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Holding Hands and Drying Tears: Effectiveness of Student Employees  
in Promoting a Successful LMS Implementation

Cary A. Johnson

A dissertation submitted to the faculty of  
Brigham Young University  
in partial fulfillment of the requirements for the degree of  
Doctor of Philosophy

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## ABSTRACT

### Holding Hands and Drying Tears: Effectiveness of Student Employees in Promoting a Successful LMS Implementation

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Doctor of Philosophy

Two-thirds of higher education institutions are either currently involved in the process of or will soon begin to review their learning management system strategy (Green, 2012). Transitioning from one LMS to another is an endeavor that utilizes the entire institution and requires a great deal of strategic planning and cooperation.

The literature described the involvement of instructional designers and technology support as key players in this transition process over a period of parallel time. When BYU transitioned from Blackboard to Learning Suite, a team of student employees managed the majority of the change. While there was very little time when Blackboard and Learning Suite ran in parallel, these employees provided support to faculty across the university. Data for this research included interviews with five faculty consultants who worked closely with faculty on the design of their courses and nine faculty members who used the student employees throughout the process along with survey data and the database kept to track interactions with the faculty members. Interview data were analyzed using a Spradley (1979) analysis. Descriptive statistics were used to analyze the survey and interaction data.

Major findings suggested that the student employees were the critical component for helping smooth the transition. They were used extensively by the faculty members and logged over 41,000 points of contact over a period one year and four months. The student employees provided side-by-side help to resolve faculty concerns and answer questions. This team added capacity and tool knowledge that supported both faculty members and the consultants.

Keywords: learning management system, content management system, implementation, transition, Blackboard

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## Chapter 1: Introduction

The Learning Management System (LMS) is a technology that some claim is “the most time-sensitive and widely-used faculty/student enterprise system for learning. Faculty and students use it daily” (Learning Management System Task Force Recommendation Accepted by Board of Regents, 2011, p. 1). Instructors use LMSs to manage the day-to-day learning experiences for students in their classes, including, but not limited to, sharing content, reporting student grades, displaying the course syllabus, creating discussion boards, exams and quizzes, and providing feedback on submitted assignments. Students mainly use the LMS to access content, view grades and instructor feedback, submit assignments, view the course syllabus, participate in online discussions, and take exams and quizzes. Coates, James, and Baldwin (2005) suggested that faculty also use an LMS to increase efficiency, hoping that students will learn more, fulfill student expectations that technology will be a part of their educational experience, and compete with online programs. These researchers state, “Clearly, there is something so seductive about LMS that, despite their complexities and risks, almost every university seems compelled to have one” (p. 23).

In a survey sent to 561 two- and four-year institutions across the United States in 2012, 99% reported having an LMS (Bichsel, 2012). Given the widespread use of the LMS, the question is whether or not it is making a difference in the university. Duke University suggested that there were several ways the LMS encouraged change at the institutional level. First, the LMS provided a space for saving resources and materials that could be shared from semester to semester. Second, it improved the course accessibility, making courses “visible, concrete, and public” with the course site “a tangible record of a course” (O’Brien, Campbell, & Earp, 2005, p. 122). Third, the LMS offered a centralized location for exploring and sharing innovative and

creative teaching and learning across the campus. This opened discussions across the university about how they could use the online technology to be innovative in their teaching. They also planned ways to address a number of needs across campus, all because they had the LMS. One example of a need they addressed was a change in program assessment at Duke because they had a common toolset and common language surrounding the tools within their LMS. They were able to plan for data collection and standardize the assessments across the entire program in order to collect data to inform program evaluation. In addition, they discovered that having the LMS allowed them to standardize their courses where multiple sections were taught and allowed them to maintain their courses from semester to semester, adding new materials each semester, while not having to reinvent the entire course. Because of the LMS, they discovered that their instructors began asking more pedagogical questions that impacted teaching and learning university-wide as well as informed policies at the university. In sum, the LMS opened a common dialogue among faculty for thinking about and sharing how they could use the technology to improve their teaching and at the same time, open up more hybrid and blended courses to capitalize on the strengths the LMS offers (O'Brien et al., 2005).

Despite the benefits of using an LMS, there are also some concerns. One is that web technology constantly changes. As each LMS has new releases and new versions, institutions face the decision of whether they should upgrade to the latest version of their current LMS or if they should switch LMSs entirely. Green, (2012) said, "[T]wo-thirds of this year's survey participants [Fall 2012] report that their campus is or will soon begin a review of the institutional LMS strategy, affirming the assessment that higher education can be a very volatile market for LMS providers" (p. 2). Some will upgrade to the latest version, which has its own challenges as there are often significant changes to the user interface and new tools that faculty must become

familiar with. If they change to an entirely new LMS, there is the issue of a different interface, as well as data migration, support, training, hardware configuration, and a host of other decisions and changes that may need to be made.

There are three major reasons that institutions change their LMS: cost, features, and vendor services (Clymer, 2012). With licensing, hosting, and supporting fees, the cost of the LMS increased quickly; hence institutions looked for a more cost-effective option, often leading to a decision to adopt a new LMS. The second reason Clymer reported was that each LMS and LMS upgrade offered distinctive features that could provide useful and powerful tools for enhancing the teaching and learning experience for faculty and students. When administrators select an LMS, they carefully consider the features used and requested by faculty and students and then try to find an LMS that fits their needs. The third reason provided by Clymer was the vendor services or the vendor relationship. Some vendors provided more training, support, and help documentation as well as a partnership for future development. Their customer service model could also affect how easy or difficult the vendor was to work with. While these are only three of the reasons why institutions change LMSs, they cover the main concerns for many institutions.

Because faculty have invested time and energy into building and perfecting their courses in the LMS, they are naturally alarmed when there is a change because they recognize the time commitment that will be necessary for learning how to use the new system and for migrating their courses (West, Waddoups, Kennedy, & Graham, 2007). Given the high likelihood that institutions will change systems, the question is how to make the transition the least painful and most effective for faculty and students.

When Brigham Young University (BYU) began its migration to a new LMS, we searched for research to guide us in the migration and transition process; however, we found that the literature was very limited to a few practitioner articles that focused on lessons learned. While the lessons learned were helpful, we often had unanswered questions regarding their processes and method because the articles were limited. There were very few published articles that included the research design. Because the implementation at BYU was different than most implementations described in the few publications available, this qualitative study was designed to understand the impact on the university of having a team of student employees lead the implementation rather than utilizing a team of full-time instructional designers as most other universities did.



## Chapter 2: Literature Review

There are many institutions that utilize an LMS to facilitate teaching and learning. Because LMSs are a web technology in a competitive market, they update and release new software versions relatively often, which means it is likely that most institutions will be changing to a new LMS or at least a new version of the same LMS every few years. This poses a great concern for faculty members who have to make the migration to the new LMS and to administrators as they support the migration.

To review the literature, I searched the following databases: ERIC, Education Full Text, PsychINFO, Social Science Collection, Academic Search Premier, and Google Scholar. The key words I searched for were *learning management system*, *course management system*, *LMS*, *CMS*, *implement\**, *deploy\**, *Blackboard*, *Canvas*, *Desire2Learn*, *Sakai*, *Moodle*, and *higher education*. The asterisks were wildcard characters to capture different forms of these root words. The criteria for articles that I included in the literature search indicated that the article must discuss the experience of an institution of higher education transitioning from one LMS to a new one. I began searching for journal articles, but found a limited number, so I expanded my criteria to also include conference proceedings.

Unfortunately, I found little published literature about the migration or transition experience from one LMS to another. What was available typically included recommendations for implementation based on insight and experience. Very few of the articles reviewed included the research design to inform the credibility and replicability of the findings. This study was initiated and includes a research design with many examples that can be used to inform readers of the lived experience of the participants.

In the following section, I will draw on this literature to share the documented practices for making the migration to a new LMS as smooth as possible. There are eight specific sections that will be addressed: making the LMS transition mission critical, creating a strategic plan, selecting the right LMS, creating a communication plan, adequately testing the system and gathering end-user feedback, training end users and creating certification program, building a support system for users, and migrating the data from the old LMS to the new LMS.

### **Making LMS Transition Mission Critical**

Because of the monumental task of transitioning from one LMS to another, institutions must consider many factors because this task potentially impacts every aspect of the institution either positively or negatively. The LMS transition needs to be viewed as a priority across the institution.

First and foremost, Scanlan and Holtzman (2009) recommended that administrators “recognize that [LMS] adoption is a mission-critical decision requiring broad-based change management strategy” (p. 1420). One of the benchmarks used at the University of Medicine and Dentistry of New Jersey was that everyone at the institution needed to recognize the importance of the selection and implementation of the new LMS. If the implementation is not perceived as the top priority, faculty members could become frustrated and lose trust in the administration, and ultimately, the students would suffer. Because no two LMSs are created equal, it takes time and effort for faculty members to migrate and modify their courses in the new LMS. Providing a strategic plan and resources to assist with the migration and support were recommended ways of making the change in LMS the “mission-critical” task that it should be to potentially lessen some of the pain (Dwyer, 2004; Scanlan & Holtzman, 2009).

It is also essential that administrators and key stakeholders within the institution understand the rationale for the transition. so they can create and communicate that vision to the rest of the institution. They must also be willing to allocate or provide the necessary resources to make the transition successful. This level of commitment can assist faculty members and students who are affected daily by the LMS to make the transition easier.

### **Creating a Strategic Plan**

The literature specified five major considerations when preparing for a change in an LMS. Institutions that implemented a plan changed the large-scale project into one that was more manageable for everyone involved.

**Use a top-down approach.** At Saint Anselm College, the administration played a critical role in the success of the adoption of Sakai (Li, 2010). Administrators took the lead in presenting and communicating the plan to key stakeholders from the very beginning of the project, which made the transition smoother for everyone and increased the likelihood of success because the end users, faculty and students, felt that they were informed with key information. Because the administrators took the lead, the rest of the faculty members followed. Charles Sturt University also converted to Sakai and reported that “the key to successful campus initiatives in technology-enhanced learning and distance education is the support of campus leaders” (Uys, 2010, p. 990). Administrators should lead the change effort to keep faculty members aware of the change and the progress of the change over time.

**Decide on a clear goal for the LMS.** It is essential that stakeholders understand the criteria for the LMS to meet the needs of the institution, which will inform the decisions that are made surrounding which LMS is adopted. As Royal Roads University (RRU) upgraded its Information Technology (IT) infrastructure, one subproject was to also upgrade the LMS for the

university. They had specific criteria to guide their selection and eventually chose Moodle “because the software is based on the constructivist theory of learning and fit RRU’s outcome-based learning models” (Chao, 2008, p. 47). At the Aristotle University of Thessalonica, the university was moving toward a blended learning model and needed an LMS to facilitate pre-face-to-face work along with face-to-face meeting follow up. With this in mind, they selected to use Moodle as well (Konstantinidis, Papadopoulos, Tsiatsos, & Demetriadis, 2011). Chao (2008) and Konstantinidis et al. (2011) argued that the selection committee should consider the goals they have for the LMS and understand the needs of the individual stakeholders who would use the LMS, including administrators, faculty, and students. They suggested that the committee should have a clear knowledge of what the LMSs they are considering can and cannot do, so the institution will get the most benefit out of the LMS they choose. Having clear goals will simplify the selection process and will help all individuals involved to understand which LMS will best meet the needs and goals of the institution.

**Set a timeline for selection, implementation, and training.** There are many tasks that must be accomplished through the implementation of an LMS, many which have dependencies on other aspects of the timeline. Creating a comprehensive timeline can capture the complexities of the tasks that must be completed and break them into more comprehensible components. This timeline should also capture a rollout strategy, including the time that both the new and the old systems will be running in parallel, and the time that the legacy system will be retired.

When Saint Anselm College transitioned to Sakai, one aspect of strategic planning that made a difference at the college was to create a public timeline for important events to take place (Li, 2010). This helped them break down the almost overwhelming process into more manageable tasks that were prioritized and carefully planned. A decision they made with regard

to the timeline was how long the old system and the new system would run in parallel. This was an important decision that affected the transition. Some institutions reported running in parallel for six months to one year to allow adequate time for faculty to learn the new system and to migrate their courses (Bexheti, Shehu, & Besimi, 2009; Dwyer, 2004; Muldoon, Tennent, & Tickle, 2010; Scanlan & Holtzman, 2009; Uys, 2010). University of South Alabama decided to transition over the course of three years (Khalsa et al., 2012). Eitzmann (2011) and Scanlan and Holtzman (2009) noted that if the timeline is too short, the faculty and students are the ones who suffer, so this must be a deliberate decision. Pierce College's Military Program used Blackboard CE8, and their contract was due for renewal. The state of Washington had started a search for a statewide LMS. They decided to use Instructure Canvas. Because of U. S. Army requirements, the timeline had to be shortened. This gave the Military Program one month to migrate courses and train faculty. At InstructureCon 2013, Johnson (2013) presented that there was "great effort and good humor by all" after one month (p. 10). This demonstrates that a rapid transition with little parallel time can be successful, given sufficient support and administration, but most institutions typically use both systems in parallel for a longer period of time.

Breaking the tasks into a clear timeline helps to focus the institution on the tasks that need to be done and the timeframe in which they must be done and provides for accountability of those tasks. Running the two systems in parallel for a period of time (six months to two years for most institutions) can provide a smoother transition where a select number of faculty are migrated at one time over the course of the transition.

**Create strategic plan for implementation and evaluation.** A general timeline can help move the project along, but that is not enough. It is also important to include the implementation and evaluation as elements of the timeline. Liu (2005) counseled that implementation planning

was key to the adoption and use of software in an organization. She noted that the plan should include how to strategically migrate and train all faculty, staff, and students and how to evaluate the experience. At Saint Anselm College, the committee tasked with the change of the LMS created a plan and identified evaluation success criteria. They discussed the project plan monthly, evaluated how the migration was going, and analyzed problems that had arisen. They then made modifications to the project plan moving forward to assure that the problems were addressed (Li, 2010). By implementing the plan, the committee saw their progress, addressed issues as they arose, and shared this information with key administrative stakeholders. The administrators at the Aristotle University of Thessalonica created evaluation benchmarks at every step along the way. After Moodle was implemented, they continued to evaluate the program adoption and use, by information gathered through user logs and surveys (Konstantinidis et al., 2011). Planning for the implementation and evaluation will clarify the benchmarks that must be met and the criteria for meeting them. Planning from the outset of the project will ensure that the goals are being met and the extent to which they are met.

**Plan for hidden costs.** Implementing a new LMS at an institution is an expensive endeavor. At Aristotle University of Thessalonica, one of the major points of analysis prior to selecting the LMS was that of the cost for implementation—including maintenance and support in the future (Konstantinidis et al., 2011). According to Cross (2004) in his history of e-Learning, some institutions have spent so much on the LMS itself that they failed to budget for implementation, training, and support after the purchase. This hindered the success of the adoption and use of the LMS for these institutions. Hidden costs are very real because they impact the day-to-day use of the system. If these costs are not considered from the outset, adoption and full-scale use of the system may be limited.

## Selecting the Right LMS

The decision about which LMS to adopt is a decision that will potentially impact every faculty member and student for multiple years. There are some things that should be carefully considered when choosing the LMS that will be supported at an institution.

**Write a list of requirements.** A list of requirements provides the discrete details required to meet the goals for adopting the LMS. Scanlan and Holtzman (2009) reported that creating a list of requirements for the LMS was crucial in the selection process, and the end users should be included in that process. They concluded that it was essential to know the current instructional strategies of the end users and then to find an LMS that matched as many as possible. Black, Beck, Dawson, Jinks, and Dipietro (2007) as well as Konstantinidis et al. (2011) and Scanlan and Holtzman (2009) reported that it was easy for many to get caught up in only thinking about the current needs of faculty members, but because the LMS would be used over a period of time, it was also important to consider and plan for the future needs of faculty and students and to select an LMS that was moving toward the future of the technology. In their article that focused on the implementation and adoption of the LMS, Black, et al. (2007) recommended that the LMS that was selected needed to offer some benefit to the organization that other LMSs didn't. Konstantinidis et al. (2011) implemented Moodle in their university for instructors teaching in a blended learning environment. They recommended three primary priorities when selecting the LMS: usability, reliability, and support. The secondary priorities that they reported were pedagogical, financial, support, assessment for accreditation, integration, and long-term viability. These examples demonstrate that a priorities list can assist the selection committee to know current faculty needs as well as the institution's priorities. Given the rapid growth of technology in education, it is important to examine the current technologies used by

the LMS provider and then to understand the trajectory on which they are going to predict future development and how it will impact their ability to meet future technology needs for the institution.

**Work with Vendors.** A requirements list can also be useful for narrowing down the list of potential LMSs. Scanlan and Holtzman (2009) reported that the next step they took was to invite the marketing team from each vendor to meet with them to demonstrate the LMS and to answer questions about it. During these presentations, faculty, staff, and administrators were invited to participate so that they understood how the systems functioned and would be able to evaluate the products in terms of their own needs. The end users asked the vendors to *demonstrate* how the LMS would meet the institution's needs, and not just say that it would, which created more buy-in from the end users. Scanlan and Holtzman (2009) and Foreman (2013) also recommended that the committee talk to other institutions that used the same vendor to gain greater insight into how well the vendor worked with the institution and the level of support and resources that were available to the institution as well as the institution's overall satisfaction with the LMS. Another recommendation was to pilot one or more of the possible LMSs with a few varied courses to get faculty buy-in, and also to test the limits of the system, including what it could and could not do in the context of the institution (Eitzmann, 2011; Foreman, 2013; Khalsa et al., 2012; Scanlan & Holtzman, 2009; Uys, 2010). Throughout the pilot phase at these institutions, the faculty members and students were contacted to understand the strengths, weaknesses, and experiences using the LMS to make a more informed decision about whether or not to adopt the LMS.

Selecting the right LMS requires more than just participating in the vendor demonstrations. It includes testing the limits of the system as well as piloting the type of



relationship that is possible with the vendor. Through the pilot process, it is also important to verify the technical requirements for integrating the LMS with the institution.

**Integrate with other campus systems.** There were two aspects that were considered in the literature with regard to the LMS integration with the campus. First, Black et al. (2007) discussed that the LMS must integrate with the culture and goals of the institution. They also discussed the need for the selection committee to have a clear vision of the overall goals of the institution and how the LMS fit in with the goals. The committee also needed to understand the culture of the institution and the availability for applying that culture through the LMS. Another type of integration discussed in the literature was the integration with the data systems of the institution, such as the student information system, campus mail, registration, and grade submission to facilitate the work of all end users (Bexheti et al., 2009; Dwyer, 2004). They noted that without proper integration systems in place, a great deal of work would need to be completed manually, which could be a pain point for an already taxed faculty and staff. The integration of the LMS is a critical step in the implementation because it will facilitate the inter-system information sharing across the institutional offices.

### **Creating a Communication Plan**

The literature was very clear about the importance of having and using a communication plan with faculty, staff, and students. Clear, open communication with the end users has been critical to the success of the LMS adoption and implementation at several institutions.

Having a plan and strategy for communicating with all members of the institution will keep them informed of the progress of the implementation. Charles Sturt University was one of the first universities in Australia to adopt an open source LMS campus-wide. They carefully documented their change strategy. They strategically planned for the communication that would

be sent to faculty, staff, and students, including email messages, formal committee information, screensavers, and professional development communication (Uys, 2010). This article only mentioned having the communication plan. While the article didn't provide a lot of detail surrounding the communication plan, it is important to have one, so administration, faculty, staff, and students are aware of what is happening with regard to the LMS over time.

**Communicate the “why.”** Helping all members of the institution understand why the transition is necessary is important in the adoption of the LMS. At Nippising University in Canada, the university upgraded from Blackboard CE to Blackboard Learn (Ryan, Toye, Charron, & Park, 2012). After the transition, the university surveyed faculty members about the process of change and the experience of the faculty members going through the change. One of the factors that they found helped smooth the transition for many was that the faculty understood why the university was changing from one LMS to another. Their survey question asked the extent to which faculty understood why the university was making the transition and only 29% of faculty disagreed. The open-ended comments related to this question communicated that faculty members felt that the transition was quite smooth for most of them, and they didn't notice significant changes, which helped them through the transition. The changes they did notice included having better functionality, thus it was an improvement for the faculty. When faculty members understand the rationale for the change and the benefit to them, it makes the transition easier because they can see the associated positives of the system.

**Create a website.** Since communication is so important, one unobtrusive way several universities elected to provide information to end users was to create a website that communicated the current status of the project (Dwyer, 2004; Scanlan & Holtzman, 2009; Uys, 2010). This helped the end users build trust in the administration because they felt that there was

a level of transparency. After the selection process, the selection committee posted their executive summary and included it on the LMS progress website to inform users of the results of the evaluations of each of the LMSs and to allow the faculty members to ask questions (Eitzmann, 2011). Informing users of the status of pilots and new features also helped faculty stay informed about progress (Chao, 2008; Uys, 2010). When RRU adopted Moodle, their website informed faculty of changes they made, successes they had, as well as challenges they faced, and how to deal with all of the changes (Chao, 2008). Charles Sturt University provided similar communication and in addition, included how to use the system and instructional materials on their website (Uys, 2010). Creating a website to house release notes, new features, tutorials and help information, and the background and timeline of the project can keep all interested parties informed of the progress of the implementation and can become a central point in which individuals can stay up-to-date through the process of change.

**Summary.** The literature about communication can be summarized in three words, “Communicate, communicate, and communicate!” (Chao, 2008, p. 50). The more open communication that happens, the more satisfied faculty and students will be because they will know the status of what is happening, the reasons for change, and how to make the transition.

### **Adequately Testing the System and Gathering User Feedback**

After deciding which LMS will be adopted, but prior to launching the system, it is crucial to test the system to understand its strengths and limitations. Li (2010) recommended that part of the testing should include verifying the system’s stability. Dwyer (2004) commented on the importance of verifying that there were enough hardware resources to power the LMS, especially during crunch times when there was a large amount of traffic from students and faculty. Scanlan and Holtzman (2009) included that the institution should test the feasibility of migration and the

compatibility with other campus tools prior to installation. Smart and Meyer (2005) reported a study conducted at University of North Dakota, where prior to implementing a new LMS, 10 faculty members were asked to import their course materials from Blackboard into Desire2Learn, their proposed new LMS. They then followed up with the faculty members to find out which materials transferred into the new system and what did not. They reported that even though there would be a significant workload to transition and recreate their courses, eight out of ten of them were still willing to make the change. Testing the system thoroughly will help the institution allocate enough hardware and human resources to support the system. Additionally, testing multiple aspects of the system can help support staff create training materials and workarounds, if necessary, to assist the institution through the transition.

**Use your pilot testers and early adopters.** Pilot testers and early adopters are an important part of the implementation because they are able to provide the end users' experience and the perspective of faculty members and students. One report recommended that when setting up the pilot of the new system, efforts should be made to recruit pilot testers from multiple departments and different backgrounds to participate (Bexheti et al., 2009). Bexheti et al. reported the experience of South East Europe University who used ANGEL Learning. They desired to integrate their university systems better, so they decided to develop a new LMS in-house. When it came time to pilot the first release of the new LMS, most of the pilot testers were faculty members and students from the computer science department or members of the development team. When the LMS was fully launched, they found that the computer science department used a lot more of the features than the other departments and found that the other departments required more training to understand how and why to use the features of the system, something they did not anticipate based on the pilot. Their pilot test could have helped them

anticipate some of this if it had been broadened to a few faculty members from the other departments as well (Bexheti et al., 2009).

Typically, pilot testers and early adopters have a higher tolerance for ambiguity and patience when systems don't work as well as expected. They are also typically more comfortable with technology (Rogers, 1995). With this in mind, they are also often more positive when it comes to adopting emerging technology and are typically the thought or opinion leaders. Using the pilot testers can be useful in marketing the new LMS to the rest of the campus. Li (2010), Nanayakkara (2007), and Powell (2008) discussed that faculty members liked to hear the actual experiences from real users, and found that hearing about the experience of using the LMS from a peer down the hall was more believable and influential than hearing it from an administrator or a marketer. These peer leaders were also helpful for assisting other faculty members to know how to use the LMS pedagogically.

Scanlan and Holtzman (2009) made some recommendations for helping to facilitate the conversations about using the LMS. One of their recommendations was to sponsor open houses or special meetings where pilot testers and early adopters were able to share their ideas. Another option was to highlight these faculty members in promotional materials that were shared with the rest of the institution.

Pilot testers and early adopters can inform the direction of the implementation based on their experiences. They are able to provide the perspective of end users and help champion the system across their colleges and departments.

**Gather and use end-user feedback.** End users know a lot about how they use the LMS and have ideas of things they would like to be able to do with the system to make their jobs easier. Gathering feedback from the end users was really important for knowing how to improve

the system for everyone (Bexheti et al., 2009; Chao, 2008; Uys, 2010). South East European University used UserVoice when they released their in-house developed LMS to gather feedback and enhancement requests from their users (Bexheti et al., 2009). UserVoice allowed users to vote for requests, which assisted the development team in setting development priorities. With this feedback, they were able to continually improve the system. Scanlan & Holtzman (2009) reported one recommendation was that they published their user feedback on their LMS website, which created open communication and some public accountability for making changes to the LMS. User feedback can be filtered back to the vendor for consideration as they work to improve their system. Feedback from end users can help the developers prioritize new features that clients would like added to the system.

**Provide incentives.** One of the frustrations mentioned by faculty members was they had spent a lot of time getting their courses just right in one LMS, so adopting a new LMS created anxiety for them because they didn't want to have to put the same amount of work into rebuilding their courses (West et al., 2007). Because of the amount of work necessary for rebuilding courses, some of the articles reported that the institutions provided incentives for the faculty members as they migrated their courses. Scanlan and Holtzman (2009) reported they estimated the person-hours it would take to migrate, rebuild, and create faculty members' courses and incentivized accordingly. Reports included two major incentives for faculty members: stipends (Eitzmann, 2011; Liu, 2005; Powell, 2008) and release time (Eitzmann, 2011; Liu, 2005; Nanayakkara, 2007). Having these incentives provided some extra compensation for going through the hours necessary to rebuild faculty members' courses and lessened some of the pain associated with the transition.

## **Training End Users in the New LMS**

The literature was clear that providing training for end users would create a better usage experience for everyone (Butler & Sellbom, 2002; Chao, 2008; Dwyer, 2004; Eitzmann, 2011; Khalsa et al., 2012; Liu, 2005; Ryan et al., 2012; Uys, 2010). Nanayakkara (2007) conducted a survey with 95 post-secondary instructors across New Zealand that focused on the acceptance and adoption of e-learning systems and found that in order for faculty to accept new technology, there needed to be adequate training; the “failure to provide training will result in high [sic] level of user apprehension in accepting this technology” (p. 228). The literature discussed different approaches to training that are worth consideration.

**Create a certification program.** The University of South Alabama determined the competencies necessary for faculty members to administer a course and then created a training program to teach those competencies for certification. The faculty members could complete their certification in several different ways, including attending face-to-face workshop sessions, completing online training modules, or completing a combination of these. Another option they had was to demonstrate their competency by performing tasks within the LMS without attending the training sessions (Khalsa et al., 2012). Scanlan and Holtzman (2009) also recommended providing a certification program for verifying that faculty members had the necessary skills for using the LMS. A certification program provides a way for the institution to track the training completed by individuals and verify they have critical skills in using the LMS prior to receiving access to their courses. When faculty members have demonstrated their knowledge of the system, they are typically able to create their courses more effectively and efficiently.

**Provide just-in-time training.** Just-in-time training includes training when individuals need it, located in positions where they can easily access it in relation to the work they are doing

(Clark, 2010). When RRU moved from an in-house LMS to Moodle, they created a number of tutorials that could be accessed from a distance, and these became the foundation for their just-in-time training (Chao, 2008). As a result, faculty could find information they needed to know when they needed it. Khalsa et al. (2012) described creating their training modules online or in the tool itself, which gave quick and easy access to help documentation for faculty members and students when and where they needed it. Just-in-time training is effective because it is provided in smaller chunks that are accessible when and where users need it without having to recall information that was give to them in a workshop that may have been removed from where and when they created their courses.

**Train users on pedagogically sound best practices.** Providing faculty with point-and-click training where they learn how the tool worked was helpful, according to Scanlan and Holtzman (2009); one of their other benchmarks included training faculty on using effective online pedagogy. The pedagogical use of the LMS could also highlight the various features of the LMS and show how they fit in with the objectives of the course and the mission of the institution. Only providing training on the tool itself is a disservice to faculty members. Teaching with online tools may be different for many of them; helping them understand the pedagogy can improve their overall teaching and course design.

**Provide different levels of training.** Faculty members have different levels of interest and skill in developing their courses and using the LMS. The literature reported that it was important to be flexible in the training that is provided. University of Wisconsin at Eau-Claire provided workshops for faculty members that taught them the general use of the LMS and then they held specialized workshops that focused on each component in depth within the LMS (Dwyer, 2004). These workshops were useful to faculty and provided the basics, but also more



in-depth training for those who wanted a deeper understanding of how the LMS could work for them. When the University of Medicine and Dentistry of New Jersey created their list of best practice benchmarks, they noted that some faculty use the LMS as a document distribution tool while others use the tool for online instruction. They noted that the training needed to accommodate both types of instructors (Scanlan & Holtzman, 2009).

**Train teaching assistants.** West et al., (2007) surveyed and interviewed faculty members who were using Blackboard at their institution and found that a number of the faculty members set up the courses for their classes, but their teaching assistants did most of the course management inside the LMS. They recommended focusing the training on the teaching assistants who would then work with the faculty members to help them understand how to use the system. Training faculty members was important to help them understand the strengths and limitations of the system; training the TAs was also important because they were often the ones who did the work of building courses.

**Market the training.** The published literature demonstrated the importance of training and the difference it could make in faculty members' adoption and use of the technology. Ryan et al. (2012) commented on the importance of training: “[For] instructors, to not avail themselves of the offered training seems to be asking for frustration down the road” (p. 230). In the survey that Ryan et al. (2012) conducted, they found that only 37% of the faculty members attended training sessions offered. Most of the faculty members (94%) later contacted the help desk to ask questions about using the LMS. Thinking about these numbers, many of the questions potentially could have been answered by attending the training, or more just-in-time help could have also been offered when and where the instructors needed it most. It is important that administrators incent the training, so faculty and students will feel it is worth their investment to

attend up front, and then provide them with contextual help when and where they need it most later on.

**Decide who will offer the training.** Previous literature reported three different groups that provided the training for the LMS. In two of the articles, the faculty members met with IT personnel to receive their training (Li, 2010; Scanlan & Holtzman, 2009). From these reports, we don't know the effectiveness of the training nor the method of the training (e.g., workshop, one-on-one, peer), nor the percent of the faculty who were actually trained. We also do not know how many IT personnel were needed to complete the training and the costs associated with it. Powell (2008) reported a study where twelve administrators, faculty, or staff from two separate institutions, a Lutheran institution and a Methodist institution (six from each), participated in interviews to more fully understand the adoption process. At the Lutheran institution, some of the faculty members who had been trained became trainers for other faculty members. The report did not specify the cost-benefit for the cost necessary for incentivizing the training. In a previous adoption, the Lutheran institution provided incentives for faculty members to attend training workshops. The Methodist institution provided workshops by request for departments and colleges and made them fun events that faculty wanted to attend. Neither reported the effectiveness of the offerings nor the participation by faculty and students. The Methodist institution gave student employees an active training role to sit with faculty to show them how to create their courses and post information for their students. This was only briefly mentioned, and not expanded to clarify the actual role they played nor the extent to which the student employees were utilized. Additionally, they did not report their overall effectiveness. There is a need to provide training for users, but there is limited information about who is best to

provide the training and especially the role student employees could potentially play in training faculty members.

### **Building a Support System for Users**

After users are trained, they need to continue to be supported. This support comes in the form of technological support, documentation and materials, and pedagogical support.

**Provide technological support.** After the initial training, end users will not remember everything they need to know regarding the LMS, no matter how well they are trained. They may also experience bugs or technical issues that relate to the performance of the LMS, so providing ongoing support after the initial training is crucial to a successful user experience (Dwyer, 2004; Li, 2010; Muldoon et al., 2010; Ryan et al., 2012). In their article about implementing and adopting their LMS, Black, et al. (2007) emphasized the importance of providing support: “[I]nadequate technical support and funding for support are primary reasons for failed adoption of elearning technologies” (p. 38). Another thing that was recommended as a helpful practice for providing technical support was to involve the trainers in a support role. Trainers were not only able to teach users how to use the LMS, but they were also an effective part of the support team (Scanlan & Holtzman, 2009). As trainers, they had the luxury of already possessing a deep understanding of the system, so they were able to more easily troubleshoot when individuals requested detailed help. Providing technological support is crucial through the implementation and ongoing use of the LMS. This support role provides a way for issues to get reported and resolved, as well as a central location for individuals to get answers to their questions.

**Create documentation and online materials.** Synchronous support (i.e., in-person, over the phone, online chat) is helpful to assist individuals in their understanding of how the

LMS functions. Asynchronous support can also be very useful for understanding how to troubleshoot a particular task or as a job aid for remembering how to complete a task. When the University of South Alabama migrated to Sakai, they created support materials in the form of text-based tutorials, videos, how-to guides for students and instructors, frequently asked questions, and a blog. They standardized the look and feel of the materials, so they were professional and created continuity to increase brand recognition. End users were able to access these materials whenever and wherever they were. Dwyer (2004) noted that some LMSs come with a significant number of resources such as training and support materials that can readily be used by faculty and students. For others, many resources need to be created, especially if the institution has its own instance with its own look and feel of the LMS or unique user needs. One recommendation that was discussed in the literature was to provide the materials in multiple formats for different user needs and preferences when possible (Li, 2010; Liu, 2005; Scanlan & Holtzman, 2009). Asynchronous materials can be helpful for many individuals who just need to see how to do one thing in the LMS. The tutorials and help documentation should be easily accessible and short enough that users can scan and quickly find the answer they are looking for.

**Provide pedagogical support.** In addition to providing technological support and help documentation, it is important to help faculty members understand how to use the LMS to enhance their pedagogy and perhaps use the transition to rethink the design of their course and to make pedagogical changes, if necessary (Chao, 2008; Dwyer, 2004; Muldoon et al., 2010; Scanlan & Holtzman, 2009). Lane (2009) reported that when using an LMS, many end users, especially novices, transferred the learning activities and functions that took place in a face-to-face classroom to an online environment. When this happened, instructors and students missed out on powerful functionality that could enhance any learning experience. For example, there

are many new and emerging technologies that enhance communication online that can engage students. Also, multimedia sources make it possible to *show* rather than *tell* in many instances that can clarify concepts being taught. There are also web technologies that can help instructors personalize feedback to students to engage them more. Lane (2009) made the following statement regarding understanding online pedagogy:

Novices are inclined to utilize only the aspects they understand from a non-Web context. Posting a Word document online makes sense, but not creating an HTML page, because a word-processed document is a familiar unit of presentation but a Web page is not. Similarly, e-mail is the current incarnation of the familiar process of writing a memo, but there are fewer guideposts for instant messaging or video conferencing. The addition of hardware peripherals, such as a webcam or microphone, further increases the distance between the professor and familiar modes of teaching. (para. 9)

Working with an instructional designer or other knowledgeable individual who has online experience can be valuable for assisting the novice to think differently about course design in order to create learning experiences that will better transfer to the online environment.

Before RRU transitioned to Moodle, they had a very linear course development process where faculty members did not have editing access to their courses. With Moodle, faculty members did have editing rights, so prior to the transition, instructional designers met one-on-one with them to discuss the course design and how it could be improved for effective online pedagogy in each of their courses (Chao, 2008). Teaching faculty how to effectively teach using online tools can maximize the use of the LMS and help them improve the course experience for their students.

## **Migrating the Data from the Old LMS to the New LMS**

West et al. (2007) conducted interviews and found that faculty had the fear that after they developed their courses, the administration would change to a new LMS. Because they had spent a significant amount of time building their courses, they didn't want to lose their work by having to start over. Transferring faculty members' data from the old LMS to the new one was an important step in keeping faculty members supportive of the change. The literature noted a few different configurations for having a successful migration experience.

**Create a strategic plan for migration.** It is useful to have priorities, goals, and milestones throughout the migration experience. Planning strategically can help to make the migration as effective as possible. Dwyer (2004) noted that the University of Wisconsin had different cohorts of students in programs, and departments had varying levels of resources available to help with the migration. Creating a plan was essential for managing the department needs as well as courses that were taught to cohorts of students who may need to finish their coursework in the old LMS. They also carefully considered the different LMS features used by the faculty members and the amount of time it would take to build their courses. They had to set clear priorities, so they did not disrupt too many lives while still making the migration into their new LMS.

**Rebuild courses after data migration.** At RRU, administrators helped faculty recognize that after the initial data had been imported from the previous LMS, there was a great deal of work to clean up the course to fit it into the structure of the new LMS. This was a necessary step to make it more student-friendly (Chao, 2008). Scanlan and Holtzman (2009) reported best practice benchmarks in their presentation and said that institutions should base their initial training on the users' experience with the previous LMS, so their schema for new learning

is situated in the context in which they are familiar, which helped them know what needed to be done to clean up their courses after the import. In addition, they also reported another benchmark that assisted faculty in rebuilding their courses was to create page templates to speed up the process of building their course pages.

### **Deciding Who Will Do the Actual Work of the Implementation**

This literature review has identified many suggestions for conducting a successful LMS implementation. A significant amount of thought and labor are required to implement the LMS effectively. The next question is where do the resources come from to implement the LMS? The literature offered some insights of who has done the work in previous implementations.

**Involve faculty.** Some institutions involve their faculty members actively in migrating data, especially if they are moving from one LMS to a later version of the same LMS. Dwyer (2004) reported that this was effective at the University of Wisconsin at Eau Claire because faculty were able to modify and redesign their courses through the process of migration. She recommended that when faculty members were involved in the migration process, they needed specific instructions to help them know what they needed to do and how to do it effectively. Involving faculty members can be helpful as a training opportunity where they can learn how to use the LMS while creating their courses, but it can also increase faculty frustration because of the often time-consuming nature of migrating data and designing a course (West et al., 2007).

**Collaborate across campus support centers.** Some institutions combined the efforts of multiple campus offices to migrate courses. For example, the University of Montana used their Faculty Advisory Committee and the instructional design team, along with some student assistants to migrate courses. They also brought in key faculty members and made them part of the process (Eitzmann, 2011). RRU found that Metro, the team that was tasked to upgrade the IT

infrastructure, and the Centre for Teaching and Educational Technologies, responsible for course design assistance and LMS training, working together were able to successfully lead the migration into Moodle (Chao, 2008). This could be a viable option if the offices are able to collaborate effectively.

**Involve student employees.** Student employees have been involved in varying levels to provide service to faculty members. At RRU, student employees were used to check for course quality, including looking for dead links and incorrect due dates that might affect students' perceptions of the course (Chao, 2008). At the University of Wisconsin, student employees were hired to complete mundane tasks such as copy-and-paste and check the courses after they were completed (Dwyer, 2004). O'Brien et al.(2005) reported that at Duke University, as part of their incentive program, faculty members were paired up with student workers who trained faculty and helped migrate their courses. These authors noted that as a result, faculty members reported that they began to explore possibilities that they may not have if someone hadn't been working with them one-on-one. As with previous reports, this report did not go into the details of the effectiveness of this practice, the extent to which the student employees were utilized, or the cost-benefit analysis of the work they did.

Student employees will most likely not be involved in every aspect of an implementation as outlined in the previous literature, but could potentially be involved in multiple aspects if the typical resources are not available. Some questions not answered through the previous literature could be asked, such as the following: Could student assistants be utilized effectively to assist with communicating with faculty? How will faculty members respond to undergraduate students who reach out to them about receiving training on the new system? Will faculty members reach out to undergraduate students when they need help? Will faculty be satisfied with the help? Can



undergraduate student employees really be held responsible for providing sufficient support for a new system, perhaps both technical and pedagogical? Can undergraduate student employees be meticulous enough to migrate faculty members' course data from one system to another and rebuild the courses to the satisfaction of a faculty member?

### **Research Questions**

Past literature recommended several best practices for implementing a new LMS at an institution. However, using student employees to facilitate the implementation of a new LMS was rarely mentioned. If students were used, they mostly performed mundane tasks or final checks and rarely worked as trainers or migration help (Chao, 2008; Dwyer, 2004; Eitzmann, 2011; O'Brien et al., 2005). The reports did not provide details of the utilization or effectiveness of student employees to assist with the work of implementation, nor the cost-benefit associated with using a student labor force to assist faculty with the work of migration.

Little is known about the effect student employees may have in the LMS adoption process. Inasmuch as students are a resource available to every educational institution, understanding their potential role in the adoption of an LMS may provide valuable insight into the pros, cons, and overall process of using students as resources in the adoption and transition of LMSs. Specifically, we asked:

1. To what extent do faculty and staff use student employees tasked with assisting with the implementation?
2. How are student employees perceived by faculty and staff through the implementation of a new LMS?
3. What conditions are in place that lead to these student employees to be successful or not?

4. Is there anything the implementation team can contribute that the Service Desk cannot?
5. Based on this experience, what are other lessons we can learn about LMS transitions?

### Chapter 3: Methods

In this chapter, I will begin by providing the contextual background for the study. Then I will describe the methods of data collection and data analysis.

#### Contextual Background of Study

Brigham Young University (BYU) has designed and built an in-house LMS to replace Blackboard. The BYU Center for Teaching and Learning (CTL) had designed and built several web applications to facilitate and enhance the teaching and learning at BYU. The tools it originally built were Syllabus Builder, Midcourse Evaluation, and Digital Dialog (multimedia discussion board), and it had designed the interface for the university's Gradebook (powered by Agilix). In the summer of 2010, the university administration decided they would not renew their contract with Blackboard and would therefore turn off its service in May 2012. They asked the CTL and the Office of Information Technology (OIT) to build an in-house LMS utilizing the core functionality that existed within the tools the CTL had already built along with additional functionality. The CTL decided the core functionality that would be developed based on a survey they sent out to faculty and staff asking which features of Blackboard they used most. The CTL was asked to create the interface design and front-end programming, and OIT was asked to provide the web services necessary to integrate the LMS with the various campus offices. In addition to the existing functionality, an exam builder and a content system were added, along with rebuilding the existing pieces to integrate with the overall architecture of the LMS. The three main reasons for building an in-house LMS were to be able to fully *integrate* with campus systems, to be *innovative* and responsive to the needs unique to BYU, and to be *independent* of other proprietary systems. From the time the assignment was given, the CTL had

about 18 months to create a functional product, from concept to a fully functioning LMS. The name chosen for the LMS was the BYU Learning Suite.

In November 2011, the administration decided that they would turn off Blackboard in May 2012, and all courses beginning with Spring 2012 would be taught in Learning Suite. This would give no time for running the two systems in parallel to allow for a slower adoption and transition. In order to appease faculty concern, they determined that a team of 50-70 student implementation assistants (IAs) would be hired to support faculty individually. Their main roles were to train faculty members individually and in group meetings, assist with course migration and rebuilding courses after data migration, assist with testing, answer phone calls about the system, provide feedback to designers and developers, and keep records of all interactions. The original plan was that the IAs would be hired for one year—from January to December. At the time, I was an employee of the CTL and was asked to lead the team of IAs.

In January 2012, we hired 55 IAs and began three weeks of daily training to give them the background of Learning Suite and train them in the functionality and how the components were integrated together. They performed tasks to demonstrate their competence and skill in using Learning Suite and practiced giving presentations. We trained them on appropriate phone etiquette and conducted personality training on how to work with colleagues and faculty who had similar and very different personalities from themselves. The IAs began contacting faculty members who had agreed to participate in the pilot courses (approximately 30 faculty from most of the colleges and schools across campus). They were also asked to migrate all of the courses for faculty who would begin teaching in the spring term. Because the LMS was still in development, there was a beta site for the pilot instructors, but the majority of faculty did not have access to the production site yet. So the IAs were able to build faculty courses, but the

faculty members could not see the courses until they were given access in early April. By the time spring term began, all of the spring courses that we knew of and we had access to in Blackboard were built within Learning Suite and the IAs provided as many one-on-one training sessions as possible.

In May and June, the IAs contacted and trained the faculty members who were teaching in summer term, proactively reaching out to them. In July and August, the IAs did the same for faculty members who were teaching in the fall semester. Fewer courses were taught during spring and summer terms, so there was a lot of work to do to prepare for fall semester. Throughout the beginning of fall semester, they continued to provide support for faculty. Because of the volume of calls and support given by the IA office, additional funding was sought for and granted to provide support for faculty members through April 2013. See Figure 1 for a visual display of the timeline.

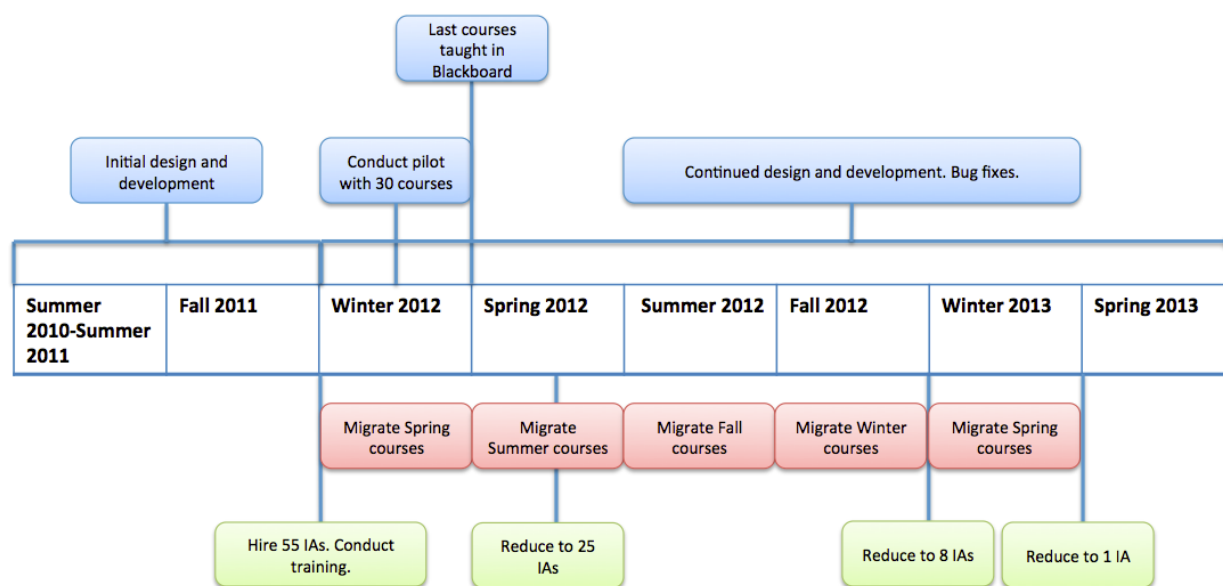


Figure 1. Timeline of the full implementation of BYU Learning Suite.

## **Background on the IAs as a Group**

The IAs were a motivated group of student employees who were bright and had a desire to work with instructors. The job was, for many, their first professional job. There were a few IA qualities that seemed to impact the interactions with faculty members. They included having tool knowledge, some pedagogy/course design knowledge, phone skills, and people skills. Each is considered below.

**Tool knowledge.** It was important that the IAs understand as many of the inner workings of Learning Suite as possible in order to answer faculty members' questions. In the first three weeks of being hired, the IAs attended daily training on individual tools of Learning Suite. The training also included the rationale for why the tools were designed the way they were and how they integrated with other tools in the system. The IAs then practiced and certified on the different tools and functionality in sandbox courses. Additionally, they role-played with their supervisors and with other IAs to build their confidence in explaining the tools and providing training sessions. When they first began making contact with faculty members, they conducted their training sessions in pairs or small groups in order to support each other until they all developed confidence for answering questions and giving presentations. Their knowledge of the tools enhanced their ability to answer faculty members' questions and to troubleshoot problems when they occurred.

**Pedagogy/course design best practices.** The training the IAs received also included some basic principles for course design, which helped them provide recommendations based on best practices as well as their own personal preferences, when asked by faculty members. This was not a core part of their training, but they were taught some basic principles in their weekly team meetings to help them better answer questions from faculty members. Faculty members

sometimes asked these student employees about the pedagogy in their courses and how the tools could be used to facilitate that pedagogy.

**Phone skills.** Within the first two weeks of the IAs beginning to make phone calls as part of the proactive outreach, we held several workshops to address phone etiquette and professionalism. The results were recognized both by the instructors and consultants.

**People skills.** Because for many this was their first professional job, it was important for the IAs to learn how to work better with other people, especially those with different personalities than theirs. The coordinator that managed many of the day-to-day affairs of the IA office was a certified DiSC (“DiSC Overview,” n.d.) personality trainer and was able to train the IAs about different personalities and how to work with each type. This training facilitated office management as well as working with stressed faculty members. For example, one day after a meeting, two of the IAs, both with the Dominant (D) personality, came back to the office and were able to articulate very clearly how they recognized that their personalities began to clash, but by thinking through what they had learned in their training, were able to correct the issue and continue with an effective training session. Faculty members also recognized the results of this training. Instructor B said, “Many times I said to myself, they obviously have had some very detailed training about how to work with angry faculty so they could comb their ruffled feathers because they were very good.”

### **Data Collection**

The data for this research are from two extant sources in addition to one-on-one interviews with a purposeful sample of faculty members. The following describes each in more detail.

**IA database.** Throughout their time of employment, IAs tracked all contacts with faculty members. Early in the project, we did not have a customer-service tracking system, so interactions were tracked in paper-based files on each faculty member by college. We later developed a Sharepoint database to track and report the interactions with faculty members in a more automated way. The paper-based data were manually transferred to the new database when time permitted. We began using Sharepoint in May 2012. Later in August, we updated the database to track additional information. Data were transferred from version one to version two manually by two students, so data could be consistently entered. The database was secure and could only be accessed by password. The records of the interactions included incoming and outgoing phone calls, incoming and outgoing email messages, course migrations for the faculty members, appointments, and training session attendance. These data were used as a primary source to describe the totality of the IA work. During a weekly staff meeting that all IAs were required to attend, they were trained specifically how to use the Sharepoint tool to enter information about each of the interactions with faculty members. We provided them with the codes used for entering data on each faculty member, as well as definitions of the codes and differentiations between the codes. For approximately the first week after the initial training, someone was always on hand to answer questions about the database, so the fields were filled in accurately. Prior to each semester, the IAs reached out to all faculty members who were teaching that semester and then updated the records in the system as they interacted with more faculty members. We periodically re-assigned IAs to work specifically with different colleges, and as they rotated their responsibilities, they were able to cross-check each others' work. While there are no data on the validity and reliability of the records, they are the summary of the IA



work. The database was also used to find faculty members' training statuses, which were used in the participant selection process, as categorized by the IAs through their interactions with them.

**Faculty survey.** In October 2012, the Center for Teaching and Learning sent out an Academic Technology Survey to faculty members that included data about the use of Learning Suite. This technology survey is sent out yearly to gather data about faculty use of technology across the university. Some of the questions directly related to Learning Suite, such as the following:

- How many courses do you currently teach using Learning Suite?
- When was the last time you encountered a problem with Learning Suite?
- Which features do you use in Learning Suite?
  - Please rate them according to their usefulness.
  - Of the features you do not use, please indicate why you do not use them.
- Please give your overall comments of Learning Suite.

The survey also asked a number of questions that are more generally related to the use of technology in the classroom, such as:

- Which other tools do you use besides Learning Suite?
- How have technology changes you have made in your classroom impacted your students' learning?
- Which tools would you use if the university provided them for you?
- What are the online activities that you use to replace class time?

This is self-report data. The interviews (see below) will be used as a follow-up and method of understanding instructors' use of Learning Suite more deeply. The Winter 2014 survey

addressed questions about the general use of Learning Suite across campus and instructor preferences for receiving training, and also contains self-report data.

**CTL consultant interviews.** First, I conducted interviews with the four CTL faculty consultants that were in that role throughout the transition. In addition, one of the colleges had a consultant-type person who provided technological and pedagogical support to members of the college. This consultant had begun using the student-as-trainer model prior to the IAs, so he also participated in the interviews. Three out of the four CTL consultants had PhDs in instructional design, and the other had a very strong background in corporate training. These consultants worked with faculty members on a day-to-day basis and provided them with pedagogical support and learning outcomes alignment for the courses they taught. They also assisted faculty in course design and often observed the faculty members as they taught their courses and interacted with their students. As part of their interviews, I asked them about their experiences working with faculty members as they began using Learning Suite and the impact the IAs had in transitioning faculty members from Blackboard to Learning Suite. Additionally, I talked with them about faculty members who experienced a change in attitude toward Learning Suite, either negative to positive or vice versa.

**Faculty interviews.** Because the focus of this research is to understand the impact of using the IAs, only faculty members who utilized the IAs were included. This also helped to limit the scope of the research. From the IA database, I sorted faculty members by the number of times they contacted the IAs. When I looked at the number of phone calls, I added the faculty members who called the IA office three or more times in each semester over the course of the two full semesters that the IA database was available for collecting the data. This allowed me to make sure that they had actively contacted the IAs for help with learning to use the LMS. My

initial list had 84 potential interview candidates on it. Then I sorted the list by college, so I could assure that I had a variety of experiences represented by the interview candidates.

When I interviewed the CTL consultants, I presented the list of faculty members to them and sought their recommendations on who from the list that they would recommend based on their experiences working with them. Then I selected three candidates based on recommendations from the consultants from each college for my initial invitations to participate in the interviews. I sent emails to 32 faculty members initially, and 10 of them responded saying they were willing to be interviewed. However, they were not all available for interviews because of their own time commitments. After my initial interviews, I didn't have any interview candidates that were able to participate from the College of Fine Art, Engineering, or Education, so I sent an additional 10 emails to participants from those colleges specifically and was able to get one additional interview. Because of the saturated nature of the interviews, I did not feel that additional interviews were necessary. The following table demonstrates the demographics of the interview candidates.

Table 1

*Demographics of Interview Candidates*

College	Male	Female	<i>N</i>
College of Family Home and Social Sciences	2	0	2
College of Fine Art and Communications	0	1	1
College of Humanities	1	0	1
College of Mathematical and Physical Sciences	1	0	1
Marriott School of Management	2	0	2
School of Nursing	0	2	2

I conducted semi-structured interviews with the faculty members, focusing on their roles and their teaching experiences, their interactions with the IAs, and a reflection of their experience moving from their previous LMS (either BrainHoney or Blackboard) (Bernard, 1988;

Seidman, 2013). I conducted four consultant interviews and three instructor interviews over the phone, and one consultant interview and six instructor interviews in person. In total, I conducted nine interviews with faculty members relating to their experience transitioning into Learning Suite and their experiences using the IAs. Through the interview process, I felt comfortable with this number of interviewees because many of the experiences of the faculty members were quite similar and very little new information was gained as expressed by Saumure & Given (2008), so I did not seek to conduct any more interviews. Seidman (2013) noted the importance of interviews: “If the researcher’s goal ... is to understand the meaning people involved in education make of their experience, then interviewing provides a necessary, if not always completely sufficient, avenue of inquiry” (p. 10).

The interviews were audio recorded using AudioNote, so they could be transcribed and timestamp tagged throughout the recording. After each interview, I created transcriptions of the interviews within AudioNote (King & Horrocks, 2010; Seidman, 2013). Before conducting any interview, I reviewed the IA interactions with the faculty member and was able to use that data to guide the interview more specifically. While the IA database was used to describe the overall interactions with faculty and staff, the interviews were used to understand better the lived experience of a few of them (van Manen, 1990). Table 2 includes the general questions that were used to guide the interviews.

Table 2

*Interview Questions and Corresponding Research Questions*

Interview Question	Corresponding Research Question
1. Tell me about your experience learning to use Learning Suite.	(Purpose: make interviewee feel comfortable. Start the conversation.)
2. Tell me about your experience with the Implementation Assistants. (Did they contact you or did you contact them?)	How are student employees received by faculty and staff through an implementation of a new LMS? To what extent do faculty and staff use student employees tasked with assisting with the implementation?
3. Describe a typical interaction with an IA. Please include types of questions asked or services they did for you.	To what extent do faculty and staff use student employees tasked with assisting with the implementation?
4. Were they able to answer your questions?	How are student employees received by faculty and staff through an implementation of a new LMS?
5. Tell me about your overall satisfaction level using the IAs.	How are student employees received by faculty and staff through an implementation of a new LMS?
6. Were they able to do anything for you that the OIT Service Desk was not able to do? (In other words, when you had a question or a problem, did you typically contact the Service Desk or the IAs first? Why?)	Is there anything the implementation team can contribute that the Service Desk can't?
7. Did you change anything pedagogically as a result of meeting with them?	To what extent do faculty and staff use student employees tasked with assisting with the implementation?
8. Describe anything else that you did that helped you learn to use Learning Suite?	(Purpose: Find out other strategies used. [Expected answers: use peers, attend workshops, ask TAs.]
9. Tell me about any successes or frustrations you had as you learned to use Learning Suite.	What conditions were in place that made IAs successful or not?
10. (For frustrations) Is there anything that could have changed that for you?	Is there anything the implementation team can contribute that the Service Desk can't?
11. In future implementations of technology on campus, would you recommend using implementation assistants? Why or why not?	What lessons can we learn from using an implementation team such as this?
12. Has your perception of Learning Suite changed over time? What factors have influenced that change?	What conditions are in place that make these undergraduate student employees successful or not?

## Data Analysis

Two specific data analyses were conducted. First, the IA database was used to calculate descriptive statistics to describe the overall trends relating to the work the IAs did. The faculty survey was used to understand how faculty members used Learning Suite and identified instructor preferences for training, but did not help with understanding the IAs role in their use of the LMS. Then, the case studies were analyzed using Spradley's (1979) qualitative data analysis, including Domain, Taxonomic, Componential, and Thematic analyses.

**Domain analysis.** The domain analysis consisted of identifying cover terms that described the experiences of the participants. Cover terms were the broad categories of comments made by the participants. I found the cover terms by reading through the individual transcripts and looking for patterns in the data. The cover terms were selected based on criteria set forth by Lincoln and Guba (1985) for determining the importance of an item: (a) the number of participants who used similar terms, (b) the number of unique ideas that were clearly different than other categories, and (c) the number of terms that presented a unique way of looking at the common problems.

Initially, I separated the data for consultants from the data for the instructors because I expected that the cover terms would be quite different. After the first round of analysis, I identified 23 cover terms for the instructors and 25 for the consultants. After comparing the two lists of cover terms, however, I recognized a number of the cover terms that were similar in both groups, so I then categorized the cover terms into the following groups: consultant cover terms, instructor cover terms, and both. With each of the cover terms, I tried to preserve the words of the interviewee, when possible (Spradley, 1979). Table 3 demonstrates the categories of cover terms that I identified.

Table 3

*Cover Term Categories*

Consultant Cover Terms (7)	Both (14)	Instructor Cover Terms (11)
Consultant role	Challenges/Problems/Missing Features	Complex system/User friendliness
IA Added capacity	Acceptance	Best thing they ever did
Student as a trainer	Development time/rush to release	Email message system
Student experience	Positives	IA help not available now
Stakeholder involvement	Support showed up at your door/side-by-side help	I use the system more/differently than others
Increased consultant job satisfaction	Cost of change/change is hard	Pedagogical changes
Proactive Outreach	Support from OIT Service Desk/IA understanding	Reducing dependence on Learning Suite
	IA able to answer questions	Faculty and students working on problems together
	Parallel time/supporting multiple LMS's	LS is a great idea – optimistic in beginning
	Communication	Cost of Blackboard
	Change management	System stability
	Learning to use	
	Workshops	
	Ways to use Learning Suite	

After identifying the cover terms, I wrote an initial definition of each cover term to articulate the general definition as I saw it from my identification of the cover terms. I then read through the transcripts and coded the individual comments by the cover terms, which helped me identify the included terms. The included terms were the sub-categories that fit into the categories of the cover terms and were direct quotes from the participants. For each cover term, I created a domain worksheet that included all of the included terms for each cover term. I completed this exercise twice to verify that I coded the transcripts as consistently and accurately

as possible. During the initial round of coding, I felt as though I was still solidifying the practical definitions of each cover term in my own mind. As I coded, I refined the definitions of the cover terms. For example, one of the initial cover terms I used was *IA didn't always know the answers*, but as I coded, I found some participants and consultants who referred to the ability of the IAs to answer faculty questions quite positively, so I changed the negative cover term to a neutral one and fit both positive and negative included terms underneath that cover term.

As an example, under the cover term *Best thing they ever did*, I coded the following included terms.

- “The best thing that they ever did was that they had the LS facilitation staff that could come help you.”
- “As for the implementation, I couldn't be happier. They were very, very good.”
- “I would say that that is one of the things that saved Learning Suite's bacon.”
- “The fact that there was this dedicated team just overcame a lot of negative things that people encountered.”
- “I can't think of a single factor in the implementation of Learning Suite that did more good to promote faculty acceptance than the effort of that group of students.”
- “They were great. They were really wonderful!”
- “And I always found them totally willing. Totally willing. They were just some of the nicest.”
- “As far as I could tell, they were every bit as good as any professional would have been. They knew what was going on.”



- “Many times I said to myself, they obviously have had some very detailed training about how to work with angry faculty so they could comb their ruffled feathers because they were very good.”
- “The things that were super helpful for me were the students that came and would sit and help me.”
- “I thought that was super, super helpful.”
- “And they were so nice and they were so knowledgeable.”

After I identified the cover terms and the included terms, I looked at the semantic relationships that existed between the cover term and the included terms. Spradley (1979) described searching for the following semantic relationships through domain analysis to identify and more deeply understand the relationships between important terms or components of participants’ experiences. Following are the semantic relationships Spradley identified and some possible examples of what I thought I might find in these data. For each example, X is an included term and Y is a cover term.

1. Strict inclusion (X is a kind of Y). An IA (is a kind of) personal assistant.
2. Spatial (X is a place in Y, X is a part of Y). The IAs (are a part of) CTL.
3. Cause-effect (X is a result of Y, X is a cause of Y). Being able to resolve my problems with Learning Suite (is a result of) calling the IA office.
4. Rationale (X is a reason for doing Y). Not being able to figure out how to complete a task in LS (is a reason for) calling the IAs.
5. Location for action (X is a place for doing Y). Some mysterious office on campus (is a place for doing) the magic behind resolving the issues with LS.
6. Function (X is used for Y). Students (are used for) training instructors.
7. Means-end (X is a way to do Y). Asking the IAs for help (is a way to) get a quick response to my problems with LS.
8. Sequence (X is a step or stage in Y). Calling the IA office (is a step or stage in) resolving my problem or question.

9. Attribution (X is an attribute, or characteristic, of Y). Helpful (is an attribute of) the IAs.

For each included term and cover term, I asked a series of questions to more accurately identify the semantic relationship that existed between the two terms. For example, I identified the included term “It was not possible to take the exam as though you were a student” under the cover term *Glitches, Problems, Missing Features*. Then I asked questions such as the following to identify the correct semantic relationship. Is “It was not possible to take the exam as though you were a student” a kind of *Glitches, Problems, or Missing Features*? Is “It was not possible to take the exam as though you were a student” a part of or a place of *Glitches, Problems, or Missing Features*? Is “It was not possible to take the exam as though you were a student” a result of or a cause of *Glitches, Problems, or Missing Features*? Is “It was not possible to take the exam as though you were a student” a reason for *Glitches, Problems, or Missing Features*? For each of the questions, when I was able to answer yes, then that signaled the semantic relationship that fit the included term and the cover term. The following were the semantic relationships I identified in my data: strict inclusion (is a kind of), cause-effect (is a result of, is a cause of), rationale (is a reason for doing), attribution (is a characteristic of), and means-end (is a way of).

I created a spreadsheet that contained all of the cover terms, their included terms, and the semantic relationships between them. This table is included in Appendix E.

Then I re-grouped the included terms by their semantic relationships. With this step in the analysis, I compared the different items underneath each semantic relationship, grouping them by the cover terms. The completed list is in Appendix F. This analysis was important to help me verify the coding.

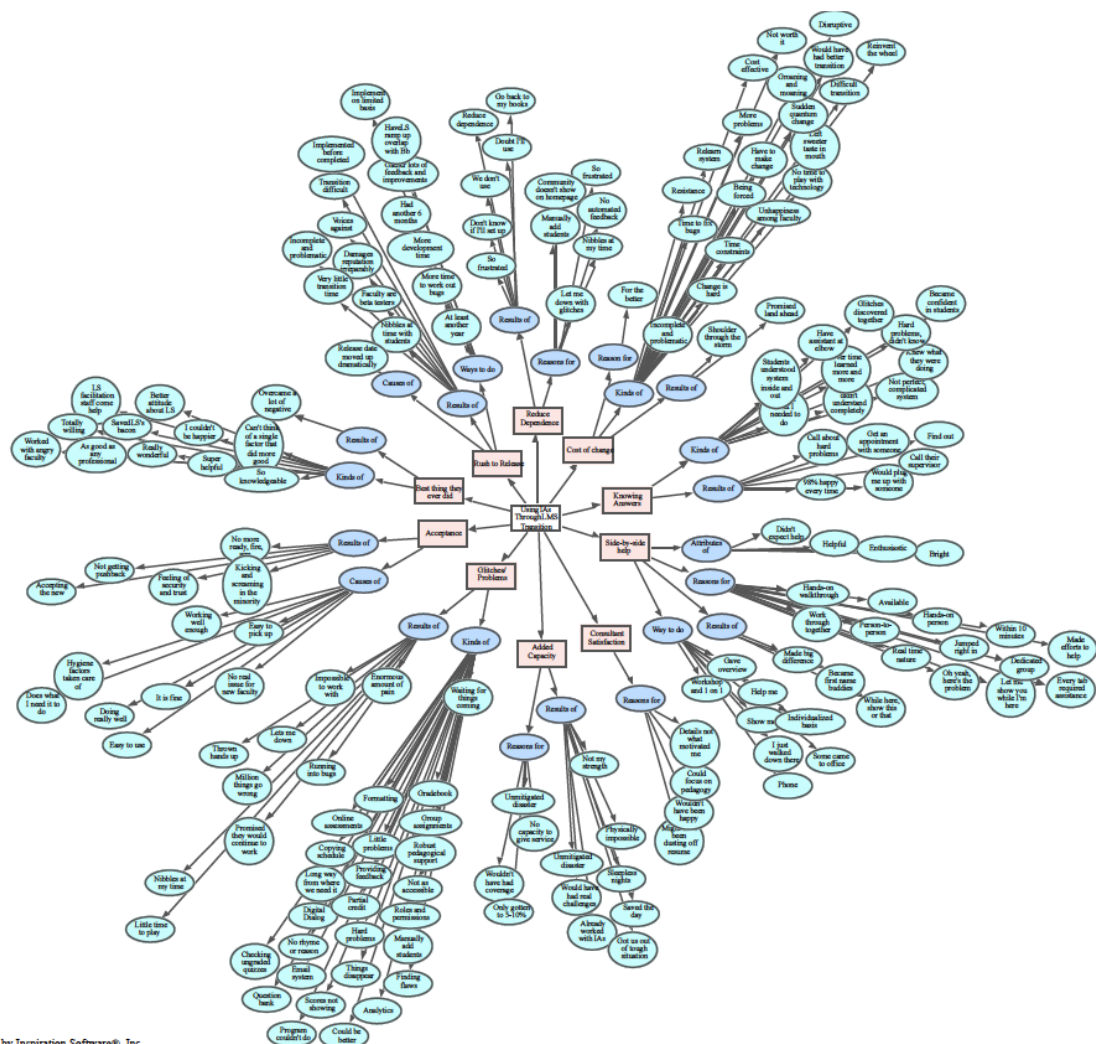
**Taxonomic analysis.** During the taxonomic analysis, I selected the particular domains for which I had adequate data and that best fit within my research questions. I then completed the following steps of completing a taxonomic analysis as outlined by Williams (2011).

I first looked for similarities between the included terms underneath the cover terms and moved the terms so the similar ones were together. For example, I had originally identified separate cover terms for *Missing Features* and *Challenges* that faculty ran into from the consultant's perspective and *Glitches/Problems/Missing Features* from the instructors' perspectives. However, as I read and reread the included terms, I determined they should be under the same cover term, so I merged these cover terms and included terms.

I continued to ask additional questions to clarify the similarities and differences. I found I could combine more than I had thought. In some of my cover terms with more included terms, such as *Glitches/Problems/Missing Features*, I wondered if it would be better to separate them, but decided to keep them together in one group because they are all areas that make the system difficult for individuals to use.

Then I returned to the data to look for relationships or data that I missed to verify that I found the relationships I should have found. For example, when I looked at the kinds of *Rush to Release*, I realized they weren't really *kinds*, but rather *ways to do*, so all of those items were changed to *ways to do* the release rather than *kinds* of releases.

Finally, I distilled the included terms down to their essence and built a taxonomy to visually display the relationships in the data. During this phase, I found that I continued to adjust some of the relationships to more carefully refine them. The completed taxonomy is displayed in Figure 2.



Created using Inspiration® 9 by Inspiration Software®, Inc.

Figure 2. Taxonomy of an LMS transition.

**Contrast questions.** Throughout the analysis, I explored similarities and differences within and across the different cover terms. I asked questions such as how are these two items similar or different? What characteristics are the same about these two items that are different from the third item? These contrast questions were asked repeatedly across different dyads and triads to understand what really made them similar and different. As an example, by asking these types of questions, I found that I had some of my included terms categorized under *Using the IT Service Desk* but realized they really referred to *Having Side-by-Side Help*, so I moved those included terms under the appropriate cover term (Spradley, 1979).

**Componential analysis.** To conduct the componential analysis, I looked for specific defining characteristics for each of the domains. These included what is included and what is not and how the particular terms are similar or different under different circumstances. To begin the analysis, I looked the cover terms of *IA added capacity* and *consultant job satisfaction*. I outlined the components of each, according to the included terms in each domain. I noticed that when talking about how the IAs added capacity, the consultants talked about how their own job descriptions would have changed, and they would have become like the IAs, but because there were fewer of them, they would not have had the same capacity to reach as many instructors. When talking about their own job satisfaction, one component they discussed was that the technical piece was not their strength or not the part of their job they enjoyed. Having the IA team specialize in the technical training allowed the consultants to focus on higher-level teaching and learning pedagogy and course design, which they enjoyed more and was their specialty. Because of the high interrelatedness between these two components, I felt that they should be combined into one category, *IA influence on consultant work* (Williams, 2011).

**Thematic analysis.** In the thematic analysis, I explored the recurring themes and patterns throughout the data. This helped to see the overarching results of the data. Throughout the analysis, I broke the data apart and then put it back together in different combinations to try to understand relationships and how all of the pieces fit. In this phase of the analysis, I found the key items that made a difference in this transition and how they made an impact. Two key ideas I identified were *the best thing they ever did* and *side-by-side help*. Additionally, one aspect that surfaced in multiple places was the need for a slower transition with more parallel time between the systems.

## CAQDAS Tool

The Computer-assisted Qualitative Data Analysis Software (CAQDAS) tool that I used for the data analysis was the Comment Classification Tool (CCT) 1.0 created by Ken Plummer. This tool is an Excel spreadsheet formatted for organizing qualitative data. Figure 3 displays a screenshot of the CCT. After creating the transcriptions from the interviews, I divided the utterances by meaningful chunks. Some of them were at the sentence level while others included multiple sentences. I tried to keep the utterances short enough that I could easily analyze them. Then I pasted these utterances into the CCT so that each paragraph mark from the text document entered the quote in a new row in Excel. I entered each of the raw cover terms across the columns of the CCT, and then for each utterance, I entered a “1” in the cell where the utterance and the cover term intersected. This allowed me to see the alignment of the cover terms and the utterances as I scrolled through the file. I then transferred the specific quotes from the CCT to a new Excel document and included the reference to the quote in the CCT to complete the rest of my analyses.

	16	17	18	19	20	21	22
Instructor-student work on problems	5	19	9	13	3	4	2
Cost of change							
Effects of rushed dev time			9				
Workshops				13			
System Stability					3		
Features they like						4	
Learn to use by teaching others							2

Figure 3. Screenshot of Comment Classification Tool.

## Establishing Trustworthiness

In an effort to establish trustworthiness in this qualitative research, I followed Guba and Lincoln's (1989) criteria for trustworthiness: credibility, transferability, dependability, and confirmability. The following section will describe each criterion and how I addressed it in more detail.

**Credibility.** I established credibility in the following ways, using guidelines from Guba and Lincoln (1989) throughout the data analysis.

**Member checking.** I sent the participants a copy of the data analysis chapter with their comments highlighted, so they could read them in the context of the analysis. I asked them to

verify that their perspectives were adequately represented and that the conclusions drawn are representative of their experiences. I asked them to respond within two weeks. Eleven of the participants responded positively to the accuracy and verification of their quotes and the interpretations thereof. One participant asked that I modify the language of her quotes for formality. The rest commented that they were accurate from their perspective.

***Audit trail.*** I created a file that contained how data were gathered, decisions that were made, and how the categories were defined and selected. A portion of the audit trail is included in Appendix G.

***Peer debriefing.*** My dissertation chair provided my peer debriefing, as he questioned the analysis I performed and the conclusions I drew. He helped keep my personal biases balanced.

***Negative case analysis.*** Throughout the data analysis, I searched for cases that did not fit the assumptions, definitions, and components I identified. Because this sample of instructors had proactively reached out to the IA office, their experiences were quite similar. Had I found instructors with significantly different experiences, I would have then asked them more focused inquiry questions to help refine the categories, definitions, and components to more accurately understand their transitional experience (Guba and Lincoln, 1989).

***Transferability.*** Through the analysis, I tried to provide enough thick, rich description of the context of the study so readers could draw their own conclusions about the transferability based on the information presented and apply the lessons learned to their own situations.

***Dependability.*** My dissertation chair in large measure provided the dependability check through the process of the study and the analysis of the findings. He was balanced and challenged my personal biases throughout the written analysis.



**Confirmability.** I did not conduct an external audit in this study, but a portion of my audit trail is available in Appendix G.

## Chapter 4: Findings

The focus of this study has been to analyze the impact of having undergraduate student employees serve as the group that supported the implementation of the LMS university-wide. This chapter will discuss the findings of the analysis, answering the specific research questions and then discussing other lessons learned as they emerged from the data. The research questions were as follows:

1. To what extent did faculty and staff use student employees tasked with assisting with the implementation?
2. How were student employees perceived by faculty and staff throughout the implementation of a new LMS?
3. What conditions were in place that led to these student employees being successful or not?
4. Did the implementation team contribute anything that the Service Desk could not?
5. Based on this experience, what other lessons can we learn about LMS transitions?

### Findings for Question One

To answer the question of the extent to which faculty and staff used student employees tasked with assisting with the implementation, I will report the data from the IA database, where the IAs recorded their interactions with faculty members. The IAs interacted in different ways, including appointments, phone conversations, email, workshops, and department meetings. Not only did the IAs interact with faculty members, but they also provided services such as course migration assistance that would not have been available without them.

**Appointments.** The IAs set up individual one-on-one appointments with instructors to demonstrate how to use the system and to answer questions that the instructors had that were

unique to their courses. Many were initiated proactively by the students while others were initiated by the instructors. In some cases, the instructors would call with a question, and rather than trying to answer it over the phone, the IAs would go to the faculty members' offices to figure out the best way to resolve the problem. After each appointment, the IAs reported the appointment in the Sharepoint database, designed for tracking interactions with faculty members. The IAs conducted a total of 1,643 meetings in faculty members' offices with 975 unique instructors.

Figure 4 demonstrates the number of appointments each month throughout the IAs' employment. Prior to April 2012, only the 30 pilot instructors had access to Learning Suite. During the summer months, fewer courses are taught on campus, so the numbers dropped through June and July. Another trend to notice is that after classes began in fall semester (starting September 2012), the number of appointments dropped significantly, yet the IAs continued to conduct appointments each month.

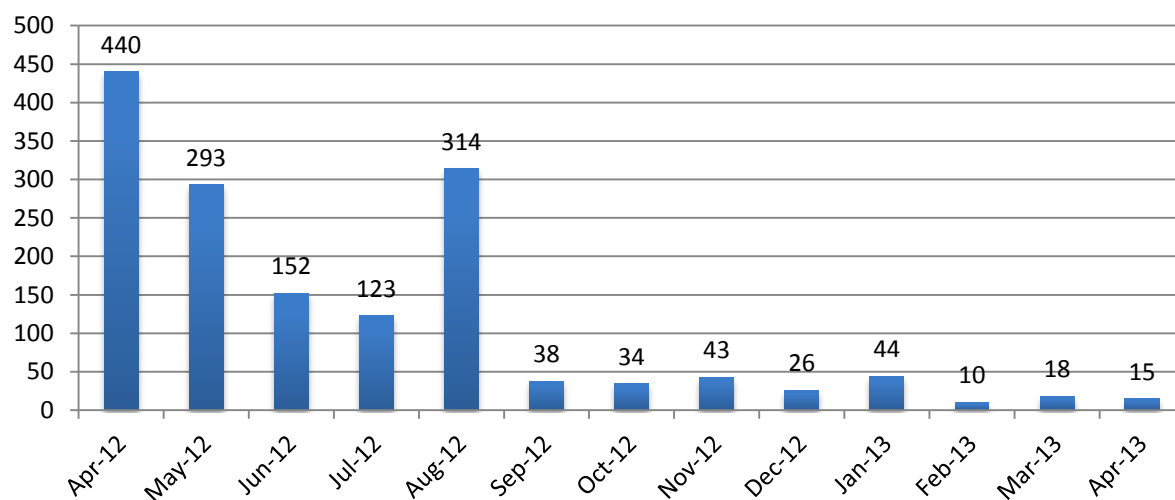


Figure 4. Number of appointments IAs conducted per month.

The user list that was used to track IA interactions was downloaded each semester from a report from IT and contained all of the courses taught at the university and the lead instructors

over each of the courses. By the end of Spring 2013, the database contained 3,259 unique individuals—faculty members, including full time, adjunct, and graduate student instructors, administrators, and TAs that the IAs worked with. Figure 5 shows the training status of the individuals in the database.

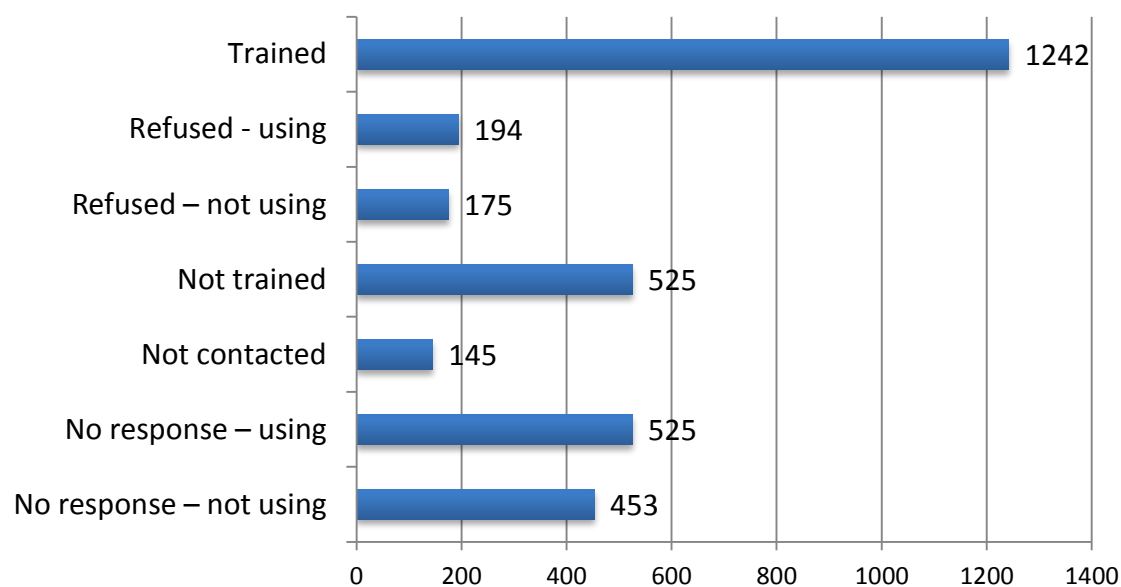


Figure 5. Training status of administrators, faculty, staff, and TAs in Database, N=3259.

Note: The following are the explanations of each of the training statuses:

- *Trained*: The instructors received training from the IAs.
- *Refused – Using*: The instructor refused to receive training but did build their courses in Learning Suite.
- *Refused – Not Using*: The instructors refused to receive training and did not build their courses in Learning Suite.
- *Not Trained*: Instructors who periodically called with questions, but never received a full training session.
- *Not Contacted*: The instructors were not contacted, mainly for reasons such as they taught an individualized class, such as research, thesis, dissertation, or individual music lessons that did not make use of Learning Suite.
- *No Response – Using*: The IAs attempted to contact these instructors, but the instructors never responded. The instructors did build their courses in Learning Suite.
- *No Response – Not Using*: The IAs attempted to contact these instructors, but the instructors never responded. The instructors did not build their courses in Learning Suite.

**Course migrations.** The IAs were available to assist with course migrations on behalf of faculty members. Many of these came as a result of meetings with the faculty members. Prior to

Spring 2012 term courses, the IAs migrated 518 courses for faculty members. Unless a faculty member refused assistance, the IAs copied their courses from Blackboard to Learning Suite, so when the faculty members had access to Learning Suite, their spring courses would already exist in the system. Some courses were very straightforward to complete while others were quite complex. The courses containing a larger number of exams took an extensive amount of time to create because each question had to be created manually. The IAs completed approximately 1,428 course migrations for faculty members during their tenure.

**Phone calls.** The IAs had four phone lines into the office where instructors could call in and the IAs could call out. The main purpose for which instructors called in was to ask a question or to set up an appointment. The main purpose for outbound calls was to proactively reach out to instructors to assist them in setting up their courses. There was a total of approximately 10,846 phone calls both inbound to and outbound from the IA office recorded. Table 4 demonstrates the results of the phone calls.

Table 4

*Results of IA Phone Calls*

Result	Inbound	Outbound
Appointment	193	1436
Course Migration	57	11
IT Service Desk	538	18
Resolved	3808	4785

The table demonstrates the numbers of phone calls, organized by the results of the phone calls. Many of the outbound calls resulted in appointments with instructors across campus, which was part of the proactive approach the IAs tried to take. The IAs received 57 of the course migrations/conversions from inbound calls and 11 from outbound calls. A number of the calls needed to be transferred to the IT Service Desk in order to resolve and track bugs or technical

issues with the system. Many of the inbound calls were resolved directly in the IA office. Most were questions about how to complete a specific task in Learning Suite. On closer inspection of the call reports, the outbound calls marked as *Resolved* were often to return instructors' phone calls to answer questions they asked or the IAs left a voicemail regarding the answer to a question or to offer them implementation services. This demonstrates that the IAs were actively involved in answering faculty members' questions and proactively reaching out to offer them support.

**Email.** In addition to appointments, phone calls, and migrations, the IAs also contacted the instructors via email. The IAs had a centralized email account where all email was managed. The IA coordinator mediated the flow of email between the IAs and the instructors.

Approximately 4,915 of the emails originated from the IAs inviting instructors to allow them to assist with migrating their courses. There were approximately 251 email responses to the outbound emails. Additionally, instructors sent in approximately 217 emails asking questions, and the IAs sent about 950 emails to answer questions. Many of these were to follow up from phone conversations or appointments. Finally, the IAs sent a number of batch emails to all individuals in the database to invite them to utilize IA services in preparation for the next semester. The number of batch emails was not included with the number of individual emails sent by the IAs.

In summary, the IAs were used heavily throughout the transition. The 1,242 individual instructors who were fully trained, the 1,428 courses that the IAs migrated, the 10,846 phone calls, both inbound and outbound, and the over 6,000 emails sent demonstrate the proactive nature of this relationship and suggests that much of the action taken in regards to transitioning

to Learning Suite occurred as a result of IA initiatives. In total, there were over 41,000 points of contact with faculty members throughout the four semesters the team was in existence.

### **Findings for Question Two**

The student employee implementation team played a significant role in the implementation of Learning Suite at BYU. This section will focus on how the student employees were perceived by faculty and staff through the implementation of Learning Suite. There are four specific areas I will discuss to answer this question.

**Best thing they ever did.** Four of the instructors made specific comments about the presence of the IA team as being one of the most important factors of the implementation:

- Instructor A: “The best thing that they ever did was that they had the Learning Suite facilitation staff that could come help you.”
- Instructor B: “As far as I could tell, they were every bit as good as any professional would have been. They knew what was going on.”
- Instructor E: “The thing that was super helpful for me were the students that came and would sit and help me.”
- Instructor G: “I would say that is one of the things that saved Learning Suite’s bacon ... The fact that there was this dedicated team just overcame a lot of negative things that people encountered ... I can’t think of a single factor in the implementation of Learning Suite that did more good to promote faculty acceptance than the effort of that group of students.”

The general theme throughout all of the interviews was gratitude for these students and their assistance with migrating courses and answering questions about the functionality of Learning Suite.

**Missed when the office closed.** When the concept of creating a team of IAs was conceived, the budget provided by administration was to be used within one year. The IAs began working during the Winter 2012 semester, so they could be trained and could begin to convert courses for the Spring 2012, the first semester of full implementation. Toward the end of Fall 2012, we analyzed the number of contacts the IAs were having with faculty members each week and found that on average there were still over 100 points of contact per week. We proposed to the administration that the support should continue for at least one more semester with a smaller cadre of IAs. Thus, IA support continued to be available through Spring 2013, at which point the team was dissolved and the office closed.

The interviews occurred during Winter 2014, almost two years from the initial transition, and five of the instructors commented on the fact that the IAs were no longer available. This was concerning to them because they still felt that they needed the support offered by the students. One of the initial purposes of the IAs was to train instructors how to use Learning Suite, but they also often assisted in completing the conversions of instructors' courses each semester, which faculty missed after the team was dissolved.

Interestingly, Instructor A commented on the fact that they were gone and described what happened to him personally as a result. He said, "There have been so many glitches, so many bugs, that I've really kind of thrown my hands up ... because that kind of person-to-person help isn't available any more." This instructor continued to use Learning Suite until, because of the various problems and bugs, he no longer felt he had additional support to do everything he needed to do in Learning Suite, at which point he began using it less.

Other instructors mentioned the effects of the IAs going away:

- Instructor C: "And then the IAs went away...it is all OIT right now."



- Instructor E: “They went away faster than I would have liked them to.”
- Instructor F: “They don’t send anybody down anymore. It’s all over the phone now... That’s the thing that I miss now.”
- Instructor H: “There was a direct line to the people who just did Learning Suite and eventually that faded out and now 2-4000 is where we go.” (Note: 2-4000 is the phone number for the IT Service Desk. Sometimes faculty and staff refer to the Service Desk by their phone number.)

Had the team not been dissolved, there is some evidence that they would have still been useful in supporting instructors with their courses in Learning Suite.

**Influence on pedagogy.** Even though these were undergraduate student employees, few with a background in teaching and pedagogy, they were able to influence the way that instructors taught their courses using Learning Suite. Instructor A taught in a flipped classroom as defined by Bergmann & Sams (2012) and Bishop & Verleger (2013) where students engage in a number of individual activities and learning experiences through reading, lectures, videos, or other materials prior to coming to class. Class time was then utilized for practical application and problem solving with the instructor orchestrating activities and providing opportunities for peer teaching. Instructor A said, “They were super helpful in actually helping me to get further into the flipped approach.” The students had not been specifically trained in teaching in a flipped classroom, but were able to demonstrate to the instructor how to utilize the tools within Learning Suite to best accomplish the pedagogical approach he chose to use. Instructor E also learned more about the tools and how to use them to benefit her class. She said, “I learned all about the uploading of the assignments, which was super, so we do them predominantly electronically, which I love. I also learned about Digital Dialog videos.” Instructor F learned he could upload

his content and reading materials into Learning Suite, so he didn't have to make copies of his materials, as he had done for a number of years.

Instructor C explains using the IAs in a different way with regards to pedagogy:

Sometimes I would bounce things off. I suppose the word pedagogy includes both teaching and how you manage the course, and so more in terms of would students like to see this or would they like to see this? Wouldn't students care to know about their weighted grade as they go along as opposed to having the weighting done at the end? That's what I thought ... Sometimes they would give their feedback too, like yeah, I like this in my classes, and this is the challenge. If you asked, they would tell you. So that was kind of nice to have the student perspective to make sure you are on track.

Her approach was to get their feedback about the way she set up her course and then she set it up according to preferences. She didn't necessarily change her approach for her class, though.

Instructor F had a different approach than other instructors. He had taught his course a number of years and had used technology in all of his years teaching. He already knew very specifically what he wanted to accomplish in his course, so his only question was how to do it in Learning Suite. He said, "I designed my pedagogy independent of whatever tools are available. Then I look for tools, like Learning Suite or whatever, that will help me accomplish those objectives, rather than letting the tools define what I can and can't or will and won't do."

In sum, the instructors generally trusted the advice given by the IAs. Consultant 1 said, "When they (instructors) hear it from a student, then they think, okay, if students are going to like it, then I'm willing to do it ... I think students can have a big influence, just helping in that transition. They probably get more confidence than when I go."

**Added capacity and increased consultant job satisfaction.** The IAs were able to provide support not only for instructors, but also for the CTL consultants. The consultants' primary responsibilities were to arrange for training sessions for departments or programs and work with individual faculty members to design their courses. Three of the consultants said that they also provided a lot of moral support for the faculty members, including “holding hands [and] drying tears” (Consultant 4). Consultant 2 said that without the IAs, it would have been an “unmitigated disaster.”

BYU administration often referred to the IAs as a small army to help with the transition. Just by the number of student employees involved, many faculty members were able to receive assistance to set up and run their courses. Here are some comments from the consultants about the capacity the IAs added:

- Consultant 2: “I think what would have happened is the consultants would have become like the IAs but we didn't have the coverage they had ... We would have gotten to only 5-10% of all that the IAs were able to get to ... I see faculty just basically saying, I'm not using it. I'm just going to have to go to another LMS.”
- Consultant 4: “They saved the day for me ... I would have had many sleepless nights if it had been up to me to make sure everyone in my colleges was taken care of.”
- Consultant 5: “As for me as a consultant, I would never have had the capacity to give the service to the faculty that they deserved.”

This group of students was able to build capacity for training and support that would have not been possible without someone filling that role. Because of the small number of CTL consultants, other resources needed to be added to provide the necessary support through the transition.

In addition to adding capacity, two of the consultants specifically mentioned that without the IAs, their motivation in their jobs would have suffered.

Consultant 5 said, “I wouldn’t have been very happy spending all of my days doing, you know, one-on-one training with Learning Suite ... I would have been a lot less happy in my current job because I would have been doing things that I was not that interested in ... I’m interested in the success of the tool, but getting into the details of it all was never what motivated me about my job.” Consultant 4 went further by saying, “I might have been dusting off my resume and going somewhere else were it not for them, and that is probably no exaggeration.”

The IAs were able to focus on the technology side of the support, allowing the consultants to meet with faculty to discuss pedagogy and effective course design, which was their area of expertise, and of greater interest to them. Because of the number of IAs, they also were able to reach a greater number of instructors than the consultants could have reached on their own.

### **Findings for Question Three**

This section will respond to the question of the conditions that were in place that led to these student employees being successful or not. Several factors influenced the IAs’ success. First, they were able to provide side-by-side help. Second, their ability to answer questions impacted their success. Third, they were able to personalize the training they provided to fit the needs of the course and the instructor.

**Side-by-side help.** The IAs were available throughout the transition from Blackboard to Learning Suite and were deployable to faculty members’ offices or available by phone. There was something significant about having students “show up at your door” (Consultant 1) that made a difference. All of the instructors mentioned having someone come to their offices to

work with them and were impressed that they would do that. Instructor E almost seemed shocked. She said, “I could just kind of ask them for help and the IAs would really come.” We did not advertise the location of the IA office, yet Consultant 1 said, “some faculty would just go down there” to get the side-by-side help they wanted or needed. Consultant 4 talked about the impact of having the side-by-side help available by saying, “When they had a concern, something about having an assistant right there at their elbow who could answer their questions ... really saved the day.”

Having the IAs available to assist faculty also helped improve the perception of Learning Suite. Thinking about interactions with faculty members across campus, Consultant 4 recognized, “Because the IAs were willing to go in and help them transition their courses, those who took advantage of that really calmed down in a hurry.” Instructor G offers an instructor’s perspective:

The fact that the university went to so much trouble to help people work through implementing it and overcoming the problems smoothed out a lot of those feelings ... I can’t think of a single factor in the implementation of Learning Suite that did more good to promote faculty acceptance than the effort of that group of students that came and helped.

The IAs were prepared, so they could be deployed on a moment’s notice throughout the duration of work hours, and this was noticed by faculty. Instructor A said, “Within ten minutes, one would come to my office. ... sit down with me, and help me work through it.” Instructor G also commented on the rapidity of the IA visits. He said, “Just the fact that there was so much help available instantly, quickly, and I would say in a friendly way.”

Instructor A talked about the value added of having someone sitting with you. He said, “The tech sitting here would go, oh yeah, here’s the problem.” Instructor D said something similar. He said, “When they were here, they would say, while I’m here, let me just quickly show you this or that sort of a cool little thing you can do. You know, kind of tutoring.” This is aid faculty members received because they had someone physically in their offices.

**Ability to answer questions.** Another factor that contributed to the success of the IAs was their ability to answer questions. All of the instructors had comments about the ability that the students had to answer questions. Instructor D said, “They knew what they were doing. They knew how to tell me what I needed to do.” Instructor I said, “They were extremely helpful for all of the things I had questions about.” Instructor A said, “I was 98% happy every time that they came over.” Instructors also acknowledged that they didn’t always know the answers, but they quickly followed this comment up with comments such as “They would always plug me up with someone” (Instructor E) or “They would always get an appointment with someone else or find out. They were really good about that” (Instructor G). Even though it wasn’t perfect and the IAs didn’t know the answer to every question, they were able to answer the majority of the questions. Instructor G also commented, “I imagine over time that they learned more and more of the finer features of Learning Suite and were more helpful to answer questions ... You wouldn’t expect the students to have encountered every possible problem.” Faculty members were mostly forgiving that the IAs didn’t know everything.

After the IA team dissolved, another much smaller team was created at the CTL to continue to provide small-scale support to faculty members. According to Instructor A, “The techs ... were not trained as well, and I had them up here at the beginning of winter semester to set me up again to go over some issues I was having, and I’m afraid those poor kids messed me

up as much as they helped me.” Thus, because of the amount of time the IAs had spent in training as well as using Learning Suite, they were able to answer the majority of the questions that the instructors had.

**Personalized training to meet instructor needs.** One of the other critical factors that contributed to the success of the IAs was their ability to personalize their training to meet the specific needs of each faculty member. Many instructors attended workshops either sponsored by the CTL or by their own departments to learn how to use Learning Suite. While the workshops provided an initial overview of some basic functionality, instructors often walked away feeling like they had learned what they needed to learn, but when they actually sat down to use it, they began asking questions like “But how do I do that with my course?” (Instructor E). She went on to say, “I understood the features, ... I just didn’t really feel comfortable at all applying it.” Instructor D said:

I went to one of those meetings where someone was quickly moving through the PowerPoints and showing you this and that, and you think, I kind of get this. When I go home and start using it, maybe I sort of remember that. It was nice to have one of those assistants come and just sit down with you and say, this is how you do it.

Because they were able to sit down with the instructors one-on-one, the IAs were able to tailor the training to the specific instructor’s needs and “help me through the things that are peculiar to my course” (Instructor E).

Sometimes it took multiple visits to get everything set up the way the faculty member needed. Instructor F talked about having questions, and every time he had another one, the IAs came back. Instructor G had a similar experience:

I'm glad that we had a chance to do it more than once because once I got started, there were things that I realized I didn't know I needed to know or things that I couldn't figure out how to make them work the way I wanted them to.

Instructor E said that looking back, she wishes she had known up front that she would have liked to have three two-hour follow-up visits from the IAs, spaced out to give her time to work on some of the tasks that they trained on. Then in each visit, she would like to follow up with additional questions that she had since the last visit. She felt like that would have been the right amount of personalized help she would have liked.

In the Winter 2014 Academic Technology survey, faculty members were asked how they prefer to receive technology training and were asked to mark all that apply. Figure 6 demonstrates that many like one-on-one help, as well as classroom workshops and video tutorials.

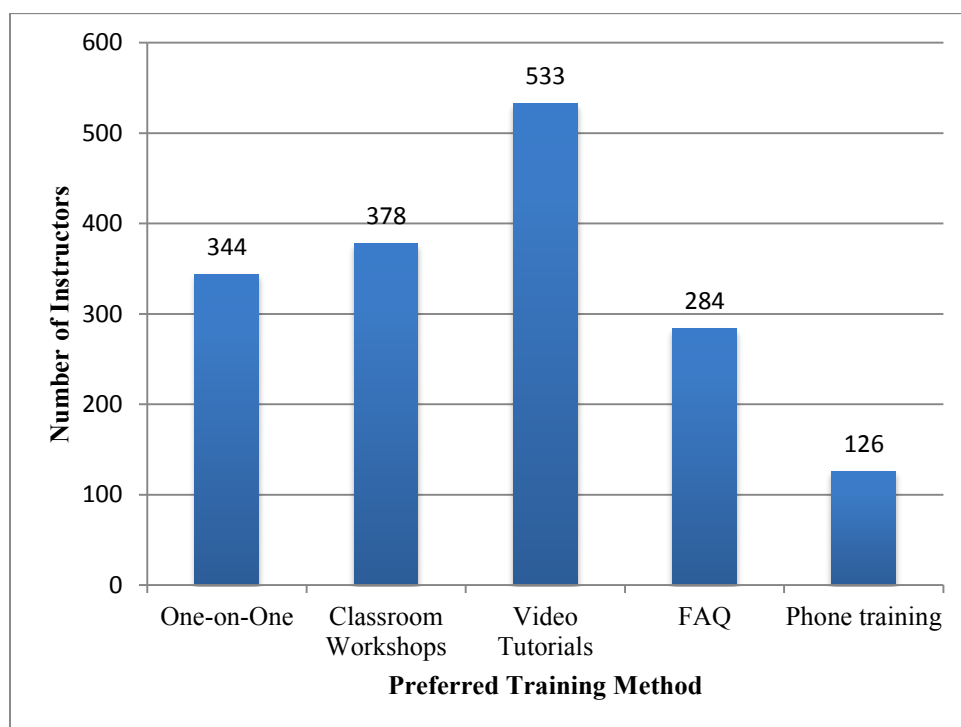


Figure 6. Preferences for different training methods by instructors.



This figure also demonstrates that phone training is the least preferred method, yet the method that became most available after the IAs were no longer available. This may have impeded the faculty members from receiving the most useful type of assistance when they needed it.

#### **Findings for Question Four**

This section answers the question of whether or not the implementation team contributed anything that the IT Service Desk could not. Throughout the transition from Blackboard to Learning Suite, there were two primary offices that provided technological support for Learning Suite. The IA office was tasked with the general training and the “how-to” type of support while the IT Service Desk was tasked with the technical support and the reporting of bugs and system malfunctions. Prior, the IT Service Desk was the only support organization on campus for all technology-support needs. All of the support provided through the IT Service Desk was over the phone. The Service Desk staff had permissions to proxy or masquerade as the instructors in Learning Suite, but did not have screen-sharing capabilities.

As I looked at the value of having an IA provide side-by-side assistance, instructors used the following words to describe the IAs: wonderful, helpful, nicest, willing, professional, and knowledgeable. One reason that Instructor D appreciated the IAs was the “real-time nature of it” that made it successful. Instructor F said, “person-to-person is so much nicer than on the phone.” Instructor G said that he “really liked that there was a dedicated group of people to talk to specifically about Learning Suite.” They were able to specialize and focus on the one product and understand the details of the system in order to answer questions about it.

Working with the IT Service Desk was a different experience for faculty members. Instructor D continued by saying, “It’s just not sort of that hold my hand sitting next to me while I do this.” One irritation that several instructors mentioned in the same way was “that they

always want to know what your user name is and stuff before they'll even talk to you, and that is just kind of annoying" (Instructor G). Instructor D mentioned that, "Sometimes they haven't answered questions." He said sometimes they closed his tickets, but never got an explanation of why the bug occurred. He continued by saying, "Because they didn't answer my question of whether or not, how confident can I be in the system?"

Another difficulty that faculty members faced was that the IT Service Desk had many tools that they supported, so when faculty members call, "everyone has to figure out what you are even talking about before they can usually help you" (Instructor I). Instructors didn't always call about bugs they encountered in the system. Instructor A said, "I had better things to do than to spend my time. I have spent multiple hours on the phone with IT and a lot of times they say, well, this is an engineer problem and the kids don't know how to address it." Instructor C often had the same issue where she "would call them and then I'd have to bring somebody up to speed and have the feeling that they really didn't understand me."

When they initially made the transition to IT providing all of the support after the IA office closed, there was a learning curve for the IT Service Desk that faculty members noticed. Instructor E said, "I get my questions answered much more now than when they initially made the transfer." Consultant 2 said, at the time of the interviews, "OIT is working well enough at supporting it." So there was a steep learning curve, but they have figured out a lot of the issues with how to support it better over time.

Since all of the IT support was done by phone, the agents were not able to see specifically what was happening on an instructor's screen. Instructor A said, "Sometimes what was happening on my screen wasn't happening on their screen because of the server or who knows." But when an IA was in his office, he said, "The tech sitting here with me would go, 'Oh yeah,

here is the problem.” Screen sharing could have been useful for the Service Desk to really help pinpoint what was happening on the instructors’ screens. It would have been one step closer to sitting in the instructors’ offices.

In summary, the IAs were able to provide real-time, side-by-side help that was more personalized than what the instructors felt they received from the IT Service Desk. Additionally, being able to see the problem occurring on the instructor’s screen allowed them to figure out the problem more quickly and easily. Finally, as noted in the section above on side-by-side help, the IAs were able to add value to the instructors. Instructor D said, “While I’m here, let me show you this or that, sort of a cool little thing you can do. You know, kind of tutoring where 2-4000 asks, ‘What’s your problem? Here’s a solution. Thanks. Goodbye.” Faculty appreciated the little things they were able to learn in informal opportunities.

### **Findings for Question Five**

Based on this experience, what other lessons can we learn about LMS transitions? In addition to the above observations there were three other themes that stood out in the analysis that I feel can contribute to the success of an LMS transition. They are communication, the cost of change, and acceptance.

**Communication.** Communication regarding the transition from Blackboard to Learning Suite was a weakness noted by faculty members. Some faculty members felt they had received advanced warning, while others felt the transition and everything about it was sprung on them with very little communication directly from administration. Instructor B explained how he learned about the transition;

I knew well in advance that it was going to happen. I think I had phone calls about it. I think I read about it in the Daily Universe that it was happening ... I think that my first

and best information came from my friends who I jog with and that I run into down at the gym.

So his communication lines were more informal sources than specific, campus-wide announcements from the administrators. Instructor H said, “I was getting some of this information simply because I was one of the beta testers of BrainHoney. I don’t think anyone else down the hall or other professors were getting any clue of the change coming.” Instructor D expressed with a tone of frustration, “It was dumped on us since the beginning ... The communication side was not handled very well. But the support side was good.”

Instructors also commented on their perception about the lack of communication about ongoing changes. After a significant change to the email system within Learning Suite and its merge with the university-wide secure email system, Instructor D said, “They even told the highest levels that they didn’t want to sort of alert faculty that they were doing this because they thought that faculty didn’t want to be bothered by these kind of details in email and things like that.” Instructor E expressed some concern when she said, “I would figure out how to do something in Learning Suite and then it seemed like there was an update or something.”

Instructor F’s experience was similar: “They didn’t tell me. So I didn’t get an email or anything like that. All I got was suddenly I couldn’t do it anymore, so I wondered what was going on.”

Instructor H had some recommendations regarding the communication about change:

I think some preparation of the why, the rationale of the switch can help and maybe even getting more professors involved in understanding what was wrong, especially with Blackboard. And also why Learning Suite is going to be better ... We like to operate from the idea that there is evidence that this transition is necessary, not because ‘we said so.’

This statement corroborates with the findings of Ryan, et al (2012) where helping faculty members understand the “why” was extremely important to the adoption and success of the LMS.

**Cost of change.** Change is really hard, no matter the type. Consultant 4 shared a succinct quote from Lorin Wheelwright, “Change has a twin. It is called pain.” The same consultant continued by saying, “It was just making the change that was one of the biggest challenges for faculty I worked with.” Instructor H felt “forced” to transition to Learning Suite before he was ready. In talking about change management, he said, “Don’t just change something because you think the little bit you gain on it makes that big of a difference to make people relearn a new system. Strategic change models tell you it’s not worth it. That’s so disruptive within an organization.” Instructor G said something similar:

I think in the end, a slower rollout and more beta testing and bug fixing up front would have left faculty with a sweeter taste in their mouth ... You hear a lot of groaning and moaning about Learning Suite, which probably wouldn’t be the case if it had been implemented in a more rational way... You don’t usually get the best outcome if you make a sudden quantum change from one thing into another. The industry has learned that it isn’t a good idea. You always keep the old system going for awhile while you bring on the new system so that people’s needs are satisfied and people can kind of ease into the new one.

As he mentioned, there was not parallel time between Blackboard and Learning Suite. Other institutions typically run the legacy system along with the new system in parallel for anywhere from 6-24 months to give faculty members ample time to transition (Bexheti et al., 2009; Dwyer, 2004; Muldoon et al., 2010; Scanlan & Holtzman, 2009; Uys, 2010).

There was a feeling also that the administration didn't take into account the amount of time and effort that it would take to really transition everyone. Instructor D explained:

Even though I think they made a lot of efforts to help us with the students and online assistants, they were able to do the initial introduction program they had. They maybe made effort, but I don't think it really recognizes the sort of time constraints ... I don't think the administration was conscious of how little time we have to play with it, how long it takes to work the bugs out, and to work those out while you are trying to actually use it as your course management system was a bit frustrating.

Instructor B had similar feelings, "I knew it was coming and it was well in advance. I can't say that I wasn't warned, but I didn't adequately appreciate how big the change would be."

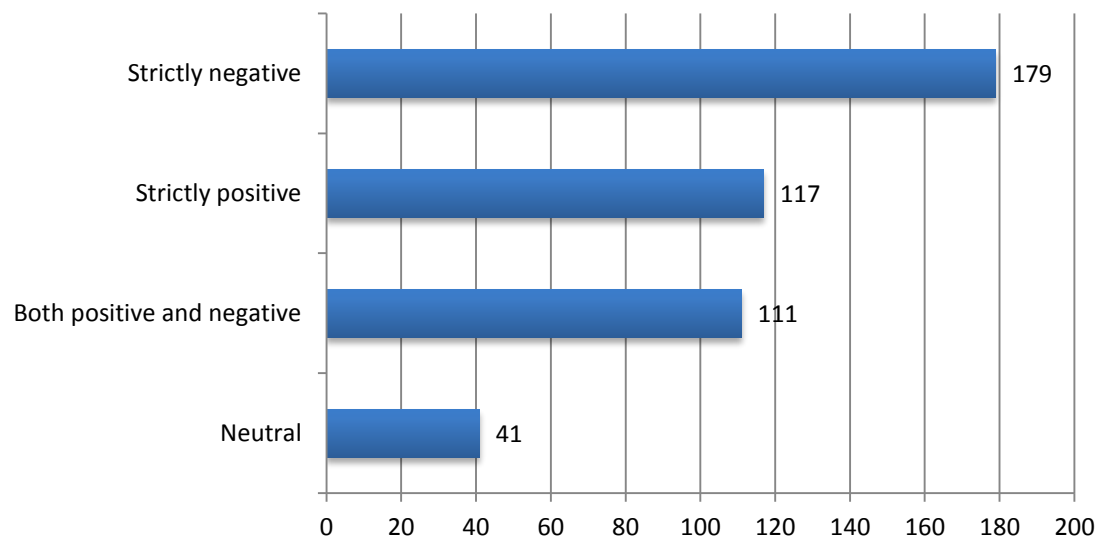
**Acceptance.** Though the change was painful, looking back, according to the consultants, "Everyone has pretty much accepted it" (Consultant 1). Consultant 3 said, "For the majority, Learning Suite is fine ... Most faculty like it. I get a lot of comments about how easy it is to use. Students like it. So that is good." Consultant 4 had similar comments:

I'm not hearing any more about the ready, aim, fire that we heard earlier. I'm not hearing any more, will it work? Or is it simple enough for me to work? I think for the most part, it's sort of an 'all's well that ends' is what I'm getting from people ... I really sense that there is a great feeling of security and trust.

One aspect that came out from Consultant 1 was "once you've got some of these vocal people who start championing it, everyone has pretty much accepted it." So some of the early adopters who struggled in the beginning began to see the benefits and the bugs worked out, then were able to motivate others to use it. Prior research has also recommended using early adopters to encourage and motivate others to use the new LMSs (Bexheti et al., 2009; Li, 2010;

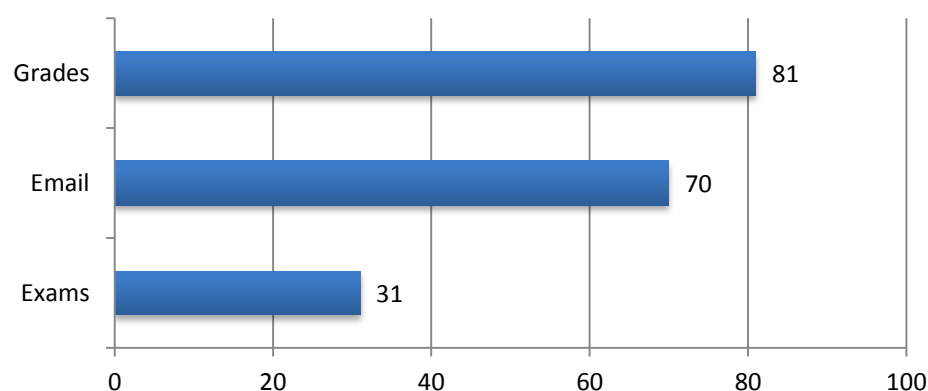
Nanayakkara, 2007; Powell, 2008; Rogers, 1995; Scanlan & Holtzman, 2009). The literature pointed out that early adopters were effective at identifying the benefits of the system and sharing them with their colleagues. This transition was no exception. The early adopters of Learning Suite also became advocates for the system.

Each of the faculty members mentioned frustrations they had with Learning Suite as well as recommendations for future development in their interviews. In the Winter 2014 Academic Technology Survey, faculty members were given an open-ended question to provide their overall comments about Learning Suite. Out of 955 responses to the survey, 448 provided comments to this question. I categorized these comments as positive, negative, or neutral, based on the overall tone of their responses. Positive comments included statements such as “I like it very much,” “Great tools,” and “Easy to use” where the instructors made references to liking the features or their ease of use. Negative comments included statements such as “It is deadly slow,” “Horribly buggy and inefficient to use,” and “I’m going to be blunt. I HATE Learning Suite for most things.” Some instructors included both positive and negative responses, such as “Had some trouble learning to use it, but fine now,” “It has its glitches, but overall I’m getting used to it,” and “It’s good as far as it goes, but it’s missing a lot of important teaching/learning features present in other LMSs.” There were a few instructors who made comments that were neutral, so not negative or positive, but general statements, such as “It’s fine” and “I post readings on Learning Suite, but prefer to do everything else in class.” Figure 7 includes the total number of positive and negative comments that were included.



*Figure 7:* Instructor overall comments about Learning Suite, two years after implementation.

With some of the negative comments, faculty members addressed slowness, bugginess, and reliability, but they also listed complaints around some tools specifically, including the email system, grades and exams. Figure 8 demonstrates the number of comments regarding individual tools.



*Figure 8.* Number of comments related to problems with specific tools.

When asked about how Learning Suite is performing now, Consultant 5 said, “It does what most faculty need. Now it’s a different question to say, does it do all of the robust, pedagogical support that people who understand teaching and learning would want? And the



answer is no.” This statement was based on his own judgment of Learning Suite, but there is no data from this study to support the statement that Learning Suite does what most faculty need. There are challenges and a list of enhancements that faculty members would like but “the hygiene factors are taken care of” (Consultant 2). Based on the survey data, there may be more discontent than what is communicated to the consultants. Since the number of negative comments about Learning Suite lessened from its initial release, there is a perception that things are better than they were, but there is still some discontent.

### **Summary**

This section has focused on the major findings of this study. The IAs were able to support the transition from Blackboard to Learning Suite, and it was noticed and appreciated by faculty members. The faculty and staff members heavily used the IAs to assist with answering their questions and getting the help that they needed. Some of the conditions that made the IAs successful were their ability to sit with faculty members in their offices, their ability to answer questions or find the help that instructors needed, and their ability to tailor their training to the specific needs of faculty members.

## Chapter 5: Discussion and Conclusions

The implementation of a campus-wide LMS over a short period of time requires coordination and strategic planning to make it successful. While there is likely never a perfect implementation, there are a number of factors that can improve the chances of it being more seamless. The focus of this study has been to determine the impact a group of student employees had on the experience of faculty members and CTL consultants as they transitioned and supported the transition from Blackboard to Learning Suite.

The rapid transition time with little-to-no overlap necessitated having a great deal of support through the transition. The fact that instructors did not have the option to opt-in when they were ready or that there was no alternate university-supported system made it necessary that the university provide additional support, which came through the IAs.

It is useful to frame these students' impact on the overall transition to a new LMS through the lens of best practices, as mentioned in the literature previously. In the following section, we review these practices and indicate how IAs influenced these at BYU.

### **Making the LMS Transition Mission Critical**

The core of BYU's change management strategy was providing the IAs as a resource for assisting with the transition of the LMS across campus (Scanlan & Holtzman, 2009). Having a rapid transition was key for the university to make the LMS transition a top priority for the administration as well as all subordinate organizations (Dwyer, 2004). Most all development resources from the CTL were moved to working on Learning Suite. Prior to Learning Suite, the CTL developed a number of other tools that enhanced teaching and learning across the university. When the administration tasked CTL with the design and development of Learning Suite, most all other project development ceased. BYU administrators recognized the impact the

LMS transition would have on the university and therefore was willing to provide funding to create this team with the vision that the IAs would be able to provide one-on-one assistance through the transition. Creating the IA team became a core element in the implementation strategy.

### **Creating a Strategic Plan**

The idea for using the IAs originated from and was funded by the Academic Vice President, following the top-down strategy recommended by Li (2010) and Uys (2010). The timeline for designing and building the LMS was shortened, so the goals of the LMS became to have a working product that could provide basic functionality for most faculty members. The faculty members and consultants who participated in the interviews, as well as those who participated in the Winter 2014 Academic Technology survey recognized that for the most part, it was functional, but it still lacked some of the core features they expected a robust LMS to have. The IAs played a key role in bridging the gap where the product was not fully able to meet faculty members' needs over the short transition time so the product could be more fully developed over time. The IAs migrated courses for faculty members as well as provided side-by-side and over-the-phone assistance. They also proactively sought opportunities to provide assistance that faculty members would not have had otherwise. Though having the IAs did not completely eliminate the hidden costs associated with the LMS change, it did help alleviate some of the pain experienced by faculty members and consultants (Cross, 2004; Konstantinidis et al., 2011), as evidenced by comments made such as "Saved the day for me," "Best thing they ever did," and "Saved Learning Suite's bacon."

### **Choosing the Right LMS**

Choosing the right LMS is the only area in which the IAs did not have a major role through the decision and implementation. The IAs had a significant impact in all other areas.

### **Creating a Communication Plan**

While the university did provide several major announcements about Learning Suite, the IAs managed a lot of the communication about the product, including informing faculty members of updates and keeping the Learning Suite website updated with the latest tutorials and help information (Chao, 2008; Dwyer, 2004; Eitzmann, 2011; Scanlan & Holtzman, 2009; Uys, 2010). Additionally, in the workshops and individual training sessions they conducted, the IAs communicated the rationale for the transition and how Learning Suite fit in with the strategy for the university (Ryan et al., 2012).

### **Adequately Test and Gather User Feedback**

The CTL had a small team of regression testers to conduct testing of the system as it was being developed. At particular times in development, the IAs assisted with this testing to discover bugs or other issues that needed to be fixed prior to release (Dwyer, 2004; Scanlan & Holtzman, 2009; Smart & Meyer, 2005). The IAs were able to complete thousands of test cases in a few days. Not only did this help with the product, but it also helped the IAs more fully understand the capabilities of the system.

The IAs had regular contact with faculty members through their meetings and phone calls and gathered requests for additional features for future Learning Suite development (Bexheti et al., 2009; Chao, 2008; Scanlan & Holtzman, 2009; Uys, 2010). We tracked enhancements through UserVoice, which was a public-facing enhancement request system. Individual faculty

members could also enter their own requests and vote for other requests that had been entered. These requests were then used to prioritize features for future development.

### **Training End Users**

Training was the core of the work conducted by the IAs. They were the designated group for the university to provide all support for Learning Suite (Li, 2010; Powell, 2008; Scanlan & Holtzman, 2009). Their primary responsibility was to contact faculty members or respond when faculty members contacted them and provide them with the training necessary to complete the tasks they needed to do when they needed to do them (Chao, 2008; Khalsa et al., 2012). The IAs trained approximately 1,242 faculty and staff members one-on-one and participated in nearly 11,000 phone calls and sent and received over 6,000 emails to accomplish their work. The goal was to help the faculty members become self-sufficient to the extent that they could use Learning Suite after the IAs were no longer available. Over time, the number of phone calls and requests for assistance did decline, but even when the IA office closed, there were still faculty members who would have continued utilizing their services, based on the comments from faculty members who mentioned that these students were gone. Being able to conduct the training, primarily in faculty members' offices, impacted the experience because the IAs were able to tailor their instruction specific to the instructors' needs and to answer their questions about how Learning Suite could help them accomplish precise tasks as they related to their individual courses and adjust their training according to the skill level of the faculty members (Dwyer, 2004; Scanlan & Holtzman, 2009). The IAs also added value by pointing out additional functionality Learning Suite was capable of as it related to the tasks they were training on. They could often pinpoint problems and offer suggestions for how to fix those problems because they were sitting side-by-side with the faculty members. The real-time nature of this type of assistance made it successful.

The IAs trained and supported faculty members, their teaching assistants, and other campus administrators and staff members who supported the faculty members (West et al., 2007). The proactive nature of the IAs interactions impacted the experiences of those they served in significant ways. Had they not been as proactive, the results may have been very different.

### **Building a Support System**

There were three main groups that provided support for the campus through the transition. The IT Service Desk provided technological support for reporting bugs and other issues with the system (Black et al., 2007; Dwyer, 2004; Li, 2010; Muldoon et al., 2010; Ryan et al., 2012; Scanlan & Holtzman, 2009). The CTL consultants provided a lot of the pedagogical assistance for effectively designing courses and activities to maximize student learning (Chao, 2008; Dwyer, 2004; Lane, 2009; Muldoon et al., 2010; Scanlan & Holtzman, 2009). The IAs created the tutorials and help documentation as well as assisted faculty members understand how Learning Suite could be used to realize the pedagogy they desired to use in their classroom (Dwyer, 2004; Li, 2010; Liu, 2005; Scanlan & Holtzman, 2009). The three groups were able to support and assist each other as they worked together with faculty members through the transition. For example, the IAs contacted the IT Service Desk when faculty members experienced a bug in Learning Suite. When a faculty member contacted the IT Service Desk needing some side-by-side assistance, the Service Desk contacted the IAs. The consultants also contacted the IAs when they gave presentations as well as when individual faculty members they were working with needed IA assistance. The IAs also referred to the consultants when faculty members had questions about their course design. The three support offices provided not only support to the faculty members, but also to each other. When the IA office closed, there was a significant learning curve for the IT Service Desk. It may have been useful to have some better

cross-training across teams to provide a smoother transition. Additionally, the CTL consultants felt more pressure when the office closed and requested that a new, smaller team be hired through the CTL to provide the same support for faculty members. In other transitions such as this, it may be useful to continue a smaller, deployable team to continue to assist with the use of the LMS.

### **Migrating the Data**

As Learning Suite was built, the developers also built an import tool to import packages from Blackboard that pulled content, exam questions, discussion prompts, etc. into Learning Suite. This tool became available toward the end of Winter 2012. The IAs had already migrated 518 courses manually into Learning Suite by that point, including all exams and quizzes and all content. Additionally, a small number of courses that had been taught using BrainHoney had to be manually migrated as well. Even after the import tool copied in the contents from the Blackboard courses, there was a significant amount of work that needed to be done to complete the course migration. Either the IAs or the faculty members who chose to create their own courses completed the migrations. All courses migrated by the IAs were completed the semester prior to when they were taught. By the end of the IA tenure, the majority of the courses across campus were migrated into Learning Suite. The IAs assisted in completing 1,428 of those migrations.

### **Cost-Benefit Analysis**

In the case of BYU, a team of undergraduate student employees conducted the majority of the implementation of Learning Suite. They impacted all areas, except the decision about which LMS to choose. The budget for this project included paying the student employees slightly more per hour than most student employee jobs on campus for 20 hours per week over

the course of one year. The initial budget for hiring these students for the first year was \$301,516.09. An additional \$35,192.20 was provided for some of these students to continue for one additional semester. While this was a significant amount of money for providing support, the cost of continuing to pay licensing fees for Blackboard was significantly more. Hiring student employees is also significantly less expensive than hiring full-time consultants. Because we were able to hire as many students as we did, we were able to support more faculty members than we could have had we hired more consultants. In sum, this was a wise financial decision.

While financially this transition experience appears to be a good idea, a question that still remains is whether or not the help and assistance provided was greater than the hidden costs relating to faculty dissatisfaction, the bugs they encountered, and trying to make the transition so quickly. Because all instructors transitioned at the same time, the university felt that this number of students would be necessary to provide the amount of support faculty members needed. Also, while student employees were able to provide the manual labor for the transition, faculty members had limited contact with instructional designers able to provide research-supported recommendations and best practices for course design. The IAs were given basic training in this area, but many instructors could have benefited from working directly with someone who had greater experience in course design.

Providing this level of dedicated, deployable student support demonstrated to the faculty members that there was a significant commitment from the university to making the transition as easy as possible. Two faculty members mentioned this in their interviews. Instructor G said, “I think the fact that the university went to so much trouble to help people work through implementing it, and overcoming the problems really smoothed out a lot of those [negative] feelings.” Instructor H also commented:



I think that the way they tried to do the transition to Learning Suite was very good. I think by having the students, at least you're giving the impression that we understand that we are disrupting your routine and what you already know, that we want to make sure that you have every resource that we can make available to you. So I think, if for any other reason, at least it gives the impression that you care. That's very good.

These two comments provide at least some evidence to the benefit of having a team available for assisting faculty, especially through a rapid transition. Running the two systems in parallel for a time may have smoothed some of the difficulties related to teaching all courses in Learning Suite while it was still being developed and the bugs were being worked out, but having the IAs helped smooth out some of the issues faculty members had.

### **Recommendations for Future Implementations**

There are two major recommendations for future LMS implementations from this research. One is the necessity of having side-by-side assistance and the other is having a period of overlapping systems.

**Having side-by-side assistance.** Having a deployable support group to provide side-by-side assistance eased some of the pain associated with the transitional LMS change and improved the experience for the instructors who took advantage of the service provided to them. Being able to answer questions by faculty members required a deep understanding of the LMS as well as the rationale for the transition. These IAs were also able to relate to the faculty members in a friendly and professional way that the faculty noticed and appreciated. I would recommend that a team of undergraduate student employees can impact the implementation of an LMS in positive ways and is less expensive than full-time course designers on a campus where instructors, both full-time and adjunct, have responsibility for creating their own course content and activities in

the LMS. Consultant 2 said this would have been “an unmitigated disaster” without that side-by-side help available. This was also demonstrated by comments such as “best thing they ever did” and “saved Learning Suite’s bacon.”

**Running the systems in parallel.** BYU opted to have a fast transition with almost no parallel time for the two systems to co-exist. Consultant 5 compared this to “ripping the Band-Aid off.” Consultant 1 acknowledged this may have been better for students because they only had to go to one place to find all of the materials for their courses, but as Instructor G noted, this left a bitter taste in the mouths of many faculty members because they didn’t feel that the system had all of the necessary functionality when the legacy system was no longer available.

I would recommend having at least one full semester of parallel time for a transition, but a year may be even better to increase the usage in the new system over time rather than transitioning everyone all at once, especially for a system that was built in-house and for which the core functionality was still being developed during deployment. The year of parallel time would have allowed more time for development and testing the system prior to full-scale usage. A year of overlap between the two systems could have probably cut the IA team in half from the outset to provide the necessary support since not all of the faculty members would have transitioned at the same time. Then we could have focused on those who wanted to opt in or to focus on the colleges and departments that were ready to transition, which could have helped with faculty buy-in and would have provided a little more time for development. If we had pursued this path, though, we would have had one more year of paying the licensing fees for Blackboard, costing significantly more than hiring the team of IAs for a year.

In addition, it may have been more beneficial to continue a small number of these IAs, perhaps indefinitely, the goal being that their knowledge was specialized, and they could continue to provide ongoing support for Learning Suite.

**Other lessons learned during an LMS implementation.** While the previous section addressed the significant lessons learned, there are some additional lessons that are valuable here.

1. Faculty members will use the LMS team to get answers to their questions, even if they are undergraduate students. As long as they feel that they can get the answers and support the need, they will use them. Having a team that is proactive can help build trust, but faculty will use them. This is evident from the 41,000 points of contact the IAs logged through the transition.
2. Even though they are not trained pedagogues, student employees can be taught principles of effective course design and can teach these to faculty members, who will listen. We should not underestimate the power these students have to influence instructors. Through the transition, faculty members asked the IAs questions about their pedagogy; additionally, the IAs provided suggestions for improving course design as they worked with faculty members, generally providing a student's point of view. Lane (2009) talked about how novices to online learning often need to be shown how to effectively enact their pedagogy in an online environment and student employees are capable of providing this.
3. Training the students thoroughly on all aspects of the tool, including the rationale for the design of specific tools helps them to be able to answer questions. If they don't know the answers to the questions, help them know where to go to get the answers. Train them on

how to follow up with faculty members after they get the answers. Also, teach the student employees how they can add value by using personal contact time to share tidbits that could potentially save faculty members time. The technological support is invaluable to faculty members and can add value to those who receive their assistance. Black, et al., (2007) emphasized that inadequate technological support can lead to a failed implementation. Student employees can fulfill this role in effective ways.

4. Communication is such an important aspect of a transition. Communicate the rationale for the change in the first place and then continue that communication throughout the transition to keep everyone informed of progress, where they fit in the transition, and what they can do to be prepared for it. Chao (2008) emphasized that clear communication is absolutely essential and will provide many answers for faculty members while inspiring confidence through the transition process.

### **Limitations of This Study**

The scope of this study was only to examine the transition process and the impact on having the deployable group of IAs available to assist in that process. There was a limited sample size of nine faculty interviewees and five CTL consultants that participated in the research, and it may be difficult to generalize their experiences to all other faculty members as well as other institutions and situations. Even though the interview sample size was limited, the data from the IA database and the academic technology surveys helped to broaden and support the findings. We also chose to limit the participants in this study to individuals who utilized the IAs multiple times over multiple semesters, and thus did not consider the experiences of those who did not utilize the services of the IAs as a comparison.

### **Directions for Future Research**

Some questions that arose through this research that could be considered for future research: What is the ideal number of IAs to hire to assist with the transition? What skills or abilities should these student employees already possess upon being hired, and what skills can they be trained on? How is the quality of the course design impacted when faculty members work with IAs to design and build a course as compared to working with full-time, professional instructional designers? How closely can you approximate the “side-by-side help” experience with online instructors distributed across the country as you have in the brick-and-mortar university where faculty members are on-site? What are the differences in the transition experience between those who used the IAs and those who chose not to utilize the IAs?

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## Appendix A: Email/Phone Script

Dear {name of participant}:

I am conducting research on the transition from Blackboard (or Brainhoney) to BYU Learning Suite, and am conducting interviews to understand the experiences of faculty members across campus as part of my doctoral research. Are you willing to participate in an interview to discuss your experience through the transition? I anticipate the interview will last 20-30 minutes. I plan to be on BYU campus on Thursday, 27 March. If you are not available that day, we can schedule a time convenient for you that we can talk by phone.

Please let me know if you are willing to discuss your experience with me and I will send you a link to sign up for a time along with general types of questions I will be asking.

Thank you so much for your assistance. I look forward to learning from you.

Sincerely,

Cary Johnson

Former Learning Suite Implementation Coordinator

## **Appendix B: Consent to be a Research Subject (Instructor)**

### **Introduction**

This research study is being conducted by Cary Johnson and Peter Rich from Instructional Psychology and Technology at Brigham Young University to determine the use and efficacy of the Learning Suite Implementation Assistants (IAs) through the transition from Blackboard (or Brainhoney) to Learning Suite. You were invited to participate because you worked with the IAs and will be able to share your experience transitioning from Blackboard to BYU Learning Suite.

### **Procedures**

If you agree to participate in this research study, the following will occur:

- you will be interviewed for approximately twenty (20) to thirty (30) minutes about your experiences learning to use BYU Learning Suite and your interactions with the IAs.
- the interview will be audio recorded to ensure accuracy in reporting your statements
- the interview will take place by telephone at a time convenient for you or in person on [date]
- the researcher may contact you later to clarify your interview answers for approximately fifteen (15) minutes, most likely by email.
- total time commitment will be between twenty (20) and forty-five (45) minutes.

### **Risks/Discomforts**

The risks or discomforts for participating in this research are minimal. You may experience slight discomfort when recalling the initial days of transitioning from Blackboard to Learning Suite.

### **Benefits**

There will be no direct benefits to you. It is hoped, however, that through your participation researchers may learn about the impact of using an implementation team on the adoption and use of an LMS when transitioning to a new one. This could potentially benefit many universities as many are likely to make a change every few years.

### **Confidentiality**

The research data will be kept on a password-protected computer and only the researcher will have access to the data. At the conclusion of the study, all identifying information will be removed and the data will be kept in the researcher's locked desk drawer in a locked office.

### **Compensation**

There will be no compensation for participation in this research project.

### **Participation**

Participation in this research study is voluntary. You have the right to withdraw at any time or refuse to participate entirely without jeopardy to your status or standing with the university.

### **Questions about the Research**

If you have questions regarding this study, you may contact Cary Johnson at 801-319-7587 or [johnsonca@byui.edu](mailto:johnsonca@byui.edu) for further information.

### **Questions about Your Rights as Research Participants**

If you have questions regarding your rights as a research participant contact IRB Administrator at (801) 422-1461; A-285 ASB, Brigham Young University, Provo, UT 84602; [irb@byu.edu](mailto:irb@byu.edu).

### **Statement of Consent**

I have read, understood, and received a copy of the above consent and desire of my own free will to participate in this study.

Name (Printed):

Signature

Date:

## **Appendix C: Consent to be a Research Subject (Consultant)**

### **Introduction**

This research study is being conducted by Cary Johnson and Peter Rich from Instructional Psychology and Technology at Brigham Young University to determine the use and efficacy of the Learning Suite Implementation Assistants (IAs) through the transition from Blackboard (or Brainhoney) to Learning Suite. You were invited to participate because you worked with the colleges, departments, and individual faculty members during the transition and you will be able to share your experience as you worked with individuals at the university through the transition from Blackboard to BYU Learning Suite.

### **Procedures**

If you agree to participate in this research study, the following will occur:

- you will be interviewed for approximately twenty (20) to thirty (30) minutes about your experiences working with faculty members as they transitioned to BYU Learning Suite and your interactions with the IAs.
- the interview will be audio recorded to ensure accuracy in reporting your statements
- the interview will take place by telephone at a time convenient for you
- the researcher may contact you later to clarify your interview answers for approximately fifteen (15) minutes, most likely by email.
- total time commitment will be between twenty (20) and forty-five (45) minutes

### **Risks/Discomforts**

The risks or discomforts for participating in this research are minimal. You may experience slight discomfort when recalling the initial days of transitioning from Blackboard to Learning Suite.

### **Benefits**

There will be no direct benefits to you. It is hoped, however, that through your participation researchers may learn about the impact of using an implementation team on the adoption and use of an LMS when transitioning to a new one. This could potentially benefit many universities as most are likely to make a change every few years.

### **Confidentiality**

The research data will be kept on a password-protected computer and only the researcher will have access to the data. At the conclusion of the study, all identifying information will be removed and the data will be kept in the researcher's locked desk drawer in a locked office.

### **Compensation**

There will be no compensation for participation in this research project.

### **Participation**

Participation in this research study is voluntary. You have the right to withdraw at any time or refuse to participate entirely without jeopardy to your rank and status, employment, or standing with the university.

### **Questions about the Research**

If you have questions regarding this study, you may contact Cary Johnson at 801-319-7587 ([johnsonca@byui.edu](mailto:johnsonca@byui.edu)) or Peter Rich at 801-422-1171 ([peter\\_rich@byu.edu](mailto:peter_rich@byu.edu)) for further information.

### **Questions about Your Rights as Research Participants**

If you have questions regarding your rights as a research participant contact IRB Administrator at (801) 422-1461; A-285 ASB, Brigham Young University, Provo, UT 84602; [irb@byu.edu](mailto:irb@byu.edu).

### **Statement of Consent**

I have read, understood, and received a copy of the above consent and desire of my own free will to participate in this study.

Name (Printed):

Signature

Date:



## Appendix D: Semi-Structured Interview Protocols

### Faculty Interviews

1. Tell me about your experience learning to use Learning Suite.
2. Tell me about your experience with the Implementation Assistants. (Did they contact you or did you contact them?)
3. Describe a typical interaction with an IA. Please include types of questions asked or services they did for you.
4. Were they able to answer your questions?
5. Tell me about your overall satisfaction level using the IAs.
6. Were they able to do anything for you that the OIT Service Desk was not able to do? (in other words, when you had a question or a problem, did you typically contact the Service Desk or the IAs first? Why?)
7. Did you change anything pedagogically as a result of meeting with them?
8. Describe anything else that you did that helped you learn to use Learning Suite?
9. Tell me about any successes or frustrations you had as you learned to use Learning Suite.
10. (For frustrations) Is there anything that could have changed that for you?
11. In future implementations of technology on campus, would you recommend using implementation assistants? Why or why not?
12. Has your perception of Learning Suite changed over time? What factors have influenced that change?
13. Were you employed at BYU when Blackboard was adopted on campus? If so, can you compare and contrast the experiences of transitioning to each?
14. Do you know any other faculty members who had a different experience than you did in their transition that might be willing to be interviewed?

### CTL Consultants

1. Describe your role in the transition from Blackboard to Learning Suite.
2. What were some of the concerns of the colleges, departments, and faculty members that you work with?
3. From your perspective, was the transition successful? If so, what made it successful? If not, why?
4. Based on your own interactions with the IAs and the experiences of faculty members you know, how did the IAs impact the transition?
5. In your opinion, were the concerns discussed above realized or were they calmed over time? How?
6. Were you at BYU at the time they adopted Blackboard? If so, how would you compare and contrast the two transitions?
7. Who are some faculty members you know that had an interesting “conversion” story to Learning Suite?

## Appendix E: Domain Analysis Worksheet Organized by Cover Term

### Cover Term: Acceptance

#### Included Terms

Once you've got some of these vocal people, ...everyone has pretty much accepted it.	is a kind of
The basic components are working well enough ... and OIT is working well enough at supporting it,	is a cause of
At least the hygiene factors are being taken care of.	is a cause of
On the whole, I think you need to know it is doing really well.	is a cause of
It was easy for them to pick up.	is a cause of
plenty of people who "it does what I need it to do and that is great."	is a cause of
For the majority, Learning Suite is fine...Most faculty, they like it. I get a lot of comments about how easy it is to use. Students like it.	is a cause of
There's no real issue there for new faculty...It's okay. This is just what we use here.	is a cause of
I'm not hearing any more about the ready, fire, aim that we heard earlier. I'm not hearing any more Will it work?	is a result of
We are functioning. We're not getting a lot of pushback right now, as far as I'm aware.	is a result of
But every so often, he is accepting the new and for the most part, it's working.	is a result of
I really sense that there is a great feeling of security and trust.	is a result of
he still hates it and is resisting and is kicking and screaming, but I think he is in the minority.	is a result of
the system is working and functioning and doing what faculty need.	is a cause of
For the most part, I think it is functioning well.	is a cause of

### Cover Term: Best thing they ever did

#### Included Terms

Had the LS facilitation staff that could come help you	is a kind of
As for the implementation, I couldn't be happier.	is a kind of
one of the things that saved Learning Suite's bacon.	is a kind of
overcame a lot of negative things that people encountered.	is a result of
better attitude about Learning Suite than would have been otherwise.	is a kind of
I can't think of a single factor that did more good to promote faculty acceptance than the effort of that group of students	is a kind of
They were great. They were really wonderful!	is a kind of
And I always found them totally willing.	is a kind of
every bit as good as any professional would have been.	is a kind of

they obviously have had some very detailed training about how to work with angry faculty is a kind of

The things that were super helpful for me were the students that came and would sit and help me. is a kind of

I thought that was super, super helpful. is a kind of

And they were so nice and they were so knowledgeable. is a kind of

### Cover Term: Change Management

#### Included Terms

I personally felt that the speed of change at BYU was probably faster than what was warranted and that for developing a tool that we did, that would impact 40,000 people, we probably needed at least another year. is a reason for doing

change management includes development in my mind, because you are developing a product and you have ongoing betas. is a result of

you are gathering lots of feedback and keep improving the system until you really got to a place where everybody feels comfortable that it is working in a way that is going to meet everyone's needs, instead of building the plane after you are flying. is a step in

you don't usually get the best outcome if you just make a sudden quantum change from one thing into another. is a reason for

strategic change is trying not to be too disruptive and trying to couch things within familiarity is a reason for

Strategic change models tell you it's not worth it. That's so disruptive within an organization is a reason for

### Cover Term: Communication about Change

#### Included Terms

When I was told they were going to go to Learning Suite, I wasn't particularly happy to do that. is a kind of

I was told well in advance, so I had a lot of advanced notice Is a kind of

I knew well in advance that it was going to happen. is a kind of

I think I had phone calls about it. is a kind of

I think I read about it in the Daily Universe that it was happening is a kind of

I think that my first and best information came from my friends who I jog with is a kind of

I've had a lot of conversations with different people in the university about changes were happening. is a kind of

I knew it was coming and it was well in advance. is a kind of

It was dumped on us since the beginning. is a kind of

when it was just barely dropped on us very suddenly, is a kind of

[Change in the email system] They just dumped that on us. No one knew what was going on. is a kind of

So no one was alerted ahead of time about the [BYU centralized email] system Is a kind of

that they didn't want to sort of alert faculty that they were doing this because they thought that faculty didn't want to be bothered	is a reason for
They learned that faculty really get upset when you drop something on them like that	is a result of
The communication side was not handled very well.	is a result of
it seemed like there was an update or something...It was a bit overwhelming with that.	is a kind of
I knew system changes that were coming from them [the IAs]	is a kind of
Well, you know, they changed it...I don't know why they did that.	is a kind of
you get used to one program and they change it.	is a kind of
[When a feature was changed], they didn't tell me. So I didn't get an email or anything like that. All I got was suddenly I couldn't do it anymore	is a kind of
There was a huge amount of hype when LS was first announced and then introduced and the expectations were made very high	is a kind of
It was just suddenly sprung on everybody in an incomplete and problematic format	is a result of
When people's expectations are raised really high and then they are not met, that damages the reputation of the product, sometimes irreparably.	is a kind of
I know they gave us 6 months or whatever to start making the transition	is a kind of
We had a lot of [beta users] come in and tell us it is a better system	is a kind of
I think some preparation of the why, the rationale of the switch can help and maybe even getting more professors involved in understanding what was wrong, especially with Blackboard	is a kind of
Kind of just giving everybody the heads-up that this is on the horizon.	is a kind of
I was getting some of this information simply because I was one of the beta testers of Brainhoney. I don't think anyone else down the hall or other professors were getting any clue of the change coming	is a kind of
Now I think [having the implementation team] was handled pretty well because at least for me the impression was we know this is disruptive to you.	is a kind of
What is very important is to make sure that the transition is a longer period of time with lots of heads up, lots of information, communication	is a kind of

### **Cover Term: Complicated System/User Friendliness**

Included terms

even the technicians, the student technicians didn't even understand it completely

is a result of

and a little bit more simplified. It's not really user friendly a lot of times

is a result of

As soon as I get out of the grade tab, it'll take me some other place out of where I want to go to begin with.

is a result of

There could be a million things go wrong with this.

is a result of

It turned out to be much more complex and it took a lot longer.

is a result of

With Blackboard, I could roll out a new course for the semester in about an hour and a half. With Learning Suite, it takes me at least 4 hours

is a result of

And the options that are available ... it makes it difficult to use. the flexibility that was designed for LS was so complex and so elaborate, that made it more difficult for you to roll it out have to go through 5 screens and if everything isn't clicked just exactly in the right way, there is something wrong.

is a result of

I can't go back and open [an exam that was started previously] because I have to delete what is there and have you start again.

is a result of

go to exams, ... go down to Exam 8... go to the next screen on Options... find the student's name and click on that...create an exception, and then I have to click on a date... click Save and Continue...go to Results...delete their other score. If I miss any one of these clicks, then the student, and occasionally. It takes about 5 minutes.

is a result of

is a result of

I didn't adequately appreciate how big the change would be

is a result of

It didn't take too terribly long to figure out how to use the program

is a result of

what's intuitive to a developer is not intuitive to a typical user.

is a result of

I see, they are wanting to click here, so we should have a button here.

is a result of

I don't really understand it, in terms of what other stuff there is.

is a result of

I've learned how to use what I have to use to make it work for class.

is a result of

But maybe they are there and I just haven't found them yet.

is a result of

Just a stab in the dark to figure out what it was that I didn't know

is a result of

It's hard for me to separate out what I didn't know about course management tools and what I didn't know about LS.

is a result of

So it's not very user friendly, I don't think.

is a kind of

Learning curve-wise, it was a little more involved

is a kind of

### Cover Term: Consultant Role

#### Included Terms

Just helping the faculty to adjust. with their hands tied organize training and usually we would bring in the [IAs]...and have them come in to provide some training.

is a kind of

is a kind of

talk about the concept of LS, how it would interface with our current university infrastructure in ways that Bb couldn't. is a kind of

as they would critique the whole process, they would say, "now I get that you are the messenger," so they would refer to me as the messenger. is a kind of

I would say, yeah, you are right. That's really hard. Yeah, we will look into that. is a kind of

provided a lot of the consolation is a kind of

help faculty kind of get up and running and know what it is capable of doing is a kind of

arrange for training sessions is a kind of

logistical arrangements is a kind of

attending those presentations, and then following up with faculty who had questions, and making arrangements for them to meet with IAs. is a kind of

hold hands, dry tears, that kind of thing. is a kind of

know what the tool was, how it functioned so I could assist faculty to implement it in a way that was beneficial to them and to their students and for the learning is a kind of

be an advocate of the tool to the university...help them see the value and the advantages, how they can actually improve their teaching and learning by using it. is a kind of

listen to faculty and their concerns to convey that back to the development team and transition team is a kind of

listen to people and some people had concerns or complaints, I just had to listen, and understand. is a kind of

an empathetic missionary. is a kind of

I could get faculty to that immediate support and I could be focusing more on pedagogy and course design and other things is a kind of

### Cover Term: Cost of Blackboard

#### Included Terms

that it was very expensive to keep Blackboard on board is a kind of

I'm sure the school wasn't happy with paying you know license fees and everything they were doing. is a kind of

### Cover Term: Cost of Change

#### Included Terms

I think it's a really hard thing to make a big change. And I think change is just hard. is a kind of

you are just so busy that you just simply don't have time to play with this technology and figure it out. is a kind of

there was a lot of unhappiness among faculty is a kind of

There is just not enough time in the day to take the time to play around with this new technology

is a kind of

I don't think it really recognizes the sort of time constraints and stuff.

is a kind of

administration was not conscious of how little time we have to play with it, how long it takes to work the bugs out, and to work those out while you are trying to actually use it as your course management thing

is a kind of

[a slower rollout and more beta testing and bug fixing up front] would have left faculty with a sweeter taste in their mouth

is a kind of

You don't usually get the best outcome if you just make a sudden quantum change from one thing into another.

is a kind of

it was just suddenly sprung on everybody in an incomplete and problematic format

is a kind of

You hear a lot of groaning and moaning about LS

is a kind of

I had this idea of being forced to accept the new system.

is a kind of

the idea that we are making the change and you have to make the change.

is a kind of

change everybody at the same time, and then you start to find the glitches, that transition is very, very difficult.

is a kind of

had more problems than if you had just left me in BH.

is a kind of

[slower transition] would have been a nice, a better transition for those of us who were happy with what we already had.

is a kind of

so busy that most of us are not going to make the transition until we have to

is a kind of

quite a few people on campus...probably would have, within that year, could have probably found most of the glitches

is a kind of

is it cost effective for us to spend all that time, money, and resources, to try to reinvent the wheel

is a kind of

can we just adopt that system because that's what people know, rather than supposedly get some other efficiency

is a kind of

little bit you gain on it makes that big of a difference to make people relearn a system... it's not worth it. That's so disruptive within an organization

is a kind of

you're giving the impression that we understand that we are disrupting your routine and what you already know

is a kind of

different sometimes can be huge for the disruption it causes.

is a kind of

may not be worth enough of the disruption to create enough satisfaction or to create the angst that will go for a year or two, which then lowers productivity because

is a kind of

They hate change...but it is for the better.

is a reason for

It is going to be a little rocky

is a kind of

the promised land is ahead of us.

is a result of

We're going to just have to shoulder through the storm.

is a result of

you are right, this is really hard.

is a kind of

[concerns faculty had] was the challenge of change

is a kind of

"Change has a twin. It's called pain."

is a kind of

It was just making the change...biggest challenges for faculty I worked with.

is a kind of

Just the disruption to their lives

is a kind of

They didn't want to relearn a new system, let alone populate that system and get it functioning in the way that they wanted to

is a kind of

You always have that kind of resistance

is a kind of

### Cover Term: Glitches/Problems/Missing Features

#### Included Terms

I've really kind of thrown my hands up

is a result of

the online assessments were so prone to little bugs and hiccups

is a kind of

in my opinion, it is a long, long way from [where we need it]

is a kind of

the ongoing problems have just made it impossible for me to work with right now.

is a result of

To get it to copy over accurately on the correct number of days when you are using half as many days

is a kind of

Digital Dialog had a steep learning curve.

is a kind of

the more and more I got into depending on LS, the more and more it kind of let me down

is a result of

When people tried to attach a document, sometimes that didn't work. When they tried to take the online assessments, the grading program graded the papers wrong. And sometimes, this is what happened today, it was recording the wrong score for some reason. It was only multiple choice. It can only be one correct thing and I had all the correct answers there and it recorded it wrong,

is a kind of

[I called IT] once [to report an issue], but it has happened again. there is no rhyme or reason to it. In one section, it was okay, the next section it was completely messed up.

is a kind of

Now I can't delete that email

is a kind of

There could be a million things go wrong with this

is a kind of

every time something goes wrong, it nibbles at the time I can spend, really teaching, grading, advising, consulting

is a result of

it didn't open it with the original format.

is a result of

assured that it would be as good and that if it was not as good, they were going to continue to work on it and develop it until it was as good.

is a kind of

is a result of

I was told, well there will be an implementation team and they will be able to help you and they will be able to transport from Bb to LS and it would be pretty much a seamless no-problem sort of event. And it wasn't.

is a kind of

even though they dumped everything in course syllabus, it was not acceptable. It had to be realigned in order.

is a kind of

I would continue to run up against little problems.

is a kind of



the multiple choice quizzes because there were problems they had with the quizzes and I made the mistake of publishing the quizzes before they were really in LS the way they needed to be  
 There is one problem they have never been able to solve,...providing feedback for the answers and the what is correct, and so forth. is a kind of

there was an enormous amount of pain on my part. is a kind of

Others were nonfixable and we had to kind of figure a workaround. is a result of

So I tell my students not to rely on [the new email system]. is a kind of

go through every student in the class every quiz to know which ones are not done is a kind of

checking for ungraded quizzes is a kind of

I don't have a bank of questions now in LS. is a kind of

there are a few things that could be better. is a kind of

I ended up not using Syllabus Builder because there were some glitches is a kind of

quizzes is a kind of

But the things I want still aren't there...partial credit is a kind of

things that we wanted to do, but the program couldn't do. is a kind of

I was just running into bugs. is a result of

But some of the bugs I'd run into, I'd have to make many, many calls is a result of

There's things I'd like to use that it can't do is a kind of

inability to sort out the different sections is a kind of

So it was never beta tested, it was never ready, it was dumped on you guys is a kind of

how little time we have to play with it, how long it takes to work the bugs out, and to work those out while you are trying to actually use it as your course management thing is a result of

a student came to me and I've taken, I give online quizzes every week. And she said, hey, I've taken these quizzes, but my scores aren't showing up. is a kind of

There are issues that I wish they could do. is a kind of

you cannot create a pool of questions and have it randomly select questions for students is a kind of

there's no analytics. I don't know if a quiz question is a good or fair question is a kind of

how we message students is a kind of

There were things I would like it to do that it just can't is a kind of

It would really be helpful if we could do pools of questions and add questions all the time and when they come up, it could randomly select those. is a kind of

enhance some of the functionality things that would, so LS would not be, simply a management tool, but would become a resource is a kind of

for understanding and learning about teaching and learning and how effective it to be.

functionalities that would help us do the teaching effectiveness, teaching process and learning process, would be helpful.

there are still a few bells and whistles that I'm sure are coming helped me get the final back that disappeared

Every time I go in there, I think, please don't disappear! Please don't disappear!

I put them in my development course and then when I copy them over, they don't copy exactly right,

LS just can't do that.

I would love for the announcement feature to be able to have attachments

It would change all the time, the dates on our quizzes.

Future Courses - it takes them quite a long time to put those in there

I don't know why they don't have schedule marked.

There the course is! It wasn't there! Now all of a sudden it is there!

Now you come and it is there! Yesterday, it wasn't even there! this last year I have been so frustrated.

there was also a thing that you had to push down there when you open the content, it wasn't automatically there.

I could usually solve the simple problems myself, you know, it was the hard problems that I would call about

So it wasn't just a matter of finding out how to do something, or to make the fix, but had to go right to the programmers and realize that there was something wrong.

In fact, there are still things that don't work.

it was not possible to take the exam as though you were a student.

I want to provide feedback to my students when they take quiz questions

negative things that people encountered

They just grumble about the problems.

I just wish that it [building Learning Suite] would have been done in a different way.

change everybody at the same time, and then you start to find the glitches, that transition is very, very difficult

[Learning Suite] had more problems than if you had just left me in Brainhoney

There were some of the glitches that we actually, ... discovered together

those are minor problems, but they are aggravating problems.

when students submit an assignment, there is no way for students to automatically receive feedback that we put in their inbox.

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The departments that used Bb heavily, they were the ones that had the most pain points. is a kind of

The ones with the most pain points are wishing they could do a lot more here or there. is a kind of

There were only occasionally a few things, somewhat more advanced, that they wanted to do but couldn't. is a kind of

People are busy. Faculty are busy. is a kind of

annoyance factor for many of them to have to make that change. is a kind of

There were some legitimate implementation issues that caused some grievances. is a kind of

managing large class sizes in the discussion boards. is a kind of

some of them felt that they hadn't been consulted well enough. is a kind of

It was rolled out too quickly and there wasn't enough transition time. is a kind of

just the disruption to their lives is a kind of

there were concerns that we have not yet been able to take care of is a kind of

The people who had concerns have just decided not to tell anybody about them any more. is a kind of

There are still areas that need improvement, like Gradebook. is a kind of

The score from a rubric does not transfer to the Gradebook. is a kind of

We have fewer development resources now than we did in the past. is a kind of

The mail ...sometimes it will accept being archived and sometimes it won't accept being archived. is a kind of

now I can't delete that email. is a kind of

The email feature of LS has been very unsatisfying to students and myself is a kind of

So I tell my students not to rely on it...number of students who don't look at their LS email either... I don't think to look there too. is a kind of

More important than how we message students, for example. I mean that was a disaster. is a kind of

So you can't do direct email. Then they came back and fixed it so whenever it goes onto LS, it lets you know that you have a message. But I don't think you can respond to that message. is a kind of

It was that email was not secure enough. And it was probably a violation of rights. Give me a break! Even on LS, if the NSA wants to look at it, they are going to if they want to. If someone sent you an email, they are initiating the conversation. If you answer that, you are not violating anybody's privacy because they are the one that asked the question. is a kind of

So she said, don't communicate with me on private issues on that. Let's do it directly through email, exactly what the university thought was insecure. is a kind of

I hate the new email system. is a kind of

Hate it. Hate it. Hate it...I have it forwarded to my email, so it's like they can email me, but I can't respond. I have to go into LS and respond to them there and I just, that makes me crazy  
And I don't use email through that. I use regular email. Some of the students do and I answer them that way

is a kind of  
is a kind of

### Cover Term: Having Side-by-Side Help

#### Included Terms

to have someone just happily answer the phone and just talk with you and try to really understand.

is a kind of

The tech sitting here with me would go, oh yeah, here's the problem

is a reason for

the real-time nature of [in-person help]

is a reason for

we're working through it and you do this and you do that.

is a reason for

when they were here, they would say, while I'm here, let me just quickly show you this or that, sort of a cool little thing you can do.

is a reason for

because they were here in the SWKT, I just walked myself down there and said, ok, I need help.

is a way to do

Person-to-person is so much nicer than on the phone.

is a reason for

I really liked that there was a dedicated line and a dedicated group of people to talk to specifically about Learning Suite.

is a reason for

I liked the fact that when we called the Learning Suite line, they just jumped right in and said, okay, what is your problem and how can we fix it?

is a reason for

Good to have a hands-on person come into the office and say here's how it works.

is a reason for

Within ten minutes,... one would come to my office...sit down with me, and help me work through it.

is a reason for

Every one of those tabs on the far left-hand side required a little bit of side-by-side assistance

is a reason for

A lot of times the tech sitting here with me would go, oh yeah, here's the problem, and they would lead me to it

is a reason for

I got to be first-name buddies with the students who were helping me

is a result of

I used them on the phone and might have had someone come in person

is a way to do

When you [need to have someone come over], it's really nice to have it available

is a reason for

[Interface usability-trained individuals] would be helpful to have in our office

is a way to do

I think they made a lot of efforts to help us with the students they used to show me, this is how you have to do it.

is a reason for

They helped me do it. I learned how to do it, and it's not a problem.

is a way to do

is a reason for

just sit down with you and say, this is how you do it. It's a hands-on walk-through and that was very helpful.

real time nature of it

Someone sitting there and we are working through it

while I'm here, let me show you this or that

while I'm here, let me show you this or that

super helpful for me were the students that came and would sit and help me.

I just walked myself down there and said, okay, I need help.

I would have liked more one-on-one help

If they could just help me through the things that are peculiar to my course

I could just kind of ask them for help and the IAs would really come

Maybe if you come to a workshop, then we'll come for six hours one-on-one.

we'll come on an individualized basis, two hours at a time for three times.

I understand it can do that, but how do I do that with my course?

For me, because I'm old school. Show me how to do that

[For learning the new Gradebook], I would have liked a little scheduled one-on-one.

I just didn't really feel comfortable at all applying.

They used to send, ... and that was so helpful

They showed me how to do it and all. Sometimes they would send two down.

They just showed me how to work the thing and it worked just fine.

Whenever I had additional questions, they came back down, so I felt good about it

Person-on-person is so much nicer than on the phone

the people you sent down was so helpful

that's the thing I miss kind of now, having the students come

that's really what I like

I specifically had a group of students come over at least on two occasions that I remember

once I got started, there were things that I realized I didn't know I needed to know or things that I couldn't figure out

These students were bright and enthusiastic and very helpful.

The fact that the university went to so much trouble to help people work through implementing it

People have a much better attitude about Learning Suite

single factor in the implementation of Learning Suite that did more good to promote faculty acceptance

is a reason for

is a reason for

is a reason for

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is a reason for

Just the fact that there was so much help available instantly, quickly, and I would say in a friendly way. is a reason for

It made all the difference in the world as far as I'm concerned. is a reason for

I had the invitation that they were more than willing to do that. is a result of

It was when I was looking for a feature that either didn't exist or needed more permissions. is a reason for

When I did meet with them, they were extremely helpful for all of the things I had questions on is a result of

they came by and gave me a rundown on all of the basic information, so that was helpful to start with is a way to do

Being a staff member, I didn't expect to have someone come and sit down with me either. is an attribute of

these students who understood the system inside and out, and were always available is a reason for

People really needed the one-on-one, the individual support is a reason for

willing to go in and help them transition their courses, those who took advantage of that really calmed down in a hurry is a reason for

something about having an assistant right there at their elbow...really saved the day. is a reason for

they'd go to their desk...some faculty would just go down there. is a reason for

really made a big difference. is a result of

to have someone just happily answer the phone and just talk with you and try to really understand. is a result of

### Cover Term: I Use It More/Differently

#### Included Terms

I probably used LS more than anybody in the whole danged school for quite awhile is a kind of

I have an online class. So for that class, I depend very heavily on a learning management system is a kind of

I don't know that there is anyone at the university that was more impacted by the change than what I was is a kind of

I think there are a couple of us here in the department that use LS more than others and I totally depend on it, that's just the way I function is a kind of

I kind of led the way in some respects in the department here is a kind of

kind of blazing the trail.

### Cover Term: IAs Added Capacity

#### Included Terms

Consultants would have become like the IAs but we didn't have the coverage they had... We just didn't have the capacity. is a reason for

We're only getting to only 5-10% of all that the IAs were able to get to. is a reason for

It would have been a mitigated disaster. Unmitigated, I should say. is a result of

It was great to go in and talk to faculty, and they said, yeah, I've already worked with the IAs is a result of  
 Because of what occurred then that essentially got us out of a very tough situation. is a result of  
 Lacking that [the IAs], we would have had some real challenges here. is a result of  
 From a consultant's perspective, they saved the day for me. is a result of  
 I would have had many sleepless nights if it had been up to me to make sure everyone in my colleges were taken care of is a result of  
 Number one, it would have been physically impossible to do all of that. is a result of  
 Number two, ...that is just not my strength. is a result of  
 I would never have had the capacity to give the service to the faculty that they deserved. is a reason for

### Cover Term: Increased Consultant Satisfaction

#### Included Terms

I might have been dusting off my resume and going somewhere else, were it not for them is a cause of  
 I wouldn't have been very happy ... one-on-one training with Learning Suite. is a cause of  
 I could get faculty to that immediate support and I could be focusing more on pedagogy and course design is a cause of  
 I would have been a lot less happy in my current job getting into the details of it all, was never what motivated me about my job. is a cause of

### Cover Term: Influence Pedagogy

#### Included Terms

helping me to get further into the flipped approach is a kind of  
 sometimes I would bounce things off. sometimes they would give their feedback... I like this in my classes, ...nice to have the student perspective to make sure you are on track. is a kind of  
 I learned all about the uploading of the assignments, I learned about Digital Dialog videos is a kind of  
 I don't have to make copies anymore. is a kind of  
 I didn't want to change my approach, just because the tool changed is a kind of  
 I designed my pedagogy independent of whatever tools are available is a kind of

### Cover Term: Instructor-Student Work on Problems Together

#### Included Terms

I said, I'm giving you an early Christmas present; everybody gets a perfect score. is a result of



Most of them were quite willing to wait. As the problems emerged, we would work on them together.

is a kind of

I was teaching seniors, and they just didn't even want to learn it, so they didn't even take the time to mess around with it and would whine and complain and really made a fuss.

is a kind of

The seniors didn't want to mess with it for one last semester.

is a kind of

### **Cover Term: Knowing the Answers**

#### **Included Terms**

I was 98% happy with every time that they came over.

is a result of

Not perfect because it was a very complicated system to begin with.

is a kind of

The student technicians didn't even understand it completely

is a kind of

They occasionally had to refer to a supervisor.

is a result of

they would say they needed to get their supervisor and then call me back.

is a result of

I think mostly they were [able to answer questions]. Unless they ran into bugs with the program.

is a kind of

They knew what they were doing. They knew how to tell me what I needed to do.

is a kind of

they would always plug me up with someone.

is a result of

They would always get an appointment with someone else or find out.

is a result of

that's when they would get \_\_\_\_ or \_\_\_\_ involved.

is a result of

I imagine over time that they learned more and more of the finer features of Learning Suite

is a kind of

It was the hard problems I would call about and they typically didn't know the answer off the top of their head

is a kind of

It was the hard problems I would call about and they typically didn't know the answer off the top of their head

is a result of

There were some of the glitches that we actually, I wouldn't say we discovered together

is a kind of

They actually became really confident in these students.

is a kind of

having an assistant right here at their elbow who could answer their questions.

is a kind of

Knowing that there were these students who understood the system inside and out

is a kind of

### **Cover Term: Learning to Use**

#### **Included Terms**

He and his TA's just really sat down and really worked through it.

is a kind of

have a hands-on person come into the office and say here it how it works.

is a way to do

understanding the principles of what you want to see, and getting that private tutoring with \_\_\_\_ really helped me learn how to lay out a course logically for a student

is a way to do

I went to one kind of introductory thing, you are just so busy ..., that you just simply don't have time to play with this technology and figure it out super helpful for me were the students that came and would sit and help me.

is a way to do

I constantly ask people.

is a step in

So by experimentation, I just fiddled around with it some... If I have time, I mess around with it.

is a way to do

is a way to do

There was instructional material online that I went through, but I specifically had a group of students come over

is a way to do

I have several of the LS, the people who help you learn how to use it, I had several meetings with them,

is a way to do

is a way to do

### Cover Term: Optimistic in the Beginning

#### Included Terms

When Learning Suite came, we thought, okay, this will be great.

is a kind of

I was glad the university made this effort to do Learning Suite

is a kind of

There was a huge amount of hype when LS was first announced and then introduced

is a kind of

I thought it was a great idea, it has great potential

is a kind of

I was very optimistic about it.

is a kind of

### Cover Term: Parallel Time

#### Included Terms

a little bit more cross over time so Bb was still available, and they don't have to cut off so soon.

is a reason for

it was kind of a tight timeline, kind of forced on them

is a reason for

if we had given them 6 months or a year of overlapping systems, what other complications would have arisen?

is a reason for

There wasn't like 2 or 3 year time period where they were on 3 or 4 different systems.

is a reason for

transition is very, very difficult. especially when, ... there wasn't very much parallel

is a result of

little longer parallel testing time, so that those people that want to make the change,

is a reason for

### Cover Term: Positives

#### Included Terms

Have to do less clicks

is a kind of

New faculty, when they come, they say, oh, this is so much better than the Bb I used to use.

is a kind of

For most of what faculty wanted to do, it was easy to explain. It was easy for them to pick up.

I get a lot of comments about how easy it is to use. Students like it.

You are just missing the beauty here of what LS can do.

There were a lot of positives that went on.

I love the feature where the due dates go to their calendar on their phone.

they submit to me a video. And I, according to the rubric, we grade it. It's kind of fun. They really prefer that over writing, which I don't blame them. I do too. It's actually easier for me.

I really love on Digital Dialog

It has lots of functionality and I like going back and forth

is a kind of

is a kind of

is a kind of

is a kind of

is a kind of

is a kind of

is a kind of

is a kind of

### Cover Term: Reduce Dependence

#### Included Terms

I doubt that I'll even use LS except for the very basics until they get the bugs worked out

the more and more I got into depending on LS, the more and more it kind of let me down with these glitches

I'm probably going to greatly reduce my dependence this coming summer semester

every time something goes wrong, it nibbles at the time I can spend, really teaching, grading, advising, consulting

We just don't use it.

I don't even try anymore. I just go back to my books because I'm so frustrated.

one of the courses, I didn't even set it up. I don't know if I'll set it up or if I'll do it, you know, in one of those folders. I'll have to see.

there is no way for students to automatically receive feedback that we put in their inbox.

with the communities, the course doesn't show up on their homepage, they have to seek out the communities page, and we have to hand-add and delete every single student.

Is a result of

is a reason for

is a result of

is a reason for

is a result of

is a result of

is a result of

is a reason for

is a reason for

### Cover Term: Rush to Release

#### Included Terms

In the rush to get something out so quick, \_\_\_ was probably one of the biggest voices against it (early pilot participant)

as you know the release date was moved up dramatically

It would have been nice to have a little bit more development and testing time

If we had had another six months, it would have made a big difference. If we had another year, it probably would have been ideal

is a result of

is a cause of

is a way to do

is a way to do

Ideally development for another 6 months would have been more ideal	is a way to do
If we had had more time to work out the bugs, ...we really wish we had had more time before launch	is a way to do
I know there was very little transition time	is a result of
we probably needed at least another year. Maybe another one	is a way to do
I would simply say, give us another year or two, another 12-24 months.	is a way to do
Betas might last a longer time period where you are gathering lots of feedback and improving the system	Is a way to do
change everybody at the same time, and then you start to find the glitches, that transition is very, very difficult.	is a result of
was implemented before it was even completed,	is a result of
it was just suddenly sprung on everybody in an incomplete and problematic format	is a result of
When people's expectations are raised really high, and then they are not met, that damages the reputation of the product, sometimes irreparably.	is a result of
year of overlap of keeping Bb on board and having LS ramp up while people get used to it and get the bugs worked out.	Is a way to do
Maybe implementing it on a limited basis with so many faculty to shake it down	is a way to do
So it was never beta tested, it was never ready, it was dumped on you guys, and sorry, now all the faculty are beta testers.	is a result of
every time something goes wrong, it nibbles at the time I can spend, really teaching, grading, advising, consulting	is a result of

#### Cover Term: Stakeholder Involvement

##### Included Terms

involving the stakeholders before the cement dries	is a reason for
get the stakeholders involved in helping to create that change, you are going to sidestep a lot of the grief that happens when you don't involve them.	is a reason for
perhaps had there been more involvement, more investment, more discussion	is a reason for
some of them felt that they hadn't been consulted well enough	is a reason for
I personally feel that CTL went out of their way to get input from as many people as possible. So I think it was more of a perception than a reality for that concern that they weren't consulted enough.	is a reason for
Other faculty I know felt that they were deeply involved, that their voices were heard	is a result of

#### Cover Term: Student as Trainer

##### Included Terms

I think students can have a big influence, just helping in that transition. is a reason for

I would organize a training and we would bring in the [IAs] and have them come in to provide training. is a kind of

The IAs became the grease that kept the machinery from burning up. is a reason for

The transition was the hardest part of this whole process... That was right people at the right time kind of a thing. is a reason for

The IAs, yeah, I think that was a big win there. That went a long way in smoothing things over is a reason for

### Cover Term: Student Experience

#### Included Terms

the students only had to deal with one system, for the most part. is a kind of

So now students are going to have 3 programs that they have to keep track of ... from a student perspective, probably not a great idea is a kind of

### Cover Term: System Stability

#### Included Terms

I have to sit for 30 seconds while exams load is a kind of

LS is more stable... I just really haven't had that problem this time, so that is good. is a kind of

And the links work now all the time. is a kind of

### Cover Term: They Went Away

#### Included Terms

I've really kind of thrown my hands up ... because that kind of person-to-person help isn't available any more. Is a result of

The only time I started using IT is when they shut down the implementation office. is a result of

The techs over at the CTL [current TLA's], by the way, were not trained as well is a result of

And then the IAs went away is a kind of

they went away faster than I would have liked them to is a kind of

They don't send anybody down anymore. It's all over the phone now. is a kind of

But they don't do that any more (send people down) is a kind of

That's the thing that I miss kind of now, having the students come. Is a result of

[One-on-one help] is kind of missing here. Is a result of

But I can understand that they want to save money. is a reason for

I called 1730 until it switched over is a kind of

eventually that faded out and now 2-4000 is where we go is a kind of

### Cover Term: Using the IT Service Desk

## Included Terms

Well, 2-4000 you can't blame the students that answer the phone.

If you don't describe your question that fits the lookup in the database, they are sunk

is a result of

Our problem is that 2-4000 has a bad name anyway, no matter what you are doing.

is a kind of

OIT is working well enough at supporting it.

is a kind of

The only time I started using IT is when they shut down the implementation office.

is a kind of

It's twice as slow over the phone trying to get something fixed

is a result of

If you've got IT on the phone, ...they can't access your screen

is a kind of

what was happening on my screen wasn't happening on their screen

is a result of

I had better things to do than to spend my time. I have spent multiple hours on the phone with IT

is a kind of

I probably used OIT probably 10 to 1 over the IAs

is a way to do

then I would call OIT because I had a bug.

is a cause of

More than half of my issues were program issues vs how to use it issues.

is a reason for

But it didn't take too terribly long to figure out how to use the program and then I was just running into bugs.

is a way to do

OIT wasn't totally up to speed on it initially either and you would spend a lot of time explaining the background and some of the bugs.

is a result of

I would call them and then I'd have to bring somebody up to speed and have the feeling that they didn't really understand me.

is a result of

Sometimes they haven't answered questions

is a result of

Because it didn't answer my question of whether or not, how confident can I be in the system

is a result of

It's just not sort of that hold my hand sitting next to me while I do this.

is a kind of

[I get my questions answered] much more now than when they initially made the transition

is a result of

IT Service Desk is able to answer questions] much better now.

is a kind of

And the girls are nice when I call them up there, some of them don't know very well.

is a kind of

the hotline that you had that was separate from the normal IT call center and I called them a lot also and found that was not nearly as helpful, frankly.

is a reason for

I would always start with the IAs and then sometimes they would transfer me to OIT

is a step to

they always want to know what is your user name and stuff

before they'll even talk to you and that is just kind of annoying.

is a result of

everyone has to figure out what you are even talking about before they can usually help you.

is an attribute of

[screen sharing] would be helpful for any IT group

is a way to do

It's twice as slow over the phone trying to get something fixed is a way to do

### Cover Term: Workshops

#### Included Terms

Having the workshops helped.

is a reason for

I went to one of those meetings where someone was quickly moving through the PowerPoints and showing you do this and you do that, and you think, I kind of get this.

is a reason for

Require attendance at a workshop.

is a way to do

Maybe if you come to the workshop, then we'll come for six hours one-on-one.

is a way to do

Just get the basic stuff out of the way [by attending a workshop] and then we'll come on an individual basis.

is a way to do

I understood [from the workshop] that it can do that, but how do I do that with my course?

is a reason for

The first overview I went to was so high-level that I came back and though, so yeah, but how do I do that?

is an attribute of

You had some meetings where everyone could go. I think that that would be helpful, even as a review.

is a reason for

I found kind of a hindrance to me getting the most out of that presentation from the team.

is a result of

I went to one kind of introductory thing, you know...I learned some basics, like how to put the syllabus on and things like that.

is a reason for

## Appendix F: Domains for Each Relationship with Included Terms

### X is a cause of Y

#### Causes of Acceptance

- The basic components are working well enough ... and OIT is working well enough at supporting it,
- At least the hygiene factors are being taken care of.
- On the whole, I think you need to know it is doing really well.
- It was easy for them to pick up.
- plenty of people who "it does what I need it to do and that is great."
- For the majority, Learning Suite is fine...Most faculty, they like it. I get a lot of comments about how easy it is to use. Students like it.
- There's no real issue there for new faculty...It's okay. This is just what we use here.
- the system is working and functioning and doing what faculty need.
- For the most part, I think it is functioning well.

#### Causes for Increased Consultant Job Satisfaction

- I might have been dusting off my resume and going somewhere else, were it not for them
- I wouldn't have been very happy ... one-on-one training with Learning Suite.
- I could get faculty to that immediate support and I could be focusing more on pedagogy and course design
- I would have been a lot less happy in my current job
- getting into the details of it all, was never what motivated me about my job.

#### Causes of Rush to Release

- you know the release date was moved up dramatically

#### Causes of Using the IT Service Desk

- then I would call OIT because I had a bug.
- The IAs went away

### X is a kind of Y

#### Kinds of Acceptance

- Once you've got some of these vocal people, ...everyone has pretty much accepted it.

#### Kinds of Best Thing They Ever Did

- Once you've got some of these vocal people, ...everyone has pretty much accepted it.
- Had the LS facilitation staff that could come help you
- As for the implementation, I couldn't be happier.
- one of the things that saved Learning Suite's bacon.
- better attitude about Learning Suite than would have been otherwise.



- I can't think of a single factor that did more good to promote faculty acceptance than the effort of that group of students
- They were great. They were really wonderful!
- every bit as good as any professional would have been.
- they obviously have had some very detailed training about how to work with angry faculty
- The things that were super helpful for me were the students that came and would sit and help me.
- I thought that was super, super helpful.
- And they were so nice and they were so knowledgeable.
- And I always found them totally willing.

#### Kind of Communication about the Change

- When I was told they were going to go to Learning Suite, I wasn't particularly happy to do that.
- I was told well in advance, so I had a lot of advanced notice
- I knew well in advance that it was going to happen.
- I think I had phone calls about it.
- I think I read about it in the Daily Universe that it was happening
- I think that my first and best information came from my friends who I jog with
- I knew it was coming and it was well in advance.
- It was dumped on us since the beginning.
- when it was just barely dropped on us very suddenly,
- [Change in the email system] They just dumped that on us. No one knew what was going on.
- So no one was alerted ahead of time about the [BYU centralized email] system
- it seemed like there was an update or something...It was a bit overwhelming with that.
- I knew system changes that were coming from them [the IAs]
- Well, you know, they changed it...I don't know why they did that.
- you get used to one program and they change it.
- [When a feature was changed], they didn't tell me. So I didn't get an email or anything like that. All I got was suddenly I couldn't do it anymore
- There was a huge amount of hype when LS was first announced and then introduced and the expectations were made very high
- When people's expectations are raised really high and then they are not met, that damages the reputation of the product, sometimes irreparably.
- I know they gave us 6 months or whatever to start making the transition
- We had a lot of [beta users] come in and tell us it is a better system
- I think some preparation of the why, the rationale of the switch can help and maybe even getting more professors involved in understanding what was wrong, especially with Blackboard
- Kind of just giving everybody the heads-up that this is on the horizon.
- Now I think [having the implementation team] was handled pretty well because at least for me the impression was we know this is disruptive to you.

- What is very important is to make sure that the transition is a longer period of time with lots of heads up, lots of information, communication
- I've had a lot of conversations with different people in the university about changes were happening.
- I was getting some of this information simply because I was one of the beta testers of BrainHoney. I don't think anyone else down the hall or other professors were getting any clue of the change coming

#### Kinds of Complicated System/User Friendliness

- So it's not very user friendly, I don't think.
- Learning curve-wise, it was a little more involved

#### Kinds of Consultant Role

- Just helping the faculty to adjust. with their hands tied
- organize training and usually we would bring in the [IAs]...and have them come in to provide some training.
- talk about the concept of LS, how it would interface with our current university infrastructure in ways that Bb couldn't.
- as they would critique the whole process, they would say, "now I get that you are the messenger," so they would refer to me as the messenger.
- I would say, yeah, you are right. That's really hard. Yeah, we will look into that.
- provided a lot of the consolation
- help faculty kind of get up and running and know what it is capable of doing
- arrange for training sessions
- logistical arrangements
- attending those presentations, and then following up with faculty who had questions, and making arrangements for them to meet with IAs.
- hold hands, dry tears, that kind of thing.
- know what the tool was, how it functioned so I could assist faculty to implement it in a way that was beneficial to them and to their students and for the learning
- be an advocate of the tool to the university...help them see the value and the advantages, how they can actually improve their teaching and learning by using it.
- listen to faculty and their concerns to convey that back to the development team and transition team
- listen to people and some people had concerns or complaints, I just had to listen, and understand.
- an empathetic missionary.
- I could get faculty to that immediate support and I could be focusing more on pedagogy and course design and other things

#### Kinds of Cost of Blackboard

- that it was very expensive to keep Blackboard on board
- I'm sure the school wasn't happy with paying you know license fees and everything they were doing.

### Kinds of Cost of Change

- I think it's a really hard thing to make a big change. And I think change is just hard.
- you are just so busy that you just simply don't have time to play with this technology and figure it out.
- there was a lot of unhappiness among faculty
- There is just not enough time in the day to take the time to play around with this new technology
- I don't think it really recognizes the sort of time constraints and stuff.
- administration was not conscious of how little time we have to play with it, how long it takes to work the bugs out, and to work those out while you are trying to actually use it as your course management thing
- [a slower rollout and more beta testing and bug fixing up front] would have left faculty with a sweeter taste in their mouth
- You don't usually get the best outcome if you just make a sudden quantum change from one thing into another.
- it was just suddenly sprung on everybody in an incomplete and problematic format
- You hear a lot of groaning and moaning about LS
- I had this idea of being forced to accept the new system.
- the idea that we are making the change and you have to make the change.
- change everybody at the same time, and then you start to find the glitches, that transition is very, very difficult.
- had more problems than if you had just left me in BH.
- [slower transition] would have been a nice, a better transition for those of us who were happy with what we already had.
- so busy that most of us are not going to make the transition until we have to
- quite a few people on campus...probably would have, within that year, could have probably found most of the glitches
- is it cost effective for us to spend all that time, money, and resources, to try to reinvent the wheel
- can we just adopt that system because that's what people know, rather than supposedly get some other efficiency
- little bit you gain on it makes that big of a difference to make people relearn a system... it's not worth it. That's so disruptive within an organization
- you're giving the impression that we understand that we are disrupting your routine and what you already know
- different sometimes can be huge for the disruption it causes.
- may not be worth enough of the disruption to create enough satisfaction or to create the angst that will go for a year or two, which then lowers productivity because
- It is going to be a little rocky
- you are right, this is really hard.
- [concerns faculty had] was the challenge of change
- "Change has a twin. It's called pain."
- It was just making the change...biggest challenges for faculty I worked with.
- Just the disruption to their lives

- They didn't want to relearn a new system, let alone populate that system and get it functioning in the way that they wanted to

#### Kinds of Glitches/Problems/Missing Features

- a student came to me and I've taken, I give online quizzes every week. And she said, hey, I've taken these quizzes, but my scores aren't showing up.
- the online assessments were so prone to little bugs and hiccups
- in my opinion, it is a long, long way from [where we need it]
- To get it to copy over accurately on the correct number of days when you are using half as many days
- Digital Dialog had a steep learning curve.
- When people tried to attach a document, sometimes that didn't work. When they tried to take the online assessments, the grading program graded the papers wrong. And sometimes, this is what happened today, it was recording the wrong score for some reason. It was only multiple choice. It can only be one correct thing and I had all the correct answers there and it recorded it wrong,
- [I called IT] once [to report an issue], but it has happened again.
- there is no rhyme or reason to it. In one section, it was okay, the next section it was completely messed up.
- Now I can't delete that email
- it didn't open it with the original format.
- I was told, well there will be an implementation team and they will be able to help you and they will be able to transport from Bb to LS and it would be pretty much a seamless no-problem sort of event. And it wasn't.
- even though they dumped everything in course syllabus, it was not acceptable. It had to be realigned in order.
- I would continue to run up against little problems.
- the multiple choice quizzes because there were problems they had with the quizzes and I made the mistake of publishing the quizzes before they were really in LS the way they needed to be
- There is one problem they have never been able to solve ... providing feedback for the answers and the what is correct, and so forth.
- Others were nonfixable and we had to kind of figure a workaround.
- So I tell my students not to rely on [the new email system].
- go through every student in the class every quiz to know which ones are not done
- checking for ungraded quizzes
- I don't have a bank of questions now in LS.
- there are a few things that could be better.
- I ended up not using Syllabus Builder because there were some glitches
- quizzes
- But the things I want still aren't there...partial credit
- things that we wanted to do, but the program couldn't do.
- There's things I'd like to use that it can't do
- inability to sort out the different sections
- So it was never beta tested, it was never ready, it was dumped on you guys

- There are issues that I wish they could do.
- you cannot create a pool of questions and have it randomly select questions for students
- there's no analytics. I don't know if a quiz question is a good or fair question
- how we message students
- There were things I would like it to do that it just can't
- It would really be helpful if we could do pools of questions and add questions all the time and when they come up, it could randomly select those.
- enhance some of the functionality things that would, so LS would not be, simply a management tool, but would become a resource for understanding and learning about teaching and learning and how effective it to be.
- functionalities that would help us do the teaching effectiveness, teaching process and learning process, would be helpful.
- there are still a few bells and whistles that I'm sure are coming
- helped me get the final back that disappeared
- Every time I go in there, I think, please don't disappear! Please don't disappear!
- I put them in my development course and then when I copy them over, they don't copy exactly right,
- LS just can't do that.
- I would love for the announcement feature to be able to have attachments
- It would change all the time, the dates on our quizzes.
- Future Courses - it takes them quite a long time to put those in there
- I don't know why they don't have schedule marked.
- There the course is! It wasn't there! Now all of a sudden it is there!
- Now you come and it is there! Yesterday, it wasn't even there!
- this last year I have been so frustrated.
- there was also a thing that you had to push down there when you open the content, it wasn't automatically there.
- I could usually solve the simple problems myself, you know, it was the hard problems that I would call about
- So it wasn't just a matter of finding out how to do something, or to make the fix, but had to go right to the programmers and realize that there was something wrong.
- In fact, there are still things that don't work.
- it was not possible to take the exam as though you were a student.
- I want to provide feedback to my students when they take quiz questions
- negative things that people encountered
- They just grumble about the problems.
- I just wish that it [building Learning Suite] would have been done in a different way.
- change everybody at the same time, and then you start to find the glitches, that transition is very, very difficult
- [Learning Suite] had more problems than if you had just left me in BrainHoney
- There were some of the glitches that we actually, ... discovered together
- those are minor problems, but they are aggravating problems.
- the internships spread over several semesters, sometimes

- the issue with the communities, is that the course doesn't show up on their homepage, they have to seek out the communities page,
- we have to hand-add and delete every single student
- it's not as easily accessible as the normal course is
- I'm not allowed to set up LS. So I have to track down a professor to give me access and then I can finally access it.
- I kept finding flaws and that was why I would call them.
- you can't get the feedback
- we don't like to be constrained to a semester ... have a community show up on the homepage, but with a community you can't post tests either
- since those [features] aren't implemented, we haven't bothered going back to use it.
- They (instructors) are just waiting for things that are coming.
- The assessments still need tweaking
- Do I wish it could do this or that or the other? Yes.
- It doesn't have the features that they need (Physics)
- The equation editor is not up to speed for them (Math)
- still have a lot of pain points are wishing they could do a lot more here or there.
- a few things , somewhat more advanced that they wanted to do but couldn't
- There are still those that it still doesn't do what they like it to do. That want it to do more than it is capable of quite yet.
- There are some wonderful new features that have yet to see the light of day, and people are getting a little impatient for those.
- He doesn't like the students to see their grade in relation to others.
- His landscape pages get truncated because the viewer is portrait.
- He'd like a way to grade group assignments.
- there are still a few issues floating out there
- Does it do all of the robust pedagogical support that people who understand teaching and learning would want? And the answer is no.
- Coinciding tasks (LS and Learning Outcomes) hit at the same time.
- All the functions weren't there at first
- Quizzes weren't working.
- Probably one of the hardest things was getting the faculty not to spread the word that it's terrible
- grievances, which were essentially the top-down approach
- The release date was moved up dramatically
- There were just more bugs
- The departments that used Bb heavily, they were the ones that had the most pain points.
- The ones with the most pain points are wishing they could do a lot more here or there.
- There were only occasionally a few things, somewhat more advanced, that they wanted to do but couldn't.
- People are busy. Faculty are busy.
- annoyance factor for many of them to have to make that change.
- There were some legitimate implementation issues that caused some grievances.

- managing large class sizes in the discussion boards.
- some of them felt that they hadn't been consulted well enough.
- It was rolled out too quickly and there wasn't enough transition time.
- just the disruption to their lives
- there were concerns that we have not yet been able to take care of
- The people who had concerns have just decided not to tell anybody about them any more.
- There are still areas that need improvement, like Gradebook.
- The score from a rubric does not transfer to the Gradebook.
- We have fewer development resources now than we did in the past.
- The mail ...sometimes it will accept being archived and sometimes it won't accept being archived.
- now I can't delete that email.
- The email feature of LS has been very unsatisfying to students and myself
- So I tell my students not to rely on it...number of students who don't look at their LS email either... I don't think to look there too.
- More important than how we message students, for example. I mean that was a disaster.
- So you can't do direct email. Then they came back and fixed it so whenever it goes onto LS, it lets you know that you have a message. But I don't think you can respond to that message.
- It was that email was not secure enough. And it was probably a violation of rights. Give me a break! Even on LS, if the NSA wants to look at it, they are going to if they want to. If someone sent you an email, they are initiating the conversation. If you answer that, you are not violating anybody's privacy because they are the one that asked the question.
- So she said, don't communicate with me on private issues on that. Let's do it directly through email, exactly what the university thought was insecure.
- Hate it. Hate it. Hate it...I have it forwarded to my email, so it's like they can email me, but I can't respond. I have to go into LS and respond to them there and I just, that makes me crazy
- And I don't use email through that. I use regular email. Some of the students do and I answer them that way
- when students submit an assignment, there is no way for students to automatically receive feedback that we put in their inbox.
- I hate the new email system.

#### Kinds of Having Side-by-Side Help

- to have someone just happily answer the phone and just talk with you and try to really understand.
- I specifically had a group of students come over at least on two occasions that I remember

#### Kinds of I Use It More/Differently

- I probably used LS more than anybody in the whole danged school for quite awhile

- I have an online class. So for that class, I depend very heavily on a learning management system
- I don't know that there is anyone at the university that was more impacted by the change than what I was
- I think there are a couple of us here in the department that use LS more than others and I totally depend on it, that's just the way I function
- I kind of led the way in some respects in the department here kind of blazing the trail.

#### Kinds of Influence Pedagogy

- helping me to get further into the flipped approach
- sometimes I would bounce things off. sometimes they would give their feedback... I like this in my classes, ...nice to have the student perspective to make sure you are on track.
- I learned all about the uploading of the assignments, I learned about Digital Dialog videos
- I don't have to make copies anymore.
- I didn't want to change my approach, just because the tool changed
- I designed my pedagogy independent of whatever tools are available

#### Kinds of Instructor-Student Working on Problems Together

- Most of them were quite willing to wait. As the problems emerged, we would work on them together.
- I was teaching seniors, and they just didn't even want to learn it, so they didn't even take the time to mess around with it and would whine and complain and really made a fuss.
- The seniors didn't want to mess with it for one last semester.

#### Kinds of Knowing the Answers

- Not perfect because it was a very complicated system to begin with.
- The student technicians didn't even understand it completely
- I think mostly they were [able to answer questions]. Unless they ran into bugs with the program.
- They knew what they were doing. They knew how to tell me what I needed to do.
- I imagine over time that they learned more and more of the finer features of Learning Suite
- It was the hard problems I would call about and they typically didn't know the answer off the top of their head
- There were some of the glitches that we actually, I wouldn't say we discovered together
- They actually became really confident in these students.
- having an assistant right here at their elbow who could answer their questions.
- Knowing that there were these students who understood the system inside and out

#### Kinds of Learning to Use

- He and his TA's just really sat down and really worked through it.



#### Kinds of Optimistic in the Beginning

- When Learning Suite came, we thought, okay, this will be great.
- I was glad the university made this effort to do Learning Suite
- I thought it was a great idea, it has great potential
- I was very optimistic about it.
- There was a huge amount of hype when LS was first announced and then introduced

#### Kinds of Positives

- Have to do less clicks
- New faculty, when they come, they say, oh, this is so much better than the Bb I used to use.
- For most of what faculty wanted to do, it was easy to explain. It was easy for them to pick up.
- I get a lot of comments about how easy it is to use. Students like it.
- You are just missing the beauty here of what LS can do.
- There were a lot of positives that went on.
- love the feature where the due dates go to their calendar on their phone.
- they submit to me a video. And I, according to the rubric, we grade it. It's kind of fun. They really prefer that over writing, which I don't blame them. I do too. It's actually easier for me.
- I really love on Digital Dialog
- It has lots of functionality and I like going back and forth

#### Kinds of Student as Trainer

- I would organize a training and we would bring in the [IAs] and have them come in to provide training.

#### Kinds of Student Experience

- the students only had to deal with one system, for the most part.
- So now students are going to have 3 programs that they have to keep track of ... from a student perspective, probably not a great idea

#### Kinds of System Stability

- I have to sit for 30 seconds while exams load
- LS is more stable... I just really haven't had that problem this time, so that is good.
- And the links work now all the time.

#### Kinds of They Went Away

- And then the IAs went away
- they went away faster than I would have liked them to
- They don't send anybody down anymore. It's all over the phone now.
- But they don't do that any more (send people down)
- eventually that faded out and now 2-4000 is where we go
- I called 1730 until it switched over

### Kinds of Using the IT Service Desk

- Our problem is that 2-4000 has a bad name anyway, no matter what you are doing.
- OIT is working well enough at supporting it.
- If you've got IT on the phone, ... they can't access your screen
- I had better things to do than to spend my time. I have spent multiple hours on the phone with IT
- It's just not sort of that hold my hand sitting next to me while I do this.
- IT Service Desk is able to answer questions] much better now.
- And the girls are nice when I call them up there, some of them don't know very well.
- The only time I started using IT is when they shut down the implementation office.

### X is a reason for Y

#### Reasons for Change Management

- you don't usually get the best outcome if you just make a sudden quantum change from one thing into another.
- strategic change is trying not to be too disruptive and trying to couch things within familiarity
- Strategic change models tell you it's not worth it. That's so disruptive within an organization
- I personally felt that the speed of change at BYU was probably faster than what was warranted and that for developing a tool that we did, that would impact 40,000 people, we probably needed at least another year.

#### Reasons for Communication about Change

- that they didn't want to sort of alert faculty that they were doing this because they thought that faculty didn't want to be bothered

#### Reasons for Cost of Change

- They hate change...but it is for the better.

#### Reasons for Having Side-by-Side Help

- The tech sitting here with me would go, oh yeah, here's the problem
- the real-time nature of [in-person help]
- we're working through it and you do this and you do that.
- when they were here, they would say, while I'm here, let me just quickly show you this or that, sort of a cool little thing you can do.
- Person-to-person is so much nicer than on the phone.
- I really liked that there was a dedicated line and a dedicated group of people to talk to specifically about Learning Suite.
- I liked the fact that when we called the Learning Suite line, they just jumped right in and said, okay, what is your problem and how can we fix it?
- Good to have a hands-on person come into the office and say here's how it works.

- Within ten minutes,... one would come to my office...sit down with me, and help me work through it.
- Every one of those tabs on the far left-hand side required a little bit of side-by-side assistance
- A lot of times the tech sitting here with me would go, oh yeah, here's the problem, and they would lead me to it
- When you [need to have someone come over], it's really nice to have it available
- I think they made a lot of efforts to help us with the students
- They helped me do it. I learned how to do it, and it's not a problem.
- just sit down with you and say, this is how you do it. It's a hands-on walk-through and that was very helpful.
- real time nature of it
- Someone sitting there and we are working through it
- while I'm here, let me show you this or that
- super helpful for me were the students that came and would sit and help me.
- I just walked myself down there and said, okay, I need help.
- If they could just help me through the things that are peculiar to my course
- I could just kind of ask them for help and the IAs would really come
- I understand it can do that, but how do I do that with my course?
- For me, because I'm old school. Show me how to do that
- [For learning the new Gradebook], I would have liked a little scheduled one-on-one.
- I just didn't really feel comfortable at all applying.
- They used to send, ... and that was so helpful
- They showed me how to do it and all. Sometimes they would send two down.
- Person-on-person is so much nicer than on the phone
- the people you sent down were so helpful
- that's really what I like
- once I got started, there were things that I realized I didn't know I needed to know or things that I couldn't figure out
- The fact that the university went to so much trouble to help people work through implementing it
- People have a much better attitude about Learning Suite
- single factor in the implementation of Learning Suite that did more good to promote faculty acceptance
- Just the fact that there was so much help available instantly, quickly, and I would say in a friendly way.
- It made all the difference in the world as far as I'm concerned.
- It was when I was looking for a feature that either didn't exist or needed more permissions.
- these students who understood the system inside and out, and were always available
- People really needed the one-on-one, the individual support
- willing to go in and help them transition their courses, those who took advantage of that really calmed down in a hurry
- something about having an assistant right there at their elbow...really saved the day.

- they'd go to their desk...some faculty would just go down there.

#### Reasons for IAs Added Capacity

- Consultants would have become like the IAs but we didn't have the coverage they had... We just didn't have the capacity.
- We're only getting to only 5-10% of all that the IAs were able to get to.
- I would never have had the capacity to give the service to the faculty that they deserved.

#### Reasons for Parallel Time

- a little bit more cross over time so Bb was still available, and they don't have to cut off so soon.
- it was kind of a tight timeline, kind of forced on them
- if we had given them 6 months or a year of overlapping systems, what other complications would have arisen?
- There wasn't like 2 or 3 year time period where they were on 3 or 4 different systems.
- little longer parallel testing time, so that those people that want to make the change,

#### Reasons for Reduce Dependence

- the more and more I got into depending on LS, the more and more it kind of let me down with these glitches
- every time something goes wrong, it nibbles at the time I can spend, really teaching, grading, advising, consulting
- there is no way for students to automatically receive feedback that we put in their inbox.
- with the communities, the course doesn't show up on their homepage, they have to seek out the communities page, and we have to hand-add and delete every single student.

#### Reasons for Stakeholder Involvement

- involving the stakeholders before the cement dries
- get the stakeholders involved in helping to create that change, you are going to sidestep a lot of the grief that happens when you don't involve them.
- perhaps had there been more involvement, more investment, more discussion
- some of them felt that they hadn't been consulted well enough
- I personally feel that CTL went out of their way to get input from as many people as possible. So I think it was more of a perception than a reality for that concern that they weren't consulted enough.

#### Reasons for Student as Trainer

- I think students can have a big influence, just helping in that transition.
- The IAs became the grease that kept the machinery from burning up.
- The transition was the hardest part of this whole process... That was right people at the right time kind of a thing.

- The IAs, yeah, I think that was a big win there. That went a long way in smoothing things over

#### Reasons for They Went Away

- But I can understand that they want to save money.

#### Reasons for Using the IT Service Desk

- More than half of my issues were program issues vs how to use it issues.
- the hotline that you had that was separate from the normal IT call center and I called them a lot also and found that was not nearly as helpful, frankly.

#### Reasons for Workshops

- Having the workshops helped.
- I understood [from the workshop] that it can do that, but how do I do that with my course?
- You had some meetings where everyone could go. I think that that would be helpful, even as a review.
- I went to one kind of introductory thing, you know...I learned some basics, like how to put the syllabus on and things like that.
- I went to one of those meetings where someone was quickly moving through the PowerPoints and showing you do this and you do that, and you think, I kind of get this.

#### **X is a result of Y**

##### Results of Acceptance

- I'm not hearing any more about the ready, fire, aim that we heard earlier. I'm not hearing any more Will it work?
- We are functioning. We're not getting a lot of pushback right now, as far as I'm aware.
- But every so often, he is accepting the new and for the most part, it's working.
- I really sense that there is a great feeling of security and trust.
- he still hates it and is resisting and is kicking and screaming, but I think he is in the minority.

##### Results of Best Thing They Ever Did

- overcame a lot of negative things that people encountered.

##### Results of Communication about Change

- They learned that faculty really get upset when you drop something on them like that
- The communication side was not handled very well.
- It was just suddenly sprung on everybody in an incomplete and problematic format

##### Results of Complicated System/User Friendliness

- even the technicians, the student technicians didn't even understand it completely

- and a little bit more simplified. It's not really user friendly a lot of times
- As soon as I get out of the grade tab, it'll take me some other place out of where I want to go to begin with.
- There could be a million things go wrong with this.
- It turned out to be much more complex and it took a lot longer.
- With Blackboard, I could roll out a new course for the semester in about an hour and a half. With Learning Suite, it takes me at least 4 hours
- And the options that are available ... it makes it difficult to use.
- the flexibility that was designed for LS was so complex and so elaborate, that made it more difficult for you to roll it out
- have to go through 5 screens and if everything isn't clicked just exactly in the right way, there is something wrong.
- I can't go back and open [an exam that was started previously] because I have to delete what is there and have you start again.
- go to exams, ... go down to Exam 8... go to the next screen on Options... find the student's name and click on that...create an exception, and then I have to click on a date... click Save and Continue...go to Results...delete their other score. If I miss any one of these clicks, then the student, and occasionally. It takes about 5 minutes.
- I didn't adequately appreciate how big the change would be
- It didn't take too terribly long to figure out how to use the program
- what's intuitive to a developer is not intuitive to a typical user.
- I see, they are wanting to click here, so we should have a button here.
- I don't really understand it, in terms of what other stuff there is. I've learned how to use what I have to use to make it work for class.
- But maybe they are there and I just haven't found them yet.
- Just a stab in the dark to figure out what it was that I didn't know
- It's hard for me to separate out what I didn't know about course management tools and what I didn't know about LS.

#### Results of Cost of Change

- We're going to just have to shoulder through the storm.

#### Results of Glitches/Problems/Missing Features

- I've really kind of thrown my hands up
- the ongoing problems have just made it impossible for me to work with right now.
- the more and more I got into depending on LS, the more and more it kind of let me down
- There could be a million things go wrong with this
- every time something goes wrong, it nibbles at the time I can spend, really teaching, grading, advising, consulting
- assured that it would be as good and that if it was not as good, they were going to continue to work on it and develop it until it was as good.
- there was an enormous amount of pain on my part.
- I was just running into bugs.
- But some of the bugs I'd run into, I'd have to make many, many calls

- how little time we have to play with it, how long it takes to work the bugs out, and to work those out while you are trying to actually use it as your course management thing
- I'm probably going to greatly reduce my dependence this coming summer semester

#### Results of Having Side-by-Side Help

- I got to be first-name buddies with the students who were helping me
- while I'm here, let me show you this or that
- They just showed me how to work the thing and it worked just fine.
- Whenever I had additional questions, they came back down, so I felt good about it
- that's the thing I miss kind of now, having the students come
- When I did meet with them, they were extremely helpful for all of the things I had questions on
- really made a big difference.
- I had the invitation that they were more than willing to do that.

#### Results of IAs Added Capacity

- It would have been a mitigated disaster. Unmitigated, I should say.
- It was great to go in and talk to faculty, and they said, yeah, I've already worked with the IAs
- Because of what occurred then that essentially got us out of a very tough situation.
- Lacking that [the IAs], we would have had some real challenges here.
- From a consultant's perspective, they saved the day for me.
- I would have had many sleepless nights if it had been up to me to make sure everyone in my colleges were taken care of
- Number one, it would have been physically impossible to do all of that.
- Number two, ...that is just not my strength.

#### Results of Knowing the Answers

- I was 98% happy with every time that they came over.
- They occasionally had to refer to a supervisor.
- they would say they needed to get their supervisor and then call me back.
- they would always plug me up with someone.
- They would always get an appointment with someone else or find out.
- that's when they would get \_\_\_\_ or \_\_\_\_ involved.
- It was the hard problems I would call about and they typically didn't know the answer off the top of their head

#### Results of Parallel Time

- transition is very, very difficult. especially when, ... there wasn't very much parallel

#### Results of Reduce Dependence

- I doubt that I'll even use LS except for the very basics until they get the bugs worked out
- We just don't use it.

- I don't even try anymore. I just go back to my books because I'm so frustrated.
- one of the courses, I didn't even set it up. I don't know if I'll set it up or if I'll do it, you know, in one of those folders. I'll have to see.

#### Results of Rush to Release

- In the rush to get something out so quick, \_\_\_ was probably one of the biggest voices against it (early pilot participant)
- change everybody at the same time, and then you start to find the glitches, that transition is very, very difficult.
- was implemented before it was even completed,
- it was just suddenly sprung on everybody in an incomplete and problematic format
- When people's expectations are raised really high, and then they are not met, that damages the reputation of the product, sometimes irreparably.
- year of overlap of keeping Bb on board and having LS ramp up while people get used to it and get the bugs worked out.
- So it was never beta tested, it was never ready, it was dumped on you guys, and sorry, now all the faculty are beta testers.
- every time something goes wrong, it nibbles at the time I can spend, really teaching, grading, advising, consulting
- I know there was very little transition time

#### Results of Stakeholder Involvement

- Other faculty I know felt that they were deeply involved, that their voices were heard

#### Results of They Went Away

- I've really kind of thrown my hands up ...because that kind of person-to-person help isn't available any more.
- The only time I started using IT is when they shut down the implementation office.
- The techs over at the CTL [current TLA's], by the way, were not trained as well
- That's the thing that I miss kind of now, having the students come.
- [One-on-one help] is kind of missing here.

#### Results of Using the IT Service Desk

- Well, 2-4000 you can't blame the students that answer the phone. If you don't describe your question that fits the lookup in the database, they are sunk
- It's twice as slow over the phone trying to get something fixed
- OIT wasn't totally up to speed on it initially either and you would spend a lot of time explaining the background and some of the bugs.
- I would call them and then I'd have to bring somebody up to speed and have the feeling that they didn't really understand me.
- Sometimes they haven't answered questions
- Because it didn't answer my question of whether or not, how confident can I be in the system
- [I get my questions answered] much more now than when they initially made the transition



- they always want to know what is your user name and stuff before they'll even talk to you and that is just kind of annoying.
- what was happening on my screen wasn't happening on their screen

#### Results of Workshops

- I found kind of a hindrance to me getting the most out of that presentation from the team.

#### **X is a step in Y**

##### Steps in Change Management

- you are gathering lots of feedback and keep improving the system until you really got to a place where everybody feels comfortable that it is working in a way that is going to meet everyone's needs, instead of building the plane after you are flying.

##### Steps in Learning to Use

- you are just so busy ..., that you just simply don't have time to play with this technology and figure it out

##### Steps in Rush to Release

- Betas might last a longer time period where you are gathering lots of feedback and improving the system

##### Steps in Using the IT Service Desk

- I would always start with the IAs and then sometimes they would transfer me to OIT

#### **X is a way to do Y**

##### Ways to do Change Management

- change management includes development in my mind, because you are developing a product and you have ongoing betas.

##### Ways to Having Side-by-Side Help

- because they were here in the SWKT, I just walked myself down there and said, ok, I need help.
- I used them on the phone and might have had someone come in person
- [Interface usability-trained individuals] would be helpful to have in our office
- they used to show me, this is how you have to do it.
- Maybe if you come to a workshop, then we'll come for six hours one-on-one.
- we'll come on an individualized basis, two hours at a time for three times.
- they came by and gave me a rundown on all of the basic information, so that was helpful to start with

##### Ways to Learn to Use

- have a hands-on person come into the office and say here it how it works.

- understanding the principles of what you want to see, and getting that private tutoring with \_\_\_\_ really helped me learn how to lay out a course logically for a student
- I went to one kind of introductory thing,
- super helpful for me were the students that came and would sit and help me.
- I constantly ask people.
- So by experimentation, I just fiddled around with it some... If I have time, I mess around with it.
- There was instructional material online that I went through, but I specifically had a group of students come over
- I have several of the LS, the people who help you learn how to use it, I had several meetings with them,

#### Ways to Rush to Release

- It would have been nice to have a little bit more development and testing time
- If we had had another six months, it would have made a big difference. If we had another year, it probably would have been ideal
- Ideally development for another 6 months would have been more ideal
- If we had had more time to work out the bugs, ...we really wish we had had more time before launch
- I would simply say, give us another year or two, another 12-24 months.
- we probably needed at least another year. Maybe another one
- Maybe implementing it on a limited basis with so many faculty to shake it down

#### Ways to Use the IT Service Desk

- I probably used OIT probably 10 to 1 over the IAs
- But it didn't take too terribly long to figure out how to use the program and then I was just running into bugs.
- [screen sharing] would be helpful for any IT group
- It's twice as slow over the phone trying to get something fixed

#### Ways to do Workshops

- Require attendance at a workshop.
- Maybe if you come to the workshop, then we'll come for six hours one-on-one.
- Just get the basic stuff out of the way [by attending a workshop] and then we'll come on an individual basis.

#### **X is an attribute of Y**

##### Attributes of Having Side-by-Side Help

- These students were bright and enthusiastic and very helpful.
- Being a staff member, I didn't expect to have someone come and sit down with me either.

##### Attributes of Using the IT Service Desk

- Everyone has to figure out what you are even talking about before they can usually help you.

#### Attributes of Workshops

- The first overview I went to was so high-level that I came back and thought, so yeah, but how do I do that?

### Appendix G: Audit Trail Sample

Date	Thoughts
14-Mar	Had my first interview today. It was good to get started. I wonder how the others will compare to this one.
18-Mar	Met with another consultant today. One thing that stood out to me was the idea that we didn't have a control group to really know whether or not the IAs really made a difference, but in his mind he saw that it would likely have been a disaster. He is concerned with the future development of LS because there are so many needs and slow development. Faculty may be getting impatient.
20-Mar	Had interview with another consultant. One thing that stood out from hers was that she said she would have been looking for another job if the IAs hadn't been there to take off a lot of the pressure of the transition. She had nothing but praise for the IAs and the work they did. I wonder if everyone feels like this.
21-Mar	Interviewed a consultant today. I didn't feel like this interview contributed anything really new. I felt like this one was less concerned with where LS is and the impact the transition had on faculty that he worked with. He seemed like it was almost an easy transition.
27-Mar	Conducted interviews at BYU today. It was interesting to hear the passion and the concern for the needs faculty still have with LS. A few talked about how they felt like they used LS more/differently than others. I don't know that I'll follow up on that, but I thought it was interesting. One absolutely loved it! Others were concerned because there are features that they really feel that they need. It was good to do them face-to-face. There really was something about having the IAs sit down side-by-side with the instructors. It seemed like that was a fairly common theme that came out.
3-Apr	I've been transcribing the interviews. Some themes I feel like are coming out of the data are people are resistant to change. Some felt forced. There was a need for better change management. Two themes are related to time - more time for development and more time running Bb and LS in parallel would have been a smoother transition. Some didn't feel like there was enough communication from administration.
4-Apr	Had two more phone interviews with faculty members. These two I felt like had some very articulate sayings about the importance of side-by-side help and overcoming the negative feelings faculty members had through the transition.
23-Apr	These two interviews were really insightful to me. One more phone interview. This one seemed to confirm things I've learned from others - she had a few different needs than others, but the theme of there needing to be additional functionality was same as others.
26-Apr	Have been coding the interviews. Is Change is hard really a subset of Challenges? Should IAs ability to answer questions a subset of support show up at your door.