Student Engagement in Blended Learning: A Three Year Study

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Abstract[1] **Student engagement is a growing concern as postsecondary institutions seek ways to improve learning, satisfaction, and retention. Blended learning holds the promise of engaging students more than traditional in-class lectures. This study examines student engagement over a three-year period in five first-year university introductory courses. Students were surveyed about their involvement, their interactions with peers and the instructor, the helpfulness of course technology and digital resources, and their perceptions of learning in the course. Student perceptions were found to be above the mid-point on a five-point Likert scale and scores on all questions increased positively from Year I to Year III, except that the course technology interfered more with students' learning over the duration of the study likely because of the use of more streamed video from year to year. The overall increase in student engagement over the three years was**

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posited to be due to the instructors improving the design of their courses and gaining confidence in teaching in the blended mode. This in turn led to greater student engagement. The conclusion was that blended learning can result in greater student engagement but that the instructor's role and course design are significant factors.

Keywords-*blended learning, student engagement, higher education*

I. Introduction

Blended learning, an instructional approach that combines online sessions with in-class lectures, appears to have many desirable features with few drawbacks for students, faculty, and institutions (Owston, 2013). For example, one of the advantages cited in the literature is that students enrolled in blended classes on the whole tend to achieve higher than their counterparts in fully online or face-to-face courses (*e.g.*, Means, Toyama, Murphy, Bakia, & Jones, 2010). Student satisfaction is also likely to be higher in blended courses when compared to traditional lecture courses (*e.g.*, Martinez-Caro & Campuzano-Bolarin, 2011), and faculty report having their teaching reinvigorated by the experience of teaching in the blended mode (*e.g.*, Owston, Garrison, & Cook,

2006). An advantage for institutions is that they are able to increase their enrolments and avoid costs associated with new construction because classroom space can be better utilized (Dziuban, Hartman, Cavanagh, & Moskal, 2011). Success of blended learning as an instructional strategy, however, rests first and foremost on the benefits that derive to students. One of these benefits may be that students become more engaged in their learning and ultimately more successful in their courses. Thus this study focuses on how students view blended learning as contributing to their engagement, an area of deep concern to many postsecondary institutions as evidenced by the rise in popularity of assessing engagement with the *National Survey of Student Engagement* and developing follow-up programs to improve student achievement, satisfaction, and retention (http://nsse.iub.edu/). The research examines student engagement over a three-year period in five university freshman courses.

II. Theoretical Framework

The study is situated within the literature on student perceptions of and experiences with blended learning and builds on previous work by the author and colleagues in the study of undergraduate blended learning programs. Recent studies suggest

that students favour blended learning approaches and seem to be more satisfied with blended learning when compared to traditional lecture courses (Osgerby, 2013; Martinez-Caro & Campuzano-Bolarin, 2011). Students in these studies appreciated the flexibility of blended learning and would recommend blended courses to their peers. Students favour the ability to work on their own schedule, at their own pace, and from their preferred location (Battye & Carter, 2009). Blended courses are found to be especially beneficial to students who have work and have family responsibilities because of the flexibility that they afford (Ashton & Elliot, 2007; Dziuban, Hartman, Juge, Moskal, & Sorg, 2006; Owston, Garrison, & Cook, 2006; Smyth, Houghton, Cooney, & Casey, 2012). A recent study that examined the relationship between student perceptions and grades by Owston, York and Murtha (2013) found that there is a strong correlation between the two. The survey results showed that high achievers were the most satisfied and preferred the blended format more than fully online or face-to-face courses. Students also reported that blended courses were more convenient and that they learned concepts better than in traditional face-to-face courses. The researchers recommend that

institutions should offer students the opportunity to choose between fully online, blended, or face-to-face courses because low achievers find it difficult to cope with learning in a blended course. Another option discussed by the researchers was to provide additional academic support for students in blended courses who have weak independent study skills.

Research shows mixed findings with regard to students' preferred format and types of blends. Some students prefer a larger proportion devoted to face-to-face learning, whereas others prefer lesser time spent in class (Castle & McGuire, 2010; Farley, Jain, & Thomson, 2011; Korr, Derwin, Greene, & Sokoloff, 2012). Students typically prefer having face-to-face tutorials (Battye & Carter, 2009) as they strengthen peer learning (Farley, Jain, & Thomson, 2011; Moore & Gilmartin, 2010; Smyth et al., 2012). Face-to-face interaction also encourages confidence and supports comprehension of material (Collopy & Arnold, 2009). Unlike upper-year students, first-year university students, especially, prefer that both lectures and tutorials be taught in a face-to-face format rather than over the Internet, a preference that can be ascribed to their lack of familiarity with self-directed and technology-mediated

learning. Online discussions in blended courses tend to be perceived by students as a relatively unimportant task to be completed in order to fulfill formal course requirements, rather than a valued component of their learning (Bliuc, Ellis, Goodyear, & Piggott, 2011). Ellis and Calvo (2004) report that the quality of the approach students exhibit in online and face-to-face discussions is in accordance with the way in which they perceive their learning context. The researchers add that students who have a poor perception of teaching would also neglect to understand the purpose of online discussions and perform at a lower level in these activities.

Recent studies offer explanations as to why some students might be less comfortable in a blended course. Some are concerned about the reduction of face-to-face interaction and the transfer of a greater amount of learning outside of the traditional classroom (Collopy & Arnold, 2009; Diaz & Brown, 2010; Hsu, 2011; Poon, 2012). Other students appear to be unprepared to navigate efficiently a blended course for lack of self-regulated learning skills needed to manage increased workload online and take their own responsibility for being actively engaged in the learning process

(Collopy & Arnold, 2009; Harris, Connolly, & Feeney, 2009; Korr, Derwin, Greene, & Sokoloff, 2012). Furthermore, students may be overwhelmed with the blended course that prolongs their class work over an extended period of time and become disruptive to their lives (Moore & Gilmartin, 2010; Smyth et al., 2012). The feeling of continuous learning might be influenced by dissociation of the relationship between online and in-class learning that might result in an increased redundancy of learning activities rather than concentrating on a particular task (Hsu, 2011; Reiss & Steffens, 2010; Korr et al., 2012).

With respect to student engagement, the focus of this study, there is some research evidence that blended learning can facilitate greater engagement. Holley and Dobson (2008) integrated a rich series of multimedia learning activities into traditional lecture and seminar modules designed to orient non-traditional students to university study. They found that the blended environment provided the flexibility to engage students in the classroom longer and more students completed the module than traditional offerings. In another study, Vaughan (2010) found no observable differences in student to faculty interaction in a redesigned blended course;

however he did find significant improvements in active and collaborative learning. Rather than comparing blended and non-blended versions of the same course as the previous two studies, Dziuban, Moskal, and Hartman (2005) compared the perceptions of four arbitrary generations of students (*i.e.,* Matures, Baby Boomers, Generation X, and Millennials) and found that Millennials (born between 1981 and 1994) were the least positive in their views about learning engagement, interaction value, and changed learning habits in blended courses. Millennials currently form the majority of university students today, particularly in upper years and graduate study, which suggests that blended learning would be more difficult to implement successfully with typical university students.

A major problem in examining studies on engagement and blended learning, however, is that there is no commonly agreed upon meaning of the construct of student engagement, nor of blended learning. Moreover, researchers often do not give a working definition of these terms for their study. With regard to student engagement, earlier definitions viewed it as time-on-task, quality of effort, effective instructional practices, or learning

outcomes (Kuh, 2009). More recently, the term was used to refer to the collection of activities and practices in which students participate that lead to desirable educational outcomes (*e.g.,* Krause & Coates, 2008).

In this study engagement is operationally defined as student involvement in their course, their interactions with peers and the instructor, helpfulness of course digital resources, and their perceptions of learning in the course. As for blended learning, the term has been used to describe a variety of instructional approaches that range from web-enhanced instruction, where technology is used to supplement the traditional lecture, to a model in which the amount of face-to-face time is reduced and substituted with online activities (Graham, 2006). Increasingly, the definition offered by the Sloan Foundation Consortium (Allan & Seaman, 2006) that sees blended learning as lying along a continuum between fully online courses and fully face-to-face courses is now being used most often in higher education. This definition suggests that courses that have between 30% and 79% of their instruction time devoted to either face-to-face or online activities be called blended. This definition was adopted for the current study.

III. Methodology

The current study took place at a large urban university in Canada in a fine arts faculty and it was a sub-study of a larger investigation of course design and student and instructor perceptions of blended learning. Students in five different semester-long introductory courses for non-majors participated. All courses were redesigned by the instructors to be offered in the blended format; however, the amount of online time substituted for face-to-face varied across courses. Some courses had all lectures online with face-to-face tutorials, while others had different combinations of online and face-to-face lectures and tutorials.

Students enrolled in these courses each year over a three-year period were surveyed. A total of 2,094 students responded to the survey which represented a response rate of 51%. Course enrolments and response rates for each year and each course are given in Table 1. Survey items were adapted from several sources which included: the *Classroom Survey of Student Engagement* (CLASSE), which is an adaptation of the National Survey of Student Engagement (Smallwood & Ouillet, 2009; the appendix of Garrison and Vaughan's (2008) book *Blended Learning In Higher Education*; the *Blended Learning Tookit* developed at the University of

Central Florida; and faculty and student surveys from Owston, Garrison, & Cook's (2006) study. The survey had 16 items related to student engagement[2]: perceptions of students' involvement in their course, their interactions with peers and the instructor, helpfulness of course technology and digital resources, and their perceptions of learning in the course. Students were asked to respond to each item on a 5 point Likert scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strong agree) to compare experiences in their current course with other courses they had taken or were taking at the same time.

[2] The 16 questions reported on in this study were part of a larger 29 item survey of student attitudes toward blended learning, hence the question numbering is not sequential as student engagement questions were interspersed with other questions unrelated to this study.

TABLE 1. NUMBER OF PARTICIPANTS IN EACH COURSE RESPONDING TO SURVEY PER YEAR

Courses	YEAR I	YEAR II	YEAR III	TOTAL
Total course enrolment	766	1,640	1,638	4,044
Survey response	348 (45%)	945 (58%)	801 (49%)	2,094 (51%)
ARTH 1900	NA	289 (79%)	221 (72%)	510 (76%)
FILM 1900	NA	261 (68%)	201 (51%)	462 (60%)
MUSI 1900	179 (74%)	235 (75%)	224 (68%)	638 (72%)
DANC 1900	77 (26%)	71 (21%)	106 (29%)	254 (25%)
THTR 36	92 (45%)	89 (38%)	36 (15%)	217 (33%)

IV. Results

A. Involvement in Courses

Students' mean responses to questions on course involvement are given in Table 2. All responses were above the scale mid-point (2.5) and all increased between Years I and III. Q11 asked students directly whether they felt more engaged in their current course than other courses they had taken. The mean responses to this question increased by 0.26 points over three years which suggests that students felt reasonably well-engaged in their blended courses. The mean scores across three years on Q7 suggest that course expectations were clearly communicated.

Additionally, students appeared to feel stronger about the relationship between face-to-face and online learning components over the period of the study (Q4). Mean scores on Q12, which asks students

for their reactions to the perception of their likelihood of asking more questions in class, increased the least of questions in this grouping about course involvement.

TABLE 2. STUDENTS' RESPONSES TO QUESTIONS ON COURSE INVOLVEMENT (MEANS)

Survey Questions	Year I	Year II	Year III
Q4 (online and F2F components enhanced each other)	2.93	3.00	3.12
Q7 (clearly communicated expectations)	n/a	3.39	3.69
Q11 (more engaged)	2.55	2.56	2.81
Q12 (likely to ask questions more)	2.60	2.56	2.68

B. Course Interaction

Four of the questions focused on the quantity and quality of interaction with other students (Q13 and Q14) and between students and instructor (Q16 and Q17) in the blended courses (see Table 3). The overall response to these questions was neither positive nor negative – almost equal proportions of students were either disagreeing, being neutral, or agreeing with the statements regarding their level of interaction with other students or their instructor. Over three years, however, students reported slightly increased levels of perceptions of their interaction with other students and the instructor.

TABLE 3. STUDENTS' RESPONSES TO QUESTIONS ON INTERACTION (MEANS)

Survey Questions	Year I	Year II	Year III
Q13 (increased amount of interaction among students)	2.34	2.57	2.53
Q14 (better quality of interaction among students)	2.33	2.59	2.64
Q16 (increased amount of interaction with instructor)	2.37	2.46	2.49
Q17 (better quality of interaction with instructor)	2.56	2.53	2.63

C. Technology and Digital Resources

Four survey items related to students' perceptions of technology and digital resources used in the blended course (see Table 4). The navigation of Moodle, the course management system, in the blended courses received an overall positive response from students (M = 3.46 in Year I, M = 3.68 in Year 2, and M = 3.91 in Year III). This finding suggests that students felt comfortable to navigate and locate easily course information on Moodle. Similar scores were reported by students with regards to the usefulness of resources posted within the Moodle environment, as well as to the reliability of the Moodle technology used for online learning activities. Compared to the Year I and Year II evaluations, students' perceptions of Moodle

navigation and the quality of online resources improved in Year III. Still, the results indicate that some students felt that the technology interfered with their learning in the blended courses (Q23). Compared to Year I, the level of technology interference with learning has slightly increased in both Year II and Year III, perhaps because of the greater use of streamed video and difficulties of playing it on various devices and at different network speeds.

TABLE 4. STUDENTS' RESPONSES TO QUESTIONS ON USE OF TECHNOLOGY (MEANS)

Survey Questions	**Year I**	**Year II**	**Year III**
Q5 (easy to find course information on Moodle)	3.46	3.68	3.91
Q6 (Moodle resources were useful)	3.32	3.62	3.75
Q8 (technology for online activities was reliable)	n/a*	3.35	3.64
Q23 (technology interfered with learning)	2.18	2.60	2.54

* This question was not asked on the Year I survey.

D. Student Learning

Four questions asked students about their perceptions of whether the blended format helped improve their learning (see Table 5). Note that the Year I survey included only one item about

students' perceptions of improvement of learning. Compared to Year I, students' perceptions about the impact of blended learning on their performance improved slightly overall. Students agreed or strongly agreed that their interest in the subject matter increased (Q2), and their understanding of key concepts of the course was better as compared to their experiences in previous face-to-face courses (Q20). Students felt that they had more opportunities in the blended course to reflect on what they had learned (Q22). The results also show that students perceived that they developed better communication skills in their blended course.

TABLE 5. STUDENTS' RESPONSES TO QUESTIONS ON USE OF TECHNOLOGY (MEANS)

Survey Questions	Year I	Year II	Year III
Q2 (increased interest in subject)	n/a*	3.16	3.28
Q20 (improved understanding of concepts)	2.99	3.21	3.35
Q21 (developed better communication skills)	n/a*	2.60	2.76
Q22 (more opportunities to reflect)	n/a*	2.89	3.11

* These questions were not asked on the Year I survey.

V. Discussion and Conclusions

Student engagement is considered to be an increasingly important issue in higher education as academic administrators look for ways of improving student success and boosting retention rates. As discussed earlier, blended learning offers several advantages for students including the possibility of enhancing their engagement. This study examined student perceptions of engagement in first-year university blended courses over a three-year period. Prior to the study instructors had no experience teaching in the blended mode; however, over the three-year duration they improved the design of their courses and gained confidence in teaching in this mode. While the courses had different students in each of the years, student perceptions as assessed by the survey improved between Years I and III on all but one dimension. The exception was Q23 were students reported that the technology interfered more with their learning over the three years, likely due to the use of streamed video and the attendant problems of playing it across a variety of platforms and network connections. Furthermore, perceptions improved steadily each year except for Q23 and Q12. On the latter item that dealt with how likely students were to ask more questions, a slight dip in Year II occurred but an

improvement was still noted between Years I and III. Moreover, mean scores in the final year were at least slightly above or considerably above the midpoint on the survey Likert scale which suggests students perceive their experiences in the blended courses positively.

While the overall trend of steady improvement in perceptions could be due to sampling or random errors, the likelihood of this being due to chance alone is very small. A reasonable conclusion is that the blended learning experience of students contributed to these improved perceptions. As instructors improved the design of their courses and gained confidence in teaching in the blended mode the courses became more engaging. Thus this study provides evidence that blended learning can support student engagement, but that the instructor's role and course design are critical. What remains to be researched is whether the improved engagement results in better achievement and retention.

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