

Team and Community Building Online: Using Technology to Enhance the Student Experience

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Abstract: With the ongoing move toward blended and team-based learning in post secondary education, there is a need for greater understanding of how to support virtual teams in their work and as they build learning communities online. This paper outlines a study that examined the student experience in an online module which used various virtual collaboration tools to facilitate effective collaboration in team-based course activities and foster the development of a learning community. Likert scale and open-ended questions were used to collect students' perceptions of their experience in the online module. In addition, team reflections on the use of assigned virtual collaboration tools were analyzed. While positive comments were received about activities that gave participants the ability to connect with each other in real time and asynchronously, it was clear that anonymous participation in module activities was not highly valued.

Introduction

In addition to industry specific skills, employers identify problem solving, applied learning, and team work as key to success for graduates of post-secondary institutions (Johnson et al., 2016). With this in mind, and noting the continued growth in online learning (Canadian Virtual University, 2012; Kanuka, 2008; White, Warren, Faughnan, & Manton, 2010), there are opportunities to leverage technological innovations to offer greater opportunities for individuals to work on teams (Gilson, Maynard, Jones Young, Vartiainen, & Hakonen, 2015). As a result, institutions of higher education are in an excellent position to provide students with experiences that can aid in their growth as effective collaborators in team-based activities.

In 2006, a two-week online community-building module was launched for undergraduate business students at a small university in Western Canada. After offering the module for several years, we capitalized on our understanding of the activities that aid learning community development and created an updated version of the module, called *The Link*, for graduate students in the School of Education and Technology. From its inception, one of the purposes of *The Link* was to begin the process of building an inclusive team-based learning environment where students have an understanding of each other's unique strengths, with the additional benefit that they will be better able to establish ongoing connections with others throughout the time spent in the program and beyond. In the context of the blended programs at the university, which require significant team-based learning, tools that support virtual team collaboration are required.

The context for this study is a two-year graduate level program that was offered in two formats, one was fully online, the other used a blended delivery format, starting with a two-week on-campus residency. *The Link* was initially developed for this graduate program in 2014 and is now in its third annual offering. After the first two courses, both groups of students studied together for the remainder of the program. Part of the residency experience involved learning about the university academic supports, participating in community-building activities, and completing two courses. The fully online students participate in *The Link*, which was initially designed to begin the learning community development process and to cover the same information about academic support and as the on-campus residency. The intent was that the experience in *The Link* provide a common foundation upon which students could build a larger, cohesive cohort when they join with the blended group for the third course in the program. Therefore, the online activities in *The Link* were planned to achieve similar outcomes as those experienced by the students in the blended format of the program.

The Link provided students with skills and tools to begin building an inclusive team-based learning environment where students support each other and have an understanding of each other's unique contributions to the overall learning of the cohort. To achieve this desired outcome, the activities were designed with the purpose of assisting in the development of a learning community, as well as providing students with the opportunity to work on teams. The team activity was designed specifically to begin virtual teamwork in a non-assessed and supported manner. Below are further details about these activities. In addition, video clips, voice-over PowerPoints, synchronous sessions and asynchronous discussion forums were designed to provide curated information on a variety of university academic services and program supports.

Activity: Getting to Know you

1. Make an introductory video using a tool of your choice (note: additional guidance was provided for what should be included in the video).
2. "Let's Talk" discussion forum – view your colleagues' videos and reply to several of them with an observation or question.
3. "Who are we as a cohort" discussion – summarize your reaction and think about what you have learned about your colleagues. What are the similarities and differences you observed? What are likely to be our strengths as a group? Post a brief paragraph answering "who are we as a cohort".

Activity: Annotated Virtual Team Resources Bibliography

1. In your teams, please create an annotated bibliography of your team's top five resources on working in virtual teams.
2. Resources that you identify are to be process-based resources – ways in which you can increase your own personal and team effectiveness working in virtual teams. They should come from peer reviewed sources.
3. Each team has been assigned a virtual collaboration tool to use to complete this activity: Asana; Basecamp; Bitrix 24; Samepage.

Activity: Building your Community: A Timeline Activity

1. In the Timeline I Padlet, post one to three sticky notes addressing the following questions: (i) In your sector, what have been the predominant technology changes over the past 20 years?; (ii) In your sector what have been the predominant learning and education models used over the past 20 years?
2. Once you've posted to Timeline I, post one to three sticky notes to the Timeline II Padlet addressing the following questions: (i) In your sector what do you see as the next "Big" technology in the next two years?; (ii) In your sector, what do you see as the next move in learning and education models in the next two years?

Methodology

A mixed-methods approach was used (Teddlie & Tashakkori, 2009) that involved an online survey, which included a combination of Likert scale and open-ended questions. The five-point Likert scale questions focused on the various activities in *The Link* and the value that participants placed on each activity as it pertained to their understanding of the university, the program, and the development of a learning community. The quantitative data was summarized using descriptive statistics.

Qualitative data were gathered through four open-ended questions in the online survey, as well as through team reflections on specific virtual collaboration tools, which were assigned for the annotated bibliography activity. The open-ended survey questions invited students to elaborate on their experiences and comment on aspects of *The Link* that they found effective as they furthered their understanding of the university, program, and methods to build a learning community. The team reflections focused on the usefulness and on the challenges of using the assigned virtual collaboration tool. Qualitative data analysis was conducted with six themes being determined by two individuals performing an independent examination of the data set.

Findings

Of the 16 students taking part in *The Link* 2016, 10 responses were received, with 9 participants completing the survey, providing a participation rate of 56%. Of the 9 who completed the survey, 2 were female and 7 were male. The age range was 25 to 56 and, unlike previous years, all participants were Canadian.

Quantitative Data Analysis

Participants strongly agreed (78%) or agreed (22%) that two of the activities, Getting to Know You and the Annotated Virtual Team Resources Bibliography, contributed to building a learning community. Ironically however, Building Your Community: A Timeline Activity, had a wider distribution of responses with 33% strongly agreeing, 45% agreeing, 11% disagreeing, and 11% being undecided. These results were verified by the qualitative data, which provided a deeper understanding of why students appreciated attributes of *The Link*, as well as insights on the challenges they found when taking part in the activities.

Qualitative Data Analysis – The Link Activities

The following six themes emerged from analysis of the qualitative data: (1) Connection; (2) Practice; (3) Communication; (4) Tools; (5) Layout & Functionality, and, (6) Timing. These support the quantitative findings outlined above and are discussed briefly below.

Connection

Participants spoke of the value of the synchronous sessions in helping them to connect with others in their program, “the Collaborate sessions (synch) as well as the ‘Getting to Know You’ forum were both fantastic activities that helped to shape the online learning community as a ‘community of learners’”. Students also highlighted the virtual team activity specifically, “the AB activity helped to pull our team together and get to work with a small, collaborative activity. I was grateful for the opportunity to get to know some of my peers in the program”, and *The Link* more generally, as contributing to the building of an online learning community, “I feel very positive about moving forward within the online learning community because of *The Link*”. While participants appreciated the ability to connect with their peers, there were differences in how the activities were received, “the video introductions were a great idea for an icebreaker activity. The Padlet activity not so much as all the postings were ‘anonymous’”.

Practice

Within this theme, participants noted that having fixed activities in a short time frame provided them with opportunities to connect and practice working collaboratively, “forcing us to jump into the deep end ... was an excellent way to get us started!”. Students focussed specifically on the annotated bibliography stating that, “as a team [it] was a great way to jump right in and start learning about working collaboratively with my peers (as well as getting to know each other!)”.

Communications

The focus of this theme was on the value of the synchronous experiences in *The Link*, “the Collaborate session were by far the most helpful components of the orientation”, as well as a desire for ongoing “quicker than email” methods for connecting with members of the cohort, “I wish there was a way for us to send text messages right away to each other”.

Tools

Participants spoke of the value of the scaffolding created between using tools in week one of *The Link* and then, in the second week, objectively assessing the tools they had used. “the team assignment of reviewing the tool helped us to take an objective look at the benefits and shortcomings of the tool”. They also found that having the opportunity to use videos provided them with an opportunity to build relationships, “having to create the videos and replying to each other helped a lot in getting to know each other”.

Layout and Functionality

It was apparent that students were concerned with navigating the online platform. Some noted that they were confused as they worked to familiarize themselves with Moodle, the synchronous platform, and the other virtual tools required to participate in *The Link* activities. As one student said, “I was a bit confused about where to locate different communication tools, schedules and assignments. Working through the 2 weeks of *The Link* certainly helped but it did take some time”. Another participant expressed concern over the placement of activities, but offered a suggestion to address the issue, “I felt *The Link* a bit overwhelming to begin with and had difficulty locating some types of information. Maybe a chart, document or exercise in *The Link* navigation would be helpful to some of us who are a little more old school”. In addition, there was a desire for *The Link* and the associated Learning Management System to function and integrate with other online tools such as text messaging, calendar apps, and notifications, which are used in the daily work life of students, as highlighted by this participant, “it would be great if the schedule could be downloaded to Outlook so that it could appear in our calendar without retyping”.

Timing

Some participants discussed the need to have advanced warning so they could plan ahead, “I would have liked to have the Collaborate session schedule sooner to book them into my workday.... I could have accommodated with three weeks notice”, while others felt some pressure created by the volume of activities within the two-week timeframe, “a bit like drinking from a fire hose”. In addition, one student felt the same challenge initially, but adjusted as the module progressed, “it was a tight timeline to get started but once I adapted to the pace I am very excited to get going with the courses!”.

Qualitative Data - Virtual Collaboration Tools

A common theme identified by the participants was that the virtual tools identified and used in *The Link*, did not meet all of their expectations for an integrated suite of tools with synchronous and chat capability, “we made

use of the task tracking and file sharing features, whereas synchronous communications were managed separately”. In addition, students identified that the selection of virtual collaboration tool should consider the task required and the group size. In the context of an orientation module such as *The Link*, participants identified the time required to “ramp up” on a specific virtual tool as critical to being able to use it successfully to complete a task. With respect to the four virtual collaboration tools used, Basecamp and Samepage were identified by participants as being the most useful for the assigned tasks.

One interesting aspect to explore further is to what degree the self-identified benefits and challenges outlined in Table 1 are illustrative of the time spent exploring and examining the tool in order to complete the task. It is possible that there are some features of the tools may not have been discovered by the teams when they used them to complete the team activity. Table 1 illustrates the benefits and challenges of each tool used, as identified by participants.

	Asana	Basecamp	Britix 24	Samepage
Benefits	<ul style="list-style-type: none"> • Conversations and list functions useful when sharing documents • Assigned project tasks could be tracked • Best suited to face-to-face collaboration that requires online task tracking 	<ul style="list-style-type: none"> • User friendly • Easy to learn • Seamless chat, activity lists, document upload and scheduling 	<ul style="list-style-type: none"> • Start-up and creation of accounts moderate to easy • Incorporates many tools 	<ul style="list-style-type: none"> • Simple to use • Uses familiar tools (spreadsheets, Word docs etc.) • Allows for synchronous engagement • Engaging • Task oriented • Organizes all resources, time lines, project work, and communication on one "page"
Challenges	<ul style="list-style-type: none"> • Lacks video chat and instant messaging • No visual confirmation that others are typing • Default setting sends email alerts • No visual representation of task progress • Tasks could only be assigned to one individual 	<ul style="list-style-type: none"> • Login tedious if not using the Basecamp app • Could not see who was online • Check-in feature was not helpful • No group video/audio conferencing 	<ul style="list-style-type: none"> • Creation of account • Changing personal settings • Takes time to become familiar with use • Using for small teams is cumbersome 	<ul style="list-style-type: none"> • Project pages could become cluttered

Table 1: Identified Benefits and Challenges of Virtual Toolsets

Conclusions

Given the growing number of students who enroll in online courses, the expanded use of technology in the workplace, and the need for employees who have strong virtual team skills, there is an irrefutable need to understand the benefits and challenges associated with working in online teams. In this study, we examined how technology can be used to enhance the experiences of graduate students building learning communities online and working on teams.

This preliminary study indicated that, despite initial feelings of being overwhelmed, the community-building activities were effective, with the participants noting that they appreciated the ability to collaborate prior to the start of the for-credit portion of the program. The students also enjoyed working on the team assignment, finding it provided them with an opportunity to get to know each other by giving them motivation to work together; they noted that the activities were both enjoyable and informative. With regards to the team tools used, it was apparent that each tool had distinct benefits, but all had drawbacks which meant students were not able to use their assigned tools exclusively to complete the task they had been given.

Moving forward with our development of *The Link*, we plan to provide ample notice so that students can plan ahead, provide a smoother navigation of the Moodle site, and include information about time-zones to allow for more effective organization of team work. We are aware from our analysis of the data that we must continue to provide students with opportunities to meet each other online prior to the start of their program and incorporate activities that allow them to explore online team-building and community development. We expect that, as technology evolves, we will find more suitable tools, ideally ones that incorporate all the required elements of communication for students working in online teams including: instant messaging, scheduling features, document sharing, tracking, video/audio chat, visual confirmation that others are online, ease of use, activity lists, and smooth login.

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