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Institutional Adoption of Blended Learning: Analysis of an Initiative in Action

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Abstract

This instrumental case study explored some preliminary impacts of a 7-year blended learning initiative (BLI) at a medium sized Canadian university on student learning. Building on the Community of Inquiry (CoI) framework, two research questions directed the investigation: (1) What are the preliminary impacts of a BLI on student learning? (2) What are the actual lived experiences of students, professors, and administrators in a university-wide BLI? Preliminary impacts reveal that student retention appears to be greater in blended courses as opposed to traditional ones, and no significant differences were observed for student grades in the campus-wide roster of courses. Both students and instructors shared that an intentional synergy of in-class instructional practices and online activities added value to a course and had a positive impact on student learning. The viewpoints of the three key stakeholders were very different concerning themes such as motivating factors and mechanisms for support; these themes need to be taken into account and weighted carefully.

Cette étude de cas instrumentale explore certains des effets préliminaires sur l'apprentissage des étudiants et des étudiantes d'une initiative d'apprentissage hybride sur une période de 7 ans dans une université canadienne de taille moyenne. S'appuyant sur le cadre des enquêtes communautaires, deux questions de recherche ont dirigé l'enquête : (1) Quels sont les effets préliminaires de l'initiative d'apprentissage hybride sur l'apprentissage des étudiants? (2) Quelles sont les véritables expériences vécues par les étudiants et les étudiantes, les professeurs et les professeures, ainsi que les administrateurs et les administratrices, dans une initiative d'apprentissage hybride à l'échelle de l'université? Les effets préliminaires révèlent que la rétention des étudiants et des étudiantes semble être plus importante dans les cours où l'on pratique l'apprentissage hybride par rapport aux cours où l'apprentissage est traditionnel, et aucune différence notoire n'a été observée en ce qui concerne les notes des étudiants et des étudiantes dans toute la liste des cours offerts sur le campus. Tant les étudiants et les étudiantes que les professeurs et les professeures ont déclaré que la synergie intentionnelle des pratiques d'instruction en salle de classe ainsi que les activités en ligne avaient ajouté de la valeur au cours et avaient eu des effets positifs sur l'apprentissage des étudiants et des étudiantes. Les points de vue des trois parties prenantes principales étaient très différents concernant les thèmes tels que les facteurs motivants et les mécanismes de soutien. Ces thèmes doivent être pris en ligne de compte et devraient être pondérés avec soin.

Garrison (2017) suggests there has been some difficulty with large-scale adoption of blended learning on most Canadian post-secondary campuses. Moreover, as different delivery modes of blended learning are altering the landscape of higher education, there still remains a dearth of empirical evidence that focuses on how Canadian universities adopt initiatives; let alone an understanding of the impact of such large-scale implementation on student learning (Taylor, Ghani, Atas & Fairbrother, 2018).

Therefore, the scope of this investigation was to explore some of the preliminary impacts of a 7-year blended learning initiative (BLI) at a medium sized Canadian university on undergraduate and graduate student learning. At this institution, blended is defined as a course where 20-80% of in-class hours are replaced by interactive online learning activities. This initiative consisted of a funding program for course (re)design, pedagogical and technical training and support and the development of course design tools and resources for professors and teaching assistants. As of 2019, just over 500 instructors participated in training and about 800 courses had been (re)designed and taught in a blended learning format. This paper reports on a three-year empirical investigation, funded by the institution's Teaching and Learning Support Service (TLSS), which focused on the experiences of students, professors, and administrators.

Focused Literature Review

To provide an overview of the impacts of long-term university wide BLIs, two tracks of literature are briefly presented here to help contextualize the scope of the problem. This focused literature review will help situate the research questions by providing background on some of the key factors related to the adoption of a blended learning program as well as transitions that institutions in higher education make towards blended learning.

Benefits and Challenges of the Adoption of Blended Learning Programs

Drawing from an international context, Vaughan et al. (2017) investigated four faculty blended learning developmental programs to understand the benefits and challenges of such initiatives. Instructors who participated in these programs reported that they were more reflective of their teaching practices as they transformed their courses online. Another benefit was that it helped them focus more on interactions with the students. This progression started by being a content provider and course designer and then a facilitator of learning. As the instructors became more reflective of their teaching practices, there was a purposeful shift in their pedagogical approach to learning. Nortvig et al. (2018) reported similar findings and highlighted the importance of educator presence and the interactions between instructors and students through active learning activities on student engagement and the achievement of learning outcomes in online environments. However, one of the challenges was the need to develop a clear definition of what blended learning actually means to the key stakeholder groups in the institution. Blended learning seemed to mean different things to different people and this was a hindrance in moving the agenda forward. Additionally, lack of time and resources to support faculty in the redesign of their courses was also a recurring theme across the four institutions. Also, there was a collective understanding that blended learning does not simply imply adding digital technologies to

an existing face-to-face course. A key recommendation from the Nortvig et al. (2018) study was the importance of aligning a developmental program for blended learning with the institution's vision and mission.

Building on Graham et al.'s (2013) three stages in the lifecycle—(1) awareness/exploration, (2) adoption/early implementation, and (3) mature implementation/growth—of such institutional initiatives, Porter and Graham's (2016) study described factors that facilitate or impede blended learning adoption in higher education institutions. In this 2016 study, the authors sought to explore how institutional strategy, structure and support decisions, as well as faculty members' collective innovation, aided in the adoption of blended learning. The authors surveyed 214 faculty members at an American university that was at the adoption/early implementation stage. Findings indicated that factors such as availability of an adequate infrastructure, technological and pedagogical support, evaluation data, and an institution's purpose for adopting blended learning significantly affected the rate at which faculty members adopt this new format. Faculty members who were recognized as innovators in Stage 2 identified different factors for adoption and early implementation than "the laggards." For example, these innovators believed that a supportive institutional infrastructure which is aligned with the institution's strategic goals for adopting blended learning were key motivating factors. On the other hand, late adopters identified lack of an efficient infrastructure, technical support, and one-on-one training as factors for not moving into a blended learning pedagogy. Furthermore, Ma'arop and Embi (2016) identified similar obstacles for instructors and emphasized the increase in workload and the amount of time required to make the transition to a blended learning format.

These studies indicate the importance of a large scale coordinated blended learning initiative that is aligned with the institutional vision, supported with appropriate pedagogical and technological resources, and evidenced by evaluation data. This study seeks to report on an initiative that addresses each of these elements.

Institutional Transition to Blended Learning

Examining success factors through an institutional lens, Adekola et al. (2017) developed a holistic framework to help guide higher education organizations as they make the transition into blended learning. Evidence from this UK qualitative study comprising 20 semi-structured interviews suggests that it is essential that all stakeholder groups in the institution be invested in making the transition to blended learning a success. Their framework consists of four elements: change agents, institutional considerations, organisational preparedness for change, and stakeholders' roles. Central to the operation of the framework was the role of senior management who were enablers of physical infra-structure, learning technology support, pedagogy, management and organisation, insti-tutional culture, and ethical issues.

Mestan (2019) also explored how an institution made the transition to blended learning through a case study that used learning management system (LMS) data, interviews with unit coordinators, and student surveys from six faculties in one university. Findings indicate that a collaborative approach to understanding the meaning of blended learning among administration and faculty is essential to successful implementation. For example, some unit coordinators expressed confusion about the definition of blended

learning and the implications for the teaching changes. One of the reasons for this confusion was that faculties were at varying stages of adoption without a consensus from senior administration as to the meaning of blended learning. This translated into operational issues. Another bottleneck in the transition plan was that only a few faculty members had been hand-picked by administration to initiate the change. An institution's commitment to a blended learning transition must be supported across staff levels, spearheaded by senior executives, and informed by the views and experiences of a range of stakeholders including students.

Similarly, Thurab-Nkhosi (2018) conducted a qualitative case study to review the progress of blended learning adoption at a Caribbean higher education institution. Methods included: (a) the review of the usage reports of the Learning Management System Moodle by Campus Information and Technology Services and (b) interviews conducted with deans and administrative officers. Findings emphasized that the need for change management strategies are paramount, such as establishing a sense of urgency, forming a powerful guiding coalition, and creating a vision for the program implementation. Senior level administrators also have to secure funds in advance of implementation as investments in software, hardware, appropriate staff, and training require substantial financial outlays. Performing appraisals to gauge the efficiency of existing technical skills and campus hardware and software can lead to cost reductions. In this case, administrators accepted the responsibility to provide clear directives as to who should lead the initiative and who should pledge team support for the overall program development. Equally important, as reported by Matheos and Cleveland-Innes (2018), is **the role of** developing a strategic agenda and accompanying policies in the initiative's success.

Even though there is a gap in the evidence of impact, this brief literature review has provided a background to the scope of the problem by addressing the key factors related to the adoption of a blended learning program as well as transitions that institutions in higher education make towards blended learning. What seems to be needed now is a greater understanding of how university-wide BLIs impact student learning, particularly given that no known studies specifically examine this issue from a diversity of perspectives. To shed light on the student learning experience associated with large-scale blended learning adoption, this study examines the experiences of students, professors, and administrators and the preliminary impacts of an institutional BLI on student learning.

Conceptual Context

The conceptual context for the study was Garrison et al.'s (2000) Community of Inquiry (CoI) framework for online and blended learning. It was chosen because at the heart of the framework is the educational experience of the student—the learner who is participating in meaningful discourse and reflection through social connections. An adapted version of this framework which includes two overarching elements of infrastructure support at both the faculty and institutional levels, as included by Taylor, Atas, and Ghani (2017), was used to better understand research question #2—the lived experiences of students, professors, and administrators in the context of an institutional blended learning initiative (see Figure 1). Moreover, the various elements of the framework provided a novel way of considering possible impacts.

Figure 1
Community of Inquiry Framework at the Institutional Level
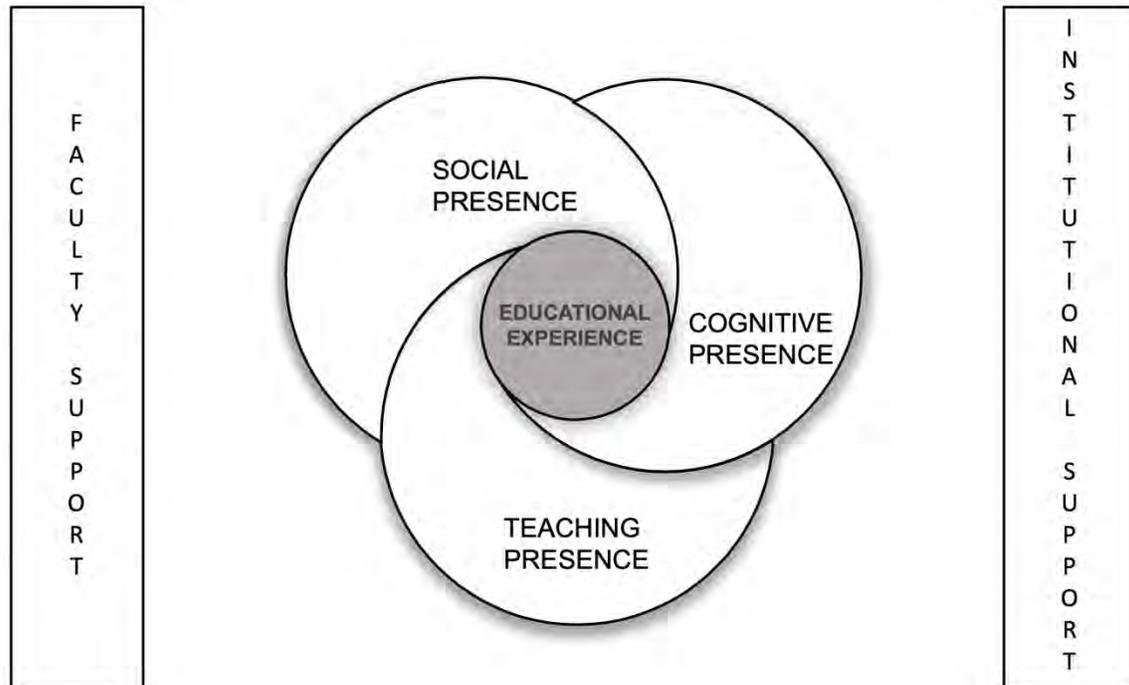
The model itself has been the focus of extensive research for over a decade (Garrison, 2009) and combines the core elements of social, cognitive, and teaching presence and the dynamics of collaborative and constructive online educational experiences for students (Garrison et al., 2010). Social presence concerns how students relate to the educational community where they communicate with confidence to develop social connections with each other (Garrison, 2009). Cognitive presence is defined as students' ability to participate in purposeful critical discourse and reflection to construct and confirm meaning (Garrison et al., 2001). The third element, teaching presence, entails designing and facilitating social and cognitive presences to meet desired learning outcomes in online learning environments (Anderson et al., 2001). Figure 1 illustrates how the students' educational experience in online and blended learning environments is influenced by all three converging components.

Although social, cognitive, and teaching presence are the foundational elements of blended learning environments at the course or micro level, Taylor, Atas, and Ghani (2017) proposed two additional institutional level components, namely "Faculty Support" and "Institutional Support" for the effective implementation of blended learning courses at an organizational level. As stated by the authors, faculty level support is needed to help develop an in-house culture that encourages the use of blended learning. This in turn has a positive impact on professors and it provides them with direction as they invest in this way of teaching. For instance, instructors who are new to a blended learning format need clearly written faculty policies as they embark on this pedagogy. In addition, committed institutional support, such as resources for pedagogical and technical expertise, is needed to launch and sustain a BLI both within individual faculties and across the university.

Method

Research Design and Participants

Two research questions guided the investigation: (1) What are the preliminary impacts of a BLI on student learning? (2) What are the lived experiences of students, professors and administrators in a university-wide BLI? As such, a qualitative instrumental case study approach was used as the research design to gain an in-depth understanding of the diversity of perspectives (Creswell, 2013; Stake, 1995). As stated by Stake (1995), case studies are opportune designs to enable researchers to put aside as many presumptions as possible to discover individual experiences in-depth in particular context, or bounded case. The site for the study was a medium-sized Canadian university in Eastern Ontario with more than 40,000 students, 2,200 professors, and over 450 graduate and undergraduate programs. Five faculties were selected based on their current interest for adopting and implementing blended learning course delivery and included Education, Social Sciences, Arts, Science, and the School of Management. Purposeful sampling (see Stake, 1995) guided the search for students, professors, and decision makers for the interviews. To obtain prospective participants, researchers contacted individual faculty representatives through contacts provided by the co-ordinator of the BLI that was housed in the TLSS unit. Researchers then requested the names of professors that were teaching blended learning courses, as well as the names of their administrators who were overseeing or involved at the faculty level. Professors who agreed to participate in the study also provided the names of their students who had recently completed a course in the blended learning format. Participating students had taken at least one blended learning course in their program. The professors had been teaching in their particular faculty for more than six years and involved in instructing in a blended learning format for an average of 2.3 years. The 15 administrators interviewed held senior positions of Dean, Vice Dean, or Director; each administrator had served in an administrative capacity for more than 13 years. On average, these decision makers had been involved in the faculty's online or blended learning activities for more than two years. Following the receipt of funding, ethical clearance was approved for this three-year study at the midpoint of the institutional blended learning initiative (Teaching and Learning Support Service, 2016).

Data Collection

The study used four data sources to answer the research questions: semi structured interviews, documents/artifacts, questionnaires, and institutional records. Separate semi structured interviews were conducted with undergraduate and graduate students ($n = 31$), professors ($n = 27$), and administrators ($n = 15$) from five faculties. These protocols were prepared using the literature from national and international studies that were based on teaching, social, and cognitive presences of the CoI framework and university reports that had investigated blended learning. Each interview schedule consisted of three demographic questions and between six and nine open-ended questions depending on the key informant group and were piloted. Each face-to-face interview lasted between 45 and 60 minutes and was audio recorded.

The second data source consisted of 32 documents as well as student and professor artefacts. Examples of documents included institutional policies, regulations, and in-house discussion papers related to blended learning. The types of student artefacts collected were course projects, weekly and final assignments, and journal reports whereas examples of professor artefacts included course syllabi, evaluation surveys, assessment tools, and lesson plans.

In addition, institution-wide surveys administered to students having completed blended courses received 1200 responses. This represented a response rate of 22.6% for students enrolled in courses registered in the institution's Student Information System (SIS) as being taught in a blended format. While respondents represented all levels of study, the large majority were at the undergraduate level. Survey items related to the distribution of time spent in-class and online for a specific course and the impact of activities experienced during each mode of instruction. Serving as a comparative measure, a similar survey was sent to a representative sample (with the same distribution of respondents across faculties and levels of study) of students who had completed traditional in-person courses during the same two semesters ($n = 1484$). Lastly, a survey administered to instructors having received funding from the BLI and since taught their (re)designed course in a blended format garnered 29 responses. Institution-wide surveys to students were administered at the end of fall 2018 and winter 2019. The survey to instructors having received funding from the blended learning was administered in spring 2019.

The fourth data source was institutional records provided by the institution's registrar. Specific data regarding course offerings, modes of instruction, student grades and course drop rates between fall 2014 and fall 2018 were extracted from the registrar's data sets to examine growth patterns and factors associated with campus-wide blended learning.

Data Analysis

Various analyses and statistical techniques were used on the four data sources to answer the research questions. In order to determine patterns from the semi-structured interviews, the constant comparative technique was used (Merriam, 2009; Thomas, 2016). This analysis involved five steps: (1) preliminary exploration of the data by reading through the responses, (2) coding data, (3) using codes to develop themes by aggregating similar codes together, (4) connecting and interrelating themes, and (5) constructing the narrative. First, participants' responses to interview questions were converted to transcripts, and narratives were developed from these transcripts. Then, in order to develop similar themes, researchers read through the transcribed data several times followed by connecting these themes and creating the narrative. In addition to the analysis of qualitative data obtained from the interviews and open-ended responses in the surveys, an analysis of the blended learning documents and artefacts was also conducted using a criteria grid. Analysis of the quantitative data emerging from the student and instructor surveys as well as the institutional records largely consisted of statistical techniques such as reporting frequencies, the determination of mean values for different categories of data, and significance testing using t-tests.

As a final step in the data analysis path, the narrative themes drawn from the four data sources were then overlaid on the modified CoI framework to explore possible links

and impacts among social, cognitive and teaching presence and the two overarching elements of infrastructure support both at the faculty and institutional level.

Findings and Discussion

The findings and discussion section is organized in two parts, the first presents and then discusses data relevant to the first research question to provide broader context on the preliminary impacts of a BLI. Integrating more depth, the second part presents the themes emerging from the narratives of lived experience as per the second research question, and subsequently uses the CoI framework to help interpret findings and explore possible links to relevant research.

Preliminary Impacts of the BLI on Adoption Rates, Retention, and Course Grades

Since the inception of the BLI in the fall of 2013, the growth of blended learning at this institution has continually increased. In 2014, only 18 courses were identified as officially following a blended format (between 20% and 80% of instructional time is online) as registered in the university's student information system. In 2018, this number had grown to 237 courses for that year alone, reaching a total of 11,762 students. A similar pattern of growth is witnessed for the number of instructors trained in blended course (re)design and the number of courses requesting and receiving funding from the BLI as seen in Figure 1.

Figure 1
Cumulative Growth of Blended Courses Taught, Instructors Trained and Courses Funded
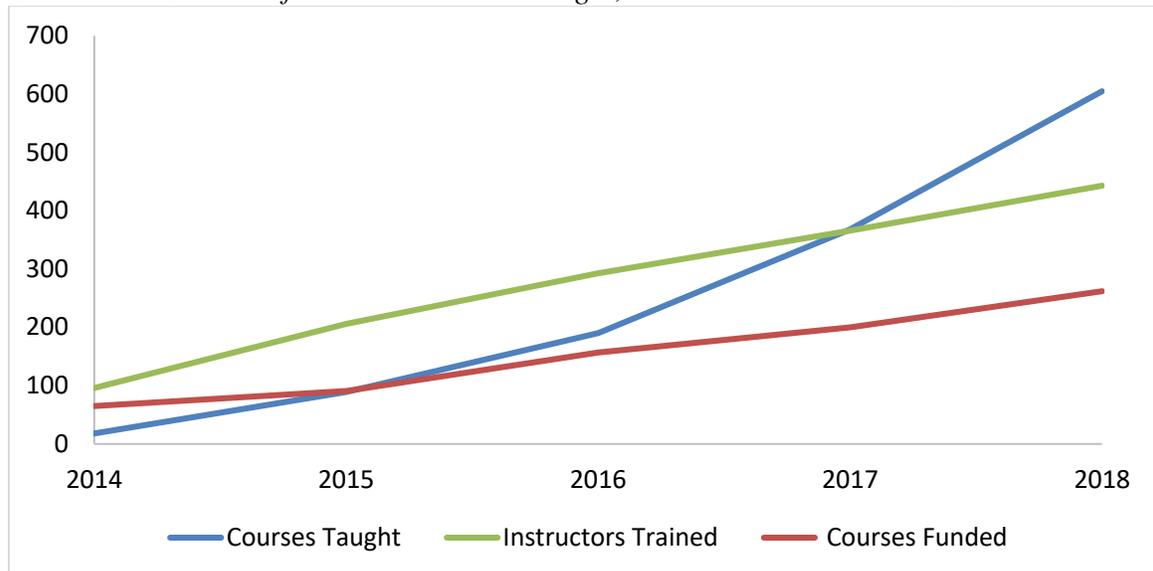
As stable growth continues in terms of instructors trained and courses funded for (re)design, an exponential growth is observed in the number of blended courses being taught on campus. This indicates that an ever-increasing number of unfunded courses are being (re)designed in a blended format, perhaps providing evidence that the initiative has served as an impactful catalyst for the university's teaching community. While these

numbers represent blended courses across the institution, it should be noted that the faculties with the largest number of blended courses since 2014 have consistently been Education, Arts, Science, and Business.

When examining student data related to course grades, no significant differences were found between students who completed blended courses and a representative sample of students who completed traditional courses. However, in terms of student retention, it was found that of the 13 semesters analyzed between 2014 and 2018, all but four semesters indicated lower drop rates in blended courses ($M = 2.55$, $SD = 1.22$) when compared to a representative sample of traditional courses ($M = 3.57$, $SD = 0.98$); $t(24) = -2.25$, $p = 0.03$, as seen in Figure 2.

Figure 2
Drop Rates across Blended and Traditional Courses
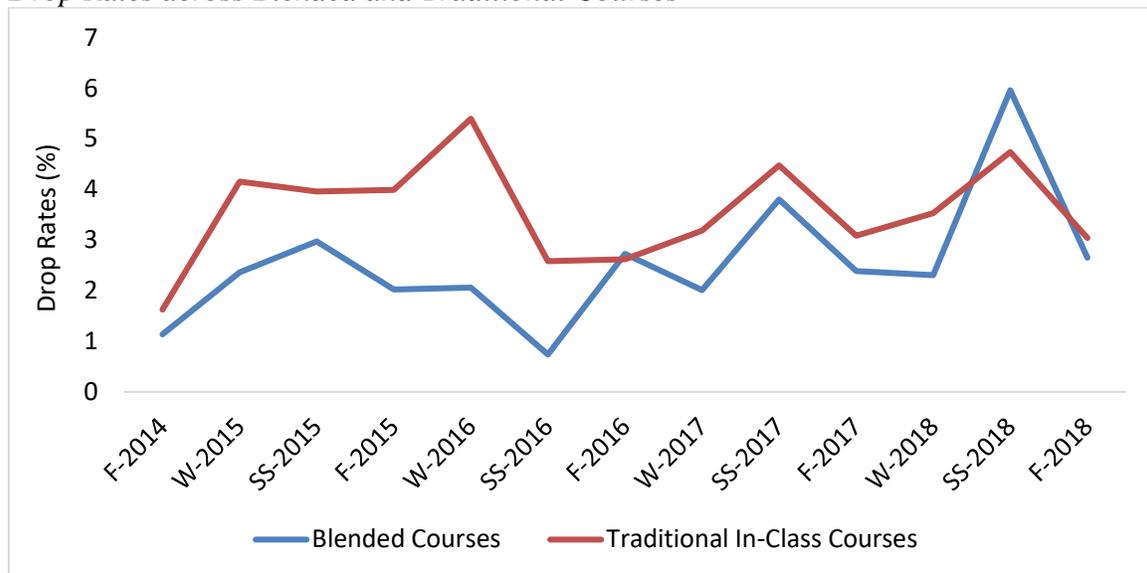
Note. F = fall semester, W = winter semester, SS = spring/summer semester

Further examining the impact of courses funded by the blended initiative, the greatest number of courses funded by the BLI was taught in the fall 2018 semester. Students in these courses achieved higher grades ($M = 7.65$, $SD = 2.02$) as compared to non-funded blended courses ($M = 7.47$, $SD = 2.04$); $t(4060) = 2.30$, $p = 0.02$. While drop rates were lower, differences were not found to be statistically significant.

Student Views of Instructional Experience and Learning in Blended and Traditional Course Formats

Stemming from survey results, a comparison of responses between students enrolled in blended courses ($n = 1200$) and a representative sample of students enrolled in traditional courses ($n = 1484$) indicate differences in the learning experiences. Overall, students in blended learning courses reported that 43% ($SD = 22.40$) of their 36 hours of instructional time took place online or outside of the physical classroom, while this represented only 18% ($SD = 23.06$) of instructional time for students in traditional courses. For time spent in class, students from blended courses reported 59% ($SD = 26.52$) of class

time being used for lecturing and 34% (*SD* = 24.74) of time spent interacting with fellow students in discussion or group work. For traditional courses, this ratio was 74% (*SD* = 24.15) lecturing and 26% (*SD* = 24.26) engaged in group interactions. In terms of specific group tasks, students in blended courses reported about 10-15% more class time engaged in class discussion and case studies. Regarding feedback received throughout the course, a notable difference was that students in blended courses indicated receiving feedback electronically via the institution's learning management system 25% more than students in traditional courses. In terms of instructional practices that students felt had the most positive impact on their learning in the blended format, 42% of students mentioned group activities in their open-ended responses. It should be noted that the next highest theme, at 19%, was the instructor's lectures. Instructional practices that inhibited learning included online modules that were disorganized and confusing (23%) and maintaining long lectures (11%). When asked if they were to take the course again, 49% of students shared that they would opt for the blended format again, 28% stated they would prefer the course in a traditional format, 13% selected an online format, and the reminder shared that it did not matter.

Instructor Views Regarding Blended Course Design and Impact on Student Learning

In the survey completed by 29 instructors that had both received funding from the BLI and completed training related to the (re)design of their blended course, it was reported that 45% (*SD* = 16.52) of the 36 hours of instructional course time was transitioned online or out of the traditional classroom space. Of the time spent online, 93% of instructors shared that their students worked through pre-made online modules, 79% used instructional video clips, 76% used readings, 65% had students do group activities online or outside of the classroom, 54% used discussion boards, and another 48% featured regular online quizzes. Conversely, of the instructional activities used when in class, 72% of instructors reported still having mini lectures, 76% used student presentations, 69% used individual/group projects, 62% used case studies, 38% featured guest speakers, and 24% facilitated simulations. Of the overall instructional time, instructors self-reported spending an average of 39% of time lecturing and 40% doing group work. Instructors equally shared that the impact of the in-class instructional practices leveraged the online activities and as a result were likely to have the most positive impact on student learning.

Discussion: Increasing Adoption and Blended Modalities as an Enabler for Flexibility, Interaction and Individualised Learning

Favourable results in terms of student retention in blended courses are beginning to emerge along with noteworthy patterns regarding student achievement that align with the works of Zhang and Zhu (2018). With the continuing increase in number of blended courses being taught, particularly courses funded by the blended initiative, the more robust the analyses on student grades and drop rates. Additionally, with more faculties adopting a blended course format, a more granular examination of grade and retention patterns will be possible. From the student perspective, blended courses offer increased flexibility given reduced time spent in-class and a greater level of engagement with their fellow colleagues when in-person via groupwork, class discussions and case studies. However, similar to

findings by Paechter and Maier (2010), students caution that poorly designed online modules and long lectures during in-class components defeat the advantages of the two modalities and hinder their learning.

From the instructor perspective, the blended format offers an opportunity to consider how the student learning process takes place and uses the strengths of each modality to better adapt the learning to individual students. An emerging theme addresses how moving more theoretical content online allows for more class time devoted to interaction and reflection as seen in studies (e.g., Herbert et al., 2017). A second theme of note relates to an increase in the accessibility of course content and material to all students and that the dual learning modalities place greater accountability on the students. Instructors equally mention that for their blended courses to be successful, they require institutional support via opportunities for pedagogical training and consultation as well as technical support with online modules as proposed by Taylor, Atas, and Ghani's (2017) revised version of the CoI framework.

The Lived Experiences of Students, Professors and Administrators in a University-Wide BLI

Lived experiences of students, professors, and administrators refers to the narratives shared by respondents during interview discussions. These life experiences provided a rich repertoire of insights enabling the researchers to learn about the initiative in a manner that was more in-depth than the examination of quantitative data alone.

Student Voices

Two key facets of the lived experience of students enrolled in blended learning courses were: motivating factors for participation and mechanisms for supportive learning. In terms of the first facet, the main motivating factor for students enrolling in a blended learning course was the desire to try a new learning format that was more engaging than the traditional face-to-face class. For instance, a representative comment from Bob highlighted this: "I was ready to try something different and was getting bored with having to just sit in class and take notes from the PowerPoint slides." A secondary motivating factor to enroll in blended learning courses related to the flexibility of pace and location of their own studies. They chose a blended learning course because of its flexibility in scheduling as well as the varied types of cognitively stimulating activities, both in class and online, that helped improve their academic performance. For instance, Naila, an undergraduate student approaching graduation noted, "I need some flexibility in doing the projects and this blended course gave me more time to pace myself when I was doing the online assignments in my group."

The second facet that emerged from the student experiences was the mechanisms of support that they needed to improve their learning outcomes. Students viewed the instructor as central in the course and the role model that guided them through the content and learning activities. Participants looked up to the instructor for teaching presence and to set the tone in assigning online groups, ice breakers, how to get to know each other, and how to provide authentic feedback. As Alison said, "I need to know that the instructor is right in there with us when we are online." Mike shared, "I feel I'm getting more out of the

course when the prof gives clear expectations about participation for in-class and online classes and then sets the example." Equally, in terms of mechanisms in support of learning, students mentioned the integration of meaningful learning activities throughout the course. Discussion forums, structured debates, applying new knowledge outside of the classroom, group problem solving, and online quizzes were some of the types of engaging activities that supported their learning and kept them focused throughout the course. As Cameron mentioned, "I liked the lively online discussions that we had but it would have helped if we had more videos on the topic." For many participants, a key support related to a sense of group spirit, community, and trustworthiness among group members. Developing a sense of trust among peers and the instructor at the outset of the course was essential. Social interaction exercises that were conducted during the face-to-face sessions before going on-line were instrumental in establishing the comfort level of disclosure on academic and personal content. Shelia stated it in this manner: "The trust building exercises that we did for the first couple of in-class sessions really helped me know the students that I would be working with. I got a good sense of feeling safe to share my opinions." This indicates the significance of social presence for the students in a successful implementation of a blended learning initiative.

Professors and Their Changes in Teaching Experiences through Blended Learning

A principal theme that emerged from the data for professors was "Driving forces to change." Several categories of motivating factors to change were reported such as a willingness to try other teaching formats, a response to large class sizes, the convenience of scheduling for both students and instructors, and the power of technology. As well, some participants described the "general push" from peers and administrators to move into blended learning as a means of increasing the competitive edge for a particular department or faculty. In terms of the power of new technology, one professor who had just started to design a course shared: "My students are always on their laptops and cell phones while I'm lecturing. I need to harness this technology better." This thought aligns with an indicator of teaching presence as advocated by Vaughan et al. (2013)—namely, shaping constructive and engaging exchanges with the students via the strategic use of technology.

"Discovering the meaning of a blended learning pedagogy" also emerged as a principal theme. Professors recognized the amount of work required to change from a traditional lecture style of teaching to a blended learning format. Claire said it succinctly, "It's a new pedagogy which needs a front-end investment of time and that time is always difficult to find with so many competing interests." Another aspect of this theme related to the term pedagogy as the art and science of teaching with specific instructional methods. Participating professors claimed that a well-defined course structure and continuity between the in-class and online learning were important design features that influenced student progress. Linda pointed out that "the learning objectives for each session need to correspond to the learning strategies that you choose and this is dependent on the core concepts of that session."

Two secondary themes were "Improved learning outcomes" and "The need to establish a supportive culture." Outcome improvements associated with the blended learning format included such impacts as an overall increase in grades, an increase in participation, and an enhanced relationship with the students. As one professor described,

"I used a mix of technological tools and right away I noticed a better conceptual understanding of the topic and better problem-solving skills." This is an example of how student cognitive presence in blended learning can be developed. Professors also highlighted the idea that sharing best practices and success stories related to their experiences in transitioning to a blended learning format was instrumental in creating a supportive culture. It also indicates a social cohesion among faculty members through open communication. For example, as Mark mentioned,

> I'm a member of the faculty council and we had a good debate about online and blended learning the other month and trying to find ways of supporting each other. But for me, I find even when I bump into a colleague in the hallway who is experimenting with blended learning, a quick 5-minute chat keeps me thinking about my own course.

Perspectives from Administrators

Within this university, faculty administrators are responsible for the direction, support, and operations related to the graduate blended learning program. A common theme throughout the data was related to "Widespread Institutional Adoption." A cornerstone of the faculty success in moving forward on blended learning was directly related to the university's BLI, which was financially supported by the Office of the Vice President, Academic. Also important to institutional adoption of blended learning was the allocation of resources through a central TLSS unit. One administrator commented, "Not only are there financial incentives for blended learning but there are technical resources and support for profs and TA's."

A secondary theme that emerged from the data sources was "Creating a Faculty Culture" which was similar to the one found in the data collected from the professors. One administrator mentioned, "early adopters helped us to set the tone for taking on this initiative." In terms of constraints, one main limitation was the lack of research that could support the complexities of blended learning pedagogy. As one administrator explained, "We need more research on methods of monitoring student progress in blended learning as well as how much time it takes for students to interact with the content of the on-line sessions." This research on best practices in blended learning has the potential to positively impact the teaching presence as well as the cognitive presence for students via the scholarship of teaching and learning.

Discussion: Institutional Transitions for Students, Professors and Administrators

Paramount to the implementation of a university-wide blended learning strategy was the identification of student learning needs. The findings highlight the flexibility of blended learning courses as one of the main motivators for students. Also, students perceived the instructor as a role model who coached them through the content and learning activities. Nortvig et al. (2018) and Vaughan et al. (2017) presented similar results and emphasized the role of instructors as content providers and designers, and the importance of the interactions between instructors and students. Vaughan et al. (2013) refer to this specifically as categories of facilitating discourse and direct instruction in teaching

presence. The two facets of motivating factors for participation (cognitive presence) and mechanisms for supportive learning (social and teaching presence) match closely with the elements of CoI framework which helps validate their importance in the success of blended learning initiatives.

Another highlight of the findings was that professors transforming their courses into a blended learning pedagogy have different knowledge and training needs than those professors who were more experienced teaching in this format. Similarly, Porter and Graham (2016) also found that there was a difference in training needs between professors who were new to blended learning yet bound by time constraints and other university commitments and those professors who were already equipped and at ease with using a full range of technological tools. Brown (2016) also found that instructors' knowledge of practice in blended learning is directly formed through their experience working with it and that it affects how they conceptualize their method of teaching. What this means is that training and professional development activities require a tailored approach that focuses on particular knowledge needs of the instructors. As indicated by the findings, such activities could include professor support groups through faculty brown bag lunches; a series of workshops resulting in a certificate in blended learning, information sessions; and one-to-one consultations that are customized to the individual professor with content and design needs. Mestan (2019) confirms that recognizing these different levels of knowledge needs appears to be critical in a university-wide plan as they provide the foundational support for adopting blended learning within an institution. As Napier et al. (2006) maintain, faculty development programs that provide content and design resources are required for both the advanced and beginner level faculty members. Taylor, Atas, and Ghani (2017) speak to this theme when describing institutional supports as one of the main additional elements of their revised CoI framework. These important institutional factors suggest that support from the individual faculty as well as from the university is essential in determining the extent to which educational experiences in blended learning courses will be delivered effectively.

Administrators appreciated the bottoms-up leadership style of early adopters and the creation of a central university hub of pedagogical and technological support for blended courses but admitted there was still a shortfall of resources. They were also concerned with the difficulty in coming up with a common definition of blended learning across professors at the institution. Moving ahead, administrators acknowledged that to support the transition to blended learning, they should be mindful of the need for flexibility in the offerings of the professional development and training activities. As much as the training was made available through the TLSS in this study, conflicts arose when teaching commitments fell on those days and times when professors were required to be in their classrooms. In addition, professors felt that juggling demanding research programs and increased community service impacted their need for more preparation time to launch a course in a new format. This barrier was also echoed by Jeffrey et al. (2014) as well as Ma'arop and Embi's (2016).

Overall, this study's findings suggest that students and professors indicate that a blended approach to teaching and learning provided them with a greater sense of engagement, flexibility, and time to explore course concepts. Vaughan et al. (2013) have strongly suggested that blended learning has the potential to enhance student engagement and the quality of learning. These ideas seem to be related to the phases of cognitive

presence in the CoI. In terms of indicators of social presence (affective, open communication, and cohesive communicative responses), it was noted that students spoke to these when describing the importance of trust building exercises used to create safe and open learning environments for dialogue among peers. Professors also emphasized how social presence contributed to a sense of group cohesion through "enhanced teacher and student interaction" in both the face-to-face and online components of the course. Shea and Bidjerano (2009) maintain that teaching presence actually creates the learning environment to develop social presence for groups of students online. Overall, this leads to growth within the community of inquiry and stronger relationships with the students.

As principal author of the CoI framework, Garrison (2017) suggests that with the advent of e-learning there has been a shift to a *guide on the side* approach, which favours learner control and responsibility. He argues that this learner-centred approach can marginalize the important role and contribution of the teacher in the educational process. Instead, he champions a learn*ing*-centred approach, where both teachers and students have important, complementary responsibilities in a blended course. As previously mentioned, teaching presence in the CoI and the teacher's role fall into three primary categories: design and organization, facilitating discourse, and direct instruction (Anderson et al., 2001). Findings from this study support these teaching categories. For example, in terms of design and organization, one professor commented on how the idea of being able to experiment with the new technological tools created a continuous type of built-in course improvement. However, there seemed to be a notable struggle among some professors with the amount of time required to transform a course to a blended learning format and to provide regular and immediate online feedback. In terms of facilitating discourse, students shared the importance of the changing role of the instructor when teaching a blended course and a need for a sustained online presence. Equally, in terms of direct instructional techniques, students commented on the positive affect of sustained efforts by professors, to intentionally build in checkpoints, provide clear expectations, connect with students synchronously and asynchronously, and provide meaningful and personal feedback. As underpinning factors of teaching and social presence, students shared that these forms of direct instruction were critical to successfully meeting their academic goals and encouraged them to increasingly see their roles as partners in the learning process in the context of their blended learning courses.

Limitations and Future Directions

This article sought to shed light on student learning and teaching practice at one institution in the context of a large scale blended learning initiative. While attempting to expand the diversity of informants in terms of their roles and disciplinary affiliations, and include a broader set of data collection methods to more comprehensively answer the research questions, several limitations still emerged.

One of the limitations of the study was the paucity of literature to draw from that actually reported on the evidence related to the impacts of an institutional blended learning program. This, in turn, raises the need for additional research in this domain using a variety of research designs, various types of post-secondary institutions and a wider range of community stakeholders. Several conceptual and methodological limitations were also apparent. For example, the modified CoI framework by Taylor, Atas, and Ghani (2017),

which includes the notions of faculty and institutional support, has only been used in a very few studies and has yet to be validated. Another limitation of the investigation is that data sources were collected from one medium sized university in a particular region of the country. Therefore, findings may not be generalizable especially for post-secondary institutions that have a smaller student enrolment. While the BLI continues to grow, several faculties remain underrepresented in the overall sample that limits the nature of generalizations that can be made across disciplines and programs.

At the institutional level, the impacts examined in this article are encouraging and elicit a sustained interest in the development of the BLI and efforts to promote blended learning pedagogy across campus. As growth in blended (re)design and instruction is expected to continue in the years to come, further examination of the impact of this instructional format on student learning will continue, particularly within specific disciplines and longitudinally. Future research examining the impact of the initiative on the quality of the teaching and learning experience is necessary and forthcoming.

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