The ‘Bricks and Clicks’ Towards Success:  
A Discussion Paper on a Blended Learning Research Project at the University of Ottawa  

Maurice Taylor and Maria Bastien  
University of Ottawa, Faculty of Education  
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**Contact Us**

**Maurice Taylor, Ph.D.**  
Professor  
Chair, University Teaching  
Faculty of Education  
University of Ottawa  
Jean-Jacques-Lussier Private  
Ottawa, ON  
Canada K1N 6N5  
Phone: 613-562-5800 #4037  
Fax: 613-562-5146  
Email: mtaylor@uOttawa.ca
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Executive Summary

As part of the Destination 2020, the University of Ottawa created the E-Learning Working Group in order to provide recommendations for online learning practices. In 2013, the working group produced a report that in part called for large-scale adoption of blended learning across the university. To achieve this, Teaching and Learning Support Service (TLSS) created the Blended Learning initiative with the initial goal of converting 20% of the University of Ottawa’s course offerings to a blended learning format by 2020. This ambitious goal was part of Phase One, which focused on quantity in order to lay the foundation for future work in blended learning. Moving forward into further phases TLSS continues to provide training and support to professors in order to focus on increasing the quality of blended learning courses offerings.

The Blended Learning Project, which was funded through the Centre for University Teaching (CUT) Chairship Program was a systematic inquiry on the topic of blended learning across the University of Ottawa. It provided needed evidence-based information for the planning and implementation of university wide adoption of blended learning as per the recommendation of the E-Learning Working Group and the goal of the Blended Learning Initiative. Therefore, the scope of the Blended Learning Project was to better understand how university professors could improve the quality of learning and teaching and as well as to better understand the student experience through the development and delivery of blended learning courses. Three questions drove the project: (1) What is the lived experiences of students who have taken a blended learning course at the University of Ottawa? (2) What type of changes do professors experience when teaching in a blended learning format? (3) What factors are important in the implementation of a university-wide blended learning initiative?

The three elements relating to student experience include: 1) Motivators for participation; 2) Mechanisms for supportive learning; and 3) The focal point of the blended learning course. For each element, information is presented from the perspective of graduate and undergraduate student experiences. Five elements relating to professors and their changes in teaching experiences through blended learning include: 1) Driving forces to change; 2) The power of new technology; 3) Discovering the meaning of a blended learning pedagogy; 4) Improved learning outcomes; and 5) The need to establish a supportive culture. Finally, four factors in the adoption and implementation of a blended learning initiative from an administrative point include: 1) The necessity for defining blended learning, 2) A hub of pedagogical and technological support, 3) Leadership through early adopters, and 4) Creating a research agenda to advance widespread adoption. To further deepen our understanding of the key factors in the adoption and implementation of a blended learning initiative, two additional perspectives were sought after: Subject Matter Experts from various Ontario universities developing blended learning and university personnel from across the country.

This discussion paper does not conclude, but rather looks forward through the enumeration of best practices in blended learning, the exploration of lessons learned through the project, and moving forward with questions towards a research agenda.
Section 1: Setting the Context

The introduction of blended learning, and sometimes called hybrid learning, at the University of Ottawa did not occur in a vacuum. In order to set the context for this discussion paper, we look back to the Government of Ontario's interest in e-learning, and three important University of Ottawa documents: Destination 2020, the Report of the E-Learning Working Group and the Report on the Blended Learning Initiative. The following sections use these documents as well as relevant research literature to illustrate the path that created the Blended Learning Initiative and a research project exploring blended learning at the University of Ottawa that was funded through the Centre for University Teaching.
From Destination 2020 to the E-Learning Working Group

Destination 2020, the strategic plan for the University of Ottawa leading up to the year 2020, is based on four pillars, principles that guide the University to identify important initiatives that support the University’s core values and vision. Of relevance to this paper is the first pillar that focuses on “the student experience-putting students at the centre of our educational mission” (Destination 2020-Scorecard. p.1).

The Report of the E-Learning Working Group was the product of a working group proposed by the Administration Committee to “set recommendations on online teaching and learning based on the University’s particular situation” (E-Learning Group, 2013, p. 1). The impetus for this working group was strongly influenced by the Government of Ontario’s interest in higher education institutions expansions of e-learning, noting in particular that e-learning is “a key factor in enhancing…competitive advantage” (E-Learning Group, 2013, p. 1). The importance placed on e-learning in this context is related to the post-secondary sector in Ontario’s “commitment to change and adapt to the times, new technology and methodologies, the needs of Ontario residents, and the competition” (E-Learning Working Group, 2013, p. 1-2).

The E-Learning Working Group (2013) note that there is a constellation of issues that e-learning has the potential to respond to. One such area of discussion is the reality that today’s learners are different; today’s student already uses a variety of technologies to meet their information learning needs. Another group of stakeholders in the educational experience includes our students’ future employers. As the E-Learning Working Group explains, the workforce today demands a different combination of formal and informal learning experiences, in particular the informal learning experiences that lead to self-directedness. They further note that today’s employers “have specific expectations for new hires, including communication and critical thinking skills — talents that are often acquired or enhanced through informal learning” (E-Learning Group, 2013, p. 5). The new type of student in combination with differing expectations of employers after graduation requires then a shift in the role of an educator. The E-Learning Group explains this shift stating: “there seems to be an increasing need for university educators to fulfill the position of educational guide” (p. 6).

The report further describes how student expectations are leading higher education toward the use of blended learning; a learning model that blends online and in-class learning (Report of the E-Learning Working Group, University of Ottawa, 2013, p.2). This flexible and dynamic model of teaching supports learning by engaging students inside and outside of the classroom and opens up opportunities for self-pacing and self-directed learning.

Most importantly, the first recommendation of the Report of the E-Learning Working Group is that that the University of Ottawa adopts blended learning at large scale. The first recommendation of the Report of the E-Learning Working Group is that that the University of Ottawa adopts blended learning at large scale.

Both the Blended Learning Initiative through the Teaching and Learning Support Service (described in Section 2), as well as the Chair in University Teaching research project in blended learning at the University of Ottawa (described in Section 3) emerged in response to this recommendation. The Chair in University Teaching Blended Learning research project links the importance of the student experience, which is the centre of our ethos, through a university wide initiative aimed at transforming instructional practices and improving the quality of learning and teaching.
Section 2: The Blended Learning Initiative

Teaching and Learning Support Service’s Blended Learning Initiative’s first goals were based on the Report of the E-Learning Working Group (2013) where in order to adopt blended learning on a large scale, “the University of Ottawa established the goal of converting 20% of the course offering, roughly 1,000 courses, into a blended format. A transformation affecting 500 professors and close to 25,000 students” (Report on the Blended Learning Initiative, 2016, p. 6). TLSS (2016) in their own report detailing the progress of the Blended Learning Initiative note that blended learning courses combine “the best of online and conventional teaching and presents numerous benefits for students and professors alike.” (p. 6). This was achieved through the set up of a dedicated team at TLSS comprising of one coordinator and one support agent (p. 7). Consultations were also held with experts in online and blended learning to train the TLSS team in blended learning, including Norm Vaughan and Jay Caufield. Through the dedicated team and the consultations TLSS then set up a training framework for instructors. Knowing that they have different needs, this training spans maximum to optional support (TLSS, 2016, p. 18).
The History of the Blended Learning Initiative

It is important to note at the outset of this section that what TLSS (2016) is currently able to report on is yet the beginning phases of an ongoing project. The historical component that we are engaging with in this discussion paper relates to the first phase of the initiative, as well as parts of the second phase in which the initiative is now advancing.

The initial phase of the Blended Learning Initiative focused on the quantity, as opposed to quality, of blended learning courses in order to reach the goal of 20% blended learning courses across the university. As Aline Germain-Rutherford noted, the idea behind a focus on quantity was about “changing the landscape of the university in online and hybrid courses” (personal communication, November 14, 2016). The point behind the quantity of courses was to get blended learning out into the university community; once the landscape had changed, it could then in a future phase be cultivated and further developed using the large number of blended learning courses now in place as a foundation to work with. Germain-Rutherford further explained that now that the quantity is there, there is a refocusing to quality, as the landscape cannot be totally transformed without quality. At this time there is a move to better understand what has been developed in order to now shift the purpose to ensure that blended learning courses meet university expectations for quality (personal communication, November 14, 2016). The Blended Learning research project through the Chair for University Teaching Program at the University of Ottawa provides the opportunity to connect data from blended learning experiences at the University with current research on blended learning.

While Phase One was intended to set the foundation for the Blended Learning Initiative in quantity through changing the university landscape, the Blended Learning Initiative continues to move forward in a shift towards quality. The initial phase promoted the creation of blended learning through incentives and support for professors. Incentives included funding for professors to convert existing courses into blended learning versions, as well as recognition such as the implementation of the Excellence Award for Innovation in Educational Technologies – Blended Learning. Support came in the form of training opportunities that over the years have evolved to meet the unique needs of individual professors. TLSS has a training framework that spans maximum to optional support (TLSS. 2016, p. 18) and includes offering courses and other support for blended learning course development. Current programming includes a growing variety of training and support options for professors as they further revise and re-invigorate their blended learning courses.

Germain-Rutherford further explained that now that the quantity is there, there is a refocusing to quality, as the landscape cannot be totally transformed without quality.
Section 3: Tapping into the Research at the University of Ottawa

Making Connections with the Blended Learning Research Project

Bates and Sangra (2011) maintain that even though the use of technology for teaching escalates on university campuses, the academy is still struggling with how to best plan and manage this activity. Although there appears to be pockets of anecdotal blended learning success stories scattered throughout different faculties at the University of Ottawa, until the Blended Learning Project, there had been no systematic inquiry on the topic. This paucity of research was considered an obstacle as evidence-based information is needed for the planning and full implementation of the university wide adoption of blended learning as per the recommendation of the E-Learning Working Group and the goal of the Blended Learning Initiative. Therefore, the scope of the Blended Learning Project was to better understand how university professors could improve the quality of learning and teaching as well as to better understand the student experience through the development and delivery of blended learning courses.
Three questions drove the project: (1) What is the lived experiences of students who have taken a blended learning course at the university of Ottawa? (2) What type of changes do professors experience when teaching in a blended learning format? (3) What factors are important in the implementation of a university-wide blended learning initiative?

The project design employed a qualitative case study approach (Creswell, 2013; Maxwell, 2013) investigating 5 faculties across the University. These included the Faculty of Education, Faculty of Arts, Faculty of Science, Faculty of Social Sciences and the Telfer School of Management. Qualitative data were collected through semi-structured interviews with undergraduate and graduate students, professors, and administrators from these five faculties. Separate semi structured interview schedules for each of the key informant groups were prepared using the literature from various national and international studies as well as university reports that had investigated blended learning. Each interview schedule consisted of three demographic questions and between 6 and 9 open ended questions depending on the key informant group. Pilot testing was done for each of the interview schedules and revisions were made based on the feedback received. Each face-to-face interview lasted between 45 and 60 minutes and was audio recorded. In total 83 semi-structured interviews were conducted and included 31 undergraduate and graduate students; 27 professors; and 15 administrators.

The second data source consisted of 32 documents and 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 assignments and journal reports whereas examples of professor’s artefacts included course syllabi, evaluation surveys, assessment tools and lesson plans.

The third data source was 10 Subject Matter Experts (SME’s) from various Ontario universities that were in the process of implementing blended learning. The fourth data source was a survey (N=57) of university professors, administrators and staff personnel involved in blended learning from across the country. Both the interview schedule and the items on the survey were drawn from the literature on institutional adoption of blended learning. Frequency counts obtained from the survey data provided an additional perspective for the case. The fifth data source included three sets of researcher field notes. These extensive field notes documented supplemental information related to the interview process and the specific interview context.

The following sections tap into data from the five data sources collected from the project as well as relevant scholarly literature to explore what students (undergraduate and graduate), professors, and decision-makers have to say about blended learning at the University of Ottawa. These sections begin with themes that emerged from the data supported by revealing quotations from the interviews. These are then connected to relevant research literature that is presented in Tables for ease of reading and future use.

**Research Question 1: Key elements of the lived experience of students in blended learning**

In this section, we explore blended learning from the perspective of students enrolled in blended learning courses. Three factors are presented with supporting quotes from the data as well as links to relevant literature on blended learning. The three elements relating to student experience include: 1) Motivators for participation; 2) Mechanisms for supportive learning; and 3) The focal point of the course. For each element, information is presented from the perspective of graduate and undergraduate student experiences.
Motivating factors for participation

Graduate

The need to develop critical thinking skills

"It all starts with the professor using the right critical questions that guide us about other ways of thinking on the new topic. I like it when we brainstorm responses to a tough question of a problem at our small group tables then discuss each other’s viewpoints in the larger class. It gets me thinking outside of the box.”

Undergraduate

Desire to try a new learning format

"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.”

Motivators for Participation

Supporting the findings are two key themes from Smyth, Houghton, Cooney and Casey (2012): the benefits and challenges of courses presented in a blended learning format. For graduate students at the University of Ottawa, blended learning offered an opportunity to try a new learning format that challenged them to think in different ways. As the undergraduate student notes, students want to do more than take notes from PowerPoint slides; the graduate student refers to a desire for tough questions and problems and opportunities for thinking outside the box. Smyth et al. (2012) notes that students want increased accessibility, flexibility, autonomy, and responsibility. Blended learning courses are one way to provide this challenge and opportunity. Perhaps this is why according to Martinez-Caro and Campuzano-Bolarin (2011) student satisfaction tends to be higher in blended learning courses than in traditional lecture courses.

Mechanisms for Supportive Learning

When it comes to this second element, mechanisms for supportive learning, graduate students and undergraduate students seek support in different ways. For graduate students, the development of a community of practice or inquiry is of importance. Garrison, Anderson and Archer (2000) also discuss communities of inquiry in the context of blended learning as a blended learning course can be considered part of a community of inquiry. Undergraduate students are more focused on the role of the instructor for support. Szeto and Cheng (2016) report that in the online learning components of a blended learning course, there is a higher rate of instructor-student interaction. Shea and Bidjerano (2009) explain that it is this teaching presence that helps develop a social presence with groups of students online, something the undergraduate students in our data found important.
Undergraduate students in our data found important.

The presence with groups of students online, something the teaching presence helps develop a social interaction. Shea and Bidjerano (2009) explain that it is this teaching presence that helps develop a social interaction. There is a higher rate of instructor-student interaction. For graduate students, the development of a community of practice or inquiry is of importance. Undergraduate students seek support in different ways. For graduate students, the development of a community when I can safely express my new opinions.

When it comes to the second element, mechanisms for supportive learning, graduate students and undergraduate students notes, students want to do more than take notes from PowerPoint slides; the graduate student refers to a desire for tough questions and meaningful activities noted, Moskal, Dzuban, and Hartman (2013) link the instructor’s ability to facilitate learning to student success and satisfaction. From the perspective of graduate students, there is a larger focus on group and community, such as is noted in Garrison, Anderson, and Archer' (2000) work that considers blended learning environments to be part of a Community of Inquiry.

Connecting with the Literature on Students

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Key Points</th>
</tr>
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<tbody>
<tr>
<td>Means, Toyama, Murphy, Bakia &amp; Jones</td>
<td>2010</td>
<td>Students enrolled in blended learning classes have higher achievements than those in fully online or face-to-face courses.</td>
</tr>
<tr>
<td>Martinez-Caro &amp; Campuzano-Bolarin</td>
<td>2011</td>
<td>Students’ satisfaction tends to be higher in blended learning courses than in traditional lecture courses.</td>
</tr>
<tr>
<td>Owston, York &amp; Murtha</td>
<td>2013</td>
<td>There is a significant relationship between students’ perceptions and grades; positive perceptions of blended learning correlated with higher grades.</td>
</tr>
<tr>
<td>Moskal, Dzuban &amp; Hartman</td>
<td>2013</td>
<td>Student success and satisfaction is required for institutions to fully adopt blended learning. Contributing to student satisfaction were: instructor’s ability to facilitate learning, communication skill, and respect and concern for students.</td>
</tr>
<tr>
<td>López-Pérez, López-Pérez &amp; Rodríguez-Ariza</td>
<td>2011</td>
<td>Blended learning formats decrease dropout rates and increase final exam marks; e-learning functions as a complement to in-class learning.</td>
</tr>
<tr>
<td>Garrison, Anderson, &amp; Archer</td>
<td>2000</td>
<td>Students in blended learning courses can be considered as part of a Community of Inquiry.</td>
</tr>
<tr>
<td>Szeto &amp; Cheng</td>
<td>2016</td>
<td>There is a higher rate of instructor-student interaction in online environments compared to face-to-face classes.</td>
</tr>
<tr>
<td>Shea &amp; Bidjerano</td>
<td>2009</td>
<td>Teaching presence helps develop social presence with groups of students online.</td>
</tr>
<tr>
<td>Author</td>
<td>Year</td>
<td>Key Points</td>
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<tr>
<td>Bowers &amp; Kumar</td>
<td>2015</td>
<td>Online students perceived stronger teaching and social presence in the fully online course as opposed to the face-to-face course.</td>
</tr>
<tr>
<td>Smyth, Houghton, Cooney &amp; Casey</td>
<td>2012</td>
<td>Two main themes in student experience were benefits and challenges of blended learning. Benefits include accessibility, flexibility, autonomy, and responsibility. Challenges include technological issues, poor sense of community, and increased workload.</td>
</tr>
<tr>
<td>Taylor, Atas &amp; Ghani</td>
<td>2017</td>
<td>Student experiences are crucial factors for successful large-scale adoption of blended learning in higher education.</td>
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**Research Question 2: Professors and their changes in teaching experiences through blended learning**

In this section, we explore blended learning from the perspective of professors and their changes in teaching experiences through blended learning courses. Five elements are presented with supporting quotes from the data as well as links to relevant literature on blended learning. The five elements relating to professors experiences include: 1) Driving forces to change; 2) The power of new technology; 3) Discovering the meaning of a blended learning pedagogy; 4) Improved learning outcomes; and 5) The need to establish a supportive culture.

**Driving Forces to Change, and the Power of New Technology**

"I've already started to move away from lecturing in class by putting some readings and videos online and this has increased student involvement somewhat, I need to dig a little deeper and find out what is good practice for online teaching."

"I noticed the lack of participation in my class and how my students are always on their laptops and cell phones while I'm lecturing. I need to harness this technology better."

Connecting to the theme of driving forces to change, our work aligns with that of Kehrwald & McCallum (2015) who note that one kind of change that professors experience when engaging with blended learning is changed pedagogical practices; as in the quote above, professors seek out best practices for teaching online components of their courses. Kehrwald & McCallum (2015) also connect to the theme of the power of new technology with professors increased capacity in technological components of their course design. Napier, Dekhane & Smith (2006) caution, however, as instructors need to balance face-to-face and online components and require technical support for its success.
Further themes include discovering the meaning of a blended learning pedagogy. As indicated by the quote above, this is linked to professors’ investment in blended learning and the changes in their workload that this might create. Kehrwald and McCallum (2015) explain that one kind of change that professors experience in moving to blended learning is increased workload. More specifically, Ocak (2011) finds that blended learning brings new responsibilities and roles to professors who already have significant workloads. This can make it difficult for them to change their teaching approaches. However, Owston, Garrison & Cook (2006) found that teaching responsibilities of faculty could be re-invigorated by designing and delivering blended learning courses. Despite the challenges with beginning to engage with a blended learning pedagogy, an additional theme of improved learning outcomes arose. This relates to professors’ experiences that students in blended learning environments seem to have greater understanding of course content and problem solving skills.

Finally, professors note the need to establish a supportive culture, and focus on mentorship and community to achieve their goals. Oh and Park (2009) note that faculty need to embrace different forms of learning online for success, which perhaps could be found through communities of practice or professional learning communities. Renes & Strange (2013) remind us that moving to a blended approach is challenging for everyone, faculty members and students. This is likely why our theme of establishing a supportive culture for all participants is so important.
### Connecting with the Literature on Professors and Instructors

<table>
<thead>
<tr>
<th>Author</th>
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<th>Key Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oh &amp; Park</td>
<td>2009</td>
<td>Emphasis on the importance of faculty’s willing embrace of new online forms of learning for it to be successful.</td>
</tr>
<tr>
<td>Kehrwal &amp; McCallum</td>
<td>2015</td>
<td>Three kinds of change professors experienced as their institution moved toward blended learning: changed pedagogical practices, increased workloads, and increased capacity in technological components of their course design.</td>
</tr>
<tr>
<td>Ellis, Steed &amp; Appleby</td>
<td>2006</td>
<td>Perceptions on teaching and learning in a blended environment are diverse, leading authors to propose a four-point spectrum from deep to surface approaches to learning and instruction.</td>
</tr>
<tr>
<td>Jeffrey, Milne, Suddaby &amp; Higgins</td>
<td>2014</td>
<td>Teachers who had implemented blended learning still valued classroom components as more effective than online components and some learning activities are more suitable in a face-to-face format.</td>
</tr>
<tr>
<td>O’Dowd</td>
<td>2013</td>
<td>Relating to online engagement in foreign language instruction and inter-university exchange, instructors should promote online collaborations by changing assessment criteria to award grades for online student contributions.</td>
</tr>
<tr>
<td>Napier, Dekhane &amp; Smith</td>
<td>2006</td>
<td>Instructors need to balance face-to-face and online components when redesigning courses. Technical support is also required for success.</td>
</tr>
<tr>
<td>Bliuc, Casey, Bachfischer, Goodyear &amp; Ellis</td>
<td>2012</td>
<td>Teachers’ approaches to redesigning courses for blended learning depend on their varied perspectives.</td>
</tr>
<tr>
<td>Carbonell, Daily-Hebert &amp; Gijselaers</td>
<td>2013</td>
<td>Instructors must find a common ground while pursuing the goal of successful implementation of blended learning, overcoming their own agendas and streamlining the transition.</td>
</tr>
<tr>
<td>Owston, Garrison &amp; Cook</td>
<td>2006</td>
<td>Teaching responsibilities of faculty were re-invigorated by designing and delivering blended learning courses.</td>
</tr>
<tr>
<td>Ocak</td>
<td>2011</td>
<td>Blended learning brings new responsibilities and roles to professors who already have significant workloads, and this can make them less likely to change their teaching approaches.</td>
</tr>
<tr>
<td>Renes &amp; Strange</td>
<td>2013</td>
<td>Moving to a blended approach is challenging for faculty members and students.</td>
</tr>
</tbody>
</table>
Research Question 3: Factors in the adoption and implementation of a blended learning initiative

In this section, the four elements in the adoption and implementation of a blended learning initiative from an administrative point are explored. These include: 1) The necessity for defining blended learning, 2) A hub of pedagogical and technological support, 3) Leadership through early adopters, and 4) Creating a research agenda to advance widespread adoption.

The necessity for defining blended learning, and a hub of pedagogical and technological support

“[I was hard pressed to find consistency in what blended learning actually means. Some of the literature refers to 20%-80% of online learning while other documents say a 50/50 split between in-class and online.]”

“A[as the blended learning initiative got up and running, many of our faculty tapped into the resources that were available from the Centre for University Teaching, (CUT) and this gave them the confidence to move through the start-up period.”

Supporting the necessity for defining blended learning, Wold (2013) indicates that because blended learning is ambiguously understood, it is important for institutions to have a definition in order to implement blended learning. Additionally, the literature notes the importance of pedagogical and technological supports. For example, one of Betts and Heaston’s (2014) key points is that administration and faculty will have varying needs as they pursue blended and online learning. Moskal, Dzuban and Hartman (2013) explain that appropriate planning and support for faculty is necessary for positive institutional transformation with blended learning.

Leadership through early adopters and creating a research agenda to advance widespread adoption

Our findings indicate that leadership in blended learning comes through early adopters who champion the initiative which aligns with the theme of leadership through early adopters. Graham, Woodfield and Harrison’s (2013) three-stage framework to help guide university administrators in pedagogical innovation starts with awareness and exploration, but in order to move forward requires the adoption/early implementation stage in order to reach mature implementation and growth.

Wold (2013) indicates that because blended learning is ambiguously understood, it is important for institutions to have a definition in order to implement blended learning.
Furthermore, it is necessary to create a research agenda to advance widespread adoption of blended learning. As Moskal, Dzuban and Hartman (2013) explain, proper support and planning for students and faculty is needed for positive institutional transformation with blended learning. Part of this proper support can include research. Betts and Heaston (2014) note that the learning experiences of faculty need to be reported along the way in order to foster a collaborative approach. Finally, as Wold (2013) explains, blended learning remains ambiguously understood, so it is necessary for institutions to create a definition in order to implement blended learning. Together, these items can become part of a research agenda for successful implementation of blended learning across a university.

Voices and Viewpoints From Outside the University of Ottawa

To further deepen our understanding of the key factors in the adoption and implementation of a blended learning initiative, two additional perspectives were sought after: interviews with Subject Matter Experts from various Ontario universities developing blended learning and a survey of university personnel from across the country involved in some aspect of blended learning at their higher education institution. Four main themes emerged from the interview data: (1) Pivotal roles-faculty and administrators, (2) Ground floor building blocks- vision and policies, (3) Design and quality features and (4) Professional development and training. In the same fashion as the previous section, key themes and quotations are highlighted from the interview data complemented with important findings from the survey data presented as bar graphs. Numeric values for the graphs are as follows: (1) Strongly Disagree, (2) Disagree, (3) Neutral, (4) Agree, (5) Strongly Agree.
Two main themes that emerged from the interview data with university personnel identified the important roles that both faculty and administration play in implementing blended learning throughout the institutional environment. When instructors have the option of choosing their own course to transform into a blended learning format and the administration allocates resources for a team of educational developers to help these instructors, adoption of a university wide initiative seems to be less complicated. Responses from the survey also suggest that strong advocacy for blended learning is required from both administration and individual instructors. As can be seen in Bar Graph 1, about 43% of instructors from various universities across Canada have advocated for blended learning at their institutions while 51% of administrators have been advocates for this new learning approach (Bar Graph 2).

**Ground Floor**

**Building Blocks – Vision & Policies**

“We have an online learning strategy and blended learning is part of the university strategy. It’s currently being revised with wide consultation and input.”

“We’re struggling because there is no institutional guide document on blended learning.”
Two of the main foundation building blocks for implementing an institutional wide blended learning initiative are for the university to have a clearly articulated vision as well as the accompanying policies that cascade out of this vision. These “building blocks” provide direction for both instructors and administrators. Quotations from the interviewees and responses from the survey seem to indicate this is an area that needs more attention in higher education. Bar Graph 3 suggests that 34% of the respondents believed that published policies on blended learning had been developed in their institutions. On the other hand, only 28% of respondents believed that a vision of a blended learning initiative had been communicated to their larger university community (Bar Graph 4).

Another theme that emerged from the interview data with the SME’s was related to the design element of blended learning and the ways in which the quality of the newly transformed courses can be evaluated and better understood. What seems to be evident from the results presented in Bar Graph 5 (on the next page) is that about 70% of respondents believe that their institution provides pedagogical support for course design while 50% believe that their institution share blended learning templates and tool kits with instructors (Bar Graph 6). As well, having an evaluation strategy with quality indicators in place can help in the collection of systematic data from students and professors. This evaluation strategy should be a key component in the overall university wide initiative. Survey results from Bar Graph 7 indicate that 42% of institutions have a blended learning evaluation strategy process in place.
Another theme that emerged from the interview data with the SME’s was related to the design element of blended learning and the ways in which the quality of the newly transformed courses can be evaluated and better understood. What seems to be evident from the results presented in Bar Graph 5 (on the next page) is that about 70% of respondents believe that their institution provides pedagogical support for course design while 50% believe that their institution share blended learning templates and tool kits with instructors. As well, having an evaluation strategy with quality indicators in place can help in the collection of systematic data from students and professors. This evaluation strategy should be a key component in the overall university wide initiative. Survey results from Bar Graph 7 indicate that 42% of institutions have a blended learning evaluation strategy process in place.
A final theme that emerged from the interview data with university personnel was related to the important factor of professional development and training for faculty members. Types of professional development varied depending on the learning needs of the individual instructor as well as group needs in a particular faculty. Overcoming the paradigm shift in moving to a blended learning format of instruction was also an identified professional development need especially at the early design stage. As can be seen by the survey results in Bar Graph 8, institutional financial resources for blended learning are not always prevalent. For example, only 32% of the respondents believed that their institution had secured adequate resources to implement a blended learning initiative. However, in Bar Graph 9 about 70% of the respondents reported that technical training opportunities for faculty were provided by the institution.

“The process of professional development is both faculty and individual driven. It can range from levels of instructional design, experimentation with e-tools right up to module courses and consultations with Educational Developers.”

“The biggest challenge is anxiety and being overwhelmed by the nature of the philosophical change when buying into blended learning.”

“It’s substantial for profs especially during design and teaching phases.”

Bar Graph 8 – Institutional financial resources for blended learning N=57

Bar Graph 9 – Technical training for faculty N=57
## Connecting with the Literature on Institutions and Adoption

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Key Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Owston</td>
<td>2013</td>
<td>Blended learning has the potential to transform higher education, particularly during this time when the transmission model is being questioned.</td>
</tr>
<tr>
<td>Taylor &amp; Newton</td>
<td>2013</td>
<td>A systematic viewpoint of blended learning implementation through the lens of teaching and learning as socially dynamic.</td>
</tr>
<tr>
<td>Moskal, Dzuban &amp; Hartman</td>
<td>2013</td>
<td>Proper support and planning for students and faculty is needed for positive institutional transformation with blended learning.</td>
</tr>
<tr>
<td>Carbonell, Dailey-Hevert &amp; Gijslaers</td>
<td>2013</td>
<td>Four factors for successful bottom-up change to create blended learning: macro and micro contexts, the project leader and the project members.</td>
</tr>
<tr>
<td>Betts &amp; Heaston</td>
<td>2014</td>
<td>1) A collaborative approach to understanding faculty and administration needs is essential to university-wide interest in blended learning; 2) administration and faculty with varying blended and online learning experiences report different needs along their blended learning journey.</td>
</tr>
<tr>
<td>Wold</td>
<td>2013</td>
<td>As blended learning remains ambiguously understood, institutions need a definition in order to implement blended learning.</td>
</tr>
<tr>
<td>Rosenthal &amp; Weitz</td>
<td>2012</td>
<td>Course redesign improved student satisfaction and retention, increased faculty satisfaction, although student learning outcomes remained similar.</td>
</tr>
</tbody>
</table>
Section 4: Looking Forward

Drawing from the five data sources collected for the blended learning project a number of best practices and lessons learned here at the University of Ottawa are summarized below.
**Students**

1. Appeal to student’s curiosity and relevance of content to get their attention in blended learning courses. These may differ for undergraduate and graduate students.
2. Develop a social presence in the online components with students so that they feel a sense of belonging.
3. A clear course outline that includes the content structure, expectations, and other organisational features is a necessary tool.
4. Learning tasks need to be authentic and close to real world tasks.
5. Provide timely and specific feedback to students using various formats.
6. Acknowledge and recognize students’ efforts in online discussion forums.

**Instructors**

7. Instructors need to be mindful that postings in an online discussion are not one size fits all.
8. Instructors need to ask for informal feedback early in the online sessions of the course.
9. Instructors want their development and training activities aligned with the changes they experience in transforming their courses.
10. Instructors want to experiment with the newer technologies in a safe training environment.
11. Instructors want to learn more about what a blended learning pedagogy actually means.
12. Instructors want to share more about how to improve their student learning outcomes using a blended learning approach.

**Administrators**

13. Individual faculties need to identify their own supportive in-house culture.
14. A common language around blended learning needs to be developed.
15. Early adopters of blended learning are faculty champions.
Lessons Learned from the Project

1. Student’s value blended learning.
2. For most students blended learning offers a richer learning experience than either online or traditional face-to-face modes of learning.
3. In a blended learning environment students will engage in a blend of learning activities that have personal efficacy and relevance.
4. Students construct knowledge in a productive online discussion when there are ample opportunities for interaction and collaboration.
5. A community of learners is one in which students have a sense of belonging, support each other and enjoy their shared identity.
6. Designing your online learning activities, should invite responses, questions, discussion and reflection.
7. Students enjoy the discovery of digital resources embedded in online learning activities.
8. Professors recognize the support they are receiving from the university as they move towards a blended learning approach.
9. Students, professors and administrators can work in concert to adopt a blended learning initiative.
10. Blended learning can make a difference.

Moving Forward Towards a Research Agenda

One of the main tracks of research in the scholarship of teaching and learning in higher education is blended and online learning. Drawing from the results of this study on blended learning as well as the focused literature review cited in this paper, there are several questions that have emerged that could constitute a research agenda. One category of questions relates to how instructors can better encourage student engagement and active learning through the design features of their blended learning courses. What roles should instructors play in defining and enacting collaborative engagement? What changes are needed by both faculty and students to enhance meaningful learning outcomes? Is student engagement related to persistence and drop out especially in undergraduate blended learning courses? How do online learning communities help graduate students develop both academic and professional skills?

A second grouping of research questions is related to the key area of professional development and training of faculty and instructors. What are the new teaching strategies for blended learning using technology such as mobile devices? Are there knowledge gaps in teaching development initiatives using blended learning strategies? What leadership actions can Centres for University Teaching in Canada take to bring higher education to new places in the foundations of teaching and learning?
For additional information on the results of this research project, please refer to:


References


