Student Engagement: Perspectives Within a Canadian University
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From the Series Editor

About This Publication

Since 1980, New Directions for Teaching and Learning (NDTL) has brought a unique blend of theory, research, and practice to leaders in postsecondary education. NDTL sourcebooks strive not only for solid substance but also for timeliness, compactness, and accessibility.

The series has four goals: to inform readers about current and future directions in teaching and learning in postsecondary education, to illuminate the context that shapes these new directions, to illustrate these new directions through examples from real settings, and to propose ways in which these new directions can be incorporated into still other settings. This publication reflects the view that teaching deserves respect as a high form of scholarship. We believe that significant scholarship is conducted not only by researchers who report results of empirical investigations but also by practitioners who share disciplinary reflections about teaching.

Contributors to NDTL approach questions of teaching and learning as seriously as they approach substantive questions in their own disciplines, and they deal not only with pedagogical issues but also with the intellectual and social context in which these issues arise. Authors deal on the one hand with theory and research and on the other with practice, and they translate from research and theory to practice and back again.

About This Volume

This volume focuses on evidence-based learning in higher education. Many have seen the increasing public discussions about colleges and universities, but much of the focus is on costs, policies, and accreditation. What often gets lost in the public commentary is meaningful discussions about learning and what students in higher education are actually gaining as they go through our educational programs. The articles in this issue help to identify how we can build evidence-based practices that can be used to guide the public discussions so that student learning remains the focus of what we do.

Catherine M. Wehlburg
Editor-in-Chief

Catherine M. Wehlburg is Provost and Vice President for Academic Affairs at Athens State University.
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Editors’ notes

Despite lacking a universal definition, student engagement has for decades been considered an important aspect of the learning experience by institutions and scholars (Grocchia 2018), and “the term student engagement has been increasingly prominent in US higher education as an indicator of student and institutional success and quality.” (Grocchia 2018, 11). Concluding a recent publication on student engagement, Buskist and Grocchia (2018) point out that “because effective student engagement occurs across different campus and community levels, there is a need for effective communication among students, faculty, staff, administrators, and community agency personnel to develop a fully integrated approach to ensuring successful student engagement” (110). There is a need for further research on student engagement, and that individual faculty members must consider current approaches through reflection on practice, examination of literature, and dialogue with campus colleagues (in particular their students). The integration of “students as partners” has been increasingly discussed in the scholarly sphere (e.g., Mercer-Mapstone et al. 2017); however, accounts of practice are fairly recent. Several of the articles in this issue highlight experiences of students as partners in learning, mentorship, and instruction, arguably one of the most compelling forms of student engagement.

In this special issue, an informal case study of a Canadian institution outlines how student engagement manifests itself at different institutional levels and within its diverse communities. The case study involves the University of Ottawa, a bilingual research-intensive university with over 40,000 students, one of whose top priorities in its strategic plan is academic success and student engagement. The questions addressed in this case study include:

- What does student engagement mean for this institution?
- What does student engagement look like across disciplines and levels of study?
- What are the facilitators and inhibitors of student engagement?
- How are diverse campus partners contributing to student engagement?

Given the topic of this special issue it must include students’ multiple perspectives. As such, each article, from those addressing theory and frameworks to those examining the realities of the classroom or learning environments, includes a multiplicity of student voices. When these articles were written, of the 26 authors, 20 were student scholars themselves. Not only is this issue addressing varied themes regarding student engagement, but it is also itself a product of that engagement.

ACKNOWLEDGMENTS

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Effective student engagement strategies: A crucial alignment for sustainable, quality learning

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Abstract
This introductory article provides a comprehensive overview of student engagement by reviewing student engagement conceptions and aspects influencing student engagement. The article concludes by highlighting considerations for student engagement and technology-facilitated education.

INTRODUCTION

Student engagement is not a precisely defined phenomenon and the complexity of student engagement has been noted in various definitions. As the National Survey of Student Engagement (NSSE) explains,

Measured against strict scholarly standards of theory construction, student engagement is untidy as a theoretical construct. It lacks precision and parsimony; encompasses behaviors, perceptions, and environmental factors; and merges related yet distinct theoretical traditions with a collection of research-informed good practices. But student engagement was not conceptualized to advance theory or even to generate testable propositions—although it can be used for those purposes. Rather, the focus on student engagement emerged from the concerns of practice. (NSSE, 2013a)

What is also complex is the interplay of organizational stakeholders who aim for -or at least profess interest in- engaged students. To understand this complexity, this article provides an overview of the literature examining student engagement and discusses different ways that student engagement can be -and has been- conceived. Through grounding this research, aspects of this literature will be used to provide an examination of cases on student engagement at the University of Ottawa in the subsequent articles.
BACKGROUND TO STUDENT ENGAGEMENT

Much like universities in OECD countries, Canadian universities witnessed an increasing social demand for greater accountability and transparency in the management and delivery of higher-education programs beginning in the early 2000s (Finnie & Usher, 2005). Measuring the quality of the education and learning experiences delivered in these institutions was at the time, and remains, at the heart of Canadian institutional and government concerns (Finnie & Usher, 2005; Liu, 2015; Rae, 2005; Weingarten et al., 2019). For the past two decades, many post-secondary institutions have turned toward the NSSE (Ewell & McCormick, 2020). This survey, which was piloted in 1999 with 75 American universities and colleges (Kuh, 2001a, 2001b; NSSE, 2000, 2001, 2002), focuses on engagement and the quality of the students’ learning experience. The survey ultimately intended to examine the educational efficacy of post-secondary institutions in relation to student success (Ewell & McCormick, 2020).

Today, more than 1,600 postsecondary institutions throughout North America, including an average of 75 Canadian universities, have used the survey as a tool to improve their teaching politics and procedures (NSSE 2019). According to the authors of the NSSE, the questionnaire enables its users to reframe the discussion and focus on the quality of the post-secondary experience and student engagement instead of on the resources and reputation of post-secondary institutions. Based on a review of the literature from the past 30 years focusing on effective practices supporting students’ postsecondary learning in the United States, and using existing assessment tools such as Pace’s (1982, 1992) College Student Experience Questionnaire (CSEQ), the survey measures the quality of student engagement in relation to their active participation in activities inside the classroom (frequency of student-faculty interactions, number of books read, assignments and group projects completed, etc.) and outside the classroom. The survey initially used five benchmarks related to the learning experience, but recently expanded these into 10 engagement indicators as they relate to four broad themes (NSSE, 2013a). Of these themes, the first, Academic Challenge measures engagement indicators through high-order learning, reflective and integrative learning, learning strategies, and quantitative reasoning. Secondly, Learning with Peers considers students’ collaborative learning and discussions with diverse learners. Experiences with Faculty addresses student-faculty interactions and effective teaching practices. And lastly, Campus Environment assesses the quality of campus interactions as well as institutions’ supportive environment for learning.

A MULTIDIMENSIONAL DEFINITION OF ENGAGEMENT

In reviewing student engagement research, Trowler (2010, 9) notes that there is a “mixed bag” of research with different understandings of what student engagement is, and various levels of analysis and complexity. Trowler describes the literature as predominantly normative (uncritically supportive), with rigorous methodologies published in highly regarded journals comprising a small share of the overall writing to date. She points out that “many articles, conference papers and chapters on student engagement do not contain explicit definitions of engagement, making the (erroneous) assumption that their understanding is a shared, universal one. In addition, studies tend to measure that which is measurable, leading to a diversity of unstated proxies for engagement recurring in the literature, and a wide range of exactly what is being engaged with under the mantle of student engagement” (Trowler, 2010, 17). Groccia (2018, 13) also notes the “many forms” that student engagement can take, as it evolves over time.
However, the theory that student engagement and academic success are closely linked has garnered consensus among several authors (Appleton et al., 2006; Bowden et al., 2019; Dunleavy & Milton, 2010; Kahu & Nelson, 2018; Korobova & Starobin, 2015; Soffer & Cohen, 2019; Zepke & Leach, 2010). Despite the lack of a universal definition, Trowler and Trowler (2010, 9) explain that, “studies have consistently shown correlations between engagement and improvements in specific desirable outcomes.” Although the measured participation in the NSSE, which was translated and quantified in terms of behaviours and cognitive learning activities implemented by professors constitutes an undeniable element of engagement, less visible dimensions of engagement, both affective and meta-cognitive, and those reflecting students’ perceptions, also need to be considered (See Table 1). Miller (1977), who was the first to apply the notion of engagement in a university setting, suggests a definition that includes three complex and interrelated aspects; affective (motivation, intention), behavioural (time management, study methods), and socio-relational.

Finn (1989) presents a developmental model that describes engagement as being complex and something that must be defined in behavioural terms (i.e., the level of student participation in the classroom and academic activities) and emotional terms (i.e., the sense of belonging and the importance placed on school). Pirot and De Ketele’s (2000) definition of engagement comprises several types of mobilizations: affective mobilization (the origin and driving force of an action, the desire to learn, aspirations, attitudes and perceptions of self and the learning environment); conative mobilization (students’ physical and mental investment in their learning); cognitive mobilization (students’ intellectual efforts toward their learning) and finally, the meta-cognitive mobilization (awareness and regulation of their learning efforts). These authors believe that the quality of activities, as opposed to the quantity, is a key factor in academic success. For this reason, their definition of engagement considers the amount of time in which the student is actively and deeply engaged in their learning rather than just the amount of time devoted to academic activities. Appleton, Christenson, Kim and Reschly (2006) present a similar taxonomy which includes four subtypes of engagement: academic (time invested in assignments, number of credits obtained); behavioural (attendance, participation in class and in extracurricular activities); cognitive (self-regulation, perception of the relevance of the learning, value placed on education); and psychological (sense of belonging, relationships with students and faculty). Fredricks, Blumenfeld, and Paris (2004) suggest a model divided into interrelated categories that also include behavioural aspects (actions and involvement in academic, social or extracurricular activities), emotional (interests, values, positive and negative affective reactions to peers, faculty and academic activities), and cognitive (willingness to do the necessary reflection to grasp complex ideas and master difficult tasks). This model is also suggested by Brault-Labbé and Dubé (2008, 731) for whom engagement “is a psychological process resulting from the interaction of three forces […] behavioural force [perseverance], motivational force [catalyst for engagement] and cognitive force [ability to accept and overcome difficulties].” Along these same lines, Dunleavy and Milton's (2010) engagement model included three interrelated aspects (social, academic and intellectual) which mainly consist of the various components listed above. For them, although social engagement (participating in student life) and academic engagement (participating in academic tasks) are essential, intellectual engagement, where students psychologically and cognitively invest in their learning experience, is an integral part of the engagement model.

Although many approaches to understanding student engagement blend into one another, Kahu (2013) identified four distinct perspectives in the literature; namely: 1) behavioural; 2) psychological; 3) socio-cultural; and, 4) holistic. However, Kahu acknowledges these four perspectives do not fully address student engagement. Accordingly, Kahu
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EFFECTIVE STUDENT ENGAGEMENT STRATEGIES

FIGURE 1  Refined conceptual framework of student engagement incorporating the educational interface (Kahu & Nelson, 2018, 64). Reproduced with permission

(2013, 765) developed a conceptual framework integrating various sociocultural influences, which “separates the antecedents and consequences of engagement from the psychological state of being engaged.” This conceptual framework interrelates the structural and psychosocial influences, as well as the proximal and distant consequences as they relate to student engagement. As indicated by the literature, Kahu’s conceptualization of student engagement includes the affective, cognitive, and behavioural dynamics to understand student engagement. Kahu’s (2013, 766) framework depicts, “the complex array of factors influencing a student’s engagement... by embedding these phenomena and processes within the wider socio-cultural context.” A refined version of the framework (Figure 1) emphasizes the critical importance of better understanding how individual and institutional factors interact so that educators and researchers can target specific areas to increase student engagement and success (Kahu & Nelson, 2018). At the core of this expanded framework is the integration of an educational interface, driven by four “mediation mechanisms” (Kahu & Nelson, 2018, 64): self-efficacy; emotions; belonging; and well-being. “The interface is the place where students live and learn in higher education (Nakata 2007); their experience is influenced not only by their background, skills and motivations, but also by the institutional and wider context. […] It is within this micro-context, when institutional and student factors align, that individual student engagement occurs.” (Kahu & Nelson, 2018, 63). However, it is also important to note that each aspect of the conceptual framework can influence one another and ultimately improve or reduce student engagement.

Wimpenny and Savin-Baden (2012) note that while quantitative studies predominate in student engagement scholarship, there are rigorous qualitative publications as well. They synthesized nine qualitative studies that satisfied their quality criteria and found that the studies, “highlighted identity shifts, and stages of transition from ‘new comer’ to students filtering information and (strategically) regulating their actions in light of the conditions and power structures within which they viewed themselves as operating” (Wimpenny & Savin-Baden, 2012, 319). Importantly, they also found the literature indicated that educators’ teaching styles and approaches affected student engagement as students could feel alienated by educators. In addition, student engagement seemed to encompass an emotional connection to learning whereby students persevered in their learning despite the challenges, while challenges also provoked a sense of cynicism and unfairness for other students. However, they (2012, 322) note the literature suggested that “connecting with peers and mentors and expectations of academic study supported engagement and tended to reduce disjunction.” Indeed, as Wimpenny and Savin-Baden do acknowledge, student
persistence remains an area to be further explored and understood. Thus, engagement is a complex construct and comprises several components (social, academic, cognitive, meta-cognitive and affective) including mobilization which is, among others, dependent on a stimulating learning environment that enables students to mobilize their internal resources (Zyngier, 2008).

ENGLISHING STRATEGIES

If we revisit Dunleavy and Milton's (2010, 5) three-dimensional model, intellectual engagement, in the authors' point of view, leads to in-depth and sustainable learning, develops when students, “work on assignments that are relevant, interesting and linked to their aspirations; when they do authentic, stimulating, highly conceptual, social and collaborative work; when students’ ideas are valued” and when relationships with their peers, as with the faculty, are enriched by positive feedback and meaningful collaboration. A vital element in this notion of engagement is the relationship with the adults in the institution, whether it be for students in high school, college or university. In their evaluations, students often highlight empathy, respect, generosity, reciprocity with their professors and with the administration as essential qualities of a favourable environment where they can feel fully and positively engaged in their studies.

According to these authors, teaching strategies that foster effective and in-depth learning include problem-solving strategies, contextualizing learning and expertise to make it relevant, working on real-life issues that can make a difference, and engaging in collaborative projects with peers and communities, such as experiential learning opportunities through community engagement strategies. Referred to as “high-impact practices”, students become involved in community engagement learning activities through service learning, learning communities, conducting research with faculty, pursuing internships/field experiences, and studying abroad (NSSE, 2013b). Culminating senior experiences are also high impact practices, which can comprise of senior courses and capstone activities such as senior research projects and comprehensive examinations. These strategies also allow students to recognize the connections between the different topics being studied and, consequently, develop a pluridisciplinary and interdisciplinary vision of their learning and encourage them to seek out relevant expertise.

CONSONANCE/DISSONANCE AND COHERENCE/INCOHERENCE BETWEEN TEACHING AND LEARNING PERCEPTIONS AND APPROACHES

It is valuable to examine the quality of the learning experience and academic engagement using the notion of consonance/dissonance and coherence/incoherence between teaching and learning perceptions and approaches, as originally presented by Prosser and Trigwell (1999) and later by Prosser et al. (2003).

More recently Prosser and Trigwell (2014) examined the teaching and learning approaches used in large first year university classes to assess large class teaching and learning. This was accomplished by exploring students’ approaches to learning in large classes as related to professors’ approaches to teaching as well how professors perceive their teaching context and the relationship connecting these variables. The researchers used surveys involving over 8,000 students and 400 professors across 50 large first-year universities in Australia. Prosser and Trigwell (2014, 791) found that “students are more
likely to adopt surface approaches to study if their teachers are adopting less of conceptual change and student-focused approach to teaching, and [instead] ... adopting more information transmission and teacher-focused approaches to teaching.”

In a study conducted among 215 Finnish civil engineering students, Salmisto et al. (2017) examined the relationship between students’ learning approaches (deep/surface learning and organized/disorganized studying), perceptions of the teaching-learning environment (interest & relevance; alignment; support from other students; constructive feedback; teaching for understanding), and their study success. Through distributing a questionnaire measuring students’ learning approaches and their teaching-learning environment perceptions, as well as collecting credits-earned/GPA data, the researchers were able to investigate the relationship as it relates to student achievement. A cluster analysis based upon the respondents’ learning approaches helped identify four clusters of students; these were: 1) unorganized students (time management issues, lack of self-regulation) applying a deep approach to learning; 2) students applying a surface approach to learning; 3) organized students applying a deep approach to learning; and, 4) organized students. Statistical analysis showed that students’ perceptions of their teaching-learning environment significantly differed between the student clusters. The researchers also found that statistically significant differences existed between credits-earned/GPA and student clusters. Unsurprisingly, organized students applying a deep approach to learning held the most credits and attained highest GPAs. Unorganized students applying a deep approach to learning had the least earned credits, while students applying a surface approach to learning had the lowest GPAs. Furthermore, the researchers found that students who apply a deep approach to learning also view their learning environment more positively than other students. These findings are important as they indicate the importance of educators aligning their instruction and assessments along activities that support and encourage deep learning and organized studying.

LEARNING AND TEACHING STRATEGIES: CONGRUENCE OR FRICITION

According to Vermunt and Donche (2017), student learning encompasses four interrelated categories: cognitive processing strategies (processing subject matter that leads to knowledge acquisition and skill development); metacognitive conceptions of learning (students’ perceptions and beliefs about teaching and learning); metacognitive regulation strategies (students’ planning, self-monitoring, directing, and self-evaluating cognitive learning processes); and, motivational-affective orientations (students’ learning objectives, motivations, and concerns for their studies). In their influential study exploring theories of learning and teaching, Vermunt and Verloop (1999) originally conceived student learning as three categories (cognitive, affective, and metacognition), but Vermunt and Donche (2017) separated metacognition activities into two interrelated components. This new learning pattern model has been supported elsewhere (see Gulpinar, 2014; Law & Meyer, 2011). Although not directly linked to learning objectives, these last two activities have an important impact on the learning process and, as such, the quality of the knowledge acquired. They also are directly connected to affective, psychological, emotional, motivation and intellectual aspects of engagement (see Table 1). These cognitive activities include students’ mental processes for connecting, structuring, comparing and organizing various parts of information, then analyzing and applying knowledge to real-life situations, assessing, prioritizing, synthesizing, etc. Activities connected to the affective aspect of learning allow students to motivate themselves by establishing their objectives or challenges and identifying course expectations and learning goals; to focus their efforts on managing their
time or their frustrations effectively; to persist when faced with a difficult task; to evaluate the relevance of a task; and to manage their emotions in order to generate, maintain or regain their well-being and the confidence in their learning journey. For example, in their study examining affective states of 28 undergraduate students, D’Mello and Graesser (2012, 154–155) showed how students oscillate between engagement, confusion, boredom, and frustration during learning. While all affective states impact the learning process, the researchers noted that confusion is extremely valuable for learning because students “will have to stop, think, reason, and be active problem solvers.” As students actively navigate their confused state, they can overcome the confusion and shift into an engaged state of learning, or detrimentally encounter another impasse leading to frustration and boredom. In these two latter circumstances, achieving learning goals are jeopardized.

Also, metacognitive, or reflective self-regulation activities, are linked to controlling both their cognitive and affective learning process (Vermunt & Donche, 2017). These activities enable students to assess their learning environment and process better, to think about the learning objectives and tasks, and allowing them to act accordingly to improve their learning process. For example, these activities could include processes of planning, diagnosing, monitoring, self-assessing, redefining objectives, and reflecting upon learning. In reviewing the literature related to metacognitive regulation strategies, Zusho (2017, 308) explained that “students who actively regulate their cognition, motivation, behaviour, and context are more likely to achieve academic success.” This review supported Dent and Koenka’s (2016) earlier findings from their meta-analysis of self-regulated learning research whereby the researchers determined that metacognitive processes are strongly correlated with student achievement. Such indications were empirically corroborated by Bol et al. (2016) in their study examining the relationship between self-regulation strategies and metacognition with student performance in college math courses. The researchers divided 116 college students into a control group and a self-regulated treatment group, which required the latter group to use self-regulation strategies of goal setting, self-monitoring, self-reflection, and time management throughout their developmental math courses. Impressively, when assessing final math exam scores, most students from the self-regulation strategies group scored above the final exam average compared to the control group who scored below the final exam average. These findings supported Bol and Garner’s (2011) results, in which students with lower self-regulating skills tended to be less successful academically.

When examining the teacher’s perspective, Vermunt and Verloop (1999) found these same categories of activities (cognitive, affective and metacognitive) translated into teaching strategies that are essential for fostering quality learning. Hence, these activities facilitate the processing of information and fulfill affective and regulative functions. Based on the teacher’s approach and their perception of the context, these activities can be entirely teacher-led and managed, or requested/initiated by the student who is partially responsible for initiating and completing specific tasks or – at the other end of the continuum – tasks can be student-led in their entirety. Student-led activities allow teachers to assume, from the beginning, that the student will adopt reflective, self-regulating attitudes and behaviours, as well as motivate themselves and maintain their well-being during the learning experience (Table 2).

However an instructor’s teaching strategies and a student’s learning strategies are not always compatible, and this dissonance can harm the quality of the learning experience and limit student engagement. Vermunt and Verloop (1999) discuss the concept of congruence when the strategies exercised by both parties are compatible, and the constructive or destructive frictions that surface when strategies are incompatible (Table 3). Constructive frictions represent different styles of teaching and learning that place the student in
TABLE 2  Learning functions and teaching activities

<table>
<thead>
<tr>
<th>Learning functions</th>
<th>Teacher-lead learning</th>
<th>Shared</th>
<th>Student-lead learning</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive</td>
<td>Presents Explains</td>
<td>Asks Questions</td>
<td>Organizes Associates</td>
</tr>
<tr>
<td>Affective</td>
<td>Demonstrates Identifies</td>
<td>Asks students to analyze</td>
<td>Analyzes Applies</td>
</tr>
<tr>
<td>Meta-cognitive</td>
<td>Observes Administers</td>
<td>Stimulates Encourages Activates Guides</td>
<td>Motivates (self) Sets goals Manages emotions (self) Self-evaluates</td>
</tr>
</tbody>
</table>

TABLE 3  The connection between three levels of control exercised by the teacher and three levels of control exercised by the student on the learning process (Vermunt & Verloop, 1999, 270)

<table>
<thead>
<tr>
<th>The degree of control that students have on the learning process</th>
<th>The degree of control that teachers have on the learning process</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Destructive friction</td>
</tr>
<tr>
<td>Intermediate</td>
<td>Destructive friction</td>
</tr>
<tr>
<td>Low</td>
<td>Congruence</td>
</tr>
</tbody>
</table>

an environment where they can develop new skills or a new attitude toward their learning, whereas destructive friction causes a decrease in learning or thinking skills. In that respect, one could say that congruence exists when a teacher uses highly explicit instruction, for example, and can assist a struggling student in making the connection between two theories. However, in continuing to use such a rigid style of instruction, a teacher can impede a student’s ability to develop their strategies and, gradually, become an autonomous learner.

Both students and teachers are the vital contributors to the learning process, however students and teachers may perceive their learning environment differently (Den Brok et al., 2006). Accordingly, Könings et al. (2014) applied Vermunt and Verloop’s (1999) concept of congruence and friction to examine both students’ and educators’ perceptions of their learning environment to identify profiles of difference between the perceptions. Using a sample of 994 students and 136 teachers, the researchers developed subgroups to describe patterns between different learning characteristics and conceptions of teaching. The researchers found that most students had differing perceptions of the learning environment compared to their teachers. Overall, 11% of students were grouped in a distal profile, while 59% of students were categorized as an intermediate profile—indicating a significantly sharp difference between students’ perceptions and teachers perceptions. According to Könings et al. (2014, 25), this high figure indicates that the majority of students have more “motivational and affective problems, have less constructivist conceptions of learning, and additionally perform worse.” Conversely, teachers grouped as idealistic perceived the learning environment as more positive than students on all measured scales, while the other profile, adaptive, represented 30% of teachers whose perceptions were slightly more congruent with students’ perceptions. Because of the distinction between student and teacher perceptions, the researchers explain that distal students may especially be at high risk of destructive friction if taught by idealistic educators, while
intermediate students may still be at serious risk of destructive friction. They also introduced the term ‘destructive congruence’ whereby the perceptual differences between students and teachers are too small to enable a challenging and collaboratively productive learning environment—thus limiting the potential for student learning. This study stressed the importance of understanding students’ perceptions and comparing these to teachers’ perceptions as doing so can potentially remedy friction and enable greater learning success. Indeed, these findings support Mancuso et al. (2010, 33) notion of the “misunderstanding factor,” wherein differences in evaluating learning experiences can compromise learning and student engagement; consequently hindering students’ academic success.

**STUDENT ENGAGEMENT AND INFORMATION AND COMMUNICATIONS TECHNOLOGY**

Information and communications technology (ICT) is increasingly affecting teaching and learning, and its reliance, especially with the entrenchment of distance/online learning, necessitates the importance of examining the relationship between student engagement and ICT. Indeed, the COVID-19 pandemic has centralized technology as a vital aspect of teaching and learning. However, how does ICT impact student engagement? Selwyn (2016) explored Australian university students’ sense of disengagement as a result of ICT and found that students’ report disengagement as emerging from technology as being a distraction, disruption, difficult, and detrimental to the quality of learning. Bergdahl et al. (2020) found that students who are generally engaged in traditional learning environments are more likely to be engaged when learning via ICT and that students with high digital skills were more likely to be engaged in ICT-facilitated learning. Interestingly, there was no significant difference of disengagement between students’ with low or high digital skills. Therefore, the researchers note that while motivating students to learn is imperative, ensuring that students have capable digital skills enables a more engaged student body. This insight could also explain why Junco et al. (2011) found that using Twitter for learning enabled greater student engagement—the presumption being that students are typically more capable of using social media platforms.

However, recognizing consonance/dissonance between students and teachers approaches and perceptions of online learning may bridge gaps between engaged and disengaged students. To understand the rapid transition to university online learning in light of the COVID-19 outbreak, Mishra et al. (in Press) examined teaching-learning modes used, students’ and teachers’ perceptions of teaching and learning during the pandemic, and affiliated challenges experienced by students and teachers while transitioning to online learning. The findings showed that the university’s learning-management system, WhatsApp and Telegram messaging software, and emailing were the most commonly used modes of online teaching, while the latter two were the most prevalent for student learning modes. YouTube and Facebook streaming were the least used as a teaching mode, while videoconferencing software such as Zoom, Google Meets, Skype, etc. were the least used student learning modes. Mishra et al. (in Press, 5) found the majority of teachers admitted they would feel more motivated about online teaching “only if they can be convinced that the online method of teaching has more advantage.” Teachers also felt that the university should provide more educational resources and professional development. Lastly, methods to motivate students, collaborate, and team teach were the most important elements of teaching online. Conversely, some students felt that learning via computers and other digital apparatuses, could be uninteresting and consequently reported the necessity of developing better listening skills early on in the transition phase. Students appreciated
EFFECTIVE STUDENT ENGAGEMENT STRATEGIES

teachers uploading videos as these allowed students to return to course learning to ensure they have received all proper content. This perceived advantage likely explains the finding that students felt it difficult to pace their learning with that of the teachers’ instruction. Ultimately, students felt that learning should be a personalized experience. Understandably, the most cited challenge of online learning referred to technological issues, notably unstable network connections while teachers also reported the lack of meaningful interaction and limited range of teaching methods to be the most significant challenges of teaching online.

CONCLUSION

Since Miller (1977) first examined student engagement at the university level, many conceptualizations and frameworks have been developed in order to more fully understand the complexity of student engagement. These understandings have addressed the behavioural, affective, cognitive, socio-relational, metacognitive, emotional, psychological, and sociocultural influences. Notably, it appears that the notions of dissonance in learning and teaching strategies and friction between student and teacher conceptions could help explain the challenges individual students encounter with their learning. Studies also showed that contrary to a teacher’s natural tendency to “think” for their students, teachers should first, while trying to better understand their students’ perceptions of the learning environments and strategies, rethink their teaching methods in a way that transfers the responsibility for learning onto the students (Vermunt & Verloop, 1999). Similarly, the friction between educators’ and students’ perceptions of the learning environment can also affect student engagement and, by proxy, student success. Indeed, fostering more communication between both parties seems an essential step toward engagement and an improved academic experience for students. Könings et al. (2014) proffer the insightful notion of ‘destructive congruence’ by highlighting how too much similarity in perceptions can render a student’s learning experience as unchallenging and consequently the student may become disengaged. Accordingly, as Wimpenny and Savin-Baden (2012) note, investigating the aspects influencing student persistence when challenged would be a vital contribution to more fully understanding student engagement. While ICT will certainly become further entrenched in teaching and learning experiences, more research is needed to confirm the influences affecting student engagement in ICT-facilitated education. The research covered here, however, provides excellent insights and findings to inform both future research, as well as future strategies and considerations for educators. The following articles demonstrate the great undertaking and understanding that has developed since Miller (1977) first considered the notion of university students’ engagement.

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This article explores students' satisfaction in experiential learning in the undergraduate program in Human Kinetics at the University of Ottawa. Specifically, this article explores undergraduate students' satisfaction of their 4th year internship. It situates students' recommendations within the SoTL literature on research-informed practices in experiential learning and student engagement.

INTRODUCTION

Groccia (2018) conceptualizes student engagement as the student's connection and involvement with a learning activity, whether academic or nonacademic, that leads to desired positive outcomes (Coates, 2007; Fletcher, 2015; Kuh, 2009; Skinner & Belmont, 1993). Groccia's model supports a multidimensional vision of ways students can be engaged through teaching, learning, research, with the community, other students, faculty, and staff. Within these six dimensions, student engagement can occur on multilevels from the behavioral (doing), to affective (feeling), to cognitive (thinking). Kuh (2009) describes student engagement as both the time and efforts students invest in learning activities, and the measures created by postsecondary institutions to encourage students to be participants in these activities. Trowler (2010) also correlates students’ involvement in educational activities with positive outcomes including academic success, student satisfaction, and engagement.

Can student engagement occur in the community or in off campus settings? The model of student engagement developed by Groccia and Hunter (2012) considers students’ passion and involvement with learning activities, on and off campus. For Axelson and Flick (2010), student engagement is reflective of the level of connectedness between students and their learning, in their classes, their institution, their community and with each other. This learning paradigm resonates within postsecondary institutions in their partnerships with community, government and industry partners to create synergies and opportunities for campus-community research, experiential learning and service (Hake, 1998; McCarroll, O’Connor, Garlough, 2018; Pigza, Troppe, 2003; Race, 2011).

While the resources and relationships invested in campus-community collaborations are extensive, there is often a disconnect among stakeholders with regard to communication and the organizational nature and focus of the connection, resulting in missed
learning opportunities and engagement. This paper explores students’ satisfaction of their year-long internship in an undergraduate program in Human Kinetics, and investigates strengths and gaps revealed in the community–student–university partnership. Recommendations are suggested to enhance capacity for student learning and engagement.

EXPERIENTIAL LEARNING

Conceptually, the term experiential learning is understood across campuses as a form of hands-on learning whereby students learn from structured experiences and reflection in both academic and nonacademic settings (Billett, 2009; Matey & Fickell, 2014). Experiential learning is not just recognized for its resultant knowledge acquired through doing, but also for its role in building participants’ confidence to learn in different settings. It allows students to make critical connections to their curricula learning through discussion and build greater self-efficacy and self-awareness through critical thinking and reflection (Kolb, 1984; Nilson, 2016).

Kolb’s cyclical model of experiential learning (Kolb, 1984) intersects well with Graccia’s multidimensional model of student engagement through a focus on active learning through doing, feeling and thinking, within the community and among peers (Groccia 2018). Kolb’s theory of experiential learning is characterized by four cyclical modes that include: (1) the concrete experience, a hands-on experience in a new situation, immersing oneself in concrete reality; (2) reflective observation, whereby one reflects back on their experience; (3) abstract conceptualization, the ways in which one links their experience to theory or creates new ideas; and (4) active experimentation, the doing phase (Kolb, 1984; Kolb et al., 2001). In sum, experiential learning creates the likelihood for engagement by fostering students’ intrinsic motivation to learn, experiment, and reflect (Sibthorp et al., 2011).

CONTEXT AND METHODS

In tandem with the Government of Ontario’s policy research on Higher Education, the Ontario Premier’s expert panel on a highly skilled workforce recommended that Ontario postsecondary students acquire at least one work-integrated or experiential learning opportunity based on the idea it will improve workplace skills and competencies, and enhance potential for community engagement (Stirling et al., 2014; Stirling et al., 2016). To better understand the various examples of work-integrated learning, Sattler & Peters (2013) proposed a typology relevant to the postsecondary sector in Ontario, and classifies various forms of work-integrated learning into three categories: systematic training in which the workplace is considered the central focus of learning (such as an apprenticeship); the structured work experience, in which students become familiar with work settings within an postsecondary education programme (examples include a CO-OP, internship, field research); and institutional partnerships whereby the focus is on creating opportunities to respond to community or industry needs such as community service learning.

The University of Ottawa offers multiple opportunities and avenues for experiential learning as a means to enhance learning and engagement. In a concentrated organizational model, the University of Ottawa provides a centralized service for any course on campus to integrate a 30-h community service learning component within their course curriculum. The Center for Community Engagement is responsible for the creation of placements with community partners, communication with partners and professors, streamlines the process for professor-approved placements, students’ online
registration, and supervisors’ evaluation. The University of Ottawa offers a well-developed CO-OP program, enabling students in several faculties the opportunity to secure a work term placement. Each faculty maintains individual admission requirements and work/study sequences.

Several faculties at the University of Ottawa also offer students the opportunity to gain experiential learning through Department or School-based curricular unpaid internships. Fourth year students in the School of Human Kinetics, at the Faculty of Health Sciences, make a decision to complete either a year-long, research honours project, or complete a 100-h internship. For internship students, they enroll in a three-credit course, APA 4111. This internship course is comprised of lectures, on-going pedagogical activities, discussions, and the completion of a 100-h unpaid internship with local partners in Ottawa-Gatineau. Throughout the year, students prepare reflective analysis presentations, frequent action plans, progressive and overall evaluations, and a 10-page written internship reflection report.

Yet, if we subscribe to Kolb’s multiphase cycle of experiential learning, and build on Groccia’s vision of student engagement, there are deficits and gaps when our internship is promoted as a work placement, or introduction to career development. Are students satisfied with their learning experience during an internship? What supports do they need to maximize opportunity for growth, learning, and engagement?

As students are active partners in their learning journeys, this article seeks to explore students’ perceptions on their 100-h unpaid internship during their last year of undergraduate study in the multidisciplinary program of Human Kinetics. Four research questions guided this study:

1. What skills and core competencies did students identify as most important in their internship field, and what skills and core competencies did students acquire during their internship?
2. How prepared did students feel when beginning their internship?
3. How satisfied were students with the level of engagement and feedback from their supervisors?
4. How satisfied were students with the overall learning experience?

Following best practices of students as partners (Healey & Harrington, 2014) this project integrated students’ perspectives and partnerships throughout the process. Students were involved in formulating survey questions, graduate and undergraduate student RAs helped administer the survey, compile the data, assist in preparing a preliminary report summary, and graduate student Jasmine Cianciotta worked on this manuscript, and is coauthor of this article.

A mixed methods approach was used to examine the guiding questions. An end-of-year survey distributed to students enrolled in the English and French internship courses provided both quantitative data, through Likert scale questions, and qualitative data, through open-ended questions. Printed copies of the surveys were distributed through convenience sampling to all 4th year students who attended the last scheduled courses for the internship program. The only criterion was that students were willing to participate, as participation was optional. The entire survey was anonymous, and no personal information was requested or attached with the surveys. Research Ethics was confirmed for an in-class survey to improve quality of undergraduate programming.

Students were asked to provide information on the number of hours they completed, how often they attended their internship per week, and the amount of time it took them to commute to their internship. Students were asked to review a list of competencies considered important in the field of Human Kinetics, and select five core competencies they
believed to be most important to acquire in their field. Using the same list of competencies, students were subsequently asked to identify which competencies they improved or developed during their internship. To examine student satisfaction in their internship, students were asked three questions in both closed and open-ended format. Using a Likert scale of 1 (not at all); 2 (somewhat); 3 (satisfactory) to 4 (very much), students were asked to rate how prepared they felt at the beginning of their internship; rate how satisfied they were with the level of engagement and feedback received from their internship supervisor on site; and rate their overall satisfaction with the learning experience. These questions were followed up with open-ended questions, asking students to provide feedback and suggestions on how prepared they felt, their level of satisfaction of engagement with their supervisor, and the overall quality of the internship learning experience. Students were also invited to leave any additional comments.

A qualitative thematic analysis was adopted for the open-ended survey questions on students’ experiences and perceptions (Braun, Clarke, and Weate 2016). This analysis followed processes of data familiarization, searching for themes, reviewing and refining themes. Ongoing discussion with critical friends guided the naming and defining of themes (Smith & McGannon, 2018). These discussions between student, staff, faculty and supervisors allowed for comparison of perspectives, and deliberation of data interpretation.

RESULTS

The survey yielded seventy-three (73) responses from the undergraduate students enrolled in the 4th year internship program. Students wrote their responses in English, French or a combination of both languages. A summary of the results is presented in Table A1 in the appendix.

In summary, students completed an average of 115.4 h at their internship, despite the internship structured to consist of 100 h. Students went to their internship 1.8 times per week, during both Fall and Winter semesters. The commute for students to their internship ranged from 0 min for a campus placement, to 60 min for placements in schools or clinics. On average, it took students 26.7 min to travel to their internship.

Students identified five core competencies they considered to be important in their field, and were also asked to identify competencies they developed over the year. Overall, the competencies students felt were pertinent to the various domains in Human Kinetics matched the same skills the students felt they developed during the internship program. Students identified core competencies to be: knowledge of anatomy and physiology or coaching skills or exercise demonstration; speaking in front of a group or with a client; and interpersonal skills. In the internships in clinical settings, students also identified additional competencies to be performing an initial assessment, rehabilitation modalities and exercise prescription. For the internships in nonprofit community-based settings, students selected the knowledge and communication skills discussed above, in addition to critical thinking and decision-making skills. In the internships in educational settings, additional competencies identified were knowledge of specific sport techniques, rules, and strategies. All students felt they were able to develop and improve in most of the five key competencies they identified as important. A few students identified demonstration, empathy, and a client-centered approach to be important competencies, but indicated they did not have an opportunity to develop these skills during the internship. While the majority of students did not select professionalism to be a core competency in their field, several students expressed that it was one of the competencies they enhanced during their internship. In the words of a student respondent “I become aware of the importance of professionalism during this internship”.
In response to the question on how prepared students felt to start their internship, rating on a Likert scale of 1 (not at all), 2 (somewhat), 3 (satisfactory) to 4 (very satisfactory), the average score of the students’ response was 2.63, in the range from < somewhat > to < satisfactory >. For the question on the level of satisfaction for feedback received from their supervisor, the average score was 3.3, in the range from satisfactory to very satisfactory. Response to the question to rate the overall level of satisfaction students felt with their internship learning experience, the average score was of 3.47, in the range between satisfactory to very satisfactory.

Students had the opportunity to expand on these closed-ended questions, and were asked to provide suggestions to feel more prepared for their internship. Their responses focused primarily on four factors: (1) having greater general knowledge of the field; (2) more practical hands-on training within the first 3 years of university, (3) fully understanding the nature of the internship before making a final selection; and (4) ensuring supervisor, student and university agreement on mutual expectations of the students’ role in the internship. Students suggested that the internship should be worth six credits instead of three credits to recognize the work expectations and year-long commitment. Students in rehabilitation expressed a need for more practical experiences prior to entering their internship, while students in physical education teaching felt they would benefit from more focused courses on teaching prior to arriving in a classroom. Student feedback reflects discussion in the literature on the importance to clarify supervisors’ roles and expectations in the learning experience. While University faculty and staff should critically assess potential supervisors for their competencies, mentoring capabilities, and willingness to embrace course learning objectives, they should also be ready to provide additional training and resources for supervisors if needed (Bailey et al., 2017).

In response to the question, < Do you feel like the internship enhanced your student learning experience? >, the majority of students expressed that their internship positively impacted their learning experience. Three themes emerged from the responses provided. The internship enhanced the learning experience because it provided: (1) the opportunity for a practical application of knowledge, and apply theories learned during their courses; (2) the opportunity for professional development in the field, networking, and future job references; (3) development of personal skills such as time management, critical thinking, and resiliency. For the small number of students who felt their internship did not enhance their learning experience, two main reasons were expressed: (1) the structure of the internship, including the amount of hours, and commute time, and (2) miscommunication and lack of clarity with supervisors, particularly with regard to expectations of students.

**DISCUSSION**

Overall, students rate their internship to be satisfactory, and were engaged in their learning with their community partner supervisors on the behavioral, affective and cognitive levels. Some of the common themes that emerged from the qualitative questions were that most students expressed satisfaction with the opportunity to network with professionals; the ability to apply theoretical knowledge learned in the classroom; and the opportunity to gain experience and competence in a field. At the same time, some students commented on the over-emphasis of the internship as a work placement, structured in an employer-employee format. For these students, it was not an academic activity, with a focus on learning, sharing and reflection. Instead, they felt they were expected to simply show up and do unpaid work. Students suggested improved innovative and diverse reflective activities, to reinforce the academic nature of the internship.
Students’ comments echo similar findings expressed in the experiential and internship literature (Stirling et al., 2016). Experiential learning is more than just skill development in a workplace, or the opportunity to network. It should allow for an ongoing critical reflection on privilege, power relations and social justice, and allow students to critically assess current practices and innovate (Kennedy, Billett, Gherardi, Grealish, 2015; Tiessen, 2018). These recommendations from students are grounded in the very basis of the theoretical underpinning of Kolb’s model of experiential learning. While the first phase of doing is easily applied, it is less so for the phase of abstract conceptualization and phase of active experimentations. These phases are crucial in the learning cycle to link to other learnings and allow for critical thinking and action (Kolb, 1984). In doing so, it challenges a one-directional learning paradigm, be it classroom learning applied to a work setting, or learning one way of doing things in a workplace setting. Internship reflection and praxis should reveal insight into students’ deeper learning, experimentation and engagement. Is the internship structured so that students can ask critical questions about learning < one > way to do things in an internship? Can students and supervisors explore new challenges to ways of doing? Can students suggest new ideas without fear of reprisal or a poor evaluation? Further reflection could examine ways to restructure and rebalance the internship program to embrace partnership building, across campus, and across disciplines (Mercer-Maptstone, Matthews, Abbot, Cheng, Felten, Knorr, Marquis, Shammas, 2017). Supervisors need to be recognized for their role in engaging and teaching the students. We need to strengthen our partnerships so they move beyond simply sending supervisors reading materials or a note of thanks.

We are at a pivotal moment to participate in the growing strength of social movements around black lives matter, indigenous rights, sexism and abuse in sport. Ongoing consciousness raising occurs through listening, reading, reflection, dialogue, and manifestation, revealing structural inequalities and damaging power relations. For stakeholders in Human Kinetics, we observe these issues play out on a global arena as we remember that the global is local. From observing Black Lives Matter intersect with professional sport, unpacking coloniality in sport team names and mascots of indigenous culture, to identifying and dismantling sexual and verbal abuse in the sport system, we start consciousness-raising within ourselves, within our university campus, and within our internship partnerships in the community. As we critically self-examine our assumptions, language, and behaviors, we explore how they impact an individual’s access, participation and experience in all domains of sport and physical activity. This has the potential to resonate throughout the range of Human Kinetics internship placements, such as teaching physical education in schools, sport coaching, recreation planning at a community center, to planning and hosting sport events. Student engagement through Kolb’s stages of active experimentation and conceptualization should be encouraged throughout the process of their internships, not solely project products and endpoints such as a final paper or completion of hours (Kolb, 1984). Researchers emphasize the flexibility of learning, exploring, and to “creating possibilities for discovering and learning something that cannot be known beforehand” (Healey & Abbi Harrington, 2014, p. 9). Exploratory learning activities could enhance student engagement by ensuring students have opportunity for experimentation at the affective and cognitive stages.

A second theme that emerged in the data concerned students’ perception of being ready and prepared to begin the internship. Students’ concern on not feeling adequately prepared before starting the internships reveals several issues. Most students voiced need for greater support, direction and guidance from supervisors and the university. As a form of peer-to-peer student teaching, that we situate in Groccia’s dimensions of student
engagement, we envision students asked to develop communication tools for the next cohort of internship students. This approach reinforces findings in the literature, as Healey and Abbi Harrington maintain that students as partners, SaP, should feature active engagement from all stakeholders involved—students, staff, community supervisors, and embrace the process of learning together (Cook-Sather, Cathy, Felten, 2014; Healey & Harrington, 2014, p. 12). For this to occur, frequent and clear communication between supervisors, staff, and students would reduce confusion on expectations, roles, responsibilities and assessment (Cooper, Orrell, Bowden 2010). In turn, this could alleviate some levels of stress students feel prior to starting their internship.

It is also the role of faculty, staff, and supervisors to encourage students to embrace change, uncertainty, and flexibility. This emphasizes Kolb’s doing and experimental phases of experiential learning theory. Broad, multidisciplinary undergraduate programs like Human Kinetics integrate courses from several disciplinary fields in bio-physical and social sciences. Students grow to understand that knowledge on topics such as concussions in sport; physiology and sport performance, or analytics in sport marketing, is in constant development. With adoption of artificial intelligence in most domains, an internship or career in Human Kinetics will look different a few years from now, based on practices not yet discovered. In the immediate future, we continue to address pandemic-related uncertainties that impact how students learn and engage with the community. For example, we adapt to changing best practices in pandemic risk assessment, particularly for internships that involve close physical contact such as teaching children physical education in a school, doing exercise classes with seniors in a retirement facility, or assessing fan engagement at a sport venue. We emphasize to students the importance of adopting a life-long approach to learning, and continue to develop their abilities to seek knowledge, take initiative, and be flexible to change.

As it relates to the organization and structure of the internship, student feedback from this survey led to several important changes to the internship at the School of Human Kinetics. Starting in Fall 2019, the internship is now recognized as a six-credit course, instead of a three-credit course. In recognition of these additional three credits, the equivalent of a full undergraduate course, the number of contact hours was raised from 100 to 120 h, and students complete an additional assignment to reinforce the abstract conceptualization and active experimentation phases of Kolb’s cycle of experiential learning (Kolb, 1984). The change of six credits from three credits allows students to take a lighter course workload during the internship. These changes were largely in response to the heavy workload described by the 73 undergraduate students who participated in our survey. Other students felt ill-prepared with their knowledge base, or lack of previous experiential learning. Potential recommendations to address these concerns are to include research or community-based experiential learning in the first 2 years of the undergraduate program.

Finally, the need for improved communication was a common theme in the qualitative responses. Students recommended improvements in the quality and frequency of communication with internship supervisors. Specifically, the description of tasks, roles and responsibilities was revised for greater clarity. Anticipated additional efforts include a student-led design of an infographic for community/industry partners that will be included in an initial orientation package supervisors receive from the School. The infographic will provide a visual snapshot of some of the common concerns and challenges students may face throughout the academic year, including mental health challenges and financial pressures. Conveying a more accurate depiction of the range of students’ lived experiences could enhance supervisor-student engagement, and better contextualize students’ concerns.
CONCLUSION

In summary, students expressed an overall positive perception of their learning experience and rated their overall satisfaction with the internship as 3.47 on a Likert scale of 1–4, situating between satisfactory and very satisfactory. Students recommended several areas of improvement for the School of Human Kinetics and the community partners, with regard to the internship structure, communication, student preparedness, and reflexive learning. The themes discussed in this paper reflect the experiential learning and student engagement literature, and provide evidence of the importance of stakeholder communication between students, supervisors and the university. It also revealed the necessity to strengthen the opportunities for students to experiment and reflect during their internship, key aspects of Kolb’s cycle of experiential learning. Discussion centered on encouraging students’ critical self-awareness and ongoing commitment to learn. Internships should be designed and re-assessed to allow students critical reflection, active conceptualization and praxis. Engagement is optimized when students are provided opportunities for active learning and discussion across multiple dimensions of interactions among peers and learning activities that manifest at the behavioral, affective, and cognitive levels. In turn, a holistic approach to student engagement will encourage integration of experiential learning in context of a learning paradigm that critically examines beliefs, practices and privileges that shape the status quo in sport and physical activity.

FUTURE RESEARCH DIRECTIONS

Future research could examine student satisfaction with internship program changes, revised communication tools for supervisors, new reflection practices, and activities. Additional research could examine supervisors’ perspectives of the internship experience, as well as gather feedback from the internship coordinator and undergraduate program director. How does the university, student, community and industry partner recognize the supervisors’ time and commitment? Do supervisors feel valued? What are their primary concerns, and how can they be addressed? Overall, future research should continue discussion on the nature of the internship as an educational learning activity with potential to allow students to be partners in their learning, by emphasizing student engagement throughout all aspects of Kolb’ cycle of experiential learning (Kolb, 1984).

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REFERENCES


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**APPENDIX**

**TABLE A1** Undergraduate student survey results on internship satisfaction, School of Human Kinetics, March 2018

<table>
<thead>
<tr>
<th>Questions</th>
<th>Response average</th>
<th>N = 73</th>
</tr>
</thead>
<tbody>
<tr>
<td>How many total internship hours did you complete?</td>
<td>115.4 h</td>
<td></td>
</tr>
<tr>
<td>How often did you attend your internship on average per week?</td>
<td>1.8 times</td>
<td></td>
</tr>
<tr>
<td>How long did it take you to travel to your internship on average?</td>
<td>26.7 min</td>
<td></td>
</tr>
<tr>
<td>How prepared did you feel to start your internship (scale 1–4)?</td>
<td>2.63</td>
<td></td>
</tr>
<tr>
<td>How satisfied were you with the level of feedback you received from your supervisor (scale 1–4)?</td>
<td>3.3</td>
<td></td>
</tr>
<tr>
<td>How satisfied were you with the overall learning experience (scale 1–4)?</td>
<td>3.47</td>
<td></td>
</tr>
</tbody>
</table>
Reflective journal writing as a tool for student engagement in the undergraduate classroom: An intersectional analysis of experiential learning

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Abstract
Through an intersectional analysis, this article examined undergraduate students’ use of reflective journal writing as a student engagement tool by helping students to apply course concepts and theories to personal experiences and thus promote experiential learning.

INTRODUCTION

Students’ personal experience is an integral component in learning. Lindeman (1926, p. 7) posited that “experience is the adult learner’s living textbook” and therefore adult education was, “a continuing process of evaluating experience” (85). Mezirow (1990) argued learning can be defined as “the process of making a new or revised interpretation of the meaning of an experience, which guides subsequent understanding, appreciation and action” (1). Drawing on Habermas’s (1962) work, Mezirow (1991) proposed the theory of transformative learning of which personal experience continues to be an integral component. As part of good practices in undergraduate education, Chickering and Gamson (1987) advocated for active learning techniques and argued students are not spectators in the classroom and should not passively observe the teacher, as they do not learn this way and that students “must talk about what they are learning, write about it, relate it to past experiences and apply it to their daily lives. They must make what they learn part of themselves” (3).

Culture and reproduction of symbols and meaning perspectives are integral components of the learning process (Mezirow, 1991). Learning requires “educational practices that engage students across disciplinary boundaries in learning experiences that tackle real problems, allow for application of course content to those problems, and lead to sustained intellectual growth and a heightened sense of personal responsibility” (Groccia & Hunter, 2012, p. 3). Therefore, experiential learning is crucial to constructing different pedagogical...
activities. Experiential learning is a theory which encompasses cognitive, humanistic, social, and constructive processes of learning (Kolb, 1984). Simply put, experiential learning is the process of reflecting on the experience of doing (Ahmed, 2012). Experience can be transformed into educational opportunities by incorporating learning into everyday practice. Reflective journal writing can assist in such reflective learning process (Wagner, 1999).

Over the past years, the use of student journals to assess teaching and learning has become more common in higher education (Boud et al., 1985; Kok & Chabeli, 2002; Wagner, 1999). Reflective journaling like other active and engaging learning activities enables learners not to be passive recipients of knowledge but motivated and engaged learners (Bonwell & Eison, 1991; Hake, 1998). This article explores how reflective journal writing contributes to student engagement at the undergraduate level through meaningful communicative learning.

LITERATURE REVIEW

Journal reflection writing is one of the most appropriate applications of theories on effective learning (Chickering & Gamson, 1987; Dewey, 1916; Kolb, 1984). Jordi (2011) critically reviewed various adult education theories to posit “reflection is predominantly conceptualized as the rational analytical process through which human beings extract knowledge from their experience” (181). A wide range of individuals and organizations use reflective practices as a pedagogic tool either formally or informally in organizational learning activities and processes (Jordi, 2011). Brookfield (1996) argued critical reflection focuses on three interrelated processes:

1. the process by which adults question and then replace or reframe an assumption that up to that point has been uncritically accepted as representing common-sense wisdom,
2. the process through which adults take alternative perspective on previously taken for granted ideas, actions, forms of reasoning and ideologies, and
3. the process by which adults come to recognize the hegemonic aspects of dominant cultural values and to understand how self-evident renderings of the “natural” state of the world actually bolster the power and self-interest of unrepresentative minorities.

Different theorists within adult learning define reflection in many ways and give it “various meanings and differing significance” (Jordi, 2011, p. 181). Illeris (2007) asserted most of these definitions are “more concerned with thinking and less with experiences, feelings and interaction” (65). Jordi (2011) criticized this position arguing reflective practices “have the potential to ... integrate a range of cognitive and nonconceptual elements that make up our experiences and consciousness” (182). He stressed body and mind are not separable as “our subjective embodied observation and interaction” takes place within a very complex process and thus “[t]he body does not just hold the raw material for learning but is itself a site of experiential learning” (2011, p. 187). Generally, Boud et al. (1985) asserted reflection is “a generic term for those intellectual and affective activities in which individuals engage to explore their experiences in order to lead to new understandings and appreciations” (19).

The benefits of reflective journal writing are multifaceted. This pedagogical tool contributes to student learning (Everett, 2013) and engagement (Zengaro & Iran-Nejad, 2007), teacher instruction (Tompkins, 2009), and advances democratic principles in the society (Dewey, 1933). Reflections allow students to move past the dichotomy between theory and practice by enabling students to interact with their environment actively and creatively,
and help them to flourish through the formation of habits and reflection on their experiences (Ahmed & Blankson, 2005; Garrison, 1998). Consequently, students become able to improve their critical thinking about issues related to society and contribute to the educational dimensions of democracy (Dewey, 1916).

This study examines how reflective journal writing can promote student engagement by helping undergraduate students apply interpersonal communication course concepts and theories to their lived experiences. The scholarship on teaching and learning offers various definitions of student engagement (Groccia, 2018). For the purpose of this study, Coates’s (2007, p. 122) definition has been adopted which defines engagement as a “broad construct intended to encompass salient academic as well as certain nonacademic aspects of the student experience”. Collins and Bilge (2016, p. 2) defined intersectionality as “a way of understanding and analyzing the complexity in the world, in people, and in human experiences.” Drawing on their work, this study employed intersectionality as an analytical framework to answer the following research question: How does reflective journal writing about everyday experiences help students learn course contents?

METHOD

Participants and procedures

Recruited through volunteer sampling (Du Plooy, 2002), 15 undergraduate students (12 female and 3 male) enrolled in a second-year communication course at the University of Ottawa in Canada participated in this study. This 3-credit, 13-week semester length core course focused on exploring interpersonal communication theories, principles, concepts and research findings and applying them to practical communication situations, particularly personal, social, and workplace contexts. Therefore, engaging students in writing weekly reflective journal entries, connecting concepts covered in class to their daily life experiences was considered a meaningful and effective assignment. Drawing on a constructivist approach, this assignment aimed to help students reflect on a specific concrete experience (Fenwick, 2001) and apply them to their personal lives. Handed in twice a semester, for the first section of entries, students were assigned journal prompts, and for the second section, students-initiated journal topics. For the first six entries (constituting the data for this study), students chose 12 journal prompts out of a total of 24 (2 per journal entry, each with 4 choices). The journal prompts students chose spanned a variety of interpersonal communication topics such as communication competence, family communication rules, friendship, attributional patterns, listening effectiveness, attachment styles, verbal and nonverbal communication behaviors, committed romantic relationships, stereotypes, and media representation of gender.

After securing REB approval, the first author appointed two volunteers to obtain free and informed consent from students to participate in this study. The students were provided a brief description of the study and were reminded of the voluntary nature of their participation. Participant anonymity was guaranteed by removing names from direct quotes to avoid revealing individual identities.

Data analysis

The second author joined the study when data analysis began. NVIVO software was used to organize journal entries and facilitate an iterative, six-step thematic analysis procedure
Braun & Clarke, 2006). This process involved scanning and uploading journal reflections on NVIVO, which developed a report with the most used words. These keywords helped the authors identify and classify students’ comments and reflections of their learning experiences to determine analytical themes by: independently becoming familiarized with the data, producing initial codes, generating themes, reviewing the themes, defining and naming the themes, and writing a report of the analysis. Both authors met to discuss each theme, and after resolving minor interpretational differences and reaching an agreement, a final set of themes was produced. Study findings are presented using representative quotes, with punctuation added for clarity, from the journal entries to illustrate participants’ viewpoints.

RESULTS AND ANALYSIS

A number of themes emerging from the data related to how reflective journal writing can help students learn course contents through reflection upon everyday experiences. Guided by analytical sensibilities of intersectionality, which enables analyzing individual experiences on the basis of multiple identities including gender, sexuality, class, ethnicity, and race (Collins & Bilge, 2016), two overarching themes, perceived gender roles and awareness of social hierarchy, are discussed with individual sub-themes.

Perceived gender roles

This theme relates to the way students perceived how gender roles influence communication. The students’ reflections appear to be paradoxical, as some students were unable to challenge socially constructed communication patterns and did not have any problem abiding by them. In contrast, some other students were fully conscious of imposed socially constructed norms and explicitly challenged them.

Conforming to socially constructed gender roles

Many students seemed to conform to socially and culturally constructed ideas around gender. For example, a male student shared:

[M]y best friend … and I … definitely follow [,] to some extent [,] the typical patterns of our gender when communicating verbally. When we … are discussing relationships we are in, [she]is much more able to be expressive and focused on the emotions she is feeling and how to convey them in such a way that I can comprehend. She is able to categorize and construct a much more layered meaning and idea of a given situation. I [,] on the other hand [,] find it hard … to convey those same emotions, sometimes I don’t necessarily like to disclose certain aspects of what I’m thinking or feeling. Also, constructing a perception of what I’m trying to say or convey sometimes falls flat. Like we recently were discussing that for me as a gay man, my lifestyle regardless of whatever desires or goals I have set out for myself regarding family, relationships, etc., will be different from hers. I find much of my description or expression of emotion is one-dimensional, it’s rather frank, and the words I use may not be as loaded with many other layered meanings, or have metaphors for what I’m thinking.
Similarly, a female student reflected:

> When I am going through a crisis, I turn to my boyfriend for support, and tell him all of my problems. He is a great listener, and he tries to find a solution to the problem. The problem is, I don't want a solution; I just want him to listen and understand how I am feeling. He wants to be my hero and tries to explain or figure out why I shouldn't feel how I do — but all I want is his shoulder to cry on. I believe we both follow the typical patterns of female and male communication in this – I speak about feelings, and he speaks about actions.

As in the above examples, some students were aware of some constructed gender-based communication rules they found themselves conforming to in their everyday interaction with friends and romantic partners.

### Challenging socially constructed gender roles

Just as some participating students realized how they conform to socially constructed gender roles, some other participants reflected on how they challenged existing gender roles. For example, a female student shared:

> After reading the textbook’s views on gender communication patterns, I realize that there may certainly be some communication differences between men and women, ... . In my experience men are just as open to communicate and talk about relationships as women are; however, the difference lies in their ability to communicate their need. Being a woman of the 20th century, I constantly find myself searching for the ideal “man’s man”, that in my opinion, the media have created. He is seen as someone who doesn’t like to talk about his feelings or his relationship, like the textbook outlines he would prefer to go to a concert over a nice quiet dinner; however, this ideal “man’s man” does not exist. I know this because after I think I’ve landed one—a couple months into a relationship he will start to exhibit signs of female communication by wanting to discuss his feelings and fears, as well as hopes for the relationship which are usually met by disappointment on my part because I’ve been generally conditioned to find female behavior in men unattractive. This small self-experiment made me to believe that generally men and woman communicate the same, we both have the need to address our feelings. However, because men have been taught over centuries that feelings equal weakness, they are more reluctant to reveal their need for communication in public.

In the context of friendship, a male student reflected:

> My best female friend and I are so close that we simply don’t abide by gender-based communication rules. I can’t think of an instance where one of us has felt awkward because it might not have been “manly” or “ladylike” to say or do something in each other’s company. That’s not to say that they don’t exist. For instance, if she’s bothered by something, I know to explore the context and understand how she’s actually feeling about everything before offering any type of advice or comments. On the other hand, if I ask for help, she knows not to tip toe around the issue and lays everything out on the table for me from her point of view, and will give me a straight statement about what she thinks I should do.
The above quotes are illustrative of occasions when some participating students recognized their agency. Some students either implicitly or explicitly demonstrated they had agency and therefore they must challenge socially constructed gender roles during their everyday communicative practices.

**Awareness of social hierarchy**

This theme relates to participating students’ level of awareness of the intersectional systems of privileges and oppressions that, from society's power structure, they are living within and under and how this social hierarchy informs day to day interactions and communication. As such, social roles and socially constructed expectations of these students, while interacting with their surroundings, occupied a considerable space in their reflections.

**Social roles and expectations**

Participating students were aware of the importance of social roles and expectations in constructing the communicative behaviors expressed in their social interactions and in the network of power they live within. For example, a female student shared:

> My best friends are all male[..] I only have one or two female friends. As you might probably guess men have a much different set of speaking habits or gender rules. After spending [a] significant amount of time with my friends I picked up some of the ways they would speak. My male friends are quite crude and say some inappropriate jokes most of the time. One time the whole group was laughing about this one crude joke and I jumped in and added on to the joke. My friends laughed but looked awkward.

> Later on, my boyfriend informed me that it wasn’t … lady like to speak like that and … it was just uncomfortable for everyone when I spoke like that…. I felt humiliated and uncomfortable…; I didn’t know what to do with myself after that. The rest of the night I felt like I couldn’t talk and was worried I would say something like that again. Stepping out of your gender rule expectations is quite uncomfortable and can lead to awkward situations.

The above quote demonstrates this student is aware of the complex interlocking systems of power shaping her communicative behavior in certain social contexts. Specifically, this quote highlights an important intersecting factor – gender.

**Emotion and rationality**

Jordi (2011) argued it is impossible to separate emotion from rationality. Similarly, a number of students in their reflections demonstrated a strong association between their feelings and rational thinking. For example, a female student reflected:

> When I was younger I was unable to control my emotions so I could not hide them even if it meant hurting someone else. But now that I have grown up I have
come to understand how to express my emotions in accordance to my social roles and expectation. Since I am gender sensitive I don't believe I use my emotions completely on the basis of my gender…. [E]ven if there is this social pressure to go by the norm set forward by our society, I try to use a more ethical approach to express myself. In the course text it’s written that society expects women to be more caring and less aggressive, I don’t completely go by this rule that’s laid down by society for even if I were to show care it would be more due to the fact that it’s probably the right thing [to do] at the moment. Though I think that social role is something that still influences the way I convey my emotions, as it’s a more severe case for it would adversely affect the social order if expressed otherwise. For example, my emotional expression is influenced by my role as a student when I am sitting in a class.

The journal reflection exercise afforded the student quoted above the opportunity to critically engage with course contents and also be self-reflexive about how she is able to rationally and emotionally challenge constructed societal norms. These quotes and other reflective accounts also illustrate how participating students implicitly try to confront social hierarchies. These findings echo Collins and Bilge’s (2016) postulation about events in our life and how they are shaped by various factors in different and mutually influencing ways. These factors can be age, gender, and so on. The students’ reflections show most of them developed their agency through negotiation and bargaining. Islamic feminist Saba Mahmood (2005, p. 18) called scholars to think of “agency not simply as a synonym for resistance to relations of domination, but as a capacity for action that specific relations of subordination create and enable.” Participating students’ resistance to socially constructed communication patterns reflect their ability and capacity for action to subvert intersectional systems of oppression through bargaining and negotiations.

**DISCUSSION AND CONCLUSIONS**

This exploratory study documented undergraduate students’ use of reflective journal writing for student engagement through experiential learning. Brookfield (1996) determined three important criteria when analyzing experience. First, experience is not an objectively neutral phenomenon, “rather, experience is culturally framed and shaped” (377). Second, the quantity or length of experience does not reflect its richness. Third, experience should be appropriately criticized otherwise “experiences [risk] idealizing and romanticizing them. Experiences are neither innocent nor free from the cultural contradictions that inform them” (377). Accordingly, an intersectional analysis of undergraduate students’ reflective journal entries revealed the extent to which students abide by gender roles and social norms. A person can be marginalized and socially alienated if she/he/they can decide to deviate from these roles and norms. The study findings revealed reflective practices contributed to students’ understanding of the consequences of challenging the imposed gender roles and social norms.

Collins and Bilge (2016) posited parents and teachers advocate schools to not only be places where children get education, but also to foster their critical literacy and critical thinking skills. It is important to note the findings of this study provide insights into how reflective journal writing can contribute to instructor’s understanding of the various ways different systems of identity, privileges, and oppression interact together to form students’ learning experience and shape how they engage with the course contents. According to Black et al. (2000), “Journals are a rich qualitative source of students’ perceptions about a course because they afford personal records of their observations, impressions, feelings,
thoughts, opinions, and insights regarding class discussions, readings, and their personal and professional lives” (73). The study findings demonstrate reflective journals create an opportunity for instructors to not only provide individualized feedback to students but also tailor the course content to empower students and thus develop a classroom as the one Collins and Bilage (2016) advocated for. In so doing, the study findings support Black et al. (2000) claim that journals are “vehicles for students to communicate confidentially with their instructors” (73), which in turn allows instructors to develop a classroom that is safer and more personalized based on students’ experiences.

The study findings also revealed reflective journals can be used as an active and engaging learning activity to help foster students’ critical thinking skills. The importance of reflective journal writing lies in its contribution to the transformation of students from passive recipients of knowledge to engaged participants in the classroom by elaborating, discussing, sharing, questioning, and problem-solving through increased motivation and meaningful learning (Groccia, 2018; Hake, 1998). Moreover, Boud et al. (1985) asserted authoring reflections help students develop new perspectives. Accordingly, the study findings revealed journal reflections helped students to not only develop new perspectives but also complex intersectional perspectives on education and their position in society while developing a nuanced understanding of their identities.

Findings from this study should be interpreted in light of its limited focus on student learning during a 13-week semester course. Findings from additional rigorous investigations may identify and increase awareness of available learning opportunities for students to develop reflective thinking skills, provide necessary feedback to assess the effectiveness of on-going programs and interventions, and, thereby, help revise and redesign existing approaches to make student engagement efforts more fruitful.

Notwithstanding the above limitations, on a scholarly level, the study findings suggest reflective journal writing allows students to engage with course contents by not only drawing strong connections between theory and practice but also constructing new meanings and personalized understandings of both the course contents and their daily life experiences. On a practical level, the findings offer important insights for better learning and assessment tools in academic institutions especially since Axelson and Flick (2010) asserted student engagement is a crucial indicator of institutional excellence.

REFERENCES

AUTHOR BIOGRAPHIES

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RESEARCH ARTICLE

Blended learning as a vehicle for increasing student engagement

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Abstract
This article views student engagement through the lens of a university-wide blended learning initiative. Using the Community of Inquiry framework, student voices help us understand how professors and the institution can increase active learning. Attention is also given to the development of higher order thinking skills as a means of increasing student engagement.

SITUATING STUDENT ENGAGEMENT

As Groccia (2018) so aptly puts it, student engagement is a construct that continues to evolve especially now as blended learning is seen as a vehicle for transforming higher education. According to Bates (2015) mixing face-to-face teaching with online learning is often seen as 21st century pedagogy for universities. The reason for this is that the transmission model of teaching is being seriously questioned along with the quality of the student experience using this instructional approach. What this all means is that understanding student engagement requires a different perspective given the rapid growth of the online teaching environment. Several authors (Garrison, 2015; Jeffrey et al., 2014; Vaughan et al., 2013) have strongly suggested that blended learning, which is often referred to as hybrid learning, has the potential to enhance student engagement and the quality of learning. Blended learning does not mean bolting technology onto a traditional course or using technology to teach a difficult concept (Bleed, 2001) but instead it is an opportunity to redesign the way that courses are developed and delivered with student engagement as the focus. Although current definitions of student engagement within traditional classroom teaching often use terms such as social engagement, positive outcomes of success, active learning and community, these very ideas and notions can be integrated into a blended approach to teaching and learning in higher education. In this study, student engagement is viewed through the lens of a university-wide blended learning initiative that was driven by the institution's strategic plan. The purpose of this paper was to link the theory associated with the Community of Inquiry (CoI) Framework, and in particular the cognitive presence concept, with pedagogical practices for students in blended learning courses as a means of increasing student engagement.
The article begins with a description of the Community of Inquiry Framework; a model for student engagement that was used in the university study across five faculties. This framework has also been used over the past decade or so in designing and delivering blended learning in higher education because of its focus on the educational experience of the learner through engagement. The section also integrates several of the ideas from Groccia's (2018) Model of Student Engagement. Drawing from the results of the university study and integrating the scholarly literature on the topic, the voices of the lived experiences of students in blended learning are then described. This is followed by a discussion of the role of the professor in enhancing student engagement through blended learning by highlighting some of the study findings. The next section portrays the shared institutional responsibility for increasing blended learning and student engagement followed by evidence-based examples of pedagogical strategies to increase student engagement in the development of their cognitive thinking skills. Lessons learned and next steps conclude the article.

THE COMMUNITY OF INQUIRY FRAMEWORK: A MODEL FOR STUDENT ENGAGEMENT IN BLENDED LEARNING

Garrison et al. (2000) Community of Inquiry framework for blended learning communication has much to offer because of its emphasis on student engagement. This model has been the focus of extensive research and validation for over a decade (Garrison, 2009). The premise of the framework is that higher education is both collaborative and an individually constructivist learning experience. In a nutshell, the CoI framework brings together three converging elements—cognitive presence, social presence, and teaching presence. Cognitive presence is taken to mean the extent to which students in a community of inquiry are able to construct and confirm meaning through sustained reflection and discourse in a critical community of inquiry. Social presence is how the student identifies with the community as a whole in which they can trustingly communicate with each other and therefore develop inter-personal connections. In other words, this element creates the environment for trust, open communication and group cohesion. And teaching presence, which is multi-dimensional and is performed by the instructor, consists of design, facilitation and direction of the community of inquiry. These overlapping and reinforcing elements provide a collaborative constructivist experience for students by setting the climate, regulating learning, and supporting discourses. Dimensions, categories and meaningful activities for each of these converging elements along with how to align learning outcomes, assessment activities, face-to face and online opportunities and technology tools are described in detail elsewhere (Akyol & Garrison, 2011a; Garrison, 2009; Vaughan et al., 2013). Based on evidence from this present university study, pedagogical strategies to increase student engagement in the development of cognitive presence and cognitive thinking skills are discussed later in the article.

A qualitative instrumental case study approach was used as the research design to gain an in-depth knowledge of the both dynamics of cognitive presence and a description of meaningful learning from students’ perspectives in a blended learning pedagogy (Creswell, 2013). Five faculties at the University of Ottawa were chosen as the site location. Ethical clearance was approved for a three-year study examining the experiences of varied institutional stakeholders for best practices in blended learning across faculties. For more details on this context of the study, the development of the initiative and detailed results, see Taylor et al. (2019).
VOICES FROM THE LIVED EXPERIENCES OF STUDENTS IN BLENDED LEARNING

In this section, student engagement is discussed by drawing on the findings from the university study and integrating the current literature from blended and online learning as a means of additional support. Engagement is explored from the perspective of students enrolled in blended learning courses across faculties and focuses on these factors (1) Motivators for participation; and (2) Mechanisms for supportive learning. Each of these factors is presented through the lens of how graduate and undergraduate students experienced engagement in blended learning.

Motivators for participation

Blended learning offered a new opportunity for undergraduate students at the university. This novel learning approach challenged the students to modify their existing methods of learning and to be open to other ways of becoming more actively involved in their weekly courses. Undergraduate students pointed out, “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.” Graduate students, on the other hand, mentioned that the need to develop critical thinking skills led them to engage in a blended learning format. Desires to solve tough questions and real-life problems as well as opportunities for actively listening to other informed opinions were reasons that attracted them to this format. Russel, a graduate student, described enhanced engagement with the course content during a face-to-face class this way,

“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 or 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.”

Smyth et al. (2012) contend that students in higher education today are looking for greater autonomy, accessibility, and flexibility in their learning. These elements are the springboard towards active learning and student engagement and blended learning approaches are one way to deliver this mix of challenge and opportunity. This could be the reason why Martínez-Caro and Campuzano-Bolarín (2011) claimed that student involvement and satisfaction tends to be higher in blended learning courses than in traditional lecture courses.

Mechanisms for supportive learning

Students seek support through different methods to enhance their involvement in learning. However, the ways they obtain this support differs for graduate and undergraduate students. Graduate students identified the development of an online community of practice as the main mechanism to exchange support. As David puts it, “I feel a real sense of community when I can safely express my new opinions related to the online discussion questions.” Garrison et al. (2000) mention that in blended learning, communities of inquiry can be considered part of major vehicle for improving
engagement. Undergraduate students, however, feel more engaged when instructors have a more visible presence in a blended learning course. Asma, an undergraduate student explained it this way, “The involvement of the Prof is crucial. I need to know that he is attentive to my online discussion comments.” In a similar manner, Szeto and Cheng (2016) also confirm this finding. They mention that especially in the online learning components of a blended learning course, instructor-student interaction facilitates a higher rate of satisfaction for the students. Furthermore, Shea and Bidjerano (2009) maintain that teaching presence actually creates the learning environment to develop social presence for groups of students online. This is also in line with findings of the study.

THE ROLE OF THE PROFESSOR IN ENHANCING STUDENT ENGAGEMENT IN BLENDED LEARNING

This section explores the role of professors in improving student engagement through blended learning courses and centers on these key elements; (1) Discovering the meaning of a blended learning pedagogy; and (2) Improved learning outcomes.

One of the first steps for professors to improve their approaches towards student engagement in their teaching is to better understand what a blended learning pedagogy actually means. As professors move from a more traditional lecture style of teaching to a blended learning format, they realize the challenges of redesigning and re-thinking their courses. This requires time and commitment along with learning how to manage in-class and online activities so as to make students feel more ready to take ownership of their learning. Not only do they have to feel comfortable with using the new technological tools but they must also think through how to select and present the content alongside of their accompanying assessment activities. Dennis, a seasoned professor, described it this way, “It’s a new pedagogy which needs a front-end investment of time and that time is always difficult to find with so many competing interests.” Kehrwald and McCallum (2015) also make the claim that increased workloads are one of the main reasons that professors find it hard to make the transition to blended learning. Similarly, Ocak (2011) points out that embarking on a blended learning pedagogy brings with it additional roles and responsibilities for professors and this can make it difficult for them to change their teaching approaches. Nevertheless, Owston et al. (2006) found that blended learning can in fact provide an opportunity for faculty to evolve in the way they perceive their teaching responsibilities and in fact can be a means for re-invigorating their courses towards better student engagement.

Another key factor related to student engagement for professors who moved into a blended learning approach was improved learning outcomes. Professors tended to agree that blended learning environments led to an increase in active student participation and an enhanced teacher-student relationship. This, in turn, resulted in student-self regulation and an increase in higher quality course assignments and grades. As one professor described, “I used a mix of technological tools and right away I noticed a better conceptual understanding of the topic and better problem-solving skills.” In a similar vein, Owston et al. (2013) found that there was a significant relationship between students’ engagement and the grades they achieved in a university blended learning course. These students preferred the blended format over traditional face-to-face or online classrooms because of its flexibility and the different ways for increasing active learning. Taylor et al. (2018) have also emphasized the necessity to focus on improved learning outcomes through student engagement in blended learning.
SHARED INSTITUTIONAL RESPONSIBILITY FOR INCREASING BLENDED LEARNING AND THE EXPLORATION OF STUDENT ENGAGEMENT

Groccia (2018) has proposed a multidimensional model of student engagement which highlights the connections of institutional factors that influence the development and maintenance of student engagement. In the model, Buskist and Groccia (2018) explain that student engagement is a responsibility shared by the whole academic community including teachers, administrators, staff, and students themselves inside the institution as well as stakeholders outside of it. In sum, Groccia makes the argument that institutional quality is also related to the types of engagement opportunities provided to the students.

In this section, findings from the perspective of the administrator for increasing blended learning at an institutional level are presented. The focus here was on how the adoption and implementation of a university-wide blended learning initiative could increase the quality of the student experience yet ultimately influence student engagement through this new approach to teaching. One of the responsibilities of an institution is to create an enabling teaching environment for professors as they transform their face-to-face classes to a blended learning format. For administrators, the central focus underlying this change is to create policies and support structures for professors and students. Since the premise of this article is that blended learning is viewed as a vehicle for student engagement, two interconnected institutional factors are discussed: (1) The necessity for defining blended learning, and (2) Leadership through early adopters.

From an administrator’s perspective, there is a necessity for defining blended learning at an institutional-level even before tackling issues around student engagement. Directors, department heads and deans clearly stated that defining this term is essential to the successful implementation of a university-wide blended learning initiative. They also expressed confusion regarding definitions which, in turn, affects the communication lines to faculty members. Andy, a newly appointed Dean, described it this way, “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.” Furthermore, there is a lack of policies and regulations in place across faculties which leave front line professors to make their own interpretations about the meaning of blended learning. Wold (2013) and Betts and Heaston (2014) echo this problem by stating that establishing a common language around blended learning definitions is important for institutions before moving forward on any type of larger initiative. It would seem that if blended learning is a vehicle for student engagement there are bottlenecks at the institutional-level that have to be ironed out first before the real issues of student engagement can come to the forefront.

Another factor that emerged from the administrator’s standpoint on shared institutional responsibility was the importance of leadership through early adopters in blended learning. Early adopters are individual faculty members or small groups of professors who have already experimented with a blended learning format and are willing to share their experiences and provide guidance and mentorship. They are able to champion and advocate for the transition to a blended learning pedagogy and they help set an example for other instructors to follow. Expressing her sentiments on this idea, Michelle, a full-time professor, said, “Any university-wide initiative needs to have champions because they help move things along and they have networks already that are very valuable.” It seems that creating this type of awareness with the help of early adopters at the faculty level supports the work of Graham et al. (2013) and their three-stage framework for administrators which could
TABLE 1  Cognitive presence and learning and teaching strategies to enhance student engagement

<table>
<thead>
<tr>
<th>Alternate cognitive presence dimensions</th>
<th>Category of cognitive presence meaning</th>
<th>Learning and teaching strategy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metacognition knowledge</td>
<td>Becoming a critical thinker</td>
<td>Critical incident questionnaires; ethical dilemmas; personal concept maps; instructor-led discovery questions</td>
</tr>
<tr>
<td>Research and scholarship</td>
<td>Synthesis and analyzing skills</td>
<td>Critiquing a research article with instructor guidelines; bridging face-to-face and online discussion points; peer support; adequate online time for reflection and summation</td>
</tr>
<tr>
<td>Professional capacity and self-regulation</td>
<td>Self-regulated learning</td>
<td>Learning contracts; monitoring self-progress; community of inquiry learning; assignments with professional and work activities</td>
</tr>
</tbody>
</table>

become the foundation for integrating ideas around student engagement and blended learning.

EVIDENCE-BASED PEDAGOGICAL STRATEGIES TO INCREASE STUDENT ENGAGEMENT IN THE DEVELOPMENT OF COGNITIVE THINKING SKILLS

In this section, the discussion returns to an earlier point made in the article—cognitive presence which is an integral element of the Col framework to enhance engagement. McGee and Reis (2012) maintain that active learning is an integral component of student engagement in blended course design. They assert that active learning, in turn, requires that students develop and use cognitive strategies to attain higher levels of thinking. For example, studies on cognitive presence and higher order thinking suggested that problem posing scenarios related to case studies and elaborating on weekly readings in small groups were essential pedagogical tools to advance cognitive thinking in a blended learning course design (Akyol & Garrison, 2011a, 2011b). Similarly, in another blended learning study McDonald et al. (2014) investigated the effects of a partnership between faculty and students on how reflective practices in higher-order thinking could be best supported. The authors analyzed students’ writings with respect to level of reflection and depth of higher-order thinking prior to and during the course. Results indicated that several reflective practices increased by the end of the course. However, these related studies employed sampling procedures from an undergraduate student population.

As part of the study on blended learning, an attempt was made to further understand the cognitive presence element of the Col framework and how graduate students, in particular, develop their higher order thinking skills (Taylor et al., 2019). A summary of those results is highlighted in Table 1 by focusing on three alternate cognitive presence dimensions, the meaning of cognitive presence for graduate students and the related pedagogical learning and teaching strategies to enhance student engagement in the development of cognitive thinking skills. These results were obtained using concept mapping exercises with a panel of experts in adult education, a student survey, semistructured interviews with graduate students and course assignments. Key informants described the significance of active learning in their academic progress and how it was an integral component in their motivation for continuous engagement.

The first alternate dimension of cognitive presence for graduate students is Metacognition Knowledge. This refers to the breadth and depth of knowledge used to exhibit
critical thinking and problem-solving skills in a blended learning format. It is also related to the ability to evaluate and explain theories in one's domain of specialty. A graduate student demonstrating this expectation would have an awareness of the current theoretical thinking in a particular domain area of education and be able to provide a systematic critical appraisal of this information. Fundamental to this is that graduate students are in the process of becoming critical thinkers. Teaching and learning techniques that can enhance student engagement through this cognitive dimension are critical incident exercises that ask students to question their taken-for-granted assumptions on topical educational subjects, brainstorming exercises on ethical dilemmas in education and developing personal concept maps based on the weekly online readings and online discussions. A key role for the instructor is to pose the right critical thinking and discovery questions.

Research and Scholarship is the second dimension of cognitive presence. It is defined as the demonstration of an advanced understanding of research approaches and methods in educational research. It also refers to an ability to understand and interpret research results. For example, a graduate student providing evidence of this expectation would be able to distinguish among the different research paradigms and select appropriate research methods to accompany these lines of inquiry. A fundamental competency for graduate students related to this aspect of cognitive presence and the development of higher order thinking was the development of synthesizing and analyzing skills. A learning strategy that was favored by these students was the small group discussions that occurred in class and then carried online when assigned a research article to critique. Students found that having the time in between the weekly online sessions gave them an opportunity to compose and revise their thoughts with peer support before submitting their comments to the large group. The resources of the instructor such as additional websites, podcasts and videos acted as a stimulus for student engagement to further build new knowledge within the group.

A third dimension of cognitive presence was Professional Capacity and Self-Regulation and included higher order thinking through the demonstration of initiative, intellectual curiosity, and goal setting in a graduate student environment. A graduate student demonstrating this learning outcome would be able to regulate self-direction with minimal support in an area related to their professional growth. A key learning strategy that enabled individual student engagement was the use of contracts associated with their professional goals and course planning tools to self-monitor weekly progress. This shift in student ownership towards self-direction helped to increase participation and active learning both in class and online through peer and instructor support. In addition, having course assignments that related to their work place or their professional aspirations provided a means for self-discovery and creativity especially when individuals attempted to solve work issues with the support of their peers.

LESSONS LEARNED AND STEPS FORWARD

There are several lessons that can be learned from the arguments discussed in this article and the results presented from the blended learning study at the University of Ottawa. A common thread weaved through each of the different sections has been that blended learning can be seen as a vehicle for increasing student engagement. The CoI framework, which holds some parallels to Groccia's model of student engagement, is an interesting approach to consider in blended and online learning environments. It offers a different way of understanding a quality educational experience for students by introducing the three overlapping elements of cognitive, teaching and social presence. In addition,
undergraduate and graduate students have different needs and expectations from blended learning courses which require different learning strategies to encourage motivation, active learning, and deeper engagement. As professors make the transition into a blended learning pedagogy and transform their courses, this seems to be a pivotal time to also focus in on more relevant teaching and learning strategies for enhancing student engagement. At the institutional level, however, much more work needs to be done in sharing the responsibility for blended learning as a vehicle for student engagement. Presently, there appears to be a lack of symmetry among administrators, professors and students as to the importance of a quality learning experience that centers on learner engagement. Although some initial evidence-based pedagogical strategies to increase student engagement in the development of cognitive thinking skills have been reported here, a more complete repository for both undergraduate and graduate students is needed.

Moving forward and based on some of the lessons learned from this article, there are several questions that have emerged that could constitute the beginning of a research agenda. One category of questions relates to how professors can better encourage student engagement and active learning through the design features of their newly transformed blended learning courses. What roles should professors and students play in defining and enacting collaborative engagement? What changes are needed by administrators and faculty to enhance meaningful student learning outcomes? Is student engagement related to persistence and drop out especially in undergraduate blended learning courses? Since two of the main tracks of research in the scholarship of teaching and learning in higher education are both blended learning and student engagement, this article has attempted to raise a call to meet this challenge.

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Design and implementation of assignments for large classes of health professional students that engage learners and promote communication

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Abstract
This article describes the use of feedback-oriented online assignments in large classes of undergraduate students studying anatomy and physiology to promote active learning, critical thinking, and effective written communication skills.

INTRODUCTION

At the university undergraduate level, teaching of basic sciences often involves lecture-based delivery of detailed information to large classes of students who need to assimilate that new knowledge and, by linking it with what is already known, transfer it to long-term memory (Kirschner, 2002; Kirschner et al., 2006). The extent to which assimilation has occurred is then frequently assessed using multiple-choice-based examinations that test recall and understanding, cognitive abilities categorized as lower order by Bloom’s revised taxonomy (Anderson et al., 2001). Concerns related to these methods of curriculum delivery and assessment include their promotion of learning that is largely passive and their dependence on rote memorization. As Roberts (2011) suggested, this type of learning, by not actively engaging students to explore, synthesize, and apply new knowledge to real-life scenarios, often does not promote long-term knowledge retention.

Many definitions and models exist for student engagement, but common descriptors include: doing, communicating, participating, being motivated, and applying theories to the solution of real problems (Barkley, 2010; Coates, 2007; Groccia, 2018; Groccia & Hunter, 2012; Kuh, 2002). This article presents the provision of interactive online assignments to large classes of undergraduate students studying anatomy and physiology (A&P). The purpose of each was to promote interactive and constructivist learning by guiding students through exploration of the literature and the creation of a finished product with educational value. In addition to identifying the educational and professional goals targeted by each assignment, this article also addresses challenges accompanying assignment assessment when dealing with large classes.
WHY ASSIGNMENTS?

Research has demonstrated that long-term gains in knowledge retention supporting subsequent retrieval and application can be achieved when students are encouraged to explore concepts in depth and construct explanations in their own words (Michael, 2006; Rivard & Straw, 2000). Conducting research can promote information literacy as students critically gauge the reliability of their sources and the validity of the information acquired (Beck et al., 2012; Wolf & Barzillai, 2009). Indeed, a key expectation of post-secondary education is to create opportunities for students to use higher order cognitive skills such as analysis, evaluation, and creation, so they can subsequently apply new knowledge and understanding once in the workplace by being able to plan, predict outcomes, and problem-solve (Carnegie, 2015; Mayer, 2008; Michael, 2006; Mynlieff et al., 2014; Orr & Foster, 2013). Furthermore, interactive and self-reflective learning leading to an improved ability to link theory with clinical practice is recognized as being especially important for health science students (Bouchaud et al., 2017; DeLenardo et al., 2019). Once in clinical practice, they will need to think on their feet, react to changing situations, and explain medical procedures to patients in a way that is understandable.

While construction of suitable assignments as well as provision of instructive feedback can be time-consuming and labor-intensive (Carnegie, 2012; Kali & Ronen, 2005), it is important that instructors dedicate that time in order to enrich the learning experiences of their students. Importantly, effort must be directed toward constructing learning exercises that have clear educational value. Students will not use an online tool simply because it exists; they need to see possible gains in learning outcomes that such a tool can enable (Saunders & Gale, 2012). They need to feel motivated, both extrinsically and intrinsically, to do the extra work (Lapum & St-Amant, 2016; McDaniel & Tornwall, 2016). A useful extrinsic incentive that is often used is awarding marks directly linked to successful completion of an assignment (DeLenardo et al., 2019; Ryan & Deci, 2000). However, and more importantly, connecting assignments to course learning objectives and the possibility of improved summative evaluation outcomes as a consequence of work invested can also authentically engage and intrinsically motivate student participation (Groccia, 2018; Padilla-Walker, 2006; Pentaraki & Burkholder, 2017).

Often labeled as soft skills, communication and collaboration are recognized as core competencies essential to many healthcare professions (Suter et al., 2009; American Nurses Association 2010; Ray & Overman, 2014; Schwartz et al., 2019). When students are working together, the discussions that accompany group activities, be they in-person or online, are valuable examples of social engagement in learning (Trowler, 2010). Both can foster learning and the development of higher cognitive skills by providing a forum for enquiry and critical evaluation during project creation (Brown, 2010). Learning management systems such as Blackboard Learn™ and Brightspace™ provide opportunities for students to hone their cooperative and communication skills when working in groups online to create and evaluate documents that extend from classroom learning.

ASSIGNMENT #1: CREATION OF A MINI LECTURE TARGETING A NOVEL APPLICATION

This assignment involved approximately 300 students studying the cardiovascular system. Students were randomly assigned to one of five topics (Exhibit 1) that asked them to apply their understanding of the properties of blood components to a real-life situation by creating a 10-slide PowerPoint presentation to answer their assigned question in an informative
and engaging manner (Carnegie, 2016). Successful assignment completion represented 3% of their final grade. This assignment encompassed the doing, applying, communicating, and being motivated aspects of student engagement.

This assignment had several goals. Topics were selected that would engage student interest and encourage them to build links between physiological principles learned in class and practical circumstances to which they could relate (Exhibit 1). Using PowerPoint slides to convey information gave students practice in developing explanations that were clear and concise. Creativity was encouraged as students decided how to best convey factual information and link physiological concepts. Basically, they were being asked to apply an aspect of course content to real life and, at the same time, teach.

A number of studies have investigated the learning benefits associated with teaching and even preparing or pretending to teach. A key contributor to the in-depth learning that occurs while preparing to teach can be a sense of responsibility combined with a desire to not disappoint (Chase et al., 2009). However, even in the absence of teaching-based interactions, students were found to learn more deeply, organize information more coherently, and demonstrate improved recall following preparation for teaching compared to exam-based assessment (Nestojko et al., 2014). Roscoe and Chi (2007, 2008) demonstrated that tutors benefited most when their preparation involved reflective thinking while exploring source materials and constructing explanations. An additional benefit is that of retrieval practice—the act of constructing explanations by organizing pieces of factual information retrieved from long term memory (Koh et al., 2018). Koh et al. (2018) demonstrated that learners who taught a recently-learned physiological concept without using notes and those who undertook retrieval practice by writing explanations related to that concept performed better on subsequent assessments than those who had taught, but using notes, and those who had neither taught nor practiced information retrieval. All of these activities were experienced by the students in the current study as they explored the literature, restructured and organized information when constructing concisely worded explanations in their own words, and selected supportive illustrations.

Faced with assessing 300 submissions, the author used the assignment function of Blackboard Learn to efficiently provide individualized feedback via comment boxes and a grade to each student. Feedback recognized the strengths and weaknesses of each submission, corrected errors in understanding, and identified spelling, grammatical and referencing errors.

| Q1 (last digit of student number is 0 or 5) | Why does blood volume decrease in an astronaut? What happens to the hematocrit? |
| Q2 (last digit of student number is 1 or 6) | Why does the gene for sickle cell disease confer resistance to malaria? |
| Q3 (last digit of student number is 2 or 7) | Blood drawing used to be carried out for a number of illnesses. Of course we know this practice is usually not a good idea. But what is an example of a disease for which this is a valid treatment and why? |
| Q4 (last digit of student number is 3 or 8) | How is fetal hemoglobin different from maternal hemoglobin? Why does this make sense? |
| Q5 (last digit of student number is 4 or 9) | Donated blood that has been stored for more than three weeks may be deficient in nitric oxide. Why is that a concern? |
ASSIGNMENT #2: GLEANING TAKE-HOME MESSAGES FROM AN EDUCATIONAL RADIO INTERVIEW

This assignment also asked students (approximately 300) to create an instructional PowerPoint slide presentation. However, in this case, they accessed a source with a different modality (radio interview) and the focus was nutrition. Students were provided with a link to a 25-min interview between Anna Maria Tremonti of CBC Radio’s *The Current* and Mark Schatzker, author of the book, *The Dorito Effect* (Tremonti, 2015). This interview discussed changes in food that is now available to consumers and the effects of those changes on nutritional content and eating behavior. Students were instructed to select three key concepts they would like their peers to take away from this interview and to construct a short PowerPoint presentation (maximum 10 slides) to present those take-home messages and justify their importance using supportive data from the interview. They were informed that assignment assessment criteria included ability to grab and maintain attention, quality of the language used to convey nutrition-based information, and success with which their presentation convinced the reader of the importance of their selections. Assignments were assessed (3% of their final grade) and individualized feedback efficiently provided as described for assignment #1.

This assignment encouraged students to use the more challenging higher cognitive skills of analysis and evaluation so they could create an informative and educational final product that would convey their ideas effectively (Anderson et al., 2001; Mynlieff et al., 2014; Zoller, 1993). Rather than simply repeating facts from the interview, they had to select pieces of information that they deemed to be of critical importance and to defend the choices made. “Justify” falls under “evaluation”, the highest cognitive skill in Bloom’s revised taxonomy (Fellenz, 2004). Justification involves appraising and then selecting key pieces of content to support a particular position, and then linking concepts so that they can convince a target audience of the validity of their argument. These critical thinking activities force students to explore new information more thoroughly than they normally would as they weigh the importance of different pieces of evidence. As a result, they are supportive of deeper learning that can lead to improved understanding and knowledge retention (Vanags et al., 2013; Zoller & Pushkin, 2007). This assignment targeted the doing and communicating aspects of student engagement, but also the application of learned concepts to real life.

ASSIGNMENT #3: CREATING AN INFORMATIVE PRO-VACCINATION BROCHURE

Students tackled this assignment after learning about the immune system and the ability of vaccines to confer long-term protection against certain infectious microorganisms. This project involved 271 and 276 students, respectively, enrolled in two sections of an A&P course (over 50% of them were Bachelor of Science Nursing students). Students were asked to create a one-page educational brochure targeting the general public in which they explained how vaccines work, why vaccination of children is a safe approach to healthcare, and against what diseases children can be vaccinated (Savory & Carnegie, 2019). They were given complete freedom to design the layout of their brochure and provided with a rubric detailing the evaluation approach responsible for 3% of their final grade (1.5% for information quality and accuracy, 1% for writing quality and ability to maintain interest, and 0.5% for effective use of color and supportive illustrations). Assignment grading and feedback provision was via the course web site (in this case, Brightspace), as previously described.
Students embraced this assignment. It gave them an opportunity to consolidate some of their learning by making links between theoretical concepts and aspects of clinical practice (Bouchaud et al., 2017; Savory & Carnegie, 2019). They were encouraged to develop information literacy (Beck et al., 2012) by selecting references with a careful eye for accuracy and reliability. They were given practice regarding communication in that they had to restructure potentially complicated scientific information into a document suitable for the lay public using appropriate language and clear explanations. Their success in doing that, in addition to the correction of any misconceptions, was addressed in the feedback that was provided for each submission.

Both Roberts (2011) and Young (2018) discuss the four sequential steps that are needed for deep learning to truly occur. They are: (1) experience, (2) reflection, (3) abstract conceptualization and, finally, (4) active experimentation or testing. The vaccination assignment included all of these. Students learned about vaccination principles in class and most of them had prior experience with being immunized (step 1). Reflection on what they had learned and continued to learn as they explored the literature addressed step 2 while planning the layout of their brochure, its content and the organization of information flow, were components of step 3. Finally, step 4 was accomplished by the submission of a completed final product and the receipt of instructive feedback addressing strengths and weaknesses of their brochure. This assignment targeted the communicating and being motivated aspects of engagement, but especially the application to everyday life. Indeed, one student’s brochure was adopted by her family physician for distribution to patients; this information was subsequently shared with students in order to illustrate the applicability of this assignment to their future careers.

ASSIGNMENT #4: LIMERICK CREATION AND PEER EVALUATION

This two-part assignment involved the creation of a final product (an educational limerick) following by assessment of limericks produced by their peers (Carnegie, 2012). Students worked in groups of three to create limericks based on any aspect of A&P content. The groups were generated randomly within Blackboard Learn and each group assigned a private discussion folder. Groups had three weeks to select a topic and to create, polish, and submit their final product. Basic rules governing limerick creation were explained in class and posted online; students were also provided with a sample limerick created by the author (Exhibit 2).

Following submission, each student then completed two rounds of anonymous evaluation of their peers’ limericks in order to identify the best creations. For round 1, the lim-
ericks were grouped so that each student had 12 limericks to evaluate using the following rubric. Students could award up to 5 marks for each of 4 parameters (learning value, accuracy, adherence to limerick rules/musicality, spelling/style) to arrive at a final score out of 20. Round 2 of assessment involved sending the top 24 limericks, as identified by student scoring, to the entire class so that each person could complete a final assessment using the same rubric. The top three limericks were displayed in class so that the limericks and their authors could receive appropriate recognition.

Limericks were selected for this assignment for several reasons. A limerick is an example of a mnemonic—a pattern of letters, words or ideas that helps with memory. The study of A&P involves the acquisition of a new language as well an emerging understanding of how different parts of the body work and are regulated. It was hoped that working with this new language, seeking appropriate words to rhyme with one another, and selecting short ideas to present that all link to a particular topic during limerick construction would increase student familiarity with the language of anatomy and promote a greater understanding of body functioning and its regulation.

Furthermore, once created, a limerick can be an excellent memory tool. It allows the user to link new pieces of information with that which is already known, uses rhyming to cue recall of unfamiliar words, and employs rhythm as a means of enhancing long-term retention (Brahler & Walker, 2008; Purnell-Webb & Speelman, 2008). The ability of melodies to facilitate the recall of text has long been recognized (Purnell-Webb & Speelman, 2008; Wallace, 1994). However, music is not essential. Wallace and Rubin (1988) also demonstrated improved recall when text was recited aloud using a rhythm compared to when it was spoken in the absence of a beat.

All students conducting the second stage of peer evaluation had access to the best limericks created by their peers and were free to continue to use any limericks that they found helpful when preparing for summative examinations. While the results must be viewed with caution (the high level of participation by students in the limerick writing and evaluation meant low numbers in the non-participation groups), students who participated in limerick writing and assessment had improved overall course final grades compared to those who did not (Carnegie, 2012).

Assessment of their colleague’s limericks also presented important active learning opportunities for the peer assessors. Guided by the rubric, they had to re-explore course content in order to evaluate the accuracy of the limericks and they needed to read each limerick carefully to ensure compliance with a standard limerick pattern. These activities (reflecting, verifying accuracy, identifying errors, composing written comments) have all been linked to deeper learning and consolidation (Topping, 1998; Van Lehn et al., 1995). Indeed, important comparisons have been made between the learning benefits of peer tutoring and those of peer assessing (Topping, 1998).

CONCLUDING REMARKS

In summary, it is important to provide undergraduate students enrolled in large classes in any discipline with opportunities to enrich their learning experiences via activities that engage interest and provide opportunities for students to explore, evaluate, synthesize and create while, at the same time, seeing how content learned in class applies to real life. While these activities targeted A&P, they could be extended to any discipline that introduces new terminology or language and/or requires students to understand and apply concepts. Course learning management systems facilitate the provision of engaging assignments to large classes by providing online sites for assign-
ment upload, online discussion, and efficient provision of individualized feedback to students.

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Engaging students as co-creators of course resources and learning experiences

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Abstract
This article focuses on the benefits and barriers to engaging students as partners in educational projects.

PROBLEM

Despite the benefits associated with including students as stakeholders in education development teams, barriers have hindered these practices (Bovill et al., 2016). A recent review of the literature in student engagement has illustrated a growing movement to include students in educational resource design and studied the impacts that student contributors had on these projects (Mercer-Mapstone et al., 2017). In the present article, we (i) describe the projects and roles that students have played in these projects, (ii) describe the approaches we have used to involve students on our own project teams, (iii) reflect on the advantages that this involvement has provided, and (iv) explain how potential barriers were mitigated or eliminated.

In the following sections, we present a review of the literature on student–faculty partnerships, including their benefits and barriers. We include experiences from the students listed above where appropriate in order to hear from the students themselves on the potential benefits and barriers and to situate their experiences within the literature. The goal of this article is to showcase the benefit and barriers that the Flynn Research Group has found while engaging students.
STUDENT ENGAGEMENT

Student engagement in higher education is commonly described in the context of classroom engagement and active learning, but also plays an important role outside of the course context (Trowler, 2010). The concept of involving students as partners in their education has gained significant traction in higher education in recent years (Bovill et al., 2016; Gravett et al., 2019). A student’s level of involvement on a project can vary greatly from being a token contributor to a leader (Figure 1). The various roles are described below:

1. Token contributors: referred to as the “underpinning of student voice” (Biddulph, 2011; Fielding, 2004; Hart, 1992; Matthews & Limb, 1999; Rudduck & Fielding, 2006). This type of involvement simply requires a student to be present, without necessarily contributing to the project.

2. Consultants: students provide their unique perspectives to explore, affirm, and improve teaching and learning (Cook-Sather & Alter, 2011).

3. Collaborators: students provide meaningful collaboration towards research under the direction and supervision of a principal investigator (Bovill et al., 2016).

4. Partners: students jointly design learning including resources and assessments (Bovill et al., 2011). The key distinction between collaborators and partners is that the former defines students as unequal to the supervisor, while the latter treats the parties as equal.

5. Leaders: students lead the team.

STUDENTS AS PARTNERS

Partnership is “a reciprocal process by which all partners have the opportunity to contribute equally, although not necessarily in the same ways, to curricular or pedagogical conceptualization, decision-making, implementation, investigation or analysis” (Cook-Sather et al., 2014). A successful partnership can also be considered a process of student engagement where faculty and students learn from each other by working together to create an environment where students are engaged, and teaching is enhanced. Regardless of context, productive partnerships are established on principles of respect, reciprocity, and shared responsibility (Healey & Healey, 2018). This contribution focuses on the roles of students as partners (SaPs), with occasional mention of students’ other roles as consultants and collaborators.

OPPORTUNITIES AT THE UNIVERSITY OF OTTAWA

The University of Ottawa is a large, bilingual, research-intensive university that has several programs to promote students’ involvement in educational research and development projects. In Table 1, we describe the ways in which undergraduate students have been involved in educational research and development, where we have involved over
### TABLE 1  Summary of student involvement opportunities at the University of Ottawa

<table>
<thead>
<tr>
<th>Program</th>
<th>Student hours (approximate total)</th>
<th>Student salary or scholarship amount, approx.</th>
<th>Faculty cost</th>
<th>Faculty incentive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Research Opportunity Program (UROP)</td>
<td>50</td>
<td>$1,000</td>
<td>Expenses&lt;sup&gt;a&lt;/sup&gt;</td>
<td>$500</td>
</tr>
<tr>
<td>Honours</td>
<td>360</td>
<td>0</td>
<td>Expenses&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0</td>
</tr>
<tr>
<td>Summer student</td>
<td>560</td>
<td>$7,000–10,000</td>
<td>Salary and expenses&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0–percentage of salary&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Co-op</td>
<td>560</td>
<td>$7,000–10,000</td>
<td>Salary and expenses&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0</td>
</tr>
<tr>
<td>Part-time student</td>
<td>Variable</td>
<td>Variable</td>
<td>Salary and expenses&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0</td>
</tr>
<tr>
<td>Volunteering</td>
<td>Variable</td>
<td>0&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Expenses&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0&lt;sup&gt;c&lt;/sup&gt;</td>
</tr>
</tbody>
</table>

<sup>a</sup>Expenses are those associated with the student working on the project (e.g., printing, cost of chemicals in a laboratory).

<sup>b</sup>Faculty are reimbursed for a portion of students’ salary when hired through the Work-Study program.

<sup>c</sup>Having student volunteers may be appealing, but we place large value on paying the students appropriately for the work that they do.

### TABLE 2  Summary of initiatives discussed herein

<table>
<thead>
<tr>
<th>Initiative</th>
<th>Bilingual</th>
<th>Open education resource</th>
<th>Intended discipline</th>
<th>Intended level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Science preparatory workshop</td>
<td>Yes</td>
<td>No</td>
<td>Science</td>
<td>1</td>
</tr>
<tr>
<td>Organic chemistry learning modules</td>
<td>Yes</td>
<td>Yes</td>
<td>Chemistry</td>
<td>1–2</td>
</tr>
<tr>
<td>Growth and goals learning module</td>
<td>Yes</td>
<td>Yes</td>
<td>Any</td>
<td>Any</td>
</tr>
<tr>
<td>Research projects</td>
<td>Yes</td>
<td>N/A</td>
<td>Chemistry, education</td>
<td>Any</td>
</tr>
</tbody>
</table>

70 students and postdoctoral fellows: 14 Undergraduate Research Opportunities Program (UROP) students, 9 Honours students, 22 summer students, 2 co-op students, 4 part-time students, 10 volunteers, 8 graduate students, and 3 postdoctoral fellows. In the sections that follow, we describe the various roles that students have had within their projects.

**STUDENTS HAVE VARYING ROLES THAT CAN EVOLVE OVER TIME**

In this section, we describe the ways in which students have been involved in the Flynn Research Group’s educational development initiatives (Flynn, 2019). The projects we describe include a Science Preparatory Workshop, Organic Chemistry Learning Modules, and a Growth & Goals Learning Module (Table 2). All research projects were reviewed and approved by the University of Ottawa Research Ethics Board; program evaluations were discussed with the REB and either deemed exempt (in writing) or proceeded through full REB review.

Given that the transition to university can be challenging and is often stressful (Gall et al., 2000; Towbes & Cohen, 1996), a Science Preparatory Workshop was developed to help students better manage their transition to university studies (Veilleux-Deschênes et al., 2015). In the first year creating the Science Preparatory Workshop, Joëlle Veilleux-Deschênes was hired (2nd year BSc Biology, summer student then Honours) as an assistant to do administrative tasks (e.g., workshop registrations), but she demonstrated such creative ideas, leadership abilities, and organizational skills, such that her role quickly grew to that of
ENGAGING STUDENTS AS CO-CREATORS OF COURSE RESOURCES AND LEARNING EXPERIENCES

co-organizer (partner). Joelle brought a student perspective that was different from faculty members’. She also successfully advocated for significant changes to the workshop that were student-centered—that is, with students’ needs driving changes.

OrgChem101 is an Open Education Resource that helps students with core ideas of Organic Chemistry (Bodé et al., 2016; Carle et al., 2020; Flynn et al., 2014; 2018; Visser & Flynn, 2018). The modules are interactive, bilingual, meet accessibility standards, and student-driven (AODA, 2005). Melissa Daviau-Duguay was engaged (2nd year, BSc Psychology, summer student) with the project from the very beginning, using core project funding. She had dual roles of being a member of the design team (partner) and the main person responsible for creating the database of quiz questions and resource documents (contributor). Ryan Featherstone joined the team (3rd year BSc, summer student and research assistant) to help expand the modules, with dual assigned roles of being a member of the design team (partner) and the main person responsible for creating the database of quiz questions and resource documents (collaborator). These new modules and overall umbrella had new designs that arose from students’ suggestions and associated research studies with students. Other students also became involved in the project as it evolved, in roles that included product testers and consultants.

We created the Growth & Goals module to help students learn to identify their current knowledge and continually monitor their learning, plus develop autonomy and professional capacity skills; which are two Undergraduate Degree Level Expectations and are components of self-regulated learning (SRL) (Ontario Council of Academic Vice-Presidents, 2005). The module is a customizable, bilingual, open education resource (available for download at FlynnResearchGroup.com). Students have been involved as co-developers and researchers on this project (O’Connor, Roy, Roberge, Huang), in addition to having been consulted through focus groups. Emily O’Connor (2nd year BSc and professional engineer) brought the student perspective along with a wealth of project management experience from her background as a professional engineer. Emily acted as co-designer, project manager, and worked with faculty members who wished to implement the module. In the 2nd year of the project, Kevin Roy joined the team (3rd year, BSc Biomolecular Sciences, UROP then Honours student); he contributed to improvements to the module and co-delivered many presentations at local and national settings (O’Connor et al., 2018a 2018b, 2019). In the 3rd year of the project, Sebastien Roberge (2nd year, BSc, UROP) and Denzel Huang (1st year, MSc) joined the team. Through focus groups and surveys, a wide group of students were and continue to be consulted on the project. All four were part of the project’s evaluation team, each with their own aspect of the evaluation to investigate.

Many undergraduate and graduate students, plus postdoctoral fellows (advanced research trainees) have been part of research projects in the group and have various roles on their own projects and others (Figure 1).

This article was written in a partnership between faculty (Flynn), six graduate students (Bodé, Carle, Deng, Huang, Lapiere, and Mesnic), and seven undergraduate students (Featherstone, Ingram, O’Connor, Roberge, Roy, Veilleux-Deschênes, and Znotinas). In the process of writing this article, each member contributed equally, providing their own unique perspective and experiences.

STUDENTS ON THE PROJECT TEAMS

Table 3 outlines examples of the students’ roles on each project. Each student stated what they believed their role to be using the levels described in Figure 1. The students felt that they were primarily partners or collaborators on the projects.
### TABLE 3 Examples of students’ roles on projects

<table>
<thead>
<tr>
<th>Student</th>
<th>Project</th>
<th>How they were involved</th>
<th>Reported level of involvement</th>
<th>Description of work</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nicholas Bodé</td>
<td>Nomenclature101.com</td>
<td>UROP student, Honours student, and MSc. Student</td>
<td>Partner</td>
<td>Analyzed how students performed after using the online module</td>
</tr>
<tr>
<td>Ryan Featherstone</td>
<td>OrgChem101.com</td>
<td>Summer student and Undergraduate research assistant</td>
<td>Consultant, collaborator and partner</td>
<td>Part of learning tool’s development team and created a database of over 1000 questions</td>
</tr>
<tr>
<td>Quinn Ingram</td>
<td>Research</td>
<td>UROP student and Summer student (work-study program)</td>
<td>Collaborator</td>
<td>Analyzed data on how students approach organic chemistry projects</td>
</tr>
<tr>
<td>Emily O’Connor</td>
<td>Growth &amp; Goals</td>
<td>Summer student and Undergraduate research assistant</td>
<td>Consultant, partner</td>
<td>Involved in development, evaluation, and knowledge mobilization of the Growth &amp; Goals module</td>
</tr>
<tr>
<td>Sebastien Roberge</td>
<td>Growth &amp; Goals</td>
<td>UROP Student</td>
<td>Collaborator</td>
<td>Analyzed data on students’ reported studying habits in the Growth &amp; Goals module</td>
</tr>
<tr>
<td>Kevin Roy</td>
<td>Growth &amp; Goals</td>
<td>UROP student and Honours student</td>
<td>Consultant, Collaborator, Partner</td>
<td>Involved in development, evaluation, and knowledge mobilization of the Growth &amp; Goals module</td>
</tr>
<tr>
<td>Joëlle Veilleux-Deschênes</td>
<td>Science Preparatory Workshops</td>
<td>Summer student, Honours student</td>
<td>Partner</td>
<td>Implemented and improved the science prep workshop by including students and making sure students were part of the program</td>
</tr>
<tr>
<td>Annie Znotinas</td>
<td>Research</td>
<td>Honours student</td>
<td>Collaborator</td>
<td>Using eye-tracking technology to access undergraduate students’ understanding of chemistry's language and mechanism</td>
</tr>
</tbody>
</table>

Abbreviation: UROP, Undergraduate Research Opportunities Program

### BENEFITS OF STUDENT–FACULTY PARTNERSHIPS IN EDUCATIONAL DEVELOPMENT

Partnerships between students and faculty can be highly variable depending on both teaching and institutional contexts (Healey et al., 2014), with the benefits associated with partnership being relatively consistent across studies (Mercer-Mapstone et al., 2017). The following sections describe the benefits reported in the literature alongside our experiences from the projects we outlined.
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PROJECTS BENEFIT FROM STUDENT PARTNERS WHO INTRODUCE NEW PERSPECTIVES

Inviting students as partners on educational projects invites active participation from the principal stakeholder in education (Bovill & Bulley, 2011; Dunn et al., 2018; Lubicz-Nawrocka, 2019). In our group, Ryan had taken the class for which the project was aimed to serve and was able to relate to the students who would be using the website that provided an invaluable student perspective.

Since I was the only student on the project at the time, my opinion was definitely heard by the team. I had taken Organic Chemistry II the year before, so it was all still fresh in my head. My opinion was also used in regard to how students would approach the website, if they would want a leaderboard, and so forth. I believe my perspective was an asset to the project since the experts sometimes overlook small details such as students’ confidence levels and abilities. —Ryan Featherstone, OrgChem101.com

PARTNERSHIPS PROVIDE STUDENTS WITH NEW WAYS OF THINKING AND LIFELONG SKILLS

Beyond the benefit to students’ learning environments, research suggests that students directly involved in partnerships leave those partnerships with new skills and ways of thinking (Curran, 2017), including increased motivation (Cook-Sather et al., 2014; Little et al., 2011; Mercer-Mapstone et al., 2017) and improved metacognition and more positive identities as learners (Cook-Sather et al., 2014; Dickerson et al., 2016; Healey et al., 2014).

From our group, Joëlle described gaining skills in management and leadership, which helped her in her further studies:

This 5-year practical experience allowed me to develop management and leadership skills that helped me better understand some of the concepts I was exposed to in my subsequent MBA studies as well as during my doctorate degree in organizational psychology. —Joëlle Veilleux-Deschênes, Science Preparatory Workshop

The skills acquired by students as a result of partnerships—such as communication skills, awareness of limits of knowledge, and autonomy—are also applicable to life beyond students’ degree-level programs (Ontario Council of Academic Vice-Presidents, 2005).

These projects can also lead to students taking ownership of a new project. For example, Kevin decided to start and lead an educational project to create an open-access textbook. His role on the Growth & Goals project allowed Kevin to gain skills in dealing with the administration and managing a budget:

By working on the [Growth & Goals] project, I was able to learn administrative details such as how to fund a project how to create and manage a budget. These skills were essential for bringing [a new open access textbook] project to life and without the guidance of my supervisor and lab group, my team and I would not be working towards creating a free and accessible textbook for one of the largest undergraduate courses in the Faculty of Science. —Kevin Roy, Growth & Goals
In summary, partnerships result in educational initiatives relevant to students as stakeholders and consumers, with students directly engaged in these initiatives also leaving as more capable and confident learners.

**PARTNERSHIPS IMPROVE FACULTY’S TEACHING AND PERCEPTIONS OF LEARNING**

A prominent finding in the literature refers to enhanced relationships and/or trust between students and faculty (Healey et al., 2014; Mercer-Mapstone et al., 2017).

With increased understanding of the “other’s” experience, faculty begin to re-conceptualize teaching as a collaborative process, rather than an isolated one to foster learning (Mercer-Mapstone et al., 2017). The following quote from Alison Flynn, the common faculty member in all of our group’s student-faculty partnerships, highlights the shift in teacher identities as a result of partnerships:

> I’ve always loved seeing those ‘aha!’ moments in students’ learning. Having students as partners takes those moments to a whole new level as we work on initiatives. The initiatives have provided benefits we could never have achieved working alone, particularly if we had only been working from the educator perspective rather than the learner’s perspective. —Alison Flynn, faculty member, principal investigator

Alison describes a wide number of benefits from working with students. First, students bring the perspective of being the learners: the ones who experience the system and the ones for whom the benefits are intended. By working with students, one can truly begin to understand their needs, where the challenges are in the educational system, and design solutions and better tools. Moreover, students provide a unique perspective that may not be seen; examples from our group include a mental health session organized by the members of the Canadian Forces in Science Preparatory Workshops and the student champions for the Growth & Goals module.

**PARTNERSHIPS CAN CREATE INCLUSIVE COMMUNITIES**

Students who partner with faculty also report a greater sense of belonging and community at their institutions (Mercer-Mapstone et al., 2017). As more institutions begin to develop programs and structures to facilitate greater equity, diversity, and inclusion (EDI) (Universities Canada 2019), partnerships may be productive in ensuring that all students feel they are valued members of their university communities.

Students build relationships with the faculty involved in the project, and also with other students that they may not interact with otherwise. When developing the Growth & Goals module, a community was built that consisted of faculty from various disciplines, undergraduate students in science, psychology and chemistry graduate students from the Flynn Research Group. The following quote from Sebastien demonstrates the community built around the projects:

> The Flynn Research Group is composed of passionate and like-minded individuals from different educational backgrounds. This creates an incredibly stimulating environment. Even though we all had our different projects, the group established a friendly workplace environment that promotes team and individual growth. —Sebastien Roberge, Growth & Goals
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POTENTIAL BARRIERS TO STUDENT ENGAGEMENT AND RECOMMENDATIONS ON HOW TO OVERCOME THEM

Barriers are obstacles that would make it difficult for students to participate or be included. For example, university staff and faculty may exclude students from partnerships if the former believes the latter may not be able to contribute meaningfully (Cook-Sather et al., 2014). Surprisingly, all of the students involved in the projects reported few to no barriers to their partnership. A majority of the students in our project teams also explicitly stated that the lack of barriers was mainly because their principal faculty partner, Alison, created an environment for them to grow and flourish:

I do not feel like I really had barriers. I had tremendous support from Alison and members of the Faculty. I had a lot of freedom. If I needed resources, they were provided. —Joëlle Veilleux-Descênes, Science Preparatory Workshop

However, the few barriers that were described reinforce previous findings and are described in the following sections.

BARRIERS RELATED TO TIME AND LACK OF EXPERTISE

Time management has been flagged as the biggest barrier by both students and faculty involved in SaP (Coombe et al., 2018). Students often mention their struggles to juggle projects alongside their courses; meanwhile, faculty often mention that since their participation in projects does not lead to recognition/acknowledgement and does not constitute part of their professional workload, they struggle to find these endeavors worthwhile. As Emily recalls from her time on the Growth & Goals project:

I didn’t feel that there were any real barriers to my involvement other than time constraints. I would have liked to have continued working on and promoting the module but my availability and project funding did not allow for this to happen. —Emily O’Connor, Growth & Goals

Some students may also feel they lack expertise (Felten et al., 2013). For example, Sebastien reported that his main barriers were subject-matter expertise and time management; however, he found that a supporting attitude from the Flynn Research Group was helpful in overcoming these barriers:

The barriers that hindered my involvement in the project were subject matter expertise and time. Subject matter expertise because this was my first time doing data analysis with respect to education research. However, this barrier increased my curiosity and my motivation towards the project as a result. […] In terms of my subject matter expertise barrier, the Flynn Research Group was always ready to provide feedback and guidance to improve my understanding of the task at hand. —Sebastien Roberge, Growth & Goals

Overall, barriers related to time and expertise can be alleviated by (1) outlining the project and clearly articulating the time and expectations required, (2) training students to give them the tools necessary for success, (3) giving students opportunities to provide insight into a project’s direction, and (4) clearly communicating that learning takes time and that this time is understood and valued by other project team members. From an institutional
perspective, we recommend that institutions recognize the work required by both parties in student–faculty partnerships and to allocate the necessary time and resources to facilitate success in these partnerships.

**BARRIERS RELATED TO POWER DYNAMICS**

A potential barrier to student–faculty partnerships is that the faculty member has to “relinquish” some of their power (Arnot & Reay, 2007; Cook-Sather, 2006; Luo et al., 2019; Taylor & Robinson, 2009), making the endeavor seem “risky”. Students may also not feel comfortable challenging the power dynamics in a student–faculty partnership.

Joëlle compared two situations: one in which the student–faculty power dynamic felt inferior, and one in which it was equal:

“I was hoping to create a promotional video for the workshop. Due to a lack of resources and skills, the first (and only) video produced was not of a suitable quality. When some [staff and] faculty members provided their negative feedback, it reminded me of my “inferior” power level, and I felt like I didn’t have the authority to even ask for their support to come up with a higher quality video. Alison was a supervisor who did not hesitate to “give up” some of her power… I felt like I had almost the same “power” she had. Her complete trust in me helped me believe in myself and gave me the drive, the empowerment and motivation to lead this project to its success. —Joëlle Veilleux-Deschênes, Science Preparatory Workshop

To overcome barriers related to power dynamics, we encourage faculty members to “give up” some of their power to students by providing them with opportunities and challenges, while (1) cultivating a positive attitude towards the mutually-beneficial aspects of the partnership, (2) establishing a common understanding of each other’s goals and expectations, (3) setting in place regular checkpoints and (4) providing constructive feedback. This process may help to minimize the perceived risk associated with the power transfer (from the faculty’s point of view) as well as reduce the feelings of inequality that some students may feel.

**BARRIERS DUE TO SYSTEMIC EXCLUSION OF CERTAIN GROUPS**

It has been suggested that not all students have equal opportunities to participate in partnerships (Felten et al., 2013). SaP initiatives have been criticized for awarding positions based purely on academic merit, which may exclude students who struggle to balance their workloads due to nonacademic commitments (e.g., jobs, families, illnesses) (Felten et al., 2013). This mechanism for recruitment of students for partnership perpetuates a cycle of systemic inequity (Bindra et al., 2018). Learners with diverse backgrounds need to be purposefully recruited and included; otherwise, partnerships will fail to represent and recognize the cultural wealth of the populations they draw from (Shea, 2018).

Emily reported being wary of juggling an educational project while having a young family. However, she did report that it was easily done due to flexible hours and an understanding supervisor allowed her full reign on the project:

Dedicating extra time to a project outside of the requirements of my degree while also maintaining time for my family (spouse and 3-year-old daughter)
ENGAGING STUDENTS AS CO-CREATORS OF COURSE RESOURCES AND LEARNING EXPERIENCES

seemed at first like it might be too daunting. I was however fortunate to first be given a very flexible work schedule which would accommodate the inevitable unforeseen responsibilities of parenting a small child (daycare closures, illnesses, etc.) and then to be given the opportunity to put my studies on hold for a year and actually work full-time on the project. These opportunities made it possible for me to contribute to the project. —Emily O’Connor, Growth and Goals

CONCLUSIONS

To our knowledge, this article is the first to highlight context-specific student experiences and projects and connect them to previous benefits and barriers described within the SaP literature. Our findings also reinforce many of those described in the literature; the students involved in the projects found that the positive atmosphere, attentive faculty, and support from the faculty or university helped them in their projects, and in the development of skills they find useful in their lives. The students reported enjoying their experiences and identified themselves primarily as project partners. The following quote from Joëlle shows how much she gained from being a partner on the project:

It gave me the confidence, support, resources, and supervision at a level that exceeded my expectations. It was a really noteworthy experience of self-development and professional development that still makes a difference for me today. It inspired my subsequent professional decisions. It gave me a lot of confidence in myself. It was for me a demonstration that the University of Ottawa places the student at the heart of its activities. I have the impression that not only the academic success of students is a priority for the University, but also the well-being of students as well as their overall (life) development. As regards to Professor Alison Flynn in particular, she is still a role model for me today; a real source of inspiration. —Joëlle Veilleux-Deschênes, Science Preparatory Workshop

Like in previous work, barriers that were reported were related mostly to time management (Curran, 2017). Our experiences suggest that one way to minimize barriers is to ensure that partnerships develop through a positive and supportive atmosphere facilitated by a community of students and faculty. In terms of lacking expertise, one should recognize that each team member contributes a different type of expertise; while the students may not have contributed to the chemistry expertise on the nomenclature101 project (at least initially), they brought expertise as students and knowledge and contexts that would be relevant to students.

OUR RECOMMENDATIONS TO INSTITUTIONS

Though our group has found success in partnering with students on our projects, we recognize that our context is unique and that not all institutions or groups may have the same opportunities. We hope that our description of our educational context above will provide readers with insight into what might be possible at their own institutions. However, still recognizing potential barriers to partnership, we believe that the potential benefits and capacity to work beyond these barriers warrants the need for more student–faculty
partnerships at all institutions. Our recommendation would be to involve students as partners, collaborators, and leaders on educational development projects if possible.

We believe that having students as partners is beneficial for all involved. Promoting these projects and providing opportunities for students would be beneficial for all, including institutions. These educational projects can lead to better teaching tools and learning opportunities and involving students provides a unique perspective that can enhance a project.

We call for more spaces where all students, undergraduate and graduate in any discipline, have the opportunity to be involved in their education. Areas in which students can act as partners in teaching and learning include, but are not limited to: (1) creating learning/teaching material and assessment, (2) subject-based research and inquiry, (3) enhancement of learning and teaching practice and policy through: scholarship of teaching and learning, curriculum design and pedagogic consultancy (Healey et al., 2014).

For institutions and faculty hoping to pursue successful student partnerships, we recommend the following based on our experiences. We believe these recommendations mitigate barriers and promote the benefit of SaP. Our intent with these recommendations is that they are bound by institutional-specific contexts; that is, they should be possible regardless of the institution within which the student–faculty partnership occurs:

1. Outlining the project, including the time and expectations required, training students to give them the tools necessary for success, and giving students opportunities to provide meaningful insight into a project’s direction are key to producing successful partnerships.
2. Creating a positive and supportive environment. We recommend that partnerships be established in environments that are supportive of all parties’ interests, commitments, and goals.

LIMITATIONS

This manuscript is meant as a reflective tool on the Flynn Research Groups student engagement with students. These findings and recommendations are from our personal experience, which has been extremely positive and we hope that others may experience similar results.

REFERENCES


**AUTHOR BIOGRAPHIES**

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Kevin Roy obtained a Bachelor of Science in 2019 and is currently enrolled in medical school at the University of Ottawa.

Joëlle Veilleux-Deschênes obtained a Bachelor of Science from the University of Ottawa in 2014, an MBA from l’Université du Québec à Montréal in 2017 and is currently completing a doctoral degree in organizational psychology at l’Université de Montréal.

Annie Znotinas obtained a Bachelor of Science in 2018 and is currently enrolled in medical school.

Alison B. Flynn, PhD, is an Associate Professor in the Department of Chemistry and Biomolecular Sciences at the University of Ottawa, engaged in education research.

Student engagement in doctoral programs: Principal factors that facilitate learning

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Abstract
This article examines how doctoral candidates characterize factors that influence constructive engagement in their respective program experiences and how these have served as primary catalysts for learning along their doctoral journeys.

INTRODUCTION
Based on an inquiry examining pivotal learning experiences in PhD programs, this contribution aims to shed light on doctoral student perceptions of engagement and learning in the context of their programs of study. Stemming from Groccia’s (2018) recent description of student engagement, notions of engagement emphasized that purposeful involvement in quality activities breeds better success in learning, and consequently leads to overall institutional quality. Tinto et al. (2017) add that it is not simply about the engagement itself, no matter the activity or catalyst; it’s the meaning that learners derive from the engagement that matters. He suggests that processes associated with Mezirow’s (2000) Transformative Learning Theory, such a critical reflection, discourse and reintegration of revised views and understandings enable students to better understand how engagement in certain activities facilitates learning and leads to both conceptual and personal change. Also highlighting the influence of student engagement on learning, researchers such as Kuh (2009) and Pascarella et al. (2010) outline that student engagement is a predictor of student retention and that increased engagement is linked to enhanced critical thinking, self-esteem and improved grades and persistence.

CHARACTERIZATIONS OF ENGAGEMENT IN DOCTORAL STUDIES
Recent research has begun to examine the anatomy of an engaging doctoral experience and the factors and events that engage doctoral students (Vekkaila et al., 2013, 2014; Virtanen & Pyhalto, 2012). Stemming from a large national research project in Finland, the respective studies sought to gain a better understanding of student engagement—more specifically explore the experiences that contribute to the development of engagement in a PhD program. Both studies featured semistructured interviews, the first with 21 PhD students from
a behavioral sciences program, the second with 40 bioscience PhD students. Overall, the researchers describe perceived factors central to doctoral student engagement as belonging, competence and autonomy. Expanding on these factors, the studies recommend consideration of specific activities such as participating in events and groups in the scholarly community and ensuring the personal and scholarly relevance of their research. Equally of note, the importance of developing engaging curricula, meaningful courses and reflective learning environments for doctoral students. Authors conclude that high levels of student satisfaction may be a strong indicator of a good fit “between the student and the academic working environment, which further contributes to learning outcomes and resilience when facing problems” (p. 1236). To build on this growing understanding of student engagement in the context of doctoral studies specifically, this article outlines an inquiry that investigated experiences that best facilitate learning. In other words, how do doctoral candidates characterize instances of constructive engagement along their program journeys?

EXAMINING SIX DOCTORAL STUDENT JOURNEYS

Methodology

A multiple-case study at the University of Ottawa sought to examine how doctoral candidates describe constructive engagement that leads to learning in the context of their programs. Following ethical clearance, six PhD candidates across the Faculties of Arts, Engineering and Education served as individual cases within a first layer of analysis. A subsequent layer consisted of a cross-case analysis to shed light on congruities and contradictions in PhD candidate perceptions. The study sample consisted of PhD candidates who were in the dissertation-writing phase of their programs to ensure that they could speak to a comprehensive view of the doctoral journey. Qualitative data sources allowed for a deep and thorough exploration of student engagement and learning. These included: (1) three interviews with each participant as per Seidman’s (2013) multistage interview protocol, (2) collected documents, (3) reflexivity journal, and (4) field notes. Data analysis of the interview transcripts, field notes and journal entries followed Creswell’s (2012) thematic development coding process. This process provided comprehensive descriptions of the themes within each case (within-case analysis), and a thematic analysis across all six cases to examine commonalities and differences (cross-case analysis).

Summary of findings

Each of the participating PhD candidates had experiences and opinions to share regarding the nature and level of engagement along their program journeys. While distinct in their individual contexts, whether because of the different structure of PhD programs or because of lived experience, participant cases appear to present similarities in the emergence of certain themes. Across the six cases, discussions regarding four dominant themes came to the fore. The first related to engagement with one’s supervisor and how the nature of guidance and feedback can serve as either a facilitating or inhibiting factor in the program experience. The second outlined the value of developing self-sufficiency and the process of becoming an independent scholar. The third theme emphasized the importance of community when grappling with the intellectual challenges of the doctoral journey. Lastly, the fourth was associated with the transformative nature of thoroughly engaging in, and reflecting on, all components of the program experience. The four dominant themes in
the cross-case analysis were identified, via the categorization of subthemes, across all six cases in this study. When broadening the scope of analysis and considering commonalities and differences across cases, it was evident that with respect to the perspectives and experiences of each PhD candidate there was far more congruity than contradiction. To reveal the nature of quality engagement activities that best foster learning, each of the four dominant themes is presented in greater detail.

The first theme was the most resounding commonality across each case and emphasized the importance of strong guidance and supervision and how this factor is seen to play an influential role in the level of student engagement and on the quality of a student’s PhD experience. Positive supervisory experiences were those that encouraged PhD candidates to push boundaries and exceed their own expectations. For example, Kyle indicated:

> The advisor has a huge role in this [engaging the student] because they can either be the hands on advisor, where they’re kind of over your shoulder at all times and as soon as you go off the path, when they already know you’re going down a dead end or road, they’ll bring you right back and push you outside your comfort zone.

Conversely, experiences regarding absent supervisors or changes in supervisor over the course of a program led to disengagement and were described as a hindrance to program progress. Reflecting on a past PhD program that he dropped out of, Lukas shared that:

> I didn’t have guidance and—it was like you’re supposed to do everything on your own, like without any help. […] When I was at [institution], I had to resort to turning to some other professors from some other schools and even talking to my past TA, who had recently finished his PhD. […] It’s like here’s your lane, learn how to swim, you know. You’re not supposed to be thrown in the water and expect to—well what happens, you drown? Or, you know… You’re supposed to get some sort of guidance from a supervisor.

The second dominant theme to emerge related to the notion of independence. This was viewed as a process of becoming increasingly autonomous as a scholar and, as such, as an intended outcome of the PhD program. Several PhD candidates identified this outcome as one that aligned with their preferred way of learning, which made for particularly enjoyable learning experiences. Saad stated: “I feel very empowered, in the sense of being able to do research independently. I feel well equipped to continue the steps independently and under ever reducing amounts of guidance.” Others made mention of isolation and disengagement in the program when experiencing too much independence. At times isolation added fuel to an imposter syndrome that constrained the development of independence in several candidates. Leslie, a PhD candidate that struggled with the imposter syndrome throughout her degree, noted that she saw independence as a double-edged sword in that she had certainly become more autonomous as the program progressed, but at the cost of becoming very isolated. She noted that “Overall, the journey through this program has been an isolating experience. I’ve been disappointed and don’t feel like I’m the only one.”

A third dominant theme addressed the important role that social interaction and community play in fostering healthy and productive academic environments. Informal social interactions with peers as driven by a work environment where doors are open and engagement in community-building events are encouraged was a common refrain across cases. Speaking to the importance of community, Alexander remarked:
We had one floor where all the grad students, predominantly PhD students, were housed in our offices. And being able to kind of pop in and out of people’s offices and asking like hey, can you look at this really fast, or hey, can I email you this. Having to get feedback like instantaneously. And yeah, it was a really cool experience because you kind of peek in to see who would be there and who would not and while you’re all working separately, you’re also kind of working together. It was a shame when we got relocated to [another building] and that just felt hard.

This was complemented by the value of participating in disciplinary conferences and networking events. Kyle indicated that this was a particularly important way of becoming acquainted with other researchers, getting feedback and gaining exposure to new insights.

[At] conferences you get that exposure to people [who] are doing similar things, maybe in a slightly different way than you, people are doing something completely different but using a technique that could be applied to yours. […] So I think conferences were really important for that, because it’s just that exposure, um to people, and to that new, that new insight.

A fourth dominant theme emphasized the transformative nature of learning which emerged through each PhD candidate’s description of growth and development when fully engaged in the PhD program. In several cases, it was explicit that the PhD experience itself was seen as a transformative one when taking the time to intentionally reflect on the nature and outcome of one’s engagement, while in others the notion of transformation aligned more with an existing notion of learning. Common views shared across PhD candidates related to experiencing learning incrementally, following progressive engagement in program components.

As the dominant themes and related subthemes unfolded in the analysis phase of the study, it became evident that a multitude of interconnections between them existed. A first of three compelling connections rests between the dominant themes of independence and social interactions. The independence of doctoral study can often lead to isolation. However, this effect can be countered by social interaction and by being involved in the program community. Contrasting two very different program descriptions brings the power of community to the fore. For example, in Kyle’s case, it appears that his program has a strong community and promotes opportunities for formal and informal social interactions via departmental sport teams and BBQs. This intentional engagement within the community of a program can subsequently develop trust and social relationships and contribute to productive and confidence inspiring learning experiences leading to stronger retention. Conversely, Leslie’s program seems to have faculty members and a student body that are less engaged with limited opportunity for interactions. In Leslie’s view, this appears to contribute to greater frustration, anxiety and time to completion across the department. A second connection between dominant themes brings together guidance and supervision and the transformative nature of learning. In essence, thoughtful and intentional guidance can lead to student transformation by supporting and fostering periods of dissonance, reflection, discourse, and reintegration when engaging in program activities and milestones. As Kyle points out, to help get the process of transformation started, his supervisor often provided specific challenges to him during strategic moments along his PhD journey. This type of engagement served to disorient and cause him to question an existing understanding of a concept more deeply. Furthermore, and as mentioned in several of this study’s cases, regularly engaging in dialogue to sound off and validate ideas was equally a benefit of the
formal and informal social interactions that an active program community offered. Yet another connection leading to student transformation was that of community and social interaction serving as catalyst for the discourse stage of the transformative learning process. A third, and more paradoxical, thematic connection identified in this study’s field notes was evident between guidance and independence. It appeared that PhD candidates required sustained guidance, particularly at the outset of the program to develop independent research skills and eventually become more autonomous. Similarly paradoxical, the more autonomous one became, the greater the possible threat of isolation and lack of engagement. As indicated earlier, this was highlighted well by Leslie when she remarked that becoming autonomous was to her a double-edged sword, she saw the advantages in the application of her skillset, but at the cost of becoming further isolated. To help illustrate the interconnections described above, Figure 1 displays a simple Venn diagram mapping out the four dominant themes. The interrelatedness of each theme becomes evident in the diagram, in particular how engagement in the factors along the horizontal axis contribute to outcomes along the vertical axis.

Given the interconnections mentioned above, it seems that thoughtful and intentional supervision as well as opportunities for social interactions as part of a healthy and vibrant program community appear to go a long way in maintaining student engagement at the doctoral level and preventing or remediating emerging challenges and issues arising across the six cases examined in this study.

DISCUSSION OF FINDINGS

As indicated by Groccia (2018), student engagement is increasingly regarded as an indicator of student learning and institutional quality. In terms of learning, student involvement in activities and actions that are intentional and aligned with meaningful outcomes tend to lead to the development of skills, knowledge, professional traits and eventually the achievement of the aspired outcomes (Trowler, 2010). In this study, the activities and actions that best engage PhD candidates in a transformative learning journey consisted of constructive and intentional guidance by supervisors and mentors, processes that enabled and developed autonomy and independence, and social opportunities that promoted conceptual discourse, networking and community building. While these outcomes align with recent research examining learning and transformation in doctoral programs (Provident et al., 2015; Stevens-Long et al., 2012), parallels equally exist with scholarship examining student
engagement. For instance, Virtanen and Pyhalto (2012) outlined the central factors associated with doctoral student engagement as competence, autonomy and belonging and that these factors “may predict doctoral students’ further satisfaction, studying persistence, and experienced well-being” (1235). Describing these factors in greater depth, the researchers outlined the importance of perceived supervisory support and constructive feedback for the development of competence and autonomy, along with discussions with peers and other researchers as a contributor to belonging. Equally aligning with this study’s findings is the work of Vekkaila et al. (2013) that indicate the primary sources of engagement in doctoral studies as an “increased sense of competence and relatedness” (25). These scholars equally referred to the importance of community and the influence of the program environment on the success of the individuals studying within it. It was equally noted that notions of relatedness, competence, and autonomy as indicated by Virtanen and Pyhalto (2012), are in line with research in the domain of motivation and psychological well-being by scholars such as Deci and Ryan (2008) via their seminal work on self-determination theory.

When considering engaging educational activities and practices that lead to application of skills and sustained growth and development, Groccia and Hunter (2012) state that a student must engage with learning at multiple levels. For instance, the cognitive, affective and behavioral levels. This multidimensional view shares similarities with Cranton’s (2013) work regarding the dimensions of engagement with transformative learning, suggesting that a richer conceptualization of engagement or learning includes a multiplicity of perspectives. Cranton (2013) outlines the importance of considering three perspectives: the cognitive notions of critical self-reflection and discourse; the affective (or beyond rational) notions of intuition, emotion and anxiety; and the notion of social action via activism and using new skills and knowledge for positive change beyond the self. These three perspectives promote themes brought up in Zepke’s (2015) characterization of a more holistic and critical view of student engagement, particularly via the notion of social action and societal engagement. When overlaying Cranton’s (2013) three perspectives over the engagement activities and learning experiences shared by the six PhD candidates in this study, it is not difficult to see evidence of varied factors contributing to engagement and transformative learning.

Regarding the cognitive perspective, each PhD candidate mentioned the power of engaging in experiences of critical self-reflection in relation to held assumptions or pre-existing ways of undertaking research and writing tasks. Several candidates equally noted that discourse with others was pivotal in the broadening of their perspectives. In fact, the importance of social interaction was highlighted repeatedly by each PhD candidate and was discussed as both a catalyst for reflection and a remedy for isolation. In reference to the affective perspective, PhD candidates did note significant anxieties that generated both positive and negative emotions. For instance, anxieties regarding isolation in the PhD program experience that hindered learning and that subsequently led to experiencing an imposter syndrome for a few of the study participants. Yet others mentioned intense moments of positive emotion when being awarded scholarships or honors for their work or having their work accepted in renowned publications. Moreover, experiences of culture shock and beginning to embody a Canadian identity were lived by several PhD candidates who had moved to Canada to pursue this degree. Lastly, in terms of social action, two PhD candidates specifically mentioned learning about social injustices and oppression that led to their transformation of perspectives on large social issues and subsequent engagement in forms of activism. Both candidates shared actions that they were involved in that extended from the individual level of transformation to a larger commitment to social action and change.
In terms of institutional quality, Groccia (2018) contends that quality at this level “can be directly tied to the depth and breadth of engagement opportunities provided to students” (17). In the same article, the author suggests that thoughtfully designed and learner-focused engagement activities increase the quality of student learning and consequently the overall institutional quality. These contentions are in accord with the views held by all six PhD candidates who indicated that a quality doctoral program is ideally one that is intentionally structured to maintain an environment, processes (e.g., comprehensive exam and proposal defense), and activities that foster transformative learning experiences. An area of scholarship focused on institutional conceptions of quality in postsecondary education, led by the seminal works of Harvey and Green (1993) and Harvey and Knight (1996), also promotes the notion of quality as transformation. The aforementioned scholars outline that instead of focusing on input measures such as faculty publications, grant monies received, number of awards, and institutional rankings, institutions should orient their interpretations of educational quality around qualitative change with an emphasis on enhancing capacity and empowering the learner.

CONCLUSION

An in-depth examination of conceptions of engagement and learning of six PhD candidates at the University of Ottawa has shed light on the most constructive engagement factors in their respective program experiences and how these have served as primary catalysts for learning along their doctoral journeys. A cross-case analysis revealed principal engagement factors as: strategic and thoughtful guidance by supervisors and mentors; scaffolded opportunities to develop autonomy and independence as a scholar; and environments that promote informal and formal social interactions and community. Each factor serving as an important contributor to a transformative learning experience characterized by guided moments of challenge, reflection, discourse and integration of renewed perspectives. Extending from recommendations made by Vekkaila et al. (2013) and Virtanen and Pyhalto (2012), postsecondary programs may benefit from reorienting structure, processes and approaches aimed at fully engaging students in their doctoral journeys. In an environment where high rates of attrition continue to be of concern, taking into account the nature and level of student engagement throughout graduate programs may serve as a helpful indicator of areas in need of program-level enhancement. This practice would align well with increasing institutional messaging around quality learning experiences being promoted as transformational.

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Reflections of an institutional case study: Lessons learned

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Abstract
This final article brings together the initiatives highlighted at one postsecondary institution. As perspectives of student engagement are synthesized and categorized, facilitating factors are outlined and further questions are considered.

INTRODUCTION

Extending the conversation catalyzed in a 2018 special issue about student engagement edited by James Groccia and William Buskist, this special issue has examined student engagement at various levels and across a multitude of stakeholders within one institution. The experiences reported in each article genuinely attest to the shared responsibility of all members of an institutional community to effectively engage students in the development of new perspectives as well as engage them as critical thinkers and as partners in the facilitation of their learning journeys. The reported experiences and example engagement strategies woven through these articles equally demonstrate instances of cognitive, affective and behavioral engagement in the learning process as outlined by Groccia’s model of student engagement (Groccia, 2018; Groccia & Hunter, 2012) and Kahu’s (2013; Kahu & Nelson, 2018) conceptual framework as presented by Germain-Rutherford et al. in article 1.

For instance, engagement at the behavioral level is outlined in Ghani and Taylor’s article 4 findings with regard to the importance of both instructor and student effort and participation in the most successful blended courses. Similarly, Groen’s investigation in article 7 identifies the significance of persistently taking responsibility to work through challenges and actively participate in community in order to meaningfully foster learner engagement.

At the affective level, Ahmed and Zaky’s journal writing reflections discussed in article 3 allow students to navigate the meaning of past experiences and learn more about themselves. The authors argue that contextualizing the learning experience and making it personal can be important in motivating and fostering greater commitment from the learners. This level of commitment and motivation is equally reflected in the work of Carle et al. in article 6 as students are positioned as partners in varied aspects of their learning journeys.

At the cognitive level, Carnegie’s work in article 5 demonstrates how the use of case-based assignments in large classes can be designed to challenge students and provide evidence of conceptual linkages, application to real-life situations along with outcomes of processes that align with other levels of Bloom’s taxonomy. O’Connor et al.’s study in article
2 equally highlights the cognitive engagement exercised in experiential learning opportunities where students are guided in the processes of analyzing, evaluating, connecting, and applying theory in practice within community placements.

In addition to these multidimensional, yet interrelated, perspectives of student engagement (i.e., cognitive, affective, behavioral), the metacognitive perspective introduced across the literature presented in article 1 equally emerges from the narratives shared in this case study. As several of the authors have indicated, having students critically engage with their own experiences often means taking stock of, and reflecting on, one's own learning process. It is the responsibility of educators and stakeholders at all levels of the institution to help students foster a better understanding of their own learning profile and make necessary adjustments to their learning habits and study strategies to enhance their learning efficacy and efficiency.

ENGAGING WITH LESSONS LEARNED

Using diverse examples of initiatives, strategies and assignments, the articles in this special issue highlight factors that facilitate student engagement. Each article shares valuable recommendations from lessons learned.

Recurring factors across articles that facilitate student engagement are largely associated with four themes – namely guidance, community, reflection on experience, and the support of technology. In terms of the importance of intentional guidance, Carle et al. in article 6 highlight the importance of mentors who create a positive and supportive environment where clear expectations are outlined and discussed and where learners have been given the tools necessary to succeed. In article 7, Groen adds that strategic guidance by supervisors of study can support transformative stages of learning and develop stronger autonomy and self-efficacy. Article 4 speaks to the importance of guidance via “teaching presence,” where Ghani and Taylor outline that students are most engaged in blended learning settings in which instructors very mindfully design and facilitate classes as communities of inquiry and where the educator’s role is primarily to guide and resource learners in the process of establishing links to prior experiences and constructing knowledge.

Regarding the role of community, Carnegie shares that collaborative assignments provide a forum for inquiry and critical evaluation that are not only important in developing higher order cognitive skills, but also that these social interactions foster class community and consequently lead to greater student engagement. Groen found that a major driver of learner engagement in graduate studies was the social opportunities that promoted discourse, networking and community-building. Where these were experienced, students reported a sense of belonging that prevented isolation in the context of their studies. Similarly in article 6, Carle et al. highlight that students working as partners often interact with other students and faculty and staff that they would not otherwise connect with, and consequently report a greater sense of belonging and engagement. They feel that their contributions are productive and valued by their peers.

Reflecting on one’s experience was another common factor that facilitated student engagement. Ahmed and Zaky, in article 3, indicated that reflective journal writing was particularly helpful in having students apply course concepts and theories to personal experiences and equally helpful in fostering critical thinking skills. Rather than simply act as passive recipients of knowledge, the authors indicated that journal reflections engaged learners by elaborating, discussing, sharing and questioning. Similarly, O’Connor et al. highlight the power of reflecting on experience in article 2, suggesting that to make sense of practice, experiential learning opportunities should be carefully scaffolded with strategic opportunities for reflection. Quoting Axelson and Flick (2010), the authors suggest that
student engagement is reflective of the level of connectedness between students and their learning, in their classes, their institution, their community, and with each other.

A fourth theme of note was the use of technology as a tool to help foster student engagement. In article 5, Carnegie shares that technology such as course learning management systems (e.g., Brightspace) provide opportunities for students to hone their cooperative and communication skills when working in groups online and serve as valuable tools to support social engagement in learning. Ghani and Taylor, in article 4, speak to the use of educational technology as an opportunity to redesign the way that courses are developed and delivered with student engagement as the focus. Highlighting findings related to the use of technology in the classroom, Germain-Rutherford et al., at the end of article 1, indicate that technology can adequately support student engagement only when used as a tool that is carefully planned to support pedagogy via meaningful online interactions and the offer of a greater diversity of instructional activities/opportunities.

Barriers to student engagement equally emerged across article contributions, these were commonly identified as the time and expertise needed to design sound pedagogical practices and power dynamics in educational settings that prevent students to engage “as partners” in the teaching/learning paradigm.

Stepping back and looking at the article contributions as a whole, alignment with Kahu and Nelson’s (2018) refined conceptual framework of student engagement becomes clear. “Structural influences” that help facilitate behavioral, affective and cognitive levels of engagement are well articulated throughout the articles as institutional policy and vision, faculty and departmental culture, and curriculum. “Psychosocial influences” having an impact on the extent of student engagement included the relationships and learning partnerships established, student motivation and existing skill sets, and student identity and perceptions. As Kahu and Nelson (2018) indicate, the role of these influences help foster or inhibit learner self-efficacy, emotions, belonging, and wellbeing at the “educational interface” which dictate the nature and extent of engagement and subsequently if and how educational outcomes are achieved.

As indicated at the outset of this collection, the initiatives, experiences and studies presented across articles represent only a few of the many great examples found within this institution. The editors have found that amid the varied pressures and challenges present in most postsecondary institutions (e.g., increasing workload, accountability-related pressures, increasing student/faculty member ratios), many creative and inspiring student engagement practices are easily found in all sectors of the institutional community. Perhaps this may be influenced by the growing presence of Centres for Teaching and Learning and Student Success Services, or perhaps it may be linked with increasing engagement by instructors in the Scholarship of Teaching and Learning (SoTL). Regardless of possible sources of influence, it is certainly evident that the commitment of instructors with regard to the wellbeing and success of their students is a key driving force.

This micro collection of innovations and student engagement practices across campus, by virtue of their champions, serve as catalysts for connection and discussion within the institutional community. The informal leadership shown by these champions across their personal and professional networks aid in promoting the importance of student engagement, exchanging ideas, validating practices and further planting seeds. We acknowledge that this is often difficult to do in large institutions that are too often divided in disciplinary and administrative silos. However, with willing leadership across the layers and sectors of the institution and the support of central teaching and learning services that coordinate opportunities to promote evidence-based pedagogical research and practices, foster the cross-pollination of ideas, and encourage action research with students on pedagogical practices; cross-campus collaborations can flourish.
CONCLUDING REFLECTIONS

Most recently with the urgent transition to distance and online learning due to Covid-19, issues of student engagement have been brought ever more to the fore, with numerous creative and innovative instructional approaches being discussed, trialed, and shared. This recent reality provides hope that no matter the modality of instruction, student engagement is central to the student learning experience. As indicated in article 4 by Ghani and Taylor, the synergy between cognitive, social and teacher presence in courses is pivotal to building and sustaining meaningful student engagement. The recent mass transition to online modalities provides an opportunity for educators to (re)consider how, when and why their learners engage with the content, among themselves and with the facilitators of learning. For instance, are those students who were formerly silent in traditional face-to-face classes interacting more, or differently, in online environments? How can we leverage a combination of both in-person and online modalities to create diverse opportunities for student engagement in their learning? Regardless of instructional modality, strategy or tool, Carle et al. remind us in article 6 that the principal stakeholders at all levels of the education system are the learners themselves and that all of our questions and efforts moving ahead should be guided by learner needs, experience and outcomes.

It is our hope that this special issue contained a portrait of student engagement within a postsecondary institution with a sampling of examples that may enable reflection of current practice and possible ideas for further innovation. The beauty of student engagement is that it is inherently collaborative. It need not be (should not be) only at a micro course-scale with students themselves, but across networks of colleagues (no matter their role or status) at a macro cross-faculty and inter-institutional scale.

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