A Blended Faculty Community of Inquiry: Linking Leadership, Course Redesign, and Evaluation

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Abstract

This article describes an institutional course redesign initiative in terms of leadership, support, and preliminary findings, based on the Inquiry Through Blended Learning (ITBL) program created to support faculty engaging in blended course redesign. Garrison, Anderson, and Archer's (2000) Community of Inquiry framework has been adapted to a blended environment in order to provide faculty participants with opportunities to discuss and reflect on key redesign questions, explore and experience blended learning from a student perspective, and implement and evaluate their own course redesigns. This article describes the inquiry process and the preliminary lessons learned from the implementation of the ITBL program.

Résumé

Cet article décrit une initiative de réforme de cours institutionnel en termes de leadership, d'appui et de résultats préliminaires, basés sur le programme l'enquête par l'apprentissage intégré (ITBL, ou Inquiry Through Blended Learning) créé pour appuyer le corps professoral engagé dans une réforme de cours intégré. Le cadre de communauté d'enquête de Garrison, Anderson et Archer a été adapté à un environnement intégré afin d'offrir des occasions pour discuter et pour réfléchir sur des questions-clés de la réforme, d'explorer et de faire l'expérience de l'apprentissage intégré de la perspective de l'étudiant, et de mettre sur pied et d'évaluer les réformes de cours propres aux professeurs participants. Cet article décrit le processus d'enquête et les leçons préliminaires de la mise sur pied du programme ITBL.

Canadian Journal of University Continuing Education
Vol. 32, No. 2, Fall 2006
pp. 67–92

OVERVIEW

Not long ago, the Boyer Commission (1998) called for the "radical reconstruction" of higher education to engage students in the educational experience. We now find that many institutions are meeting this challenge and are actively positioning themselves to transform teaching and learning in a systemic and systematic manner. At the same time, most have recognized the potential of Internet and communication technologies to be a catalyst for change and essential to offering new and engaging approaches to higher education in a manner congruent with the evolving needs of a knowledge society.

The purpose of this article is to describe an institutional initiative intended to address the quality of the educational experience. This is a case study of an institutional strategy to significantly shift teaching and learning from an essentially passive lecture to an engaged and collaborative approach. The focus is on the institutional leadership, support, and evaluation of a blended-learning redesign program. The program is called Inquiry through Blended Learning (ITBL). The pedagogical approach that framed the redesign program was inquiry-based learning. Inquiry-based learning provided the rationale and link to the values and principles of higher education adopted by the institution. The inquiry framework was crucial to framing the reason for the course redesign and shaping the role of communications and Internet technologies. This transformational initiative was premised on rethinking the structure, process, and goals of university courses.

Blended learning is defined as the integration of on-campus and online education for the express purpose of enhancing the quality of the learning experience. Blended learning is seen as an opportunity to fundamentally redesign how we approach teaching and learning in ways that realize increased effectiveness, convenience, and efficiency. At the heart of blended-learning redesign is the goal to engage students in critical discourse and reflection. The goal is to create dynamic and vital communities of inquiry where students take responsibility to construct meaning and confirm understanding through active participation in the inquiry process. The elements of blended learning defined here are having a profound influence on how teaching and learning are designed and delivered.

LEADERSHIP

Discussion of blended learning began in earnest in 2002 when the University of Calgary brought in experts who were experienced with blended-course redesign. This was seen to be crucial to raise the awareness of the community and gain the support of senior administration. At the same time, a learning and instructional development committee began to draft an institutional learning plan and a blended-learning position paper. The Inquiry and Blended Learning program was formally initiated in 2004 when $130,000 was made available to faculty to redesign their courses consistent with inquiry and blended-learning principles and approaches. Clear criteria were provided and faculty members were invited to submit proposals. The proposals were vetted through a competitive process.

The Learning and Instructional Development sub-committee, chaired by the associate vice-president academic, currently oversees the inquiry & blended learning grant program and selects the successful applicants from an annual call for proposals. This committee is composed of faculty, student, and administrative representatives. The committee members are familiar with the academic mission, goals, and strategic direction of the university so that selections are made in alignment with these plans. There are ten annual awards of $10,000 and one of $30,000 for a major course redesign. The most common use of these funds is to provide teaching release time.

The motivating force and pedagogical goal was to address a growing dissatisfaction with the quality of teaching and learning. One of the primary reasons for successfully raising awareness and gaining commitment in such a relatively short period of time was the fact that the emphasis was on enhancing and extending the teaching and learning transaction. Moreover, the focus was as much on the benefits of course redesign for faculty as it was for students and learning outcomes. That is not to say that efficiencies were not a consideration. Clearly, this was important for senior administration; however, this was always a secondary issue and seldom emphasized in public discussions.

Senior administration at the University of Calgary recognized the need to enhance the learning experience and adopt approaches that engage learners in critical discourse and reflection. The success of the inquiry and the blended-learning initiative can be attributed to the proactive leadership of senior administration in approving policy, setting direction, and providing support. It is this proactive leadership that has distinguished this program and made it a model for other higher-education institutions.

Blended-learning course redesign is not sustainable without strong institutional leadership (Garrison, 2004). The University of Calgary has exemplified collaborative leadership essential to effect significant change in

large institutions of higher education. With regard to the requirements for blended-learning course redesign to be sustainable, Garrison and Kanuka (2004) offered a list of steps to be followed:

- creation of clear institutional direction and policy
- framing of the potential, increase awareness, and commit
- establishment of a single point of support, quality assurance, and project management
- creation of an innovation fund to provide the financial support and incentives to faculty and departments to initiate blended learning course transformations
- investment in establishing a reliable and accessible technology infrastructure
- strategic selection of prototype projects that prove to be exceptionally successful exemplars of effective learning
- development of formal instructional design support available through a blended format
- systematic evaluation of satisfaction and success of the teaching, learning, technology, and administration of new courses
- creation of a task group to address issues, challenges, and opportunities as well as communicate and recommend new directions to the university community (pp. 102–103)

The University of Calgary systematically addressed these requirements. Once policy was developed, awareness raised, and resource commitment achieved, the challenge was to create an instructional support system that could sustain the redesign process. The instructional design support and the initial evaluation of the course redesign efforts to date are described next.

Inquiry Through Blended Learning

The focus in the ITBL program is on the connection between one's teaching practice and student learning. The potential exists in a professional development program for faculty to make a transformational shift in their approach to teaching from one of disseminating information to one of creating learning environments where students co-construct their own knowledge through interactions with the professor, their peers, and the course content (Garrison & Vaughan, in press). The role of technology shifts from the packaging and distribution of information content to being used as a "tool set" to enable students to communicate and collaboratively construct their own knowledge.

Blended Community of Inquiry Framework

Garrison, Anderson, and Archer's (2000) Community of Inquiry (CoI) framework was used to guide the inquiry process in the ITBL program. The model is based on a collaborative constructivist perspective of education, the integration of "personal reconstruction of experience and social collaboration" (Garrison & Archer, 2000, p. 11). There are three core elements of this model: social, teaching, and cognitive presence.

When this model is applied to a faculty development context, the focus of the cognitive presence becomes an inquiry process into teaching practice (Vaughan, 2004a). The ability of the community to support and sustain this inquiry forms the social presence. The opportunities for blended (face-to-face and online learning) support are encapsulated within the teaching presence. Figure 1 and Table 1 illustrate how this community of inquiry model can be adapted for a blended faculty development initiative.

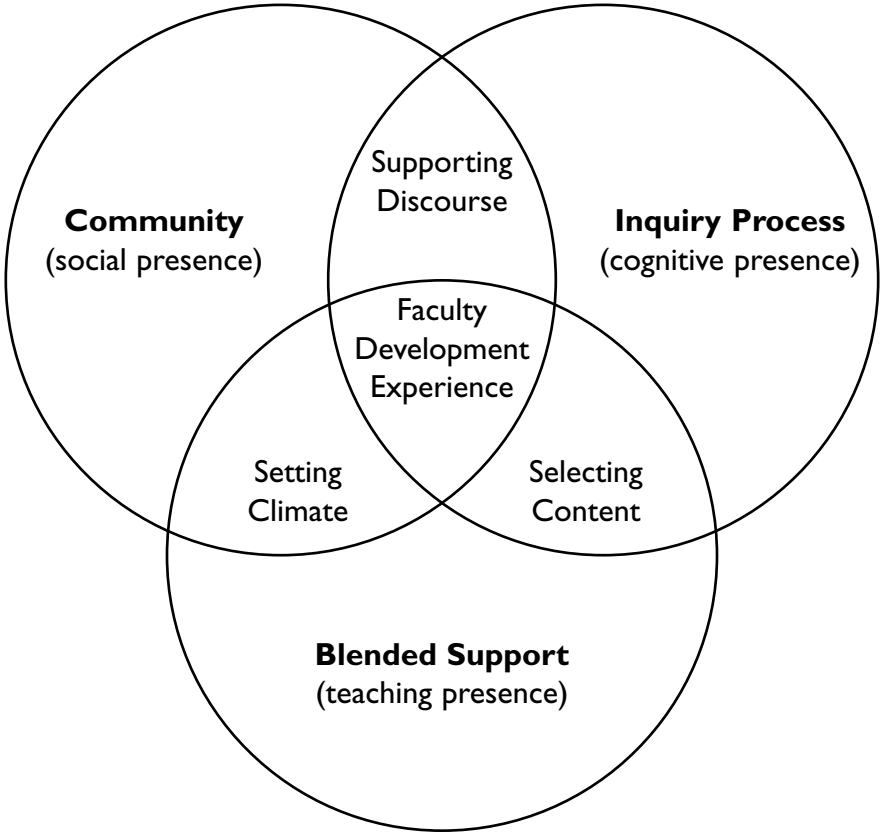

Figure 1: *Blended faculty community of inquiry—presences (adapted from Garrison, Anderson & Archer, 2000).*

Table 1: *Blended faculty community of inquiry—categories and indicators*

Sphere	Description	Category/Phase	Indicators
Inquiry process (cognitive presence)	The extent to which faculty are able to construct and confirm meaning through sustained reflection, discourse, and application in a blended Community of Inquiry (CoI).	1. Triggering event	1. Inciting curiosity and defining key questions or issues for investigation
		2. Exploration	2. Exchanging and exploring perspectives and information resources with faculty colleagues
		3. Integration	3. Connecting ideas through individual project construction
		4. Resolution/ application	4. Applying new ideas directly in teaching practice
Community (social presence)	The ability of faculty in a blended CoI to project themselves socially and emotionally as real people (that is, their full personality), through the medium of communication being used. Faculty learn best from each other.	1. Establishing trust and respect	1. Expressing emotions
		2. Open communication	2. Risk-free expression
		3. Group cohesion	3. Fostering collaboration

Sphere	Description	Category/Phase	Indicators
Blended support (teaching presence)	The design, facilitation, and direction of the inquiry and community processes for the purpose of realizing personally meaningful and educationally worthwhile learning outcomes for faculty in an environment that carefully integrates face-to-face and online sessions and activities.	1. Organizing and designing the faculty development program	1. Setting curriculum and methods
		2. Facilitating discourse in the community	2. Stimulating and sustaining the sharing of personal meaning and insights
		3. Providing direct instruction for faculty participants	3. Modeling and focusing discussion, activities, and project construction

Source: Garrison & Vaughan, in press

Inquiry Process

Cognitive presence is the element in the CoI framework that is most basic to success in higher education. Cognitive processes and outcomes should be the focus of an educational community of inquiry and, thus, social and even teaching presence are facilitators of the learning process. Garrison and Anderson (2003) stated that "cognitive presence means facilitating the analysis, construction, and confirmation of meaning and understanding in a community of learners through sustained discourse and reflection" (p. 55).

In the CoI model, cognitive presence is closely linked to the concept of critical thinking derived from Dewey's (1933) reflective thinking and practical inquiry model. Practical inquiry is grounded in experience and integrates the public and private worlds of the learner (Dewey, 1933). Based on this definition, Garrison et al. (2000) developed a practical inquiry model to guide the analysis of cognitive presence in an educational experience that is mediated by computer conferencing. The four categories of this practical inquiry model—triggering event, exploration, integration, and application/resolution— have been used to describe and examine the inquiry process in the ITBL program.

Triggering Event

A triggering event was described by Garrison et al. (2000) as a "state of dissonance or feeling of unease resulting from an experience" (p. 21). Discussions with faculty have indicated that the triggering event for participation in the ITBL program is the motivation to redesign an existing course to improve student learning and faculty satisfaction. This desire presents the opportunity to make one's implicit assumptions about a particular course explicit. The ITBL course redesign process is initiated through a formal call for proposals to participate in a blended faculty CoI. The application process is designed so that professors are provided with the CoI framework and the necessary support to begin reflecting about their existing course and constructing initial plans for the redesign process.

The ITBL application form consists of three parts: project detail, project evaluation and sustainability plans, and a proposed budget. A series of brown-bag lunches and one-on-one application consultation sessions are also provided to ensure that faculty members are clear about the course redesign focus of the program and the expectation that they become active participants in the blended faculty development CoI. Inherent in this process, faculty members are encouraged to take a community or team approach toward the redesign process in their applications. These teams often consist of a group of professors who teach the selected course, as well as teaching assistants, graduate students, and others who provide course-related support (e. g., subject-area librarians).

Once the successful ITBL applicants have been informed of their awards, an initial project meeting is scheduled that includes the project team (professors, teaching assistants, graduate students) and representatives from the institution's teaching and learning centre, library, and information technology department. The purpose of this meeting is to clarify the project goals, timelines, roles, and responsibilities for those involved in supporting the redesign process. This meeting also helps to identify the professional development support needs and requirements of the project team members. This information is then used to shape the type of activities and resources that will be incorporated into the ITBL program.

As a follow-up to this meeting, the project teams are encouraged to post a summary message to a discussion board in a course website that has been constructed for the ITBL program. The message is expected to describe the course redesign goals for the project, the action plans, and any questions related to the redesign process (triggering events). Besides helping to clarify the course redesign process, this posting allows the other members of the ITBL cohort to begin to learn more about each other's projects. This discussion-forum posting process also provides the first hands-on opportunity for the participants to interact as students with the learning management system that in most cases will be used in their own projects.

The first face-to-face ITBL cohort meeting is designed to build upon the initial discussion-forum postings in order to allow the participants to further discuss their course redesign questions and to trigger new ideas and perspectives about teaching and learning. This process is facilitated by selectively placing the participants into small groups so that they have an opportunity to interact with people from other project teams. Three questions are used to stimulate the discussion:

1. What is your definition of blended learning and how will this concept be operationalized in your course redesign project?
2. What will be the advantages (for both students and professors) of your course redesign?
3. What do you perceive will be some of the challenges you will encounter with your project? (Garrison & Vaughan, in press)

An instructional design or teaching specialist is placed at each table in order to help guide the small group discussion and to record the key points. These discussion summaries are then posted on the ITBL website as a resource and "touchstone" to stimulate further online discussion.

Our experience suggests that the initial face-to-face cohort meetings are very important for establishing the blended faculty CoI (Vaughan & Garrison, 2006). Through the discussions in these meetings, the community members realize they are not alone in experiencing a particular course rede-

sign issue or concern. This shared understanding and the physical presence of the meetings can very quickly lead to a sense of "trust and risk taking" in the group.

Exploration

The second category of the practical inquiry model is exploration, characterized by "searching for clarification and attempting to orient one's attention" (Garrison et al., 2000, p. 21). The exploration phase of the ITBL program consists of a series of integrated face-to-face and online experiential learning activities that allow the participants to become immersed in a blended-learning environment from a student's perspective. This process takes place over an extended period of time, a minimum of six months, and the activities are developed based on the feedback from the initial project meetings and in collaboration with the faculty participants in the program. These ITBL program activities are designed to provide participants with experience and expertise in the areas of curriculum design, teaching strategies, and educational technology integration (Figure 2).

The curriculum design sphere involves the creation of a course outline or syllabus for the blended-learning course. This document becomes the "blueprint" for the redesign process. In terms of teaching strategies, the ITBL program provides opportunities for participants to develop experience and skills with online discussions, group work, and computer-mediated assessment practices. The educational technology integration component involves the acquisition of strategies and skills for managing a course website and troubleshooting basic student technology issues.

In order to achieve these program outcomes, there should be a variety of learning opportunities that allow participants to share, discuss, and debate their course redesign experiences (Garrison & Vaughan, in press). The ITBL program uses a variety of information and communication technologies to support the exploration phase. For example, Macromedia Breeze is used to create brief audio presentations to help the participants prepare for upcoming face-to-face sessions, to explain online activities, and to summarize key course redesign concepts. Faculty research and travel commitments mean that not everyone can attend each of the regular face-to-face sessions. In order to overcome this challenge, Elluminate Live!, a web-based synchronous communication tool, is used to record the face-to-face sessions for future use. Elluminate Live! is also used to support "virtual" project meetings when team members are off campus.

In addition, faculty mentors (professors with previous blended-learning experience) and students are included in the ITBL discussions. The students provide the all important perspective of the learner (the target audience for the redesigned courses) and the faculty mentors are able to pass on their

"lessons learned" from direct experience with inquiry and blended-learning courses. Previous participants of the ITBL program have also stressed the importance of conducting these discussions in both face-to-face and online formats (Vaughan & Garrison, 2005). The face-to-face sessions, with their physical presence and sense of immediacy, help to establish the rhythm for the community while the online discussion forums allow for reflective thoughts and comments to be captured and archived as project-related resources.

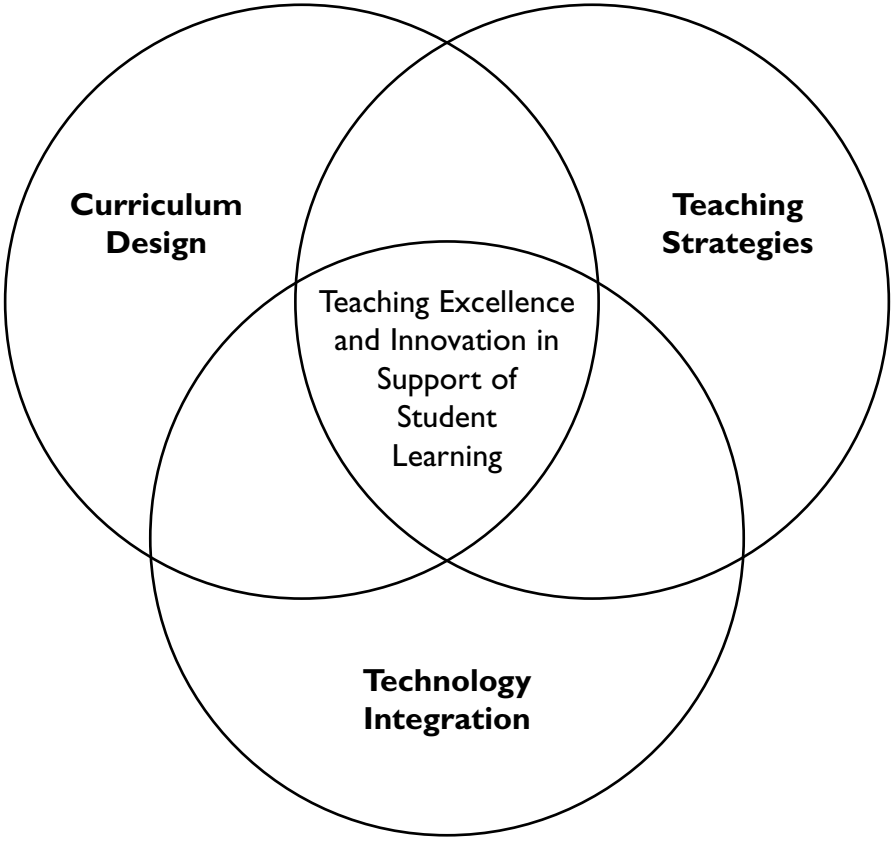

Figure 2: *Outcomes for the ITBL program participants.*

Integration

The third category is integration, which involves reflecting upon how the new information and knowledge discovered can be integrated into a coherent idea or concept (Garrison et al., 2000). A common challenge for participants involved in the ITBL program is the transition from the exploration to the integration phase. Many faculty members are comfortable sharing, discussing, and debating course redesign concepts but often a greater effort is required to transfer these new ideas into practice. One strategy used in the ITBL program involves getting faculty to regularly present project artifacts, such as their course outline or an assessment activity, to the rest of the community. This forces the ITBL participants to make redesign decisions and to create course-related resources. This "show and tell" process also allows them to get valuable feedback from their peers about the artifact. In addition, opportunities are provided to pilot portions of the projects with students who can provide insightful comments about the usability and educational value of a learning activity or resource.

In order to further support the integration phase, a series of individual project meetings are conducted outside of the regular ITBL cohort activities. These meetings are facilitated by an instructional design or teaching specialist who is assigned to specific projects based on her or his areas of expertise that correlate to the predetermined support requirements for the project. The frequency and scope of these meetings depend on the needs of each individual project. Although the larger cohort meetings provide opportunities for participants to be exposed to a diversity of ideas, the focus of these meetings is on "getting things done." Project development work and milestones are reviewed at each meeting, with tasks and "deliverables" assigned for the subsequent meeting.

Application/Resolution

The resolution of the dilemma or problem is the fourth category of the practical inquiry model. Garrison and Anderson (2003) suggested that the results from this phase often "raise further questions and issues, triggering new cycles of inquiry, and, thereby, encouraging continuous learning" (p. 60). The application and resolution phase of the ITBL program involves the implementation and evaluation of the course redesign project. This is the phase that is often overlooked in professional development programs. In many programs, faculty members receive support for the design and development of their projects but the implementation stage takes place after the program has been completed. Thus, professors are left on their own to struggle through the initial implementation of their course redesign and, in most cases, little or no evaluation is conducted to determine the effectiveness of

the project from either a student or faculty perspective (Garrison & Vaughan, in press).

To overcome these deficiencies, the ITBL cohort is maintained throughout this phase and the participants intentionally engage in the process of the scholarship of teaching and learning (SoTL). In order to facilitate this process, a discussion about the SoTL process is conducted in one of the early face-to-face ITBL cohort meetings. These conversations involve ITBL faculty mentors who have prior experience with SoTL and thus can demonstrate their study processes and results. Faculty members are encouraged to engage in the SoTL process from the outset of their ITBL projects. By applying for institutional ethics approval at the beginning of the course redesign process, project teams are able to collect data in the form of surveys, interviews, and focus groups with students, professors, and teaching assistants who have been involved in past iterations of the course. Several projects have also obtained data regarding student grades and withdrawal/drop rates for comparison with the traditional sections. The collection and analysis of this data allow the project team to make informed course redesign decisions, such as the proper selection and integration of face-to-face and online learning activities.

Although each course redesign project has its own specific SoTL needs and research study design, ethics approval has also been received for the entire ITBL program so that a common set of data can be collected for each of the project implementations. Analysis of this data will be used to inform future offerings of the redesigned courses and to create an institutional course-redesign inventory that can be used for academic program planning. Two sets of data-collection techniques are currently being used: an end-of-semester student survey and a post-course interview with the professor and teaching assistants responsible for the redesigned course.

The ITBL program is designed to help faculty define their course goals and expectations, redesign their learning activities and assessment assignments, adapt and develop online learning tools, evaluate course implementations, and disseminate results. To date, the University of Calgary is approaching 50 courses that have been funded and are in various stages of redesign. Many of these courses have significantly reduced or eliminated lectures entirely in favour of more engaged learning processes. The first two rounds of the ITBL projects are currently being implemented and a number of evaluation studies are being conducted. Student surveys are being deployed within each of the redesigned courses, and faculty surveys, interviews, and focus groups are also being undertaken. Early evaluation results of several course redesigns are provided next.

EVALUATION

Nine redesigned courses were implemented during the winter 2006 semester and students were invited to complete paper-based surveys in class time at the end of the term. There were 241 completed surveys, with a return rate of 76%. Half were first-year students and 78% were female. The survey asked students why they selected a blended course and about the amount and quality of the interaction, the issues around course design and expectations, the most/least effective aspect of the course, and their overall satisfaction. Appendix 1 provides a summary of the results.

The most significant positive finding was the expressed increase in the quantity and quality of interaction with both students and faculty. In terms of the amount of interaction, there was a 78% increase with other students and a 55% increase with instructors in these ITBL courses. With regard to the quality of the interaction, the students reported a 69% increase with other students and a 59% increase with instructors. Previous studies at the University of Central Florida (Dziuban, Hartman, Moskal, Sorg, & Truman, 2004) indicated that these perceptions of increased interaction are strong indicators of student success in a course. Comments from the student surveys suggested that group work was the primary reason for this increased interaction in ITBL courses. The students also indicated that group work, discussions (face-to-face and online), and online resources were the most effective aspects of the redesigned courses.

In terms of the least effective aspects of the ITBL courses, the survey comments identified unclear expectations, online components, and heavy workload. Students were confused about course expectations, not prepared for online interaction, and surprised by the workload. Interestingly, although students liked the group work, they felt they needed more guidance and structure. As a result of the perceived lack of organization, only 48% were satisfied with the course experience and only 45% indicated that they would take another blended course if given the opportunity. It would appear that most of the problems were evident in large enrolment introductory courses. Students may need support to become more self-directed.

The conclusion from these preliminary student surveys is that there needs to be clear expectations, structure, and direction in a course redesigned for blended learning. While students must be open to new approaches and be prepared to be more self-directed, faculty must also be prepared to support students as they adjust to a blended environment. This speaks to the importance of teaching presence in a blended environment. The evidence is growing as to the impact of teaching presence on student satisfaction, perceived learning, and sense of community (Garrison & Cleveland-Innes, 2005; Meyer, 2003; Murphy, 2004; Pawan, Paulus, Yalcin, & Chang (2003); Shea, Pickett,

& Pelz, 2004; Swan, 2003; Swan, 2004; Swan & Shih, in press; Varnhagen, Wilson, Krupa, Kasprzak, & Hunting, 2005; Vaughan, 2004b; Wu & Hiltz, 2004).

The post-course interviews provided an excellent opportunity for the project teams to reflect and debrief about the redesigned courses. During the interviews, questions such as What worked? What didn't work? and What to do differently the next time the course is offered? as well as lessons learned and advice to other faculty contemplating course redesign were explored. The project teams were also asked to reflect on their ITBL experiences and provide suggestions for improving the program. Preliminary themes and comments from nine interviews are included in Appendix 2.

The interview comments suggested that, as a result of the implementation of the redesigned courses, professors have a greater awareness of the need to provide students with an explicit orientation to inquiry and blended learning, a "clear course plan," and ongoing direction throughout the semester. They also stated that there is a greater need to align the student assessment activities with the course objectives and to focus more on discipline-specific inquiry rather than on just covering course content.

In terms of support from the ITBL program, the faculty interviewed indicated that the face-to-face lunch sessions provided them with "breadth," that is, opportunities to learn about a diversity of approaches to inquiry and blended learning, while the online components allowed them to reflect on how these new ideas could be incorporated into their own course redesigns. The optional workshops facilitated "hands-on" opportunities to develop learning resources for their courses, and the individual project meetings provided "depth" through discussions about project-specific issues, as well as the establishment of project milestones and tasks.

Conclusion

The process of course redesign for blended learning is a relatively new phenomenon. As a result, it is important to disseminate the results and "lessons learned" from course redesign initiatives to assist other institutions and teaching-support units involved in similar blended-learning initiatives. Faculty members who have successfully redesigned their courses are the best ambassadors. At the University of Calgary, they have presented and shared their experiences with new ITBL cohorts at departmental meetings and in campus-wide workshops. Articles have been written and published in institutional newsletters, and a series of two-page ITBL "Tip Sheets" have been developed to address common redesign issues (http://tlc.ucalgary.ca/resources/library).

Additional funding is often required to support the dissemination of results. Another initiative worth considering is a scholarship of teaching and learning fund. The University of Calgary has recently created an inquiry and blended learning scholarship dissemination grant program to support such activities (http://tlc.ucalgary.ca/teaching/programs/itbl/). Faculty members who have been part of the ITBL program are eligible to apply for 10 annual awards of $1,000. This grant is intended to directly support expenses related to designing, conducting, and publishing research on teaching innovations related to inquiry and blended-learning projects and for travel to present a paper at a conference based on the results of a study that describes lessons learned in course redesign and implementation.

In closing, course redesign for blended learning is a very challenging process, especially when undertaken in isolation by a single professor. For this reason, a blended faculty community of inquiry approach to course redesign has been emphasized at the University of Calgary. Without the systematic and sustained support of a professional development community, individual faculty members often make course redesign decisions that do not harness the transformative potential of blended learning. As well, without current and reliable evaluation data, both faculty and senior administration will not have the information to sustain the support and resources for blended course redesign.

APPENDIX 1

Inquiry through Blended Learning (ITBL) Courses: Student Survey Results for the Winter 2006 Semester

1. Response Rate 76% (241 of 316 potential students)

2. University Status

First Year	50%
Second Year	14%
Third Year	19%
Fourth Year	14%
Graduate	2%
Unclassified	0.7%
No response	0.3%

3. Gender

Female	78.4%
Male	21.2%
No response	0.4%

4. Primary reason for choosing the blended learning course

It is a required course	71.0%
Other (i.e., course topic sounded interesting)	13.3%
I chose the instructor, not the course modality	5.4%
It was the only available option course that fit into my timetable	3.7%
Flexibility of being able to complete assignments anyplace/anytime	2.9%
Convenience of not having to come to campus as often	2.5%
Job responsibilities make it difficult for me to attend face-to-face classes	0.8%
No response	0.4%
I have a disability that makes travel inconvenient	0.0%

5. Student Perceptions

Statement	Agreed	No Difference	Disagreed	No Response
The *quantity of interaction with other students* was *increased* in this ITBL course compared to other courses.	78%	16%	5%	1%
The *quality of interaction with other students* was *increased* in this ITBL course compared to other courses.	69%	25%	4%	2%
The *quality of interaction with the instructor* was *increased* in this ITBL course compared to other courses	59%	28%	12%	1%
The *quantity of interaction with the instructor* was *increased* in this ITBL course compared to other courses	55%	28%	15%	2%
The U of C provided *sufficient resources* for this ITBL course	53%	27%	19%	1%
You were *satisfied* with this ITBL course	48%	23%	25%	4%
Given the opportunity you *would take another* ITBL course in the future	45%	27%	26%	2%
ITBL courses are *sufficiently identified* and *expectations made clear* in the U of C course calendar	19%	36%	43%	2%

6. Most and least effective aspects of the ITBL courses

Most effective	**Least effective**
• Group work (49)*	• Lack of clear expectations, structure, organization and direction (67)
• Discussions—face to face and online (30)	• Online component (18)
• Greater degree of interaction with other students and instructors (25)	• Online discussions (15)
• Online resources (25)	• Self-directed learning approach (13)
• Greater flexibility (13)	• Increased workload (13)
• New ways of learning (11)	• Poor or lack of communication (6)
• Self-directed learning opportunities	• Lectures (6)
• Instructors (9)	• Group work (5)
• Applying what we learned (9)	• Overload of information and resources (5)
• Course structure (5)	• Technological "glitches" and problems (5)
• Variety of assignments and methods of assessment (5)	• Lack of learning (4)
• Not effective (4)	• No ineffective elements (3)
• Integration of online and in-class learning (3)	• Less physical presence (3)
• Guest speakers (3)	• Lack of interaction (2)
• Unsure (2)	• Lack of blended learning (2)
• Course readings (1)	• Guest speakers (1)
• No difference (1)	• Boring course content (1)

**( )—indicate the number of related comments*

APPENDIX 2

Inquiry through Blended Learning (ITBL) Courses: Faculty Interview Comments for Winter 2006 Semester Courses

1. Instructor benefits of the redesigned course
   - Experimented with new teaching strategies and tools
   - Increased student interaction in the course

2. Instructor challenges encountered with this redesigned course
   - Increased workload for myself
   - Student "push back" and resistance to taking increased responsibility for their learning
   - Technology issues and challenges (i.e., Blackboard server problems)

3. Changes that will be made to the redesigned course for future implementations
   - Provide a more explicit and involved student orientation to inquiry and blended learning
   - Ensure that my learning/assessment activities are aligned with my course objectives
   - Focus more on the discipline inquiry process rather than on covering content in my course
   - Make sure that I develop a "clear plan" for the course and that all my student learning resources and activities are constructed before the class begins (not enough time to properly develop these "on the fly" during a course)

4. Lessons learned

   a) Project Development Stage

Theme	**Related Comment**
Importance of course redesign—complementary and integrated face-to-face and online activities	Work online has to be linked to work done in class, in that it either sets up the in class component or allows students to further consider the in class elements.

Theme	Related Comment
Build on your strengths	Don't throw away things that have worked in the past. Use those as strengths to be built upon.
Don't go it alone	There's lots of help and support from the Teaching & Learning Centre and other faculty involved with ITBL projects
Use the resource material posted to our ITBL Blackboard site	Read the information posted on the ITBL site. There is a lot of helpful stuff there!
Openness to new ideas and a willingness to ask for feedback	Be open to considering new ideas. Realize also that what might work for someone else might not work for you.
Set project development goals and deadlines for yourself	Consciously set a goal for each project meeting so that you get work done between them.
Budget time to work on your project between the face-to-face sessions	Set aside time on a regular basis to deal with information in between meetings
Use existing resources—don't try and reinvent the wheel	Utilize resources that are already constructed—Library of Congress material, MERLOT, CAREO, etc.
Avoid the course and a half syndrome	Blended learning is not an effective way to add more content to your course. It is a great way to alter the delivery of a course by offering students more options and independence.

b) Project Delivery Tips

Theme	Related Comment
Importance of informing students about your blended style of course delivery	Ensure in the outline that students are aware that it will be blended delivery
Importance of scheduling a student orientation to inquiry and blended learning	These concepts are new to the majority of U of C students—be sure to inform students about the nature of your course before they enroll and be sure to involve the students in a discussion about these concepts during the first week of your course
Student Engagement	Blended learning doesn't necessarily mean glitzy web pages or hi-tech animations. It's about engaging students in their learning. Many web-based tools are surprisingly simple, yet can be effective learning tools for students.
Use of the Blackboard learning management system	More exposure to the options and uses of Blackboard allows for greater creativity in maximizing student learning opportunities.

5. Advice to other faculty members who are planning to design and implement ITBL courses
   - Be open to new ideas for teaching and learning
   - Start "early" when preparing for your blended learning course
   - Ask for help when you need it—take a "collaborative" rather than "solo" approach to redesigning your course for blended learning

6. Comments about support from the ITBL program
   - Lunch meetings provide "breadth"—opportunities to learn about a diversity of approaches to inquiry and blended learning
   - Online components provide opportunities to reflect on how new ideas can be incorporated into the redesigned course
   - Workshops—"hands-on" opportunities to develop learning resources for your blended learning course
   - Individual project meetings provide "depth"—opportunity to discuss project specific issues, set project milestones, and assign project related tasks

REFERENCES

Boyer Commission on Educating Undergraduates in the Research University. (1998). *Reinventing undergraduate education: A blueprint for America's research universities*. New York: Stony Brook State University.

Dewey, J. (1933). *How we think*. Boston: D.C. Heath.

Dziuban, C., Hartman, J., Moskal, P., Sorg, S., & Truman, B. (2004). Three ALN modalities: An institutional perspective. In J. Bourne & J. C. Moore (Eds.), *Elements of quality online education: Into the mainstream* (pp. 127–148). Needham, MA: Sloan Center for Online Education.

Garrison, D. R. (2004). Transformative leadership and e-learning. In K. Matheos & T. Carey (Eds.), *Advances and challenges in eLearning at Canadian research universities* (pp. 46–54). CHERD Occasional Papers in Higher Education, 12, University of Manitoba.

Garrison, D. R., & Anderson, T. (2003). *E-learning in the 21st century: A framework for research and practice*. London: Routledge/Falmer.

Garrison, D. R., Anderson, T., & Archer, W. (2000). Critical thinking in a text-based environment: Computer conferencing in higher education. *Internet and Higher Education*, *11*(2), 1–14.

Garrison, D. R., & Archer, W. (2000). *A transactional perspective on teaching and learning. A framework for adult and higher education*. Oxford: Pergamon.

Garrison, D. R., & Cleveland-Innes, M. (2005). Facilitating cognitive presence in online learning: Interaction is not enough. *American Journal of Distance Education*, *19*(3), 133–148.

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. *The Internet and Higher Education*, *7*(2), 95–105.

Garrison, D. R., & Vaughan, N. (in press). *Blended learning in higher education*. San Francisco: Jossey-Bass.

Meyer, K. A. (2003). Face-to-face versus threaded discussions: The role of time and higher-order thinking. *Journal of Asynchronous Learning Networks*, *7*(3), 55–65.

Murphy, E. (2004). Recognizing and promoting collaboration in an online asynchronous discussion. *British Journal of Educational Technology*, *35*(4), 421–431.

Pawan, F., Paulus, T. M., Yalcin, S., & Chang, C. (2003). Online learning: Patterns of engagement and interaction among in-service teachers. *Language Learning & Technology*, *7*(3), 119–140.

Shea, P. J., Pickett, A. M., & Pelz, W. E. (2004). Enhancing student satisfaction through faculty development: The importance of teaching presence. In J. Bourne & J. C. Moore (Eds.), *Elements of quality online education: Into the mainstream* (pp. 39–59). Volume 5 in the Sloan C Series. Needham, MA: Sloan Center for Online Education.

Swan, K. (2003). Developing social presence in online discussions. In S. Naidu (Ed.), *Learning and teaching with technology: Principles and practices* (pp. 147–164). London: Kogan Page.

Swan, K. (2004). Learning effectiveness: What the research tells us. In J. Bourne & J. C. Moore (Eds.), *Elements of quality online education: Practice and direction* (pp. 13–45). Vol. 4 in the Sloan C Series. Needham, MA: Sloan Center for Online Education.

Swan, K., & Shih, L. F. (in press). On the nature and development of social presence in online course discussions. *Journal of Asynchronous Learning Networks*.

Varnhagen, S., Wilson, D., Krupa, E., Kasprzak, S., & Hunting, V. (2005). Comparison of student experiences with different online graduate courses in health promotion. *Canadian Journal of Learning and Technology*, *31*(1), 99–117.

Vaughan, N., & Garrison, D. R. (2006). How blended learning can support a faculty development community of inquiry. *Journal of Asynchronous Learning Networks, 10*(4), 139–152.

Vaughan, N. D., & Garrison, D. R. (2005). Creating cognitive presence in a blended faculty development community. *Internet and Higher Education*, *8*(1), 1–12.

Vaughan, N. D. (2004a). Technology in support of faculty learning communities. In M. D. Cox & L. Richlin (Eds.), *Building faculty learning communities*. New Directions for Teaching and Learning, No. 97 (pp. 101–109). San Francisco: Jossey-Bass.

Vaughan, N. D. (2004b). *Investigating how a blended learning approach can support an inquiry process within a faculty learning community*. Unpublished doctoral dissertation, University of Calgary.

Wu, D., & Hiltz, S. R. (2004). Predicting learning from asynchronous online discussions. *Journal of Asynchronous Learning Networks*, *8*(2), 139–152.

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