VIRTUAL TEAMWORK IN AN ONLINE ENVIRONMENT

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ABSTRACT

A literature review was conducted to determine the importance of teamwork in an online educational environment and to understand the differences between online team work and that of the face-to-face environment. Although tools are available to enable effective online communication for teams, when to implement and how to implement these tools are imperative for competent communication using technology. Therefore, online instructors must understand and implement appropriate techniques for online collaborative teamwork versus face-to-face techniques.

Keywords: Virtual, teams, communication, online education, telecommunication

INTRODUCTION

Many of today’s educational institutions are in transition [17]. Tight resources and mounting costs are demanding changes in higher education. Many universities are responding to these changes by using the Internet to deliver courses at a distance. A number of instructors have the impression that only minor changes need to be made to campus classes for online delivery [4]. Online teaching, however, is very different from teaching in a face-to-face classroom. Because students don’t learn from technology itself, Cyres [4] emphasizes the importance of training the instructors for quality online programs. The instructor must be trained to be a competent communicator using technology.

In addition to instructors understanding the differences between online courses and face-to-face courses, the students’ points of view also need to be considered. Because telecommunication tools are being used to support multiple forms of learner-learner and learner-teacher interactions, Anderson and Garrison [as cited in 6] suggest the concept of support, proficiency, and independence must be expanded to include learners supporting one another. Virtual collaboration and teamwork may be useful in addressing this issue.

Teamwork and Virtual Teams

Teamwork is a form of collaboration. Michael Schrage [19] explains that the task before collaborators of all kinds is to have a shared and understood goal. This goal needs to be significant enough that the demands are too much for an individual person. Instead, each person must be drawn into collaboration with the objective to be achieved. Each person must be competent in his/her role resulting in mutual respect, tolerance, and trust as a foundation of collaboration. McMillan and Chavis [15] agree with Schrage in that members of a team need to have a feeling of belonging, that the members matter to one another, and these members’ needs will be met because of the commitment of the entire team.
Duarte and Snyder [5] describe a virtual team as a team that operates without physical limitations of space, distance, and organizational boundaries. In addition, these authors list seven critical success factors for virtual teams as: technology, human resource policies, training and development for team leaders and team members, standard organizational and team process, organizational culture, leadership and leader/member competencies.

Organizational leaders view networks of teams rather than individual hierarchies as the most appropriate organizational structure in today’s turbulent business environment [9]. However, the key to successful teams is to prevent organizing typical non-team-based work groups that are characterized by individual leadership, individual accountability, and individual work products that together generate a group output. Instead integrated teams should share leadership, individual as well as mutual accountabilities, and unified collective work products.

Heufeld and Haggerty [9] suggest that because organizations are identifying teams as a significant work structure and linking them to the success of individual projects, the department, and even the overall organization; educational systems should prepare individuals who are capable of performing effectively in teams. Heufeld and Haggerty agree with Schrage by saying careful preparation is necessary to ensure deep and meaningful interaction is taking place among the individuals. The learner’s role is to enthusiastically engage and be engaged by the learning environment while participating in this collaboration. Active learning is best embedded in the process of articulation and reflection that emerge from the learner’s interaction with the material, their peers, and the instructor in a naturalistic setting.

Mantyla [13] contends that the vital role of interactivity and communication is essential in any format. The team members need to be actively engaged in the learning process in order to help maximize their understanding and real-world application of the project being offered.

According to Schrage [20], continual communication is not required by team members. However, a strong focus on creating a rhythm, a tempo, and a flow of communication is necessary to prevent the group from interrupting one another while assuring business is progressing at a proper pace. Schrage [19] also argues that a physical presence is not necessary, but that a shared space is necessary. The shared space is the medium that team members use to share their ideas. The medium should allow for manipulation and iteration. Examples for an online shared space include e-mail, Web page/Web site, virtual prototype, and virtual model.

From a virtual point of view, the basic theory of using integrated teams must be applied. This integration can be delivered using a variety of formats including synchronous and asynchronous, moderated and un-moderated, or one group and small sub-groups [16]. Additionally, chat sessions, Video Conferencing, ICQ, or Instant Messaging services can be utilized for any size group as real-time activities [16].

Although the tools to create an electronic learning environment are necessary, the more important issue is that the students have a place to gather and learn together [1]. Since virtual teams are dependent on team interaction, the success and failure is based on human factors such as trust, group dynamics, leadership, and competencies. This unique process of a virtual team fosters social interdependence [10]. Trust is necessary and can be achieved by overcoming social
conflict such as willingness to participate, lack of planning, or individual disagreements. To overcome these social issues, critical success factors need to be identified.

Cabana and Duncan [3] suggest planning and design are critical to virtual team success. These authors identify five elements or best practices which are particularly important to the successful virtual team as: (a) organizational design referring to the overall direction the team will take, (b) job design as a profile of what team members are expected to do in their work, (c) interaction with stakeholders and not working as in dependants thereby damaging the intension of the team, (d) coordinating work through technology, and (e) reentry back into class or to the organization when the project is completed.

West and Luetkehans [21] have listed ten tips for virtual teams under three categories. The first category is tips for a team leader to facilitate motivation and efficacy by helping team members manage “cyberstress” by helping them feel connected to the facilitator and other team members and to plan frequent e-mail prompts to help team members overcome procrastination. The second category is tips for facilitating problem-solving by providing a variety of tools to support the different phases of problem solving and assist team members when they struggle with achieving consensus. The third category is facilitating knowledge construction through topical discussion using a threaded discussion (asynchronous) tool and by encourages elaboration through questioning and hypertext linking.

In broad categories, the literature promotes planning and organization for successful implementation of virtual teams in an online environment. Facilitators and team members alike need to be trained for this environment. Finally, the focus of virtual projects should be on the participants achieving the goal of the project and not on the technology used to communicate.

**Tools for Virtual Teams**

E-mail is the most commonly used application tool on the Internet. E-mail can be an effective tool for the student of a virtual group to transmit information as well as for team support [7]. Haywood [8] suggests that virtual teams decide on a team name for e-mail communication. In addition, she recommends identifying the message by priority such as “read NOW, read today, read this week, and read at your leisure.” This process could be carried one step further by including the letter “R” after the priority status to request a reply to the sender.

Bulletin boards or threaded discussion groups are asynchronous tools for discussion in a common area. The discussion can be accessed by all team members and referred back to at a later date. Because the teammate has more time to prepare the discussion posting, many times the discussion is more scholarly than that of e-mail or casual conversation [7]. The key to successful asynchronous discussion is interaction between students and prompt feedback from the instructor [18]. Interaction between learners allows for more growth from others’ personal experiences. Prompt feedback from the instructor shows an interest on his/her behalf and also reassures the learners in building their confidence.

Real-time Discussion most closely models real-life discussions [7]. Examples of real-time discussion include chat, teleconferencing, and conferencing software. Chat allows for one or
more people to speak to each other easily. Small group meetings have benefited from the chat through increased motivation on behalf of the team members. Chat software varies from text only to text and audio based [11]. Examples of commonly used chat software include NetMeeting, ICQ, Roger Wilco, PalTalk, and Stuffincommon. The disadvantage is that real-time discussion is not time and cyber-place independent

Teleconferencing is a very cost effective means for meetings with virtual team members [8]. Haywood suggests a face-to-face kick off meeting if possible, and then follow up with teleconferencing. Unlike video conferencing, teleconferencing provides the participants with very few facilities for building physical, situational, or social relationships. When organizing a teleconference, an agenda should be distributed. The call should begin with introductions and brief backgrounds. Finally, everyone should agree on the situational context before beginning to address it.

Video conferencing has actually been around since the early 1960’s when AT&T introduced the Picturephone [8]. Conferencing software allows for text, audio, and video. Other features include document file transfer and white board accessibility [7]. Haywood suggests reserving video conferencing for team meetings that will be conducted on a regular basis rather than for a one-time meeting or sporadic meetings. In the case of one-time or sporadic meetings, teleconferencing can be used. In the case of long-term virtual teamwork, video conferencing can be helpful in establishing shared physical context. However, it is important that the team members understand how the technology affects shared physical relationships. Some potential problems to be aware of include window size, window presence, window placement, confusion over which windows are public and which are private, camera angle, and unseen participants. These issues should be discussed during the training session.

A team may consider creating and using a web-site. Haywood [8] suggests each team member to have a personal web page that links back to a department or team web page. Each member could include contact information, working hours, tools and applications being used, and an updated weekly or monthly status report. This way each member can keep the group apprised to the progress being made.

Although hardware, software, and their tools are important considerations, Schrage [19] points out that such technology is obsolete in 18 months anyway. Instead, technology should be a medium of support to allow interaction with people. Issues such as (a) how to facilitate a meeting asynchronously or in real time on the Internet or intranet, and (b) when the network is best used for information exchange, coordination, or collaboration should be considered because it can be different for each activity.

Computer use and technology support will vary depending on the learning strategies and activities [12]. Equipment and infrastructure requirements must be considered for the audience in online education and group work alike. Additionally, equipment and infrastructure for online group work should be convenient for user access.
Challenges of Virtual Teams

First, some of the differences between face-to-face delivery and online delivery must be addressed. Mantyla [13] suggests that the following are important differences both faculty and learners should be aware of: (a) not being in the same physical location as the instructor, (b) not having the opportunity to network with peers for on-site collaboration, (c) having to use technology to complete the learning-interactive process, (d) often being unsure about how to interact, (e) not being sure what the instructor expects, (f) not knowing how to ask questions (and avoid feeling “stupid” in front of peers), and (g) being unsure about how to clarify learning content [13].

Next, understanding how teamwork supports and encourages knowledge acquisition is also important to understand. It creates a sense of excitement about learning together and renews the passion involved with exploring new realms in education [15]. Teamwork develops a sense of chemistry and synergy that creates an atmosphere of excitement and passion toward learning and working together. The outcome of knowledge acquired and shared is far greater than what would be generated independently or individually.

Team members need to be very aware of when they are starting to lose site of the project or when they do not comprehend some part of the project and be willing to ask for clarification [2]. To overcome these obstacles, in the online environment team members must be willing to communicate back and forth using online tools rather than speaking verbally back and forth to get their questions answered. The virtual team members will have to know how to specifically articulate the online question for the recipient to fully understand the question if they are to receive a useful answer.

Overcoming Challenges

In a study of literature and review of curriculum at 14 universities, Mckendall [14] found a lack of focus on teams within the curriculum. A large number of courses required group work, but no course focused on how to perform effective group work. McKendall suggests that the professor needs to spend more time helping the students understand how good teams function and how to manage group problems that may arise.

Mantyla [13] has listed several suggestions for overcoming the challenges of participating in a virtual team in the online environment: (a) the individual team members and their different learning styles should be considered when setting up the project, (b) the instructions should be clear and easy for team members to understand, (c) the team members should understand their role or roles, (d) team expectations should be discussed and clear to each member, (e) the team should understand how the project is beneficial to all stakeholders, and (f) the instructor should inform the team on how they can get help for questions and support as needed. In addition, this group should be prepared for the virtual environment by having a means for voicing issues and concerns. All stakeholders should be trained on the technology and the environment provided. Support tools and procedures should also be available for this virtual environment.
CONCLUSION

After reviewing current literature in virtual work environments, teamwork, and finally virtual teams, it is evident that there is great demand for further education on how to effectively create a virtual team environment. It has been proven that face-to-face education and on-site work environments differ greatly from the virtual environment. Understanding the differences is a major contributor to virtual team success. Also, virtual team work is still a relatively new concept. However, many lessons have been learned. Often organizations and faculty alike have attempted to implement virtual teams without understanding the differences. The persons responsible for educating and training for an effective virtual team environment include educators and business managers alike. The educators should be teaching the concept of virtual teams to the workers, and managers need continued education to understand how to implement this virtual team strategy.

REFERENCES


