



A PROGRAMMATIC APPROACH TO BLENDED LEARNING

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Introduction

The idea of blending different learning experiences has been in existence since humans started thinking about teaching (Williams, 2003). The growing infusion of web-based technologies into the learning and teaching process brings this term into current consideration (Allen & Seaman, 2016). These technologies have created new opportunities for students to interact with their peers, teachers, and content.

Blended learning is often defined as the combination of face-to-face and online learning (Sharpe et al., 2006). Ron Bleed, the former Vice Chancellor of Information Technologies at Maricopa College, argues that this is not a sufficient definition for blended learning as it simply implies “bolting” technology onto a traditional course, using technology as an add-on to teach a difficult concept, or adding supplemental information. He suggests that blended learning should be viewed as an opportunity to redesign how courses are developed, scheduled, and delivered through a combination of physical and virtual instruction: “bricks and clicks” (Blead, 2001). Joining the best features of in-class teaching with the best features of online learning that promote active, self-directed learning opportunities with added flexibility should be the goal of this redesigned approach (Littlejohn & Pegler, 2007). Garrison and Vaughan (2008) echo this sentiment when they state that “blended learning is the organic integration of thoughtfully selected and complementary face-to-face and online approaches and technologies” (p.148). A survey of e-learning activity by Arabasz, Boggs, and Baker (2003) found that 80 percent of all higher education institutions and 93 percent of doctoral institutions offer hybrid or blended learning courses.

Most of the recent definitions for blended courses indicate that this approach to learning offers potential for improving how we deal with content, social interaction, reflection, higher order thinking and problem solving, collaborative learning, and more authentic assessment in higher education potentially leading to a greater sense of student engagement (Norberg, Dziuban, & Moskal, 2011). Dziuban and Moskal (2013) further suggest that “blended learning has become an evolving, responsive, and dynamic process that in many respects is organic, defying all attempts at universal definition” (p.16). In this research study, the authors define blended learning as the intentional integration of theory into practice of classroom and field-based learning experiences through the use of digital technologies (Figure 1).

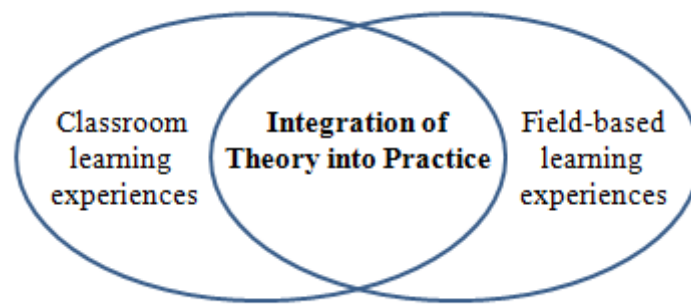


Figure 1. Bachelor of Education approach to blended learning

Study Context

Mount Royal University is a four- year undergraduate institution located in Calgary, Alberta, Canada (<http://www.mtroyal.ca>). In the fall of 2011, the University launched a new Bachelor of Education (B.Ed.) program, a four- year direct entry B.Ed. degree, with an emphasis on connecting theory with practice through early, consistent, and on-going field experiences (<http://www.mtroyal.ca/bed>). In the first two years of the program, students have a core education course each semester that meets once a week with a twenty- or thirty- hour field-placement. In the third and fourth years of the program, the students have extended field placements connected to program of studies courses and a capstone experience designed to integrate theory (of the coursework) and practice (of the field experiences). To facilitate opportunities for communication and reflection between the classroom and field-based learning experiences, the institution has adopted the use of *Google Applications* (<http://google.mtroyal.ca>): *Gmail* for communication; *Google Docs* (<http://tinyurl.com/bedjournal>) for reflective journaling; and *Google Sites* (<http://tinyurl.com/bedportfolio>) to construct a learning portfolio throughout the program.

This student-faculty research partnership study evaluates the effectiveness of the integration between the classroom and field-based learning experiences in this blended B.Ed. program from a student perspective, using the National Survey of Student Engagement (NSSE) framework (2011).

Theoretical Framework

The concept of student engagement has been discussed extensively in the educational research literature (Kuh et al., 2005). In 1998, the National Survey of Student Engagement (NSSE) was developed as a “lens to probe the quality of the student learning experience at American colleges and universities” (NSSE, 2011; p.3). The NSSE defines student engagement as the amount of time and effort that students put into their classroom studies that lead to experiences and outcomes that constitute student success, and the ways the institution allocates resources and organizes learning opportunities and services to induce students to participate in and benefit from such activities.

These conceptions of student engagement in higher education are grounded in several decades of prior research, and particularly in four key antecedents: Pace's (1980) "quality of effort" concept, Astin's (1984) theory of student involvement, Chickering and Gamson's (1999) principles of good practice in undergraduate education, and Pascarella and Terenzini's (2005) causal model of learning and cognitive development. Based on this research and a meta-analysis of the literature related to student engagement, the NSSE has identified five clusters of effective educational practice. These benchmarks are (NSSE, 2011):

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

These five clusters of effective educational practice have been used to guide this action research study.

Methods of Investigation

An action research approach was used to direct this study. Stringer (2013) indicates that action research is a reflective process of progressive problem solving led by individuals working with others in teams or as a part of a 'community of inquiry' to improve the way they address issues and solve problems. This research approach should result in some practical outcome related to the lives or work of the participants, which in this case is the ongoing redesign of an effective blended B.Ed. program through the use of Kuh et al.'s (2015) assessment cycle.

Data Collection

Data was collected from the first graduating cohort of students from the B.Ed. program in partnership with four Undergraduate Student Research Assistants (USRA). The students in this study completed online surveys and participated in focus groups at the end of their first and fourth years in the program. The questions were derived from the National Survey of Student Engagement (NSSE, 2011) and *SurveyMonkey* was used to facilitate the online survey process. The student participation rate in these online surveys is summarized in Table 1.

Table 1: Online survey response rates

End of first year	End of fourth year
March 2012	April 2015
85% (77 of 91)	88% (57 of 65)

Data analysis

A constant comparative approach was used to identify patterns, themes, and categories of analysis that “emerge out of the data rather than being imposed on them prior to data collection and analysis” (Patton, 1990; p.390). Descriptive statistics (e.g., frequencies, means, and standard deviations) were calculated for the online survey items using *MS Excel*. The additional comments and recommendations from the students were categorized in alignment with the five NSSE benchmarks in the *Google Document*.

Findings and Recommendations

The research findings and recommendations are summarized in relationship to each of the five NSSE benchmarks.

Student Interactions with Faculty Members

Students learn firsthand how experts think about and solve problems by interacting with faculty members inside and outside of the classroom. As a result, their teachers become role models, mentors, and guides for continuous, lifelong learning (Chickering & Gamson, 1999). One of the student participants commented in the fourth year online survey about the importance of “Having professors that were previously classroom teachers. I loved hearing their stories and experiences. I learned so much through personal stories” (Fourth year survey participant 17) and another student indicated “our Education professors modelled the qualities of exemplary teachers and responded to student need, tailoring the program to our feedback was amazing!” (Fourth year survey participant 33). Light (2001) highlights the importance of these previous sentiments, indicating that a close working relationship with at least one faculty member is the single most important factor in student success. A comparison of the first and fourth year online survey results suggest that students increased their frequency of communication with their teachers via email, as well as discussing grades or assignments, and working with faculty members on activities other than course work, outside of class time (Table 2).

Table 2: Student interactions with faculty members

Question	Student Response March 2012	Student Response April 2015
	Often/Very Often	Often/Very Often
Used e-mail to communicate with an instructor	92%	96%
Discussed grades or assignments with an instructor	49%	54%
Worked with faculty members on activities other than coursework (committees, orientation, student life activities, etc.)	11%	21%
Discussed ideas from your readings or classes with faculty members outside of class	25%	25%
Received prompt feedback from faculty on your academic performance (written or oral)	78%	48%
Talked about career plans with a faculty member or advisor	38%	25%
Worked on a research project with a faculty member outside of course or program requirements	24%	19%
	(plan to do in the future)	

Unfortunately, the graduating students perceived in their fourth year that they were not as frequently receiving prompt feedback from their teachers, talking about career plans with a faculty member or advisor, or working on research projects with faculty members outside of class time. For example, there were several comments about the lack of timely assessment feedback and clarity of assignments. “Assessment feedback for many classes was not timely. I often waited over a month for grades” (Fourth year survey participant 41). “Sometimes I think there were unrealistic expectations of assignments with little clarity of instruction. We often didn't receive marks and feedback until the very end of the semester” (Fourth year survey participant 27).

The study participants provided several recommendations for increasing the opportunities for education students to communicate and work with faculty members, outside of the classroom, on activities other than coursework. Students suggested that faculty and field placement mentors use web-based synchronous conferencing tools (e.g., Skype) to establish “virtual” office hours. Many of the students reside a great distance from campus and their field placements and they indicated that the use of these conferencing tools would allow them to have ‘real-time’ conversations from their homes.

Active and Collaborative Learning

Students learn more when they are intensely involved in their education and are asked to think about and apply what they are learning in different settings (Chickering & Ehrmann, 1996). Collaborating with others in solving problems or mastering difficult material prepares students to deal with the messy, unscripted problems they will encounter daily, both during and after university. In the April 2015 survey a number of participants identified how the institutional emphasis on small class sizes helped foster and promote an active and collaborative learning environment, “I enjoyed the small class sizes. I was able to collaboratively work with my peers and professors, which I believe enriched my learning experiences” (Fourth year survey participant 26). In addition, “I liked having small classes and the opportunity to do different types of projects instead of being limited to papers and exams” (Fourth year survey participant 14).

Both the first and fourth year survey results demonstrate a very high level of active and collaborative learning behaviours including an increase in frequency of class presentations, asking questions in class, as well as working with other students on projects during and outside of class time (Table 3).

Table 3: Active and collaborative learning

Question	Student Response March 2012	Student Response April 2015
	Often/Very Often	Often/Very Often
Make a class presentation	72%	91%
Work with other students on projects DURING class	70%	75%
Ask questions in class or contribute to class discussions	64%	84%
Work with classmates OUTSIDE of class to prepare class assignments	57%	70%
Tutor or teach other students (paid or voluntary)	22%	27%
Discuss ideas from your readings or classes with others outside of class (students, family members, co-workers, etc.)	60%	38%
Participate in a community-based project as part of a regular course	53%	20%

Conversely, Table 3 indicates that less than one-quarter of the students were involved in tutoring or peer mentoring activities, which are critical for the development of future teachers (Collings, Swanson, & Watkins, 2015). A formal course assignment was recently designed, which provides all second year Education students the opportunity to learn how to mentor first year students. This assignment was embedded in a second year educational technology course and focused on providing opportunities for second year students to learn how to design, facilitate, and assess peer mentoring support using digital technologies.

This peer mentoring assignment was implemented in the fall 2014 semester and it commenced with the second year teacher candidates providing support to the first year students through the initial creation of their program portfolios in *Google Sites* and journals in *Google Docs*. The plan is to create intentional peer mentoring opportunities through the use of social media applications for students in all four years of the program in order to create a peer teaching and learning circle.

Level of Academic Challenge

Challenging intellectual and creative work is central to student learning and collegiate quality. Universities promote high levels of student achievement by setting high expectations for student performance (Graham et al., 2001). The graduating students commented that they found the curriculum program of studies and their general education and elective courses to be of particular academic value: “I loved the practical skills, strategies, and tools I experienced in the curriculum studies courses because I could easily apply them to my practicum placements and keep them in a bank of resources to use in the future” (Fourth year survey participant 45) and “Integrating our minors and general education classes allowed me to explore different areas of interest more deeply” (Fourth year survey participant 8). A comparison of the first and fourth year survey results indicates that students were increasingly working harder than they thought they could to meet teachers’ standards and expectations and that the institution emphasized spending significant amounts of time studying and on academic work (Table 4).

Table 4: Level of academic challenge

Question	Student Response March 2012 Quite a bit/ Very much	Student Response April 2015 Quite a bit/ Very much
Worked harder than you thought you could to meet a teacher's standards or expectation	70%	82%
Institutional emphasis: Spending significant amounts of time studying and on academic work	85%	79%
Prepared two or more drafts of a paper or assignment before turning it in	43%	40%
Hours per 7-day week spent preparing for class (studying, reading, writing, doing homework or lab work, analyzing data, rehearsing, and other academic activities)	20% (More than 20 hours)	16% (More than 20 hours)
Working for pay off-campus	75% (More than 10 hours)	72% (More than 10 hours)

The higher education literature related to student engagement advises that students should be investing at least two hours of preparation time for every hour of in-class time (McCormick, 2011). Table 4 suggests that the Education students perceive they are actually spending less time on course preparation as they progress through the program. This can partially be attributed to the fact that the majority of graduating students (72% as illustrated in Table 4) also had part-time off-campus jobs while completing their studies.

Several recommendations were provided to overcome this deficiency in class preparation time. One recommendation was to make the homework assignments more practical in nature, requiring the students to be more engaged with inquiry-based learning projects in partnership with local schools, rather than on just reading and responding to textbook questions. The other suggestion was to increase the program focus on “teaching students on how to create long range unit plans” (Fourth year survey participant 29), “giving more attention to formative assessment strategies and resources” (Fourth year survey participant 11), “including more information about careers and the teaching systems throughout the 4 years of the program” (Fourth year survey participant 23), and “an increased focus on inclusive classrooms, we need to be comfortable with special needs” (Fourth year survey participant 51).

Enriching Educational Experiences

Educational research has demonstrated that complementary learning opportunities inside and outside of the classroom augment the academic program (Kuh, 2008). Experiencing diversity teaches students valuable things about themselves and other cultures. Internships, community service, and senior capstone courses provide students with opportunities to synthesize, integrate, and apply their knowledge. Such experiences make learning more meaningful and, ultimately, more useful because what students know becomes a part of who they are (e.g., developing their professional identity as teachers).

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In terms of enriching education experiences, the graduating students emphasized the first year volunteer placements, school tours, in-school seminars, and practicum placements were their highlights. “I enjoyed that we were able to get into the classroom right from year one, I think that this gave everyone a good idea of whether this was the right career path for them or not” and “I also enjoyed touring different schools in my first year” (Fourth year survey participant 36). “I really enjoyed the in-school seminars during my practicums as they provided us with a time each week for us to meet with our peers and discuss ideas and get support from each other” (Fourth year survey participant 29). They also indicated how important the *Google Doc* journal and *Google Site* portfolio were for “integrating my Mount Royal class and volunteer placement experiences and establishing a philosophy of education that I truly believe in” (Student Focus Group Participant 9).

Table 5 demonstrates a substantial level of participation in many high impact practices such as teaching practicums, the capstone course, and community service or volunteer work (Kuh, 2008).

Table 5: High impact practices

Which of the following do you plan to do and have done before you graduate from Mount Royal University?	Student Response March 2012 Plan to do	Student Response April 2015 Done
Volunteer school placement, teaching practicum	58%	100%
Culminating senior experience (capstone course, senior project or thesis, comprehensive exam, etc.)	23%	100%
Community service or volunteer work	38%	82%
Participate in a learning community or some other formal program where groups of students take two or more classes together	41%	67%
Coursework in a foreign or additional language	25%	26%
Work on a research project with a faculty member outside of course or program requirements	21%	19%
Independent study or self-designed major	12%	18%
Study abroad	35%	4%

Two areas of concern that are highlighted in Table 5 are related to student research and study abroad opportunities. The plan is to work with the Office of Research to develop an institutional undergraduate student research initiative, which has proved to be a challenge given the increasing emphasis on faculty research funding at the expense of student research support. In terms of increasing study abroad opportunities for the Education students', discussions have begun with our International Education Office to identify spring semester general education courses and alternative field placement experiences that are offered in other countries through international partnerships. In addition, the potential of developing an alternative spring break program is being investigated where students would be involved with community service projects in developing countries during the February reading week (e.g., University of Western Ontario, 2016).

Supportive Campus Environment

Students perform better and are more satisfied at universities that are committed to their success and cultivate positive working and social relations among different groups on campus (Chickering & Gamson, 1987). This NSSE benchmark asks students to rate the quality of their relationships with their peers, faculty members, and administrative personnel and offices. Table 6 illustrates that students perceive reasonably high quality relationships with their peers, but that relationships with faculty members and administrative personnel and offices have declined over the four years of the B.Ed. program.

Table 6: Quality of campus relationships

Quality: Your relationships with:	Student Response March 2012 (6 & 7 out of a 7 point scale)	Student Response April 2015 (6 & 7 out of a 7 point scale)
Other students	61% Friendly, supportive, sense of belonging	60% Friendly, supportive, sense of belonging
Faculty members	50% Available, helpful, sympathetic	35% Available, helpful, sympathetic
Administrative personnel and offices	25% Helpful, considerate, flexible	21% Helpful, considerate, flexible

In terms of peer relationships, the graduating students indicated again that “because the program is so small I was able to make a number of positive and professional relationships throughout the 4 years which will contribute to my career” (Fourth year survey participant 16) and “I really enjoyed the group of students we worked with over the four years. I felt like we were a community that focused on the relationships that we built. I see this transfer at my practicum school I’m at every day. How important strong relationships are” (Fourth year survey participant 21).

With regards to faculty relationships, the fourth year students again had a number of positive comments such as “the relationships I’ve built with the professors and faculty have been so meaningful and had a really positive impact on my experience” (Fourth year survey participant 44). However, the graduating students expressed several concerns regarding program organization “I did not really enjoy being the “newbies” in the program as things at times were rather unorganized, I also didn’t feel at times that the classes and faculty members were consistent with offering the same opportunities for us and also instructing the same content” (Fourth year survey participant 25). Comments like these had also been made by the students in their first year “as this is a new program I understand that it is all not mapped out yet and at times my questions were not as clearly answered as I would have liked” (First year focus group participant 7).

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In order to overcome these challenges, the graduating students recommended asking “for student input when designing and creating changes in the program!!!” (Fourth year survey participant 16). They also emphasized the importance of developing a student “road map” for the program similar to what Queen’s University (2016) has done for their concurrent B.Ed. degree.

Table 6 also indicates that the graduating students perceive a declining quality in their relationships with administrative personnel and offices at the university. This could partially be attributed to the fact that over the past four years, the institution has undergone a series of budget cuts, which has led to a reduction in support staff and services. One student commented that she “was very fortunate to have an amazing academic strategist who helped me survive the education program in one piece” (Fourth year survey participant 3). Recently, the B.Ed. program has hired a dedicated part-time academic advisor and a new full-time field experience coordinator, which will improve the quality of administrative support for students in the B.Ed. program.

In addition, the university acknowledges “that support staffing levels in academic departments and faculties have not kept pace with recent growth in size and complexity” and thus we are “investigating ways to make procedures and practices more efficient” (Mount Royal University, 2012; p.15). Recently, the institution has implemented a web-based application entitled *mruGradU8* (<http://www.mtroyal.ca/mruGradU8/>), which allows students to track their program progress by reviewing their academic history and identifying course requirements that they still need to complete to graduate.

Conclusion

Over the past decade, there has been an increased focus on student engagement in higher education because of rising tuition costs and concerns about student success and retention rates (Kuh et al., 2005). This student-faculty research participant study has demonstrated how digital technologies can be used to increase student engagement and success in a blended Bachelor of Education program through the use of the NSSE evaluation framework. For example, student and faculty interactions, outside of the classroom, can be enhanced through the use of web-based conferencing tools to support “virtual” office hours. Course assignments that incorporate peer mentoring activities through the use of social media applications can provide richer opportunities for active and collaborative learning. More intentional theory into practice connections between academic coursework and field placements can be created through the use of *Google* applications. Enriching educational experiences can be expanded through the use of social media applications to promote and communicate student led academic and social events. In addition, a supportive campus environment can be improved by the development of a digital ‘road map’ and co-curricular record for the program.

This research study has also illustrated the importance of student and faculty collaboration in the evaluation process for an undergraduate degree program. As the African proverb suggests

“it takes a village to raise a child” to which Saint-Jacques (2013) adds “that a shift toward a ‘we-learning’ conceptualization of education” will benefit us all (p.34).

References

1. Allen, I. E., & Seaman, J. (2016). *Online Report Card – Tracking Online Education in the United States*. Babson Survey Research Group, Online Learning Consortium. Retrieved from <http://onlinelearningconsortium.org/read/online-report-card-tracking-online-education-united-states-2015>
2. Arabasz, P., Boggs, R., & Baker, M. B. (2003). Highlights of e-learning support practices. *Educause Center for Applied Research Bulletin*, 9.
3. Astin, A. (1984). Student involvement: A developmental theory for higher education. *Journal of College Student Personnel*, July, 297-308.
4. Bleed, R. (2001). A hybrid campus for a new millennium. *Educause Review*, 36(1), 16-24.
5. Chickering, A. W., & Ehrmann, S.E. (1996). Implementing the seven principles: Technology as lever. *American Association of Higher Education (AAHE – October)*, 3-6.
6. Chickering, A. W. & Gamson, Z. F. (1987). Seven principles for good practice in undergraduate education. *American Association of Higher Education Bulletin*, 39(7), 3-7.
7. Chickering, A. W. & Gamson, Z. F. (1999). Development and adaptations of the seven principles for good practice in undergraduate education. *New Directions for Teaching & Learning*, 80, 75-82.
8. Collings, R., Swanson, V., & Watkins, R. (2015). Peer mentoring during the transition to university: Assessing the usage of a formal scheme within the UK. *Studies in Higher Education*, March, 1-6. Retrieved from <http://dx.doi.org/10.1080/03075079.2015.1007939>
9. Dziuban, C. D., & Moskal, P. D. (2013). Blended learning: A dangerous idea? *Internet and Higher Education*, 18, 15-23.
10. Garrison, D. R., & Vaughan, N. D. (2008). *Blended learning in higher education*. San Francisco: Jossey-Bass.
11. Graham, C., Cagiltay, K., Lim, B., Craner, J., & Duffy, T. (2001). Seven principles of effective teaching: A practical lens for evaluating online courses. *The Technology Source (March): A Publication of The Michigan Virtual University*.
12. Kuh, G. D. & Associates (2015). *Using evidence of student learning to improve higher education*. San Francisco: Jossey-Bass.
13. Kuh, G. D. (2008). *High impact educational practices: what they are, who has access to them, and why they matter*. Washington: Association of American Colleges and Universities.
14. Kuh, G. D., Kinzie, J., Schuh, J. H., Whitt, E. J., & Associates (2005). *Student success in college: Creating conditions that matter*. San Francisco: Jossey-Bass.

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15. Light, R. J. (2001). *Making the most of college: Students speak their minds*. Boston: Harvard University Press.
16. Littlejohn, A., & Pegler, C. (2007). *Preparing for blended e-Learning: Understanding blended and online learning* (Connecting with E-learning). London: Routledge.
17. McCormick, A. C. (2011). It's about time: What to make of reported declines in how much college students study. *Liberal Education*, 97(1). Retrieved from <https://www.aacu.org/publications-research/periodicals/its-about-time-what-make-reported-declines-how-much-college>
18. Mount Royal University (2012). *Inspiring learning: Academic plan 2012-2017*. Retrieved from http://www.mtroyal.ca/wcm/groups/public/documents/pdf/academic_plan.pdf
19. National Survey of Student Engagement (2011). *Fostering student engagement campus wide- annual report 2011*. Bloomington, IN: Center for Postsecondary Research.
20. Norberg, A., Dziuban, C. D., & Moskal, P. D. (2011). A time-based blended learning model. *On the Horizon*, 19(3), 207-216.
21. Pace, C. (1980). Measuring the quality of student effort. *Current Issues in Higher Education*, 2, 10-16.
22. Pascarella, E., & Terenzini, P. (2005). *How College Affects Students: A Third Decade of Research* (2nd ed.). Jossey-Bass: San Francisco.
23. Patton, M. Q. (1990). *Qualitative evaluation and research methods* (2nd ed.). Newbury Park, CA: Sage Publications.
24. Queen's University (2016). *Concurrent education map*. Retrieved from <http://www.careers.queensu.ca/sites/webpublish.queensu.ca.cswww/files/files/Major%20Maps/Web%20version/Education%20Major%20Map%20WEB.pdf>
25. Saint-Jacques, A. (2013). Effective teaching practices to foster vibrant communities of inquiry in synchronous online learning. In Z. Akyol, & D. Garrison (Eds.), *Educational Communities of Inquiry: Theoretical Framework, Research and Practice* (pp. 84-108). Hershey, PA: Information Science.
26. Sharpe, R., Benfield, G., Roberts, G., & Francis, R. (2006). *The undergraduate experience of blended e-learning: A review of UK literature and practice*. London: Higher Education Academy. Retrieved from http://www.heacademy.ac.uk/resources/detail/teachingandresearch/Undergraduate_Experience
27. Stringer, E. T. (2013). *Action research* (3rd ed.). Thousand Oaks, CA: Sage Publications.
28. University of Western Ontario (2016). *Alternative spring break*. Retrieved from <http://www.asb.uwo.ca>
29. Williams, J. (2003). Blending into the Background. *E-Learning Age Magazine*, 1.