



A blended community of inquiry approach: Linking student engagement and course redesign

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ABSTRACT

The purpose this article is to describe an institutional initiative created to support faculty engaged in blended course redesign. This Inquiry Through Blended Learning (ITBL) program adapted Garrison, Anderson, and Archer's (2000) Community of Inquiry framework in order to provide faculty participants with a guided inquiry process for discussing and reflecting on key redesign questions, exploring blended learning from a student perspective, integrating the new experiences and ideas, and then applying this knowledge through the implementation of a course redesigned for blended learning. An overview of the ITBL program, the methods used to evaluate the redesigned courses, the findings, and conclusions are presented in this article.

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1. Introduction

Over the past decade, there has been an increased focus on the topic of student engagement in higher education in light of rising tuition costs and concerns about student success and retention rates (Kuh, Kinzie, Schuh, Whitt, & Associates, 2005). During this time there has also been a rapid growth in the number of courses offered in a blended learning format in which some face-to-face time is replaced by online activities (Arabasz, Boggs, & Baker, 2003). The purpose of this article is to describe an institutional program designed 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 approach to an engaged and collaborative one. The focus is on a blended learning redesign program entitled Inquiry through Blended Learning (ITBL).

This article begins with an overview of student engagement and blended learning, followed by a description of the ITBL program, the methods used to evaluate the redesigned courses created through this initiative, the findings, related discussion, and conclusions.

1.1. Student engagement

A review of the literature on student engagement in higher education suggests that this term means different things to different people (Barkley, 2009). Bowen (2005) in an article entitled "Engaged Learning: Are We All on the Same Page?" observes that despite the emerging emphasis on engagement as evidenced by the number of vision statements, strategic plans, learning outcomes, and agendas of national reform movements striving to create engaged learning and

engaged learners that "an explicit consensus about what we actually mean by engagement or why it is important is lacking" (p. 3). One of the earliest research studies to make the connection between the term engagement and learning was by Pascarella and Terenzini (1991) who stated that "Perhaps the strongest conclusion that can be made is the least surprising. Simply put, the greater the student's involvement or engagement in academic work or in the academic experience of college, the greater his or her level of knowledge acquisition and general cognitive development" (p. 2). A decade later, Edgerton (2001) highlighted the need for students to "engage in tasks" that discipline specialists perform in order to really understand the concepts of the discipline (p. 32).

In 1998, The National Survey of Student Engagement (NSSE) was developed as a "lens to probe the quality of the student learning experience at American colleges and universities" (NSSE, 2007, p. 3). The NSSE defines student engagement as "the time and energy students devote to educationally sound activities inside and outside of the classroom, and the policies and practices that institutions use to induce students to take part in these activities." This conception of student engagement is grounded in several decades of prior research, and particularly in four key conceptual studies: Pace's (1980) "quality of effort" concept, Astin's (1999) theory of student involvement, Chickering and Gamson's (1999) principles of good practice in undergraduate education, and Pascarella and Terenzini's (2005) causal model of learning and cognitive development. From these studies, five properties or benchmarks of effective educational practice have been identified, specifically:

1. Active and collaborative learning
2. Student interactions with faculty members
3. Level of academic challenge
4. Enriching educational experiences
5. Supportive campus environment.

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The NSSE framework was selected to evaluate the courses that were redesigned for blended learning through the ITBL program. The rationale for using this framework was to align the ITBL initiative with an institutional campaign to improve student engagement and success on campus.

1.2. Blended learning

Blended learning is often defined as the combination of face-to-face and online learning (Williams, 2002). Ron Bleed, the former Vice Chancellor of Information Technologies at Maricopa College, argues that this is not a sufficient definition for blended learning as it simply implies “bolting” technology onto a traditional course, using technology as an add-on to teach a difficult concept or adding supplemental information. He suggests that instead, blended learning should be viewed as an opportunity to redesign the way that courses are developed, scheduled and delivered in higher education through a combination of physical and virtual instruction, “bricks and clicks” (Bleed, 2001). The goal of these redesigned courses should be to join the best features of in-class teaching with the best features of online learning to promote active, self-directed learning opportunities for students with added flexibility (Garnham & Kaleta, 2002).

This sentiment is echoed by Garrison and Vaughan (2008) who state that “blended learning is the organic integration of thoughtfully selected and complementary face-to-face and online approaches and technologies” (p. 148). At the heart of blended learning redesign is the goal to engage students in critical discourse and reflection. The objective 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. Blended learning can be an opportunity to fundamentally redesign teaching and learning approaches in ways that realize increased effectiveness, convenience, and efficiency.

The goal of the ITBL program was primarily to redesign undergraduate courses for blended learning. The next section of this article describes the blended community of inquiry approach used to support this initiative.

2. Inquiry Through Blended Learning

The focus of inquiry in the ITBL program was on the connection between one’s teaching practice and student learning. The potential exists in such a professional development program for faculty members 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 knowledge through interactions with the professor, their peers and the course content (Vaughan, 2004a). The role of technology shifts from the packaging and distribution of content to being used as a “tool set” to enable students to communicate and collaboratively construct their own knowledge. Sands (2002) suggests that technology can be a powerful catalyst to questioning one’s curriculum and pedagogy.

2.1. 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 framework: social, teaching, and cognitive presence.

When this model is applied to a faculty development context, the focus of cognitive presence becomes an inquiry into teaching practice (Vaughan, 2004b). 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 encapsulate the teaching presence. Fig. 1 illustrates how this community of inquiry model can be adapted for a blended faculty development initiative.

2.2. 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) state 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) have 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 resolution – have been used to describe and examine the inquiry process in the ITBL program.

2.3. 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 members indicated that the triggering event for participation in the ITBL program was the motivation to redesign an existing course to improve student learning and faculty satisfaction. This desire presented the opportunity to make one’s implicit assumptions about a particular course, explicit. The ITBL course redesign process was initiated through a formal call for proposals to participate in a blended faculty CoI. The application process was designed so that professors were provided with the CoI framework and the necessary support to begin reflecting about their existing course and for constructing initial plans for the redesign process.

The ITBL application form consisted of three parts: project detail, project evaluation and sustainability plans, and a proposed budget. A

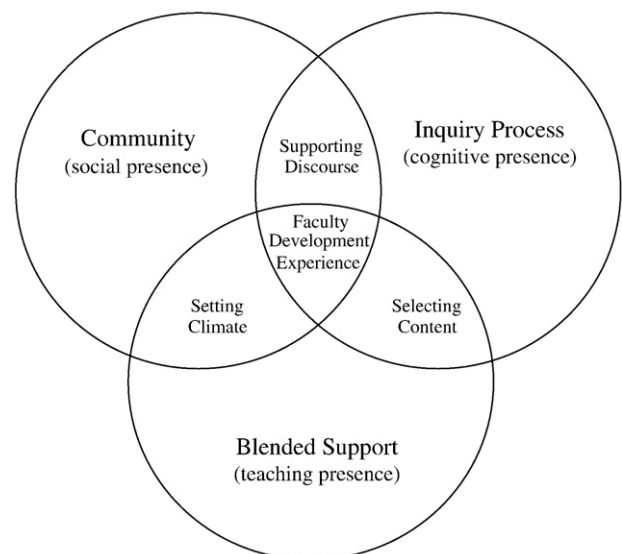


Fig. 1. Blended faculty community of inquiry – presences (adapted from Garrison et al., 2000).

series of brown-bag lunches and one-on-one application consultation sessions were also provided to ensure that faculty were clear about the course redesign focus of the program and the expectation that they become active participants in the blended faculty development Col. As part of this process, faculty members were encouraged to take a community or team approach toward the redesign process in their applications. These teams often consisted of a group of professors who taught the selected course as well as teaching assistants, graduate students and others who provided course related support (e.g., subject area librarians).

Once the successful ITBL applicants were informed of their awards, an initial project meeting was scheduled that included the project team and representatives from the institution's teaching and learning centre, library and information technology department. The purpose of this meeting was to clarify the project goals, timelines, roles, and responsibilities for those involved in supporting the redesign process. This meeting also helped to identify professional development support needs and requirements for the project team members. This information was then used to shape the type of activities and resources that were incorporated in the ITBL program.

As a follow-up to this meeting, the project teams were encouraged to post a summary message to a discussion board in a website that was constructed for the ITBL program. The messages described the course redesign goals for the projects, the action plans, and any questions related to the redesign process. Besides helping to clarify the course redesign process, this posting allowed the other members of the ITBL cohort to begin to learn more about each other's projects. This discussion-forum posting process also provided the first hands-on opportunity for the participants to interact as students with the learning management system that in most cases was used in their own projects.

The first face-to-face ITBL cohort meeting was designed to build upon the 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 was facilitated by selectively placing the participants into small groups so that they could interact with people from other project teams. Three questions were 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, 2008)

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

The ITBL experience revealed that the initial face-to-face cohort meetings are very important for establishing the blended faculty Col (Vaughan & Garrison, 2006). Through the discussions in these meetings, the community members realized they were not alone in experiencing a particular course redesign issue or concern. This shared understanding and the physical presence of the meetings very quickly lead to a sense of "trust and risk taking" in the group.

2.4. 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 consisted of a series of integrated face-to-face and online experiential learning activities that allowed the participants to become immersed in a blended learning environment from a student's

perspective. This process took place over an extended period of time and the activities were developed based on the feedback from the initial project meetings and in collaboration with the faculty participants. These ITBL program activities were designed to provide participants with experience and expertise in the areas of curriculum design, teaching strategies, and educational technology integration.

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

The ITBL program used a range of communication and information technologies to support the exploration phase. For example, *Adobe Presenter* was 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 meant that not everyone could attend each of the regular face-to-face sessions. In order to overcome this challenge, *Elluminate Live!*, a web-based synchronous communication tool, was used to record the face-to-face sessions for future use. *Elluminate Live!* was also used to support "virtual" project meetings when team members were off campus.

In addition, faculty mentors (professors with previous blended learning experience) and students were included in the ITBL discussions. The students provided the all important perspective of the learner (the target audience for the redesigned courses) and the faculty mentors were able to pass on their "lessons learned" from direct experience with inquiry and blended learning courses. Previous participants of the ITBL program have 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, helps 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.

2.5. Integration

The third category of practical inquiry is integration, which involves reflecting upon how new information and knowledge discovered can be integrated into a coherent idea or concept (Garrison et al., 2000). A common challenge for participants in the ITBL program was the transition from the exploration to the integration phase. Many faculty members were comfortable sharing, discussing and debating course redesign concepts but often a greater effort was required to transfer these new ideas into practice. One strategy used in the ITBL program involved getting faculty to regularly present project artifacts, such as their course outline or an assessment activity, to the rest of the community. This forced the ITBL participants to make redesign decisions and to create course related resources. This "show and tell" process also allowed faculty members to get valuable feedback from their peers about the artifact. In addition, opportunities were provided to pilot portions of redesigned courses with students who could 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 were conducted outside of the regular ITBL cohort activities. These meetings were facilitated by an instructional design or teaching specialist who was assigned to a specific project based on her or his areas of expertise. The frequency and scope of these meetings depended on the needs of each individual project. Although the larger cohort meetings provided opportunities

for participants to be exposed to a diversity of ideas, the focus of these meetings was on “getting things done”. Project development work and milestones were reviewed at each meeting with tasks and “deliverables” assigned for the subsequent meeting.

2.6. Application/resolution

The resolution of the dilemma or problem is the fourth category of the practical inquiry model. Garrison and Anderson (2003) suggest that the results from the resolution 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 involved 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, 2008).

To overcome these deficiencies the ITBL cohort was maintained throughout this phase and the participants were encouraged to engage in the process of the scholarship of teaching and learning (SoTL). In order to facilitate this process, a discussion about SoTL was conducted in one of the early face-to-face ITBL cohort meetings. These conversations involved ITBL faculty mentors with previous SoTL experience who demonstrated their research study processes and results.

Faculty members were 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 were able to collect data in the form of surveys, interviews, and focus groups from students, professors and teaching assistants who had been involved in past iterations of the course. Several project teams also obtained data regarding student grades and withdrawal/failure rates for comparison with the traditional sections. The collection and analysis of this data allowed the project teams 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 had its own specific SoTL needs and research study design, institutional ethics approval was also received for the entire ITBL program so that a common set of data could be collected for each of the project implementations. Analysis of this data was used to inform future offerings of the redesigned courses and to create an institutional course redesign inventory that could be used for academic program planning. The evaluation techniques are outlined in the next section of this article.

3. Methods of evaluation

Faculty interviews and student surveys were the primary methods used to evaluate the blended learning courses redesigned through the ITBL program.

3.1. Faculty interviews

A semi-structured post-course interview was conducted with the faculty members and teaching assistants responsible for each of the redesigned courses by the author. The interviews were digitally recorded and then transcribed in *Microsoft Word* by a research assistant for thematic analysis.

The purpose of these interviews was to provide the instructors with an opportunity to reflect on what worked and didn't work in their blended courses and what “lessons learned” they could take forward for the next iteration of the redesigned course.

3.2. Student surveys

One of the goals of the evaluation process was to survey the largest number and widest range of students enrolled in the redesigned ITBL courses. In order to achieve this objective, the student surveys were paper-based and conducted in-class at the end of each semester. A research assistant administered the surveys and then entered the data into *Microsoft Excel* for statistical and thematic analysis.

The questions for the surveys were derived from the National Survey of Student Engagement (NSSE) and focused on three of the five benchmarks; active and collaborative learning, student interactions with faculty members, and level of academic challenge. Table 1 illustrates the key questions that were asked for each category.

The rationale for including only three of the NSSE benchmarks in the student surveys was that the questions related to enriching educational experiences and supportive campus environment focus on how students' perceive the entire institution rather than on just a single course experience. Recently, a classroom based version of the NSSE has been developed (CLASSE – Classroom Survey of Student Engagement), which utilizes questions similar to the ones used in the ITBL program (Ouimet & Smallwood, 2005).

4. Findings

Nine redesigned courses were implemented in the fall 2006 semester. For each of these courses faculty members and teaching assistants participated in post-course interviews and students completed the paper-based surveys at the end of the semester.

4.1. Faculty interviews

Faculty members and teaching assistants for all nine of the redesigned courses participated in post-course interviews. They indicated that one of the key benefits of these blended learning courses was that the redesign process provided them with an opportunity to experiment with new teaching strategies and tools. In essence, the ITBL program was a catalyst for rejuvenating their teaching practices. With regard to students' learning, the faculty members perceived that students were more engaged with the course concepts.

In terms of challenges encountered with the redesigned courses, all faculty participants indicated that initially they experienced an increased workload. One faculty member commented this was “short term pain for long term gain” as she hoped the design and organization

Table 1
Student course redesign survey – NSSE benchmarks and related questions.

NSSE benchmark	Active and collaborative learning	Student interactions with faculty members	Level of academic challenge
Key questions	How often have you: • Worked with classmates outside of class • Worked with other students during class • Contributed to an online discussion • Made a class presentation • Contributed to a in-class discussion	How often have you: • Received prompt feedback from your instructor • Communicated via email with your instructor • Discussed ideas outside of the class with your instructor • Worked on extracurricular activities with your instructor	How much has your coursework emphasized: • Memorizing facts • Judging the value of information or arguments • Applying concepts to practical problems • Analyzing ideas, information, theory • Synthesizing ideas, information, theory

Table 2

Experimental linguistics course – constructive alignment of course learning outcomes, assessment activities and use of technology.

Learning outcomes	Assessment activities	Web 2.0 technologies
Lecture component • Understanding of the cognitive, neuropsychological, and social processes that underlie language abilities	Article critique assignment • Student groups selected an article to critique each week • Weekly online discussions about the articles – moderated by these student groups • Groups then make a class presentation based on an analysis & synthesis of the online discussion • Summary of the online and face-to-face discussions posted to a collaborative web space	Social bookmarking • The <i>Del.icio.us</i> application used for students to posted annotated links to peer reviewed journal articles Wiki • The <i>WikiSpaces</i> tool used for students to collaboratively create and post their discussion summaries
Lab component • First-hand experience with methodologies used to study language behavior	Research assignment • Individual experiments redesigned to become team based • Data collection required outside of class time • Teaching team (faculty member and graduate teaching assistant) demonstrated and discussed their current research in the lab component	Mashups • <i>Google Maps</i> and <i>Stats-Canada Mapping</i> tools used to analyze and present research findings

of future course iterations would not be so time intensive. Other challenges included student “push back” and resistance to taking greater responsibility for their learning and technology issues, such as server problems with the learning management system.

Based on their initial course redesign experience, faculty members emphasized the importance of designing, developing, and sustaining a strong sense of teaching presence in their blended learning courses. They indicated for the next iteration of their redesigned courses that they would provide a more explicit and involved student orientation to inquiry and blended learning in order to create a learning environment that encourages critical reflection and discourse through open communication and trust. The faculty participants also stressed that they would focus more on modeling and facilitating disciplinary inquiry processes rather than on just delivering content in order to nurture and develop a community of approach in their courses. With regard to assignments, several faculty members commented that they would incorporate team-based project work that required students to collaboratively move through an inquiry process from an initiation (i.e. triggering event) to resolution phase. In addition, these faculty participants highlighted the importance of making sure that the assessment of these group assignments was congruent with the course learning objectives.

Faculty members were also asked in the interviews to identify what they had learned from their experience in the ITBL program. They stressed the importance of taking a community rather than a solo inquiry approach to redesigning courses for blended learning, asking for help when needed, being open to new ideas about teaching and learning, and engaging in critical discourse and reflection with other faculty members.

4.2. Student surveys

For the fall 2006 semester, there were 241 completed student surveys, with a return rate of 76%. Half of the respondents were first-year students and 78% were female. The initial results were mixed but student surveys conducted in a second iteration of one of the ITBL program courses suggest that course redesign for blended learning is an on-going process.

This third year Experimental Psycholinguistics course originally consisted of three, 50minute lecture periods per week. For the fall 2006 semester, the course had been redesigned for a “laboratorial” format. Students met once a week for a 120minute time block that combined a lecture and lab component. The focus had been on a structural rather than pedagogical redesign and the initial survey results indicated that students perceived a low level of active and collaborative learning for the redesigned course.

After reviewing the student surveys and consulting with other members of the ITBL program, the faculty member decided that she

needed to be more intentional with regard to designing, organizing, facilitating, and directing the teaching presence component of the community of inquiry process. In order to achieve this goal, an attempt was made by the redesign team (faculty member, graduate student, and instructional designer) to constructively align the learning outcomes, assessment activities and use of technology in her course. The faculty member responsible for the course was satisfied with the learning outcomes but decided to redesign the two major assessment activities in order to provide students with greater opportunities to collaboratively construct their own knowledge frameworks about key course concepts. A variety of Web 2.0 technologies were selected to support these activities. Table 2 demonstrates the alignment between the learning outcomes, assessment activities and use of technology for the Experimental Psycholinguistics course.

These new assessment activities were implemented during the winter 2007 semester and at the end of the term, students in this new iteration of the course completed the identical paper-based survey that

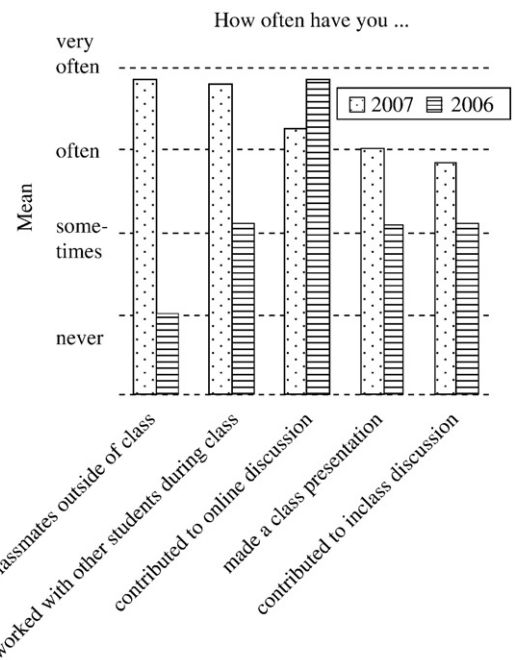


Fig. 2. Student perceptions of the level of active and collaborative learning in the fall 2006 and winter 2007 sections of the PSYC467 course.

Table 3
Experimental psycholinguistics course – student success and retention.

Final course grades	Fall 2006	Winter 2007
A	57%	82%
B	28%	12%
C	0%	6%
Withdrawal/failure	15%	0%

had been used in the fall 2006 semester. There were approximately an equivalent number of students in both sections of the course (35).

There were no observable differences between the levels of student to faculty interaction in the two course sections. Students reported that they usually received prompt feedback and communicated via email with the course instructors. Similarly, there were no differences between the level of academic challenge in the two sections of the course. Students perceived a fairly high level of academic challenge in both iterations of the Experimental Psycholinguistics course.

However, significant improvements were found in active and collaborative learning (Fig. 2). Changes in student perceptions regarding the degree of active and collaborative learning in the course appear to correspond with the redesigned assessment activities. For example, students in the winter 2007 section may have perceived they were more frequently working with peers during and outside of class time because this was a requirement for both the article critique and research assignments. These assignments also required students to make class presentations and to facilitate in-class discussions. The slight decrease in the contribution level to online discussions could be due to the fact that students received weekly participation marks for their online postings in the fall 2006 but not in the winter 2007 semester.

Perry (1970) indicates that student satisfaction is a poor measure of course effectiveness as students can initially be frustrated with course experiences that challenge their existing cognitive frameworks. That said, students were much more satisfied with the winter 2007 version of the course. Over 75%, for example, agreed strongly with the statement “I am satisfied with this course”, as compared with 50% in the fall version. In the open-ended survey questions, students indicated the most effective aspect of the course was the sense of community that was developed through the redesigned assessment activities. One student stated that this was the first course where she had not only learned the names of her fellow students but also had actually made real friends through the course experience.

Most importantly, students in the winter version of Experimental Psycholinguistics course were much more successful than students in the fall class. While the number of students in the two sections of the course is too small to make any significant statistical claims, it is interesting to compare the grade distributions and retention rates in the fall and winter semesters (Table 3).

Table 3 demonstrates there was a greater percentage of students in the second iteration of this blended learning course who received an A grade and that none of the students in winter 2007 section withdrew or failed the course (100% retention rate). This increased student success and retention could potentially be attributed to the redesign of the assessment activities to foster higher levels of active and collaborative learning in the course. Future studies will be required to explore this relationship in more detail.

5. Conclusion

In conclusion, course redesign for blended learning is a very challenging process, especially when undertaken in isolation by a single family member. For this reason, a blended community of inquiry approach was emphasized in the ITBL program. 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.

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