and expertise. The age range went from early 20’s to late 40’s with 9 women and 16 men. Their backgrounds and expertise included engineering, business, sciences, arts and humanities. Each team theoretically had one person who attended the live lectures and several people who were online distance students. Thus, each team was primarily virtual in nature, though some teams who had local people were able to meet face-to-face. Some of the clients were local, but others were located in different parts of the state or in another state. Therefore, the clients were primarily virtual as well.

Procedures: Balanced teams were created based on expertise, gender, age and background. Each team worked with a business to develop a strategic MIS and marketing plan. While the client specified some of their goals, the team worked primarily within the structure of the project in order to apply and learn the major concepts. The following is a summary of the consulting project:

SWOT analysis: a comprehensive analysis of the client’s company as well as extensive research on the industry, the major competitors, the target markets, and the economic and technological factors that may play a substantial role in this industry or for the client. The SWOT analysis was used for both parts of the consulting project: MIS and marketing.

In the consulting project, the teams worked on the following:

MIS: The teams examined/analyzed the client’s company; their existing information systems and technologies (or lack of) Based on the SWOT, they identified a major problem or opportunity faced by the client. Based on the knowledge gained in the class, the teams made specific recommendations on which information systems and technologies would cost-effectively and feasibly solve the problem and improve their competitive position in terms of cost, time, operational efficiency and customer relations.

Marketing: As strategic marketing consultants, the teams used the SWOT & target market analysis to identify a major problem or opportunity for their client and researched the most feasible target market to focus on. They then developed a thorough, comprehensive marketing strategy to help their client create or maintain a competitive advantage in their industry.

Deliverables: The class was structured so that each consulting team worked on specific tasks that resulted in unique deliverables that were graded and sent to the clients. The teams used technologies including email, Google drive, Google Hangout and/or Skype. They also had access to Blackboard, a course management system that contained the course content, archived video lectures and discussion forums.

The virtual teams worked together intensively for about 14 weeks in a semester. During the final 2 weeks, the discussion forum focused exclusively on their experiences in the virtual teams. Each person wrote a reflection piece and was also required to respond to at least three other people's reflections, resulting in some very interesting and insightful discussions and recommendations.

4.0 Results

Table 2 shows a summary of the major discussion topics from the 2-week discussion forum. There were approximately 32 pages of discussions, which reflected the thoughtful evaluation of the pros and cons of working in a virtual team. A summary of major comments follows the table.

Table 2: Trends and Patterns Emerging from the Reflections on Experiences in the Virtual Teams

Reflections	No. of times discussed
Email	51
Using Google apps to help with the virtual teams (Google docs, drive, hangout)	45
Experiences/ experiential learning	38
Trust, reliability in virtual teams,, developing good relationships	36
Using other technologies to help with the virtual teams (email, Blackboard, video-conferencing, chat, etc.) Other notes regarding technology: <ul style="list-style-type: none"> User friendliness of the technologies: (also seen as barrier to virtual team collaboration and effectiveness when they are not user friendly) Synchronous vs. asynchronous communication: Set deadlines, specific dates/times to communicate, requirement to check email and other platforms regularly; set ground rules for interacting, clear goals, clear roles Problems with quality of the technologies (free ones) 	35
Collaboration	34
Leadership in the virtual teams	31
Challenges in virtual teams	30
Need for face-to-face meeting, orientation at beginning of course	30
Scheduling/structure of teams, projects, roles. This included <ul style="list-style-type: none"> Synchronous vs. asynchronous communication: Set deadlines, specific dates/times to communicate, requirement to check email and other platforms regularly; set ground rules for interacting, clear goals, clear roles. Expectations: Manage them, establish ground rules, etc. 	27
Characteristics needed for virtual team members: self-motivated, communicate well, task/goal-oriented, being organized	15
Other lessons learned: <ul style="list-style-type: none"> Helpful to have Retrospectives/ lessons learned / feedback during project Value of different perspectives great for virtual teams Establishing a supportive, collaborative culture important 	

A few comments that demonstrate the value as well as the challenges of working in a virtual team are shown here.

Summary of major comments by the MBA students:**Challenges:**

“The major challenge in virtual teams is difficulty in sharing of tacit knowledge. I think meeting face-to-face and working as a team is better and convenient than virtual teamwork.”

“More advanced tools can make collaboration much easier but it is also very much dependent on the team member’s level of experience and technical knowledge, if the technology is too advanced to the point where some team members cannot figure out how to use it, then the technology actually becomes a hindrance and time waster rather than simpler technology.”

“A key point in the article for me was related to the team culture where everyone should be involved in “empowering team members, promoting freedom of dialogue, avoiding bureaucracy and persuading learning and application of newer skills and ideas” for the best virtual team experience and results.”

“While we did establish a team contract (and that was very helpful in the beginning), there were still issues which needed to be ironed out later. We were getting better towards the end of the semester and I know we have learned a lot, but especially being forced to interact online due to the “mixed” nature of the class made things much more difficult. The contract was good but not having some of the “social” punishments at our disposal made things more difficult (for example, when a team member misses an in-person meetings the consequences are much more severe than when the meeting is an online one).

Which leads me to the second point — building trust. Once we had established a firm meeting time each week for Skype conversations, it was not nearly enough, and we only started to develop some kind of a relationship towards the end of the semester. Have we had the opportunity to meet in person (or meet more often) perhaps we would have been able to develop trust sooner, and our work could have been more effective.”

“It was extremely difficult the first week, when my team was responsible for, first, getting to know each other and figuring out how to work together, and, second, completing our first assignment. Even having communicated via email before the start of the semester did not really give us a chance to learn each other’s personalities. I think an orientation day would help this a lot—virtual members could join via Google Hangouts or Skype, and the class time could be mandatory attendance.”

“As far as the virtual team experience goes, it definitely had its challenges. Communication is difficult because everyone has different schedules and are available at different times. We found it easiest to choose a set time each Sunday to meet and that seemed to work for the most part. Also, we tried to stay active in team discussion boards by setting a rule to check the discussion board at least one each day. This ensures no one will miss anything. To add to that, keeping an active dialog allows for knowledge transfer and creation. Having Skype meetings and the discussion board allowed us to bounce ideas off of each other. This worked well with smaller assignments, but the larger ones, we were limited because we chose to split up the work and work more in silos. Given time constraints and our schedules, we felt this was the best way to complete large portions of work. If we all had the same schedule and could meet in person, I believe collaboration and creativity, thus knowledge transfer and creation, would have been better.”

“Writing down mutually agreed deadlines that were set in team meetings and having them accessible to everyone later was critical. For me personally, immediately jotting down the deadlines in my personal calendar was helpful, although I wish I had done it more. There have been more than few times that I misunderstood deadlines that were previously set.”

“It was difficult having team members coming from different educational backgrounds and having different expectations with each assignment, but we made it through. With our group, we found it difficult to communicate and meet virtually. We had used the wrong email addresses, difficulties with Google Hangout, and stressful schedules. However, once our group had started to meet personally at a set time every week, our efficiency had really picked up. We had also found that text messaging was an easier way to communicate to one another than via email. Had we began the semester meeting with each other in person first and providing the correct emails/phone numbers and really discussed the expectations of the project rather than being too shy to really talk about it, I believe our group would have been more efficient from the start. However, from the struggles we went through, we feel a real sense of accomplishment for completing the project.”

“Some of the qualities that team members need to possess in order to work effectively in a virtual team. Some of those qualities include the ability to work independently without much external control or structure, strong result-orientation, and the ability to communicate clearly, constructively, and positively.”

“I think we were all surprised with the difficulty associated with communicating virtually. During virtual meetings, it is hard to pick up on body language and making decisions was more difficult than it would have been in face-to-face meetings. Furthermore, technology proved to be inconsistent and difficult to work with.”

“One thing I have noticed looking back at email threads is a lot of non-essential information, which should have been limited in our team contract. We should have implemented a rule that specified the need for categorized email threads and forbade getting off subject within the threads. For example—one thread could be: “SWOT Analysis”, another could be “Meeting Schedules and Timing”, a third could be “Misc. Concerns”. Organization is key.”

“I agree that face-to-face communication is very important. The article discusses the importance of using technology to simulate face-to face interaction, however, our group found that communication through Google Hangouts proved to be difficult and was certainly no substitution for true face-to-face communication.”

“Trust is a big deal, to be able to rely on your teammate and know that everyone is going to meet the agreed upon deadline is very important and hard to establish when you haven’t been able to meet and build a relationship and understanding of your partners. A few recommendations the article gives to fix these problems: set clear agendas, ban multi-tasking during meetings, and save time in a meeting for relationship building.”

“Meeting face-to-face would have allowed us to get that critical brainstorming that never really took place. I attribute this to us typically trying to wrap up the meetings quickly, and further not really establishing the personal relationships and comfort with one another where we are not as afraid to speak up or to suggest new ideas to another member. Since work was divided and conquered individually, it was often up to a single individual to generate the ideas and execute for a particular part of each assignment, whereas I feel that we all would have been able to contribute ideas to each section if we had the ability to meet in person.”

Benefits:

1. All communications are in writing without needing a designated scribe. A scribe may miss things that were said, but I could look back at my emails for any little detail I remember a teammate bringing up, perform a search, and there it is!
2. Our schedules did not need to always mesh. Although we did set up in-person/Google Hangouts/conference call meetings, we were able to accomplish much of our work with completely different schedules. It was great that I could read an email a team member sent three hours after they sent it without holding them up. (On this note, we were all pretty responsive and considerate about keeping frequent responses.)
3. Google Docs is a fantastic tool for group-created and edited documents. There was no need to proceed with edits in a sequential order and email the Docs back and forth.
4. Few to no personality conflicts. Communicating online means more direct, to-the-point conversations. In person, we are more likely to get off topic discussing personal subjects. However, we didn’t want to waste valuable email space with small talk. Meanwhile, our team was “strictly business” and did not face any personality conflicts that may have arose if we had more face-to-face contact.”

“Create a ‘virtual water cooler’” is the title of the paragraph and thank god we created a water cooler. Our team met every Thursday and sometimes on Tuesday. This is where we divided and started all of our work. Besides our first few hiccups with communication and deadlines, our group worked fairly well together. One lesson I learned that I would pass on to future students: “Ask questions, all the time”. Group members can never ask enough questions, and I learned that very early.”

“I like the point where author says that people tend to collaborate with others who are similar to them. So how to collaborate with those who are not similar? The answer to this is social media where everybody could put their ideas and communicate with each other. I also liked the point “ Train for collaboration” where author says that team collaboration can be done through training some skills like communication skills, emotional intelligence, teamwork, and networking. This is very true. With this project we surely learnt some of these skills.”

“These are four great keys to success with virtual teams. I also think they apply beyond virtual teams; leadership, effective decision making, building trust, and effective communication are keys in business in general, and when done right, help a business run in the most optimal way. I believe the most important ones for our group was communication and leadership. Both were tested throughout the semester. When communication was lacking, questions and concerns resulted. When a well-defined plan was not outlined, assignments were hard to pull together. On the other hand, when everyone stayed engaged and active in the team discussion board and meetings, deliverables were met sooner and quality was higher. When a clear process to complete work was laid out, deliverables were done in an organized, efficient way. That being said, the greater communication and leadership, the greater our team performed.”

“I think the biggest positive was that we were able to bring 5 different perspectives to an issue. Meeting just once a week virtually and in the interest of time keeping it to 30-60 minutes, we were forced to do critical thinking on our own and bring it to the table individually. I felt that this more often than not prevented detrimental group-think within our team.”

5.0 Discussion and Conclusions

The ability to connect people with complementary skills and expertise to work on projects or problems via computer technologies is widely used in the business world as well as in online education and growing in popularity. It is well understood that providing an easy way for people to communicate and collaborate regardless of geographic location or time provides a vehicle for innovation and competitive advantage. However, as the literature demonstrated, this is not a simple, easy process. Creating effective, productive virtual teams involves due diligence in preparation for cultural differences, complexities in communication, effective leadership, structure and technologies.

Lessons learned from the literature tell us that developing relationships and trust is crucial to effective virtual team effectiveness. Prior studies suggest that providing face-to-face interactions among the team members and even sending team members to meet and interact with their colleagues across the world is a necessary prerequisite to success in the team. Similarly, investment in training for differences in language and culture plays an important role in successful communication and collaboration within the team for sharing meaning, effective work and task completion. In addition, leading a virtual team is more complex than a normal work group. Therefore, leaders should receive extensive training in human resource management, project structure and management, and training for both high task and high people involvement including empathy, caring, feedback, and coaching/mentoring.

In terms of technologies, different technologies can play different roles in a virtual team. Prior studies show that multimedia such as video-conferencing and 3-D technologies provide a richer environment that more closely simulates face-to-face communication. As mentioned, this helps to build relationships and develop trust among the team members. However, with people working in different time zones, asynchronous technologies such as threaded discussion forums, email, and collaborative platforms like Google Drive can augment the more interactive technologies.

What did the MBA students have to say about their virtual team experiences? Perhaps the greatest impact was the recognition that it was very difficult to develop a relationship and trust with their team members in a virtual environment. Communication was similarly difficult and there was a long formation time in the team development process. Many of the MBA students commented that it would have been very beneficial to bring all of the teams together for a face-to-face orientation, team-building day, which would have greatly facilitated the relationship and trust building process. This would have made the virtual teams much more effective much more quickly in terms of communication and productivity. Therefore, trust and communication were probably the most important factors in the virtual teams.

In addition, they expressed the need for better expectations of the virtual team process, the roles, responsibilities, tasks and structure of the team. While the first requirement for each team was to create a team contract, it was not detailed enough to help with the complexities of the virtual team. The team contract spelled out rules for things like expectations of quality of work, attendance, participation, and some roles like team leader, facilitator, secretary and communicator. However, many of the class members expressed the need for greater clarity and detail in the roles and responsibilities and communication channels required.

For example, the team contract should specify that each team member would agree to meet via Skype or Google Hangout every Wednesday evening from 6- 8 pm and have their section of the specific deliverable downloaded to the appropriate Google Drive folder by a certain date and review the other sections by a certain date. Penalties for failure to adhere to team contract rules should also be spelled out. Several students mentioned the value of having a team leader who could focus on assigning tasks, communicating with the team and acting as a focal point for the consulting project.

In terms of technologies, many of the MBA students had not used technologies like Google Drive or Hangout, so there was a somewhat steep learning curve for many. In addition, there was a learning curve for technologies like the “Blackboard” course management system. Some of the technologies were user friendly; others were not. Some technologies worked well and were reliable; others were not. Therefore, a lesson learned in this experience was that it would have been worthwhile to have high quality, user-friendly technologies that were consistent and reliable. A dedicated technology training exercise may also have been helpful.

In conclusion, the experience of these MBA student working in virtual teams on consulting projects did mirror the literature. There were few cultural differences except for some generational differences in comfort level with different technologies and methods of communicating, but there as well as the development of trust and relationships happened over time. The first third of the semester was rough with people learning the technologies and learning about each other. However, by the end of the semester, with share goals and a shared mission of helping their client, all of the teams overcame the challenges and obstacles presented in these virtual teams. Time and a shared vision helped them to develop the relationships, trust and competencies needed to accomplish their mission.

6.0 Study Limitations and Future Research

This study was exploratory in nature. Therefore, while we can see patterns emerging in terms of models for effective virtual team performance, more quantitative studies should be done to validate these trends. In addition, this study was conducted in an academic environment. It would be useful to conduct a similar study in different business environments, from stable to more dynamic industries.

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