Sense of Belonging, Peer Support, and Social Media: Examining the Mental Health, Well-Being

and School to Work Transitions of Co-operative and Non-Co-operative Education Students

by

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A thesis

presented to the University of Waterloo

in fulfillment of the

thesis requirement for the degree of

Masters of Science

in

Health Studies and Gerontology

Waterloo, Ontario, Canada, 2015

Author's Declaration

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including

any required final revisions, as accepted by my examiners.

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Abstract

The primary aim of this study was to examine student perceptions of sense of belonging, peer support, and student social media use and how these factors influence their mental health, overall well-being, and confidence regarding their transition to work after graduation (i.e., school-to-work efficacy). A second aim was to examine the role of social media use on sense of belonging, peer support, and mental health. A third and final aim was to examine the above-mentioned variables in the context of co-operative education (co-op). Participants, undergraduate students (n=314) from all years of study and all academic faculties completed an online survey which included demographic information as well as measures of sense of belonging, mental health status, social connections and peer support systems, social media usage, perceived mental preparedness for the transition to work, and perceived importance of peer support and sense of belonging on mental health and overall wellbeing. The results of this study revealed a number of important findings related to the relationships between sense of belonging, peer support, and social media on school to work transitions and indicators of mental health and well-being. It was shown that student's perceived sense of belonging to their peers and the university community and access to high quality peer support were strongly related to their overall mental health and well-being. Demographic factors were also found to be significantly related to sense of belonging, peer support, and confidence in school to work transitions, and students who participate in co-operative education were shown to have higher levels of school to work efficacy than non-co-op peers. The results revealed that students who reported a strong sense of belonging to school and peers were more likely to report experiencing greater emotional stability and that students who experienced a stronger sense of appraisal and belonging support within the campus community were more likely to report that they experienced better levels of mental

balance and happiness. It was also found that while students perceived social media as playing an important role in their perceived sense of belonging and peer support, a high intensity of social media use was related to lower emotional stability in students. Implications and recommendations for future research are discussed.

Acknowledgements

I would like to first and foremost acknowledge the support and guidance of my advisor, Dr. Maureen Drysdale. Thank you for all of your help, encouragement, and friendship to me throughout the years. You are a role-model and inspiration to me and I have learned so much about myself and about conducting high quality research thanks to your mentorship. I would also like to express my appreciation for my committee members, Dr. Tracey Bowen and Dr. Linda Jessup. Thank you both for providing such valuable insights into this research and for challenging me to think thoroughly and critically about my project. I would also like to thank Nicholas Bohn, who provided assistance with participant recruitment and data collection. A special thanks to my partner Joseph Cohen and my children, Oliver, Violet, Lily, Reed, Quinn, and Iris for their love, support, and constant encouragement. Finally, thank you to the students of the University of Waterloo for their willingness to participate in this project. This thesis has been a remarkable and rewarding experience!

Table of Contents

List of Tables

Introduction

Peer support and connectedness to school during late adolescence and emerging adulthood have been identified as key areas for building protective factors for positive mental health outcomes and lower rates of health-risk behaviours (Bond et al., 2007; Resnick Harris, Blum, 1993). The period of "emerging adulthood" has been described by Arnett (2000) as a critical developmental stage when individuals aged 18-25 are transitioning from adolescence into adulthood. It is during this period that individuals determine the type of person they will become and experiment with their identity within a context that is often free from the constraints of parental oversight or the responsibilities associated with adulthood (Arnett, 2000). For many emerging adults in North America, leaving the parental home to attend university plays a key role in this process, in that it typically leads to increases in emerging adults' autonomy, spurred by changes in residence, employment, and the formation of new circles of friends (Arnett, 2000). During this critical period, university students are required to make a series of adjustments to cope with their newfound autonomy and the expectations of adulthood including assimilation to personal, emotional, vocational, and social adjustments (Arnett, 2000).

For emerging adults, school is particularly important as a social and learning environment, impacting not only on academic and vocational pathways, but also on present and future health and well-being (Blum & Libby, 2004; Bond et al., 2007; Libby, 2004; Resnick et al., 1993). Emerging adults who are not engaged with their learning or who have poor relationships with peers and teachers are more likely to engage in problematic behaviours, report anxiety and/or depressive symptoms, and fail to complete their post-secondary studies (Blum & Libby, 2004; Libby, 2004). Therefore, the potential consequences of becoming disconnected from school and peers are far reaching and severe.

Furthermore, as many as 450 million people worldwide suffer from a mental health disorder and this has become one of the leading causes for absenteeism from work and exclusion from the labour force (WHO, 2003). Adolescents and emerging adults are particularly at risk for mental health issues and the rate of adolescents and emerging adults experiencing mental illness continues to rise, specifically for the 15–19 years age group and the 20–24 years age group (WHO, 2003). The number of students on university and college campuses who struggle with depression, anxiety, suicidal thoughts, and psychosis across North America has also been on the rise (Gallagher, 2008) and the intensification of university students' psychological needs has been referred to as a mental health crisis on campuses (Gallagher, 2008; Mackenzie et al., 2011). A recent epidemiological study of Canadian post-secondary students found that those in the 15-21-age category had the highest prevalence rate of mental illness (Mackenzie et al., 2011). Students with mental health issues are also more likely to have poorer overall health and lower than average academic outcomes (Adlaf, Demers, & Gliksman, 2005). Several factors have been identified as contributing to the increasing rates of mental health issues amongst post-secondary students, including the growing number of students with pre-existing problems who are pursuing university and the fact that emerging adulthood is a time of developmental vulnerability to social pressures (Hunt & Eisenberg, 2010; Martin, 2010). Another key factor is the type of post-secondary program in which a student is involved - for example co-operative education -where students alternate between school and work terms so as to acquire the necessary skills for the labour market. A recent study has indicated that students in co-operative education programs feel isolated from their peers during their work terms and also report feeling depressed and anxious about graduating and transitioning to full-time work (McBeath, Drysdale, & Bohn, 2015).

To address the mental health issues mentioned above, many Canadian post-secondary institutions are developing comprehensive mental health policies and services for students (McKean, 2011). An important part of these efforts include plans to develop inclusive campus communities where students are socially connected and provided with sufficient support (McKean, 2011; Silverman, Underhile, & Keeling, 2008). However, there is little empirical evidence about the kinds of interventions that will create campus environments that foster student learning, connectedness, and sense of school belonging - in promoting enhanced academic achievement, increased academic success, and overall wellbeing (Silverman et al., 2008). Research has indicated that peer support and sense of belonging can improve overall health outcomes and help students adjust to university (Zivin, Eisenberg, Gollust, & Golberstein, 2009). Peer support has also been shown to provide students with the skills necessary to manage their stress during these crucial years as they prepare to make a successful transition from school to the labour market (Silverman et al., 2008; Zivin et al., 2009)

The overall objective of this study was to examine the associations between peer support, sense of school belonging, and social media use on well-being, mental health, and school-to-work self-efficacy in post-secondary students, with a particular focus on comparing students in co-operative education programs to their non-co-operative education peers.

Literature Review

Sense of belonging to the university community, and strong peer support networks have been identified as important protective factors for mental health among post-secondary students. Furthermore, mental health and establishing a sense of belonging within a community and with peers are believed to be important in having a successful school-to-work transition and achieving a strong career identity. It is also important to consider that university students often interact with friends and family using social networking sites, instant messaging, and mobile phones. Given that social media is a medium through which emerging adults frequently interact with social groups it is likely that sense of belonging and perceived peer support are fostered through digital mediums. These variables deserve attention in the research on participation in post-secondary education and the subsequent transition from school to the labour market.

Sense of Belonging

A healthy sense of belonging has long been thought to be an important contributor to one's overall psychological well-being. Maslow's theory of personality (1943), Epstein's cognitive-experiential self-theory (1990), as well as Deci and Ryan's self-determination theory (1991) all identify one's sense of belonging as serving a crucial psychological function (Sheldon, Elliot, Kim & Kasser, 2001). Whether labeled the need to belong, the need for affection between people, or the need for relatedness, one theme in this area of research remains constant: it is a human need. A sense of belonging has been described as among the most basic and essential of human needs and a product of an innate human drive (Baumeister & Leary, 1995). Consequently, social isolation and a threatened sense of belonging have been been linked to feelings of grief, a weakened immune system, and a higher risk of several psychological disorders (Baumeister & Leary, 1995; Kiecolt-Glaser, Garner, et al., 1984; Leary & Downs,

1995; Trout, 1980).

Threatened belongingness, for example, is a common and important cause of anxiety and stress (Baumiester & Leary, 1995). Loneliness, isolation, and alienation, feelings directly related to one's social well-being, are several of the most commonly reported psychological symptoms among those seeking counseling (Baumeister & Leary, 1995). Further research examining the effect of belongingness on social and psychological functioning has found a significant association between lower levels of belonging and increases in depression, anxiety, a history of psychiatric treatment, and suicidal thinking - as well as suicide attempts (Hagerty, Williams, Coyne, & Early, 1996; Thoits, 2011).

School Belonging

The impact of sense of belonging on well-being and quality of life is thought to be more pronounced in adolescence and emerging adulthood, a time of life during which a sense of belonging is thought to be of crucial importance. For that reason sense of belonging has been studied extensively within the context of schools, and the specific construct of school belonging has emerged. School belonging has been defined as a sense of commitment to one's educational institution, a sense of being recognized for one's abilities within the institution, as well as the perception of fitting in with one's peers (Goodeknow 1993; Smerdon, as cited by Pittman & Richmond, 2008).   Higher levels of school belongingness are associated with more positive academic, social, and psychological outcomes including; better academic motivation, higher grade point averages, lower dropout rates, and better social-emotional functioning (Anderman, 2003; Finn, 1989; Goodenow & Grady, 1993; Pittman & Richmond, 2007; Resnick et al. 1997; Shochet, Dadds, Ham, & Montague, 2006).

Although the majority of research on the subject of school belonging has focused on high

school students, there is reason to believe that the construct may have especially important implications among university students, particularly in light of the above described mental health crisis on university campuses. A study by Brunwasser (2012) found that first-year students experience elevated levels of stress and depressive symptoms increasingly throughout their first semester but that a strong sense of school belonging could help to buffer the stress associated with the transition to university (Brunwasser, 2012). Students who experience a positive change in their sense of university belonging throughout their first year tend to experience a drop in levels of anxiety and depression. It has also been found that first-year students with close social connections report fewer depressive symptoms (Pittman & Richmond, 2008; Brunwasser, 2012).

In contrast, those who fail to fit in at university on both an academic and a social level are among those most likely to drop out (Farris, 2010). Several studies have pointed to social integration and involvement within the school community as a major predictor of student university persistence (Tinto, 1997; Tinto, 1998; Hurtado and Carter, 1997; Mackie, 2001). Academic success - another predictor of dropout rates - has been found to be largely impacted by belongingness as well. A study by Freeman, Andersen, and Jensen (2007) found an association between one's levels of university belonging and students' sense of academic self-efficacy, intrinsic motivation, as well as their perceptions of their instructor's warmth. The authors also found an effect of one's sense of university level belonging on their sense of social acceptance.

Peer Support

If a sense of belonging is indeed an important determinant of stress levels and psychological problems, factors influencing belongingness, such as social support should also have an impact. Social support, like belongingness, is based on social relationships and positive interactions with others (Baumeister & Leary 1985). Measures of social support aim to capture

6

the more functional aspects of relatedness, such as the emotional, psychological, and material resources provided by one's social ties (Cohen & Wills, 1985; House & Kahn, 1985). Like belongingness, social support has strong mental health implications. Those with lower perceived interpersonal support are more likely to experience depression, general anxiety disorder, social phobia, and higher stress levels (Moak & Agrawal, 2009). In fact, research has shown that social support acts to buffer the negative effects of stress and that those with higher levels of perceived social support are linked to more positive coping strategies (Leong, Bonz, & Zachar, 1997; Lian & Geok, 2010).

Social support may have strong implications during the characteristically stressful transitional post-secondary years. Research has shown that in university students, particularly those in first-year or from minority groups, higher levels of perceived social support is linked to lower levels of negative feelings, better social, emotional, and academic adjustment, as well as higher levels of self-esteem and school attachment (Stebleton, Soria, & Huesman, 2014; Tao, Dong, Pratt, Hunsburger, & Pancer, 2000). This finding that social support may be among the most psychologically protective factors for post-secondary students is bolstered by the similar findings that among university students, higher levels of perceived social support were associated with lower levels of anxiety and depression (Hefner & Eisenberg, 2009; Yasin & Dzulkifli, 2010).

Peer support appears to be a particularly important form of social support for post-secondary students. A qualitative study by Wilcox, Winn, and Fyvie-Gauld (2005), investigating the factors contributing to higher education student retention, suggested that creating and maintaining socially supportive relationships with peers was crucial to students' finding one's place at university. A study by Friedlander, Reid, Shupak, and Cribbie (2007) found that when

compared to parental social support, higher levels of perceived social support from friends better predicted a healthy social, emotional, and overall adjustment to university among first-year university students. Other research has shown that university students with high levels of social support from peers not only have better academic outcomes, but also report better health outcomes such as fewer doctors' visits, and fewer depressive symptoms (Walton & Cohen, 2011; Farrer, Gulliver, Chan, Bennett, & Griffiths, 2015).

Peer support and mentorship have been shown to help foster sense of school belonging and feelings of connection to the university among post-secondary students (Rüssel & Skinkle, 1990; Wylie, 2012). Several studies have shown that students rate the most important qualities of peer supporters to be curiousness, inquisitiveness, and open-mindedness, lack of prejudice, receptiveness, and impartiality (Astin, 1993; Rüssel & Skinkle, 1990; Schmidt, Marks, & Derrico, 2004). These peer mentor relationships that are developed within student residences that offer living-learning communities get students more involved in social activities and learning outside of the classroom which helps them to connect with the university (Rüssel & Skinkle, 1990). Astin (1993) stated peer relationships were the greatest influence on student's decision making. In varied settings, such as academic classes and social activities, students have been found to follow after and to endorse what their peers thought about an issue (Astin. 1993; Wylie, 2012). This peer influence thus creates a large community of influence which may be used positively in students' lives (Astin. 1993; Wylie, 2012). As peer relationships potentially have a big influence in students' decisions making processes, it becomes critical for universities and student mental health personnel to understand this relationship as they seek to put in place peer mentors who will positively impact student development and learning.

Peers Support, Sense of Belonging, and Social Media Use

While evidence points to a relationship between peer support and sense of belonging and university students' academic and psychological outcomes, such measures do not account for the impact of social media use. Exploding in popularity, social media sites and applications which allow users to create, maintain, and connect to social support networks remotely, may have an increasingly important influence on college student's sense of belonging, and their access to peer support. Furthermore, the rise of social media websites and applications that allow users to remain socially connected when physically distant from their social ties may certainly have a significant impact on co-operative education students' feelings of connectedness when on work terms.

Social networking sites (SNSs) have had an increasingly large impact on the lives of university student's and some research points to the benefit of SNSs on sense of belonging. A study by Davis (2012) used a series of interviews with 32 adolescents to investigate the value young people place on online exchanges with their friends and found that casual exchanges between young people through texting, social networking (i.e., Facebook), and instant messaging helped foster a sense of belonging among participants. The young people in the study reported that social media helped them connect with peers, regardless of their physical location or the time of day (Davis, 2012). These results suggest that it may be the opportunity to experience connectedness — staying in touch — that fulfils an individual's need to belong (Baumeister & Leary, 1995; Nurullah, 2009). This finding has been supported by other researchers, who have found that online communication significantly and positively affects perceptions of social integration and bonding (Ko & Kuo, 2009). Davis also suggested that social media might support a sense of belonging by allowing young people to seek validation from peers regarding their

thoughts and experiences.

Other studies that have investigated the link between social networking sites and a sense of belonging and social capital have reported mixed results. For example, Quinn and Oldmeadow (2013) administered an adapted measure of belonging to 443 young people, and found that a sense of belonging was associated with social networking sites for males, but not for females. A study conducted by Ellison, Steinfield and Lampe (2007) utilized the Facebook Intensity Scale (FBI) to investigate the relation between Facebook intensity levels and three forms of social capital, or the networks of relationships among people who live and work in a particular society, enabling that society to function effectively. Measuring participants' bridging social capital, bonding social capital, and maintained social capital, the researchers found that Facebook intensity predicted levels of all three forms (Ellison et al., 2007). Interestingly, the results showed that among students who reported low self-esteem, or low satisfaction with college life, greater Facebook intensity was related to a larger network of peripheral social ties. The findings from Ellison and colleagues (2007) as well as subsequent studies (Johnston, Tanner, Lalla, & Kawalski, 2010; DeAndrea, Ellison, LaRose, Steinfield, & Fiore, 2012; Yang & Brown; 2015), suggest that the effect of using Facebook and other Social Networking sites on one's perceived peripheral social capital is dependent on one's psychosocial wellbeing, indicating that those with lower self-esteem or college life satisfaction may be especially reliant on SNSs to create and maintain social capital.

It should here be noted that while SNS use is correlated with binding social capital among those lower in psychological well-being, it has not been shown to ameliorate their state. A study by Sheldon, Abad, & Hinsch (2011), observed an increase in Facebook use in both students who feel connected, as well as those who feel disconnected within their university.

10

Their findings, moreover, showed that Facebook use was related to increased feelings of belongingness for these connected individuals, but did not alleviate feelings of disconnection or loneliness for those who generally felt disconnected (Sheldon, et al, 2011). The researchers hypothesized that these diverging results may be explained by differing motivations behind connected and disconnected individuals' increased Facebook use. While connected individuals' increased Facebook use may be associated with a tendency to have positive experiences with the social networking site, for disconnected individuals, Facebook use may be used as a means of coping with loneliness (Sheldon et al., 2011).

While such findings suggest that increased Facebook use is not a remedy for loneliness or disconnection, research also suggests it may prove a less than healthy coping behaviour. Several studies have shown that for university students with low levels of school belongingness, SNS use is positively related to *friend-sickness,* a type of social isolation which among college students has been found to increase feelings of loneliness and decrease self-esteem (Paul & Brier, 2001). SNS use has also been found to be associated with increased negative affect, such as sadness, loneliness, and anxiety (Klingensmith, 2010). Furthermore this research suggests that students who rate lower in belongingness, exhibit increased SNSs use to cope with feelings of loneliness, and that such increased use is associated with increased feelings of loneliness, friend sickness, and anxiety (Klingensmith, 2010).

Implications for Students Enrolled in Co-operative Education Programs

If, moreover, social connectedness is a significant stress buffer, those who have less opportunity to create social connections at university should exhibit more maladaptive coping responses to stress. A study by Brunwasser (2012), found that when compared to freshmen, transfer students had elevated stress levels and greater difficulty developing a sense of

11

connection to their peers and the broader campus community and were more vulnerable to the onset of depressive symptoms. In this study, the transfer students reported higher levels of depressive symptoms and this relationship was mediated by perceived stress and social connectedness. Importantly, the transfer students who lived off campus exhibited consistently elevated levels of depressive symptoms; transfer students who lived on campus experienced depressive symptoms similar to those reported by first-year university students by the end of the semester (Brunwasser, 2012). These findings suggest that the drop in depressive symptoms experienced by transfer students who live on campus, but not those who live off campus, is due to an increasing sense of belonging facilitated by living within the campus community in close proximity with one's peers (Brunwasser, 2012). Not only, for example, are on-campus students in close proximity to their peers, but they have greater ease of accessibility to campus resources and activities. This argument is supported by further evidence from a study by Farris (2010) which found that students who lived on campus reported higher involvement in university activities, and a greater tendency to attend on campus events, presumably increasing their sense of school belonging.

Like transfer students, there is reason to believe that students who participate in a co-operative education program may be at higher risk for the mental health problems associated with a deprived sense of belonging. When compared to students in traditional university programs, co-op students may have a more difficult time developing a sense of belonging at their university due to their alternating academic and work terms. Their academic/work term cycle which may begin as early as their first year of study may be particularly psychologically challenging for those making the delicate transition from high school to university. Not only does this term to term shift consist of a constant change of one's primary occupation, but it often

means a change of one's geographic location, uprooting students from their developing social circles. A qualitative study by Jones (2007) exploring what makes the experience of co-operative education meaningful found that students placed the most importance on the development of meaningful relationships and that co-op students reported finding the co-op program emotionally difficult, isolating them from their friends not only during work terms, but in their on campus sessions, which were often out of sync with those of their regular stream social ties. The students reported being deeply affected by their 'friend sickness', and a number of students, for example, reported that their deep feelings of sadness associated with their social isolation had them considering dropping out of the co-op stream (Jones, 2007).

It is possible that co-operative education programs may interfere with the development of university belonging, as well as access to peer support. Despite findings that co-op students are slightly less anxious than their non-co-op peers (Drysdale & McBeath, 2014), given the theorized buffering effects of social support, co-op students may be less able to cope with the stresses they do experience. Upon commencing their co-operative university programs, students begin alternating between work terms and school terms year round without a significant break, often for the final three years of their undergraduate degree. Adding to their demanding schedules, co-op students face the added pressure of maintaining the high grades required to stay enrolled in their program. Furthermore, co-op students must engage in the competitive process of applying for work-term positions, often unsure as to whether they will obtain a position that will offer a valuable experience, or where, geographically, their position will be located.

It may be argued, therefore, that as far as mental health is concerned, the co-op experience is a double-edged sword. Not only can it interfere with the development of a healthy sense of university belonging, and isolate students from their social support networks, crucial for

dealing with stress in a healthy manner, it is inherently highly stressful. Furthermore, by removing the student from campus every second term, co-operative education programs may affect students' ease of access to campus support initiatives such as peer support groups as well as mental health care. Co-op students' generally busy schedules, as well as their lesser involvement on campus may make it especially unlikely for them to seek mental health treatment requiring time constraints. These, as well as being unaware of the availability of campus services in general are among the most significant factors preventing students from seeking treatment for mental health problems (Hunt & Eisenberg, 2010).

School to Work Transitions

Co-operative education programs aim to facilitate the school to work transitions for students by providing them with practical experience and connections to employers. Such programs have become popular amongst students, particularly as the post-graduation job market can be very competitive. However, the school-to-work transition can be very challenging for all students. Unemployment rates for emerging adults are very high in most developed nations and in periods of economic recession, the job search period can be twice as long compared to economically better times (ILO, 2011). Research has shown that for emerging adults, unemployment and difficulty making a successful school-to-work transition can result in decreasing job search motivation (Aaronson, Mazumder, & Schechter, 2010), less valuable employment networks (Wanberg, Kanfer, & Banas, 2000), mental and psychological health problems (McKee-Ryan, Song, Wanberg, & Kinicki, 2005; Paul & Moser, 2009; Wanberg, 2012), psychological barriers to work (McQuaid & Lindsay, 2002; Wanberg et al., 2000), and deterioration of human capital that has been acquired in education (Möller, 1990). As obtaining employment may become increasingly difficult after longer periods of unemployment (Steijn,

Need, & van Gesthuizen, 2006), successful school-to-work transitions are of vital importance to achieve sustainable labour market participation for emerging adults and to improve outcomes in overall mental health and well-being.

Study Rationale

Given the academic, and more crucially, the mental health and well-being implications of belongingness and social support discussed thus far, further investigation of the subject is certainly warranted. Senses of belonging to the university community, and effective peer support have been identified as important protective factors for mental health among post-secondary students. Unfortunately, it is unknown how best to facilitate the beneficial connections for co-op students when they continuously alternate between the demands of theoretical knowledge acquisition and workplace skill acquisition. While there is a dearth of literature regarding the efficacy of programs and interventions that support successful school-to-work transitions for university students (both students who are transitioning to work terms and those who are graduating and transitioning to the work force) there is some literature on interventions that support positive transitions into post-secondary studies. Many studies have demonstrated the academic and mental health advantages of students participating in peer mentorship programs, including improving self-esteem and life satisfaction (DuBois & Silverthorn, 2005; Jekeliek, Moore, Hair, & Scarupa, 2002; Kahveci, Southerland, & Gilmer, 2006). Overall mental health and establishing a sense of belonging with a community and with peers are believed to be important in having a successful school-to-work transition and achieving a strong career identity (Conely, Kirsh, Dickson, & Bryant, 2014; Viner et al., 2012). As such, they deserve attention in the research on participation in post-secondary education and the subsequent transition to the labour market.

Furthermore, there is reason to believe that co-operative education programs may interfere with the development of university belonging, as well as access to peer support. A series of recent focus groups (i.e. preliminary data collected to support developing a quantitative measure for this study) conducted by McBeath, Drysdale, and Bohn (2015) indicated that co-op students - compared to their non co-op peers - reported feelings of isolation, loneliness, extreme stress, and intense depression when they were on their co-op terms. This resulted in the students feeling disconnected from their primary peer support system and the university in general (McBeath, Drysdale, & Bohn, 2015). In the focus groups conducted by McBeath, Drydale, and Bohn (2015) participants were asked to describe how they felt about making the transition from university to the workplace. All participants in the focus group expressed worry and anxiety not simply about finding a job but about maintaining social connections and having 'good' mental health when they transition to the labour market (McBeath, Drysdale, & Bohn, 2015). Given that mental health problems have become one of the leading causes for absenteeism from work (WHO, 2011) and that mental health problems in the workplace have serious effects not only for the individual but also for the productivity of businesses and thus the economy and society as a whole (WHO, 2011), it is essential that universities and colleges prepare the 'whole' person for the transition from post-secondary education to the labour market. The preliminary findings from the focus group data described above coupled with current mental health trends in the workplace emphasize the need for more resources for our students and more research on how best to prepare them for life after graduation.

Research Questions

The primary objective of this study was to examine student perceptions of sense of belonging, peer support, and social media use and how these factors influence their mental health, overall well-being, and confidence regarding their transition to work after graduation (i.e., school-to-work efficacy). A second objective was to examine the role of social media on sense of belonging, peer support, and mental health. A third and final objective was to examine the above-mentioned variables in the context of co-operative education. To summarize, the following research questions were addressed:

1. What perceptions do students have about sense of belonging and peer support?

2. What demographic factors impact sense of belonging and peer support and school to work self-efficacy?

3. Does participation in co-operative education influence peer support, sense of belonging, and school to work self-efficacy?

4. How are peer support and sense of belonging related to mental health?

5. How is participation in co-operative education related to mental health?

6. What role does social media use play in students' perceptions of their sense of belonging, peer support, and mental health?

Study Significance

The findings of this study provide insight into the importance of peer support, sense of belonging, and social media use, on mental health and well-being outcomes amongst post-secondary students, and in particular, those in co-operative education programs. This is important for the development of campus health programs, initiatives, and policies. Moreover, findings from this study may help to guide the development of larger research projects, which

17

will develop and pilot evidence-based interventions for improving mental health outcomes for students and can guide government agencies and universities to prioritize the allocation of resources towards further research and the development of initiatives related to peer support and sense of belonging. Addressing the mental health and well-being amongst young adults in post-secondary education is currently a priority for universities, public health agencies, and government.

Methods

Survey Design

To investigate the research questions presented, a quantitative study was designed.

Specifically, a cross-sectional survey was employed to investigate the relations between sense of

belonging, peer support, social media use and subjective wellbeing among co-operative and non-

co-operative education students at the University of Waterloo. This study received ethical

clearance through a University of Waterloo Research Ethics Committee (ORE #20606) .The

survey was offered only in a web-based format and was created using QuestionPro survey

software (survey available at the following URL: www.questionpro.co/t/AC6RAZSs3p). Two

versions of the survey were created in QuestionPro; one with the scales in the order as they are

presented in the appendix (Appendix B) of this thesis and the second in reverse order, excluding

the demographic which remained at the beginning. Having two differently ordered versions

helped ensure reliability, quality, and quantity of complete scales. The questionnaire collected

demographic data as well as perceptions and experiences of peer support, sense of belonging,

and social media use, and perceptions of wellbeing, confidence in making the transition from

school to work (i.e., school-to-work self-efficacy), and mental health. Completed surveys were

exported from QuestionPro to an excel file and then coded by the researcher in an SPSS 22

dataset for analysis.

Sample Selection and Survey Administration

Data collection took place over six recruitment days between July 2015 and October

2015 in the Student Life Centre (SLC) at the University of Waterloo. As the SLC is a central hub

where students congregate, this location was ideal for drawing a diverse sample of students. A

recruiting table was set up in the Great Hall where potential participants were provided with the

study information and the URL for one of the two anonymous online versions of the survey - which they could access from their mobile phone or computer (all interested participants had either a phone or computer with them). Consent to participate was indicated by the participant's voluntary completion of the online survey (Appendix A). The SLC makes Wi-Fi freely accessible for all students which facilitated immediate survey completion. The average completion time for both versions of the survey was twenty-two minutes. Upon completion of the survey, participants were provided with a verification number - which they could return to the recruitment desk to receive a $6.00 gift card for either Starbucks or the University of Waterloo Retail Services. If students were unable to complete the survey immediately, they were given the option of either picking up the gift card at a predefined later date or providing a mailing address so that a gift card could be sent to them.

Survey Instrument

The online survey (Appendix B) included demographic information (i.e., age, gender, year of study, co-op and non co-op status, number of work terms, faculty/discipline, and living arrangements during both academic and work terms, having lived in residence, participation in orientation week), as well as measures of sense of belonging, mental health status, well-being, social connections and support systems, social media usage, perceived mental preparedness for the transition to the workforce, and perceived importance of peer support and sense of belonging on mental health and overall wellbeing. The survey was comprised of both published instruments as well as newly constructed items and scales that were based on an extensive literature review and the preliminary findings from a qualitative focus group study conducted by McBeath, Drysdale, & Bohn (2015) regarding perceptions of peer support and sense of belonging amongst undergraduate students. Five verification items were included to ensure participants were truthful

20

in their responses. Each verification item was constructed to be a parallel opposite (i.e., reverse coded) to another item in the scale and was used only to validate participant responses and therefore excluded in the final analysis. The final survey contained a total of 211 items (including the demographic and verification items).

Questionnaire

Demographic Information

Participants were asked to fill out several socio-demographic questions to help provide a profile of the sample, most critically in terms of post-secondary program and year of study. The demographics scale consisted of 17 items. Items included gender, age, ethnicity, status as international student, year of study, program (co-op vs. non-co-op), faculty (e.g., Engineering, Math, Science, and Arts), year of study (first to fourth), number of co-op work terms (from one to five), location of work terms, current and predicted GPA, current living arrangements, if the respondent has ever lived in University residence, and if the respondent had participated in university orientation activities (i.e. Frosh Week).

Sense of Belonging and School Belonging

Three distinct scales were used to assess overall sense of belonging, the specific construct of school belonging, and perceptions and experience of sense of belonging while at university.

Sense of Belonging Instrument: To measure overall sense of belonging the *Sense of Belonging Instrument* (SOBI: Hegarty & Patusky, 1995) was used. The SOBI is a 31-item self-report measure designed to assess sense of belonging in adults. There are two separately scored scales. The SOBI-P (items 1-18; $\alpha = .76$) measures psychological state of sense of belonging –

the extent to which an individual perceives being valued, needed, and accepted by people in his or her social environment. The SOBI-A (items 19-31; $\alpha = .91$) measures antecedents to sense of belonging – energy, potential, and desire for involvement. Participants are asked to rate the items using a 4-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree), reflecting the degree to which the individual experiences a sense of belonging in his or her social system or environment. One item, "I generally feel that people accept me," is reverse scored. Examples of other items on the scales are "I feel like an outsider in most situations" (SOBI-P) and "Generally, other people recognize my strengths and good points" (SOBI-A). Scores on the SOBI-P ranged from 21-72 with a mean of 55.54 and a standard deviation of 9.73, while scores on the SOBI-A ranged from 19-36 with a mean of 28.04 and a standard deviation of 3.42 in a sample of college students (Hagerty & Patusky, 1995). Verification items included in this scale were SOBI-P: SOBIX01 – parallel item to SOBI-004. SOPI-P questions are written in the negative, meaning that a higher score would represent a low sense of belonging, whereas the SOPI-A questions are written in the affirmative, meaning a higher score would represent a higher to sense of belonging.

Psychological Sense of School Membership: To measure sense of school belonging the *Psychological Sense of School Membership* (PSSM: Goodenow, 1993) was utilized. The PSSM scale was created to measure the construct of "school membership," or the extent, to which participants feel personally accepted, respected, included, and supported by others in the school environment. The 'University of Waterloo' was inserted into items where 'name of school' was required. The scale has 18-items each with a 5- point Likert response scale (1 = completely false to 5 = completely true). Items 3, 6, 9, 12, & 16 are reversed coded. Chronbach's alphas range from .78 to .95. Example items from the scale include "I feel like a real part of the University of

Waterloo" and "People at this University are friendly to me." Higher scores on the PSSM indicate a stronger sense of school membership.

Sense of Belonging Items: To measure participant's perceptions of sense of belonging at university the *Sense of Belonging Items* scale was used (SB: McBeath, Drysdale, & Bohn, 2015). The SB scale was developed to measure the construct of sense of belonging, or a student's experience of personal involvement in and identification with the university community. The SB consists of 19 statements concerning the perceived context, challenges, and gains and outcomes of sense of belonging. There are three sections to the scale: Context (items 1 - 10), Gains & Outcomes (items 11-15), and Challenges (items 16-19). Examples of items related to the three sections include: "Feeling accepted by my peers contributes to my sense of belonging at my university" (Context), "My sense of belonging at the university is important for my mental health" (Gains and Outcomes), and "Feeling detached from the university contributes to feelings of loneliness" (Challenges). Participants were asked to rate the items using a 4-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree), reflecting their agreement with each statement. Higher scores on the Gains and Outcome subscale indicates a more positive experience related to sense of belonging while higher scores on the Challenges subscale indicate a more negative experience related to a lack of sense of belonging. Verification items included in this scale were SB: SBX02 – parallel item to SB001. This is a newly developed scale which has never before been used in research and a factor analysis was conducted to confirm the hypothesised factors of context, gains & outcomes, and challenges as related to sense of belonging.

Peer Support

Two measures of peer support were used to assess perceptions of social support and the utilization of peer support.

Interpersonal Support Evaluation List: To provide a more holistic view of perceived peer support the *Interpersonal Support Evaluation List* (ISEL -shortened version: Cohen, Mermelstein, Kamarck, & Hoberman, 1985) was used. The ISEL was designed to measure perceptions of social support among individuals in the general population. The ISEL (shortened version) consists of a list of 12 statements concerning the perceived availability of potential social resources. There are three subscales: Appraisal Support - the perceived availability of someone to discuss issues of personal importance, (items 2, 4, 6, 11), Belonging Support - the perceived availability of others to interact with socially (items 1, 5, 7, 9), & Tangible Support - the perceived availability of material aid (items 3, 8, 10, and 12). Items 1, 2, 7, 8, 11, & 12 are reversed scored. Participants are asked to rate the items using a 4-point Likert scale (1 = definitely false, 2 = probably false, 3 = probably true, 4 = definitely true), reflecting the truthfulness of each statement. Example items from each of the subscales include: "There is someone I can turn to for advice about handling problems with my family" (Appraisal), "If I wanted to have lunch with someone, I could easily find someone to join me" (Belonging), and "If I was stranded 10 miles from home, there is someone I could call who could come and get me" (Tangible). This scale was included in the questionnaire once to measure support while on an academic term (12 items) and secondly to measure support while on a work term or away from campus for an extended time (12 items). Higher scores on each of the subscales (Appraisal, Belonging, and Tangible) indicate stronger perceived availability of social support in each context.

Peer Support Items: To measure participant's utilization of formal and informal peer support the *Peer Support items* (PS: McBeath, Drysdale, & Bohn, 2015) scale was also used. The PS consists of 21 statements concerning the perceived experience of, context, challenges, and gains and outcomes of peer support. There are four sections to the scale: Experience (items 1-5), Context (items 6-12), Gains & Outcomes (items 13-17), and Challenges (items 18-21). Participants are asked to rate the items using a 4-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree), reflecting their agreement with each statement. Examples of items related to the three sections include: "I only seek peer support from my closest friends" (Experience), "I look for someone I can relate to in a peer supporter" (Context), "I seek peer support to obtain emotional comfort" (Gains and Outcomes), and "I have no time to seek peer support from campus programs" (Challenges). This is a newly developed scale which has not been used in previous research, However the scale is not suitable for a factor analysis given that the scale items are generally distinct from each other (even within each subscale) and it is used in this study only to provide descriptive measures of peer support.

School-to-Work Transitions

School-to-Work Self-Efficacy: In order to gauge participants feelings of self-efficacy, or belief in their ability to succeed, around the transition from university studies the *School-to-Work Self-Efficacy* (SWEF: McBeath, Drysdale, & Bohn, 2015) was used. The SWEF asked participants to rate the items using a 4-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree), reflecting their agreement with each statement. Example items include "The university experience will help me when I am moving towards the work force" and "What I am learning in my courses is applicable to the jobs in my field". Higher scores on the scale

indicate a strong level of self-efficacy, or confidence, in one's ability to make a successful transition from school to work.

Well-Being and Mental Health

Three distinct measures were used to examine different aspects of well-being and mental health.

Self-Description Questionnaire III: The Emotional Stability subscale of the *Self-Description Questionnaire III* (*SDQ-III*: Marsh & O'Neill, 1984) was used to measure emotional stability self-concept. Self-concept is defined as a set of learned perceptions, beliefs and opinions that individuals hold about them. The *SDQ III* contains 136 items that measure 13 factors of self-concept. Reliability coefficients for the subscales range from in the .80s and low .90s. Only the Emotional *Stability* factor subscale items have been selected for this study. Items 2, 4, 6, 8, & 10 are reversed coded. The 10 items are rated on a scale from 1 (*definitely false*) to 8 (*definitely true*). Example items include "I am usually pretty calm and relaxed" and "I am often depressed" (reverse coded item). Higher scores indicate a stronger emotional stability self-concept. Scores are divided into quartiles with the upper quartile scores indicative of high emotional stability self-concept and the lower quartile indicative low emotional stability self-concept.

Satisfaction with Life Scale: To measure perceptions of participants overall well-being the *Satisfaction with Life Scale* (SWLS: Pavot, W., & Diener, E. 2008) was used. The SWLS is a short 5-item instrument designed to measure global cognitive judgments of satisfaction with one's life. The Satisfaction with Life Scale (SWLS) has been used heavily as a measure of the life satisfaction component of subjective well-being. Scores on the SWLS have been shown to correlate with measures of mental health, and be predictive of future behaviours such as suicide attempts. In the area of health psychology, the SWLS has been used to measure the subjective

quality of life of people experiencing serious health concerns. The SWLS is a 7-point Likert style response scale. Example items include "In most ways my life is ideal" and "If I could live my life over, I would change almost nothing." The possible range of scores is 5-35, with a score of 20 representing a neutral point on the scale. Scores between 5-9 indicate the respondent is extremely dissatisfied with life, whereas scores between 31-35 indicate the respondent is extremely satisfied. The coefficient alpha for the scale has ranged from .79 to .89, indicating that the scale has high internal consistency. The scale was also found to have good test-retest correlations (.84, .80 over a month interval).

Well-Being Manifestation Measure Scale: In order to measure specific aspects of psychological well-being the Well-Being Manifestation Measure Scale (WBMMS: Massé, R., Poulin, C., Dassa, C., Lambert, J., Belair S., & Battaglini, A., 1998) was used. The WBMMS has six factor subscales: Self-Esteem (items 1 - 4), Mental Balance (items 5 - 8), Social Involvement (items 9 - 12), Sociability (items 13 - 16), Control of Self & Events (items 17 - 20), and Happiness (items 21 - 25), Participants were asked to rate the items using a 5-point Likert scale (1 = never, 2 = rarely, 3 = sometimes, 4 = frequently, 5 = almost always), reflecting the frequency of each statement in the last month. Example items include "I felt that others loved and appreciate me" (Self-Esteem),"I felt emotionally balanced" (Mental Balance), I was curious and interested in all sorts of things" (Sociability), "I was able to face difficult situations in a positive way" (Control of Self and Events), and "I felt healthy and in good shape" (Happiness). Cronbach's alpha for the entire scale was reported to be .93, with subscale alphas ranging from .71 to .85. Verification items in this scale were WBMMSX04 – parallel to item WBMMS015. Higher scores on each subscale indicate stronger psychological well-being for each aspect.

Social Media for Peer Support and Sense of Belonging

In order to measure the frequency and duration of time spent by participants on social media websites and to also discern the impact of social media on their perceptions of peer support and sense of belonging the *Social Media Usage items* (SM: McBeath, Drysdale, & Bohn, 2015) was used. The first section of SM asked participants to rate the items using a 4-point Likert scale (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree), reflecting their agreement with each statement. Example items include "I update my social media page(s) several times a day" (intensity of use) and "Social media helps me to feel more connected to my UW peers" (perceived sense of belonging).Verification items included in this scale were SM: SMX05 – parallel to SM013. The scale also has several additional items which asked participants to indicate how often they use social media, which Social Networking Sites they use, and how many friends they connect with over social media. This is a newly developed scale which has not been used in previous research, However the scale is not suitable for a factor analysis given that the scale items are generally distinct from each other (even within each subscale) and it is used in this study only to provide descriptive measures of social media use and related perceptions.

Data Analysis

Collected data were analyzed using SPSS version 22. The current study involved a within and between subject design with age, gender, ethnicity, international student status, year of study, number of work terms, faculty/discipline, living arrangements, participation in co-operative education, having lived in residence, and having participated in University Orientation Week as the main independent variables to be investigated. Dependent variables included the following: 1) sense of belonging, 2) peer support and perceived social support systems, 3) mental

28

preparedness for the transition to the labour market, 4) indicators of mental health and well-being 5) social media use, and 6) perceived importance of peer support and sense of belonging on mental health and overall well being.

The data were reviewed to determine if there were any validation errors and also to check for any outliers – which were then removed from analysis. Descriptive and inferential statistics were utilized to analyze the data set. Descriptive statistics provided information regarding frequencies, percentages, means, and standard deviations for the previously outlined demographics. Characterizing the sample also included the use of bivariate cross-tabulations to examine the representativeness of the sample in terms of faculty, year of study, and participation in co-operative education. Additionally a factorial analysis was conducted on the Sense of Belonging scale (McBeath, Drysdale, and Bohn, 2015) to assess the validity and reliability of the proposed constructs of the scale.

Analysis of variance (ANOVA) was used to examine main effects and interactions by combining a selected number of the independent variables with each of the dependent variables individually. Subsequently, post hoc tests were run to examine significant differences. Multiple linear regression was also used to determine the predictive relationship between sense of belonging, peer support, and measures of well-being and mental health. For this analysis the independent or predictor variables were the total scores on the SOBI-P, SOBI-A, PSSM, and ISEL subscales. The dependent or criterion variables in this study were the total scores on the measures of well-being and mental health; the SDQ-III – Emotional Stability Subscale, the SWLS, and the WBMMS Happiness and Mental Balance Subscales.

Results

Sample Profile

Approximately 465 undergraduate students started the survey and a total of 314 surveys were returned complete and usable, representing a response rate of 67.5%. Of the 314 respondents, 68.1% were female, 31% were male, and 1% identified as "other". The average age reported was 22.5 years old. The majority of respondents were of Asian/Pacific Islander (51.6%) and Caucasian (30.9%) descent and most were residents of Canada (91.4%) as opposed to international students (8.6%). Of the students surveyed, 57.6 % identified as participating in co-operative education while the other 41.7% were non-co-operative education students. The students surveyed in the sample were from all of the major faculties of the University of Waterloo: Arts (25.2%), Applied Health Science (13.1%), Engineering (15.5%), Environment (6.4%), Math (14.7%), and Science (24.8%). All years of study were also fairly evenly represented in the sample: first year (21%), second year (36.9%), third year (22%), and fourth year (20%). Respondents reported the following university grade point averages: less than 70% (3.8%), 70%-74% (20.1%), 75%-79% (30.9%), 80%-85% (31.5%), and greater than 85% (13.7%). The majority of respondents had lived in a university residence (83%) and had participated in University Orientation Week activities (89.2%). The majority of students surveyed (69.1%) reported living in the Kitchener Waterloo area and the most frequently reported living arrangement is living with friends in off-campus housing (54.5%). A description of the sample demographics outlined above is found in table 1.

Table 1 - Frequencies and Percentages for the Demographic Variables – Study Sample and 2014/15 Undergraduate Population at the University of Waterloo

Demographic Variable	Study Sample N (314)		2014/15 Undergraduate Population at University of Waterloo N (29,623)	
Gender	N	Percent	N	Percent
Male	97	31	16,377	55.3
Female	214	68.1	13,246	44.3
Other	3	1.0	-	-
Age Group				
17 to 19 years old	135	43	N/A	N/A
19 to 22 years old	147	46.8		
23 to 25 years old	24	7.6		
>25 years old	8	2.5		
Ethnicity				
Caucasian.	97	30.9		
Hispanic or Latino	6	1.9		N/A
Middle Eastern	20	6.4	N/A	
African American	6	1.9		
Native American	11	3.5		
Asian/Pacific Islander	162	51.6		
Other	12	3.8		
International Student				
Yes	27	8.6	3,989	13.5
No	287	91.4	25,634	86.5
Year of Study				
First Year	66	21.0	7,669	25.9
Second Year	116	36.9	8,339	28.2
Third Year	69	22.0	6,840	23.1
Fourth Year	63	20.1	6081	20.5
Faculty				
Arts	79	25.2	6,349	21.4
Applied Health	41	13.1	2.132	7.2
Science	49	15.6	4,872	16.5
Engineering	20	6.4	6817	23.0
Environment	46	14.6	2270	7.7
Math	78	24.8	6,376	21.5
Other	-	-	807	2.7
No response	1	.003		

Co-operative Education				
Co-op Student	181	57.6	19,236	64.9
Non Co-op Student	131	41.7	10,387	35.1
GPA				
<70%	12	3.8		
70%-74%	63	20.1	N/A	N/A
75%-79%	97	30.9		
80%-85%	99	31.5		
>85%	43	13.7		
Live in Kitchener-Waterloo				
Yes	217	69.1		
No	97	30.0	N/A	N/A
Living Arrangement				
University Residence	70	22.3		
Alone off-campus	46	14.6	N/A	N/A
With friend's off-	171	54.5		
campus	19	6.1		
With parents	6	1.9		
With partner/spouse	2	.006		
No response				
Has Lived in Residence				
Yes	262	83.4		
No	52	16.6	N/A	N/A
Participated in Orientation				
Yes	280	89.2		
No	34	10.8	N/A	N/A

The demographic composition of the sample was found to be moderately reflective of the total

undergraduate population at the University of Waterloo. Overall the students in the sample were

representative of the university population in terms of including a balanced sample of co-

operative and non-co-operative students from all of the major academic faculties and

undergraduate years of study. The cross-tabulation of the sample participants by faculty, year of

study, and participation in co-operative education is found in Table 2.

Table 2 - Cross-tabulation of Faculty by Year of Study and Participation in Co-operative Education

| | Year of Study N (314) | | | | | | | | |
| | 1 | | 2 | | 3 | | 4 | | |
Faculty	Co-op	Non Co-op	Co-op	Non Co-op	Co-op	Non Co-op	Co-op	Non Co-op	Total
ARTS	0	7	14	17	8	12	12	9	79
AHS	1	3	18	7	5	4	1	2	41
ENG	29	0	8	0	7	0	6	0	50
ENV	1	2	4	5	5	0	0	3	20
MATH	2	9	12	2	6	2	8	5	46
SCI	5	7	17	11	10	10	2	16	78
TOTAL	38	28	73	42	41	28	29	35	314

Student Perceptions of Sense of Belonging

In order to address the first research question and describe the student's perceptions of sense of belonging the descriptive measures of the *Sense of Belonging Scale* (McBeath, Drysdale, Bohn, 2015) was used. The measure required respondents to select their level of agreement with each item on a scale of 1 to 4 (1=Strongly Disagree to 4=Strongly Agree). For the items in the scale it was decided that a cut-off mean of 2.75 and above indicates 'general agreement' and a cut-off of 2.25 or below as 'general disagreement'. All items with means between 2.25 and 2.75 were seen as indicating *neither* general agreement nor disagreement. The description of the sense of belonging perceptions is found in Table 3.

Table 3 - Perceptions of Sense of Belonging

Items	N	Mean	Std. Deviation
Feeling accepted by my peers contributes to my sense of belonging at my university	314	3.11	.693
Having approachable professors makes me feel like I belong at my university	314	3.15	.672
A sense of belonging at university means feeling connected to the university as a whole	314	3.07	.673
My sense of belonging at university means feeling connected to specific areas, societies, or clubs on campus rather than the university as a whole	314	2.98	.706
My sense of belonging at university is affected by its reputation	314	2.64	.783
Feeling accepted by peers has little to do with my sense of belonging to the university	314	2.32	.819
Feeling like I belong at university provides me with a sense of security on campus	314	3.02	.672
Feeling like I belong to the campus community motivates me to actively engage in university activities	314	3.06	.674
Feeling like I belong at my university increases my academic motivation	314	3.06	.714
The campus community allows me to be myself	314	2.95	.648
Feeling like a member of the campus community eases the transition from high school to university	314	3.03	.679
My sense of belonging at the university is important for my mental health	314	3.04	.724
My sense of belonging at the university increases my ability to cope with stress	314	2.99	.729
Feeling detached from the university increases my stress levels	314	2.83	.751
Feeling detached from the university contributes to feelings of loneliness	314	2.94	.757
I have trouble maintaining a sense of belonging within the university community from term to term	314	2.45	.798
I often feel isolated from my friends and the campus community	314	2.29	.812
Feelings of loneliness and isolation have made me think of changing the trajectory of my studies	314	2.27	.901
Feeling like I don't belong on campus has made the transition from high school to university difficult	314	2.28	.839

Several of the items listed in the Table 3 asked students about their perceptions of the factors that contribute to their sense of belonging to the university and why sense of belonging is important to them. Overall the students agreed most strongly that connections with peers (M=3.11, SD=.693), approachable professors (M=3.15, SD=.672), and feeling connected with the university community as a whole (M=3.07, SD=.673) are important contributors to their sense of belonging. They also agreed, slightly less strongly, that their sense of belonging is also impacted by feelings of connectedness to specific areas, societies, and clubs (M=2.98, SD=.706), and by the reputation of the university (*M*=2.64, *SD* = .783).

When asked about the perceived benefits related to sense of belonging, students agreed that sense of belonging positively impacts their sense of security on campus (*M*=3.02, *SD*=.672) and their level of motivation to engage in university activities (*M*=3.06, *SD*=.674) and to perform well academically (*M*=3.06, *SD*=.714). They also agreed that feeling like they belong contributes to their ability to cope with stress (*M*=2.99, *SD*=.729) and is important for their mental health (*M*=3.04, *SD*=.724). This indicates that students perceive a strong sense of belonging to be related to their overall sense of well-being and mental health.

Students were also asked to describe their perceptions of the challenges related to a feeling detached from the campus community. They agreed that feelings of detachment increase their stress levels (*M*=2.83, *SD*=.751) and contribute to feelings of loneliness (*M*=2.94, *SD*=.757). However, students expressed neither agreement nor disagreement that they have difficulty maintaining a sense of belonging within the university community from term to term (*M*=2.45, *SD*=.798), or that they often feel isolated from their friends and the larger campus community (*M*=2.29, *SD*=.812). They also expressed neither agreement nor disagreement that a

diminished sense of belonging has impacted the trajectory of their studies (*M*=2.27, *SD*=.901) or made the transition from high school to university difficult (*M*=2.28, *SD*=.839).

Factor Analysis of Sense of Belonging Scale

The *Sense of Belonging Scale* (McBeath, Drysdale, & Bohn, 2015) used to examine students perceptions of their sense of belongingness and was hypothesized to consist of three distinct constructs that aim to measure these perceptions; Context (items 1 - 10), Gains & Outcomes (items 11-15), and Challenges (items 16-19). The scale was devised based on qualitative data from a series of focus groups with undergraduate students (McBeath, Drysdale, Bohn, 2015). As this study represents the first time that the scale has been used in quantitative research, a factor analysis was conducted.

Initially, the factorability of the 19-item sense of belonging scale was examined. Several well-recognised criteria for the factorability of a correlation were used. The minimum amount of data for factor analysis was satisfied, with a final sample size of 314 (providing a ratio of over 16 cases per variable). First, it was observed that 19 of the 19 items correlated at least .3 with at least one other item, suggesting reasonable factorability. Secondly, the Kaiser-Meyer-Olkin measure of sampling adequacy was .73, above the commonly recommended value of .6, and Bartlett's test of sphericity and the diagonals of the anti-image correlation matrix were also all over .5. Finally, the communalities were all above .3 further confirming that each item shared some common variance with other items. Given these overall indicators, factor analysis was deemed to be suitable with all 19 items.

Principal components analysis was used because the primary purpose was to identify and compute composite scores for the factors underlying the scale Initial Eigen values indicated that the first three factors explained 23%, 15%, and 11% of the variance respectively. The fourth

factor had an eigen value just over one, and explained 6% of the variance. The factor loading

matrix for this final solution is presented in Table 4. The factor labels proposed by McBeath,

Drysdale, and Bohn (2015) suited the extracted factors and were retained to some extent.

Overall, these analyses indicated that three distinct factors underlie the items of the Sense of

Belonging Scale, and that these factors were moderately internally consistent. Based upon the

outcome of the factor analysis the modified subscales of Gain and Outcomes (Items 5, 6, 14, and

15) and Challenges (items 16, 17, 18, and19) were separately scored and utilized for further

comparisons.

Table 4 - Factor Loadings communalities based on a principal components analysis for the Sense of Belonging Scale (McBeath, Drysdale, & Bohn, 2015)

| | Factor Loadings | | |
Item	Context	Challenges	Gains and Outcomes
Feeling accepted by my peers contributes to my sense of belonging at my university	.587		.315
Having approachable professors makes me feel like I belong at my university	.646		
A sense of belonging at university means feeling connected to the university as a whole	.741		
My sense of belonging at university means feeling connected to specific areas, societies, or clubs on campus rather than the university as a whole	.557		
My sense of belonging at university is affected by its reputation			**.856**
Feeling accepted by peers has little to do with my sense of belonging to the university		.346	**-.540**
Feeling like I belong at university provides me with a sense of security on campus	.624		
Feeling like I belong to the campus community motivates me to actively engage in university activities	.736		
Feeling like I belong at my university increases my academic motivation	.641		.220
The campus community allows me to be myself	.477	-.363	
Feeling like a member of the campus community eases the transition from high school to university	.653		
My sense of belonging at the university is important for my mental health	.626		.431
My sense of belonging at the university increases my ability to cope with stress	.581		.450
Feeling detached from the university increases my stress levels	.272	.301	**.726**
Feeling detached from the university contributes to feelings of loneliness	.207		**.783**
16. I have trouble maintaining a sense of belonging within the university community from term to term		**.739**	
I often feel isolated from my friends and the campus community		**.829**	
Feelings of loneliness and isolation have made me think of changing the trajectory of my studies		**.839**	
Feeling like I don't belong on campus has made the transition from high school to university difficult		**.760**	
Eigenvalues	4.471	2.943	2.100
% of variance	23.53	25.491	11.051

Note. Factor loadings < .2 are suppressed, Factor loadings >.4 are bolded

Student Perceptions of Peer Support

In order to describe the student's perceptions of formal and informal peer support the

Peer Support Items Scale (McBeath, Drysdale, Bohn, 2015) was used. The measure required

respondents to select their level of agreement with each item on a scale of 1 to 4 (1=Strongly Disagree to 4=Strongly Agree). For the items in the scale it was decided that a cut-off mean of 2.75 and above indicates 'general agreement' and a cut-off of 2.25 or below as 'general disagreement'. All items with means between 2.25 and 2.75 were seen as indicating *neither* general agreement nor disagreement. The description of the peer support perceptions is found in Table 5.

Several of the items listed in Table 5 asked students about their perceptions of how they utilize peer support. Overall the students agreed more strongly, on average, that they only seek peer support from close friends and that informal peer support is best (*M*=2.92, *SD* = .900). They generally disagreed that they had ever utilized peer support in formal settings, such as university sponsored programs or mentoring programs (*M*=2.18, *SD* = .732) and neither agreed nor disagreed that they would seek emotional support from a formal or university peer support group (*M*=2.37, *SD* = .802). There also neither agreed nor disagreed that they were aware of peer support programs offered by the university (*M*=2.61, *SD* = .864) and that they lack the time to seek out formal peer support on campus (*M*=2.68, *SD* = .761). This suggests that most students are both primarily receiving and preferring to receive peer support informally (likely from friends and classmates) and that the barriers to participating in more formal peer support programs are lack of awareness and available time.

Table 5 - Perceptions of Peer Support

Items	N	Mean	Std. Deviation
I have sought peer support in formal settings such as from university peer support and mentoring programs	314	2.18	.900
I only seek peer support from my closest friends	314	3.05	.723
Peer support is best when provided in an informal setting	314	2.92	.455
I would seek emotional support from a university peer support group	314	2.37	.802
I seek peer support to obtain emotional comfort	314	2.83	.744
I seek peer support to obtain academic advice	314	2.92	.723
I seek peer support for practical problem solving advice	314	2.97	.620
I seek peer support so that my feelings may be validated	314	2.75	.766
A peer supporter should be within my age group	314	2.69	.741
A peer supporter should have gone through similar experiences to be of value	314	2.98	.695
A peer supporter should offer a different perspective to my problems	314	3.09	.597
I look for someone I can relate to in a peer supporter	314	3.07	.621
I seek support from peers who are non-judgemental	314	3.32	.672
A peer supporter must be trustworthy	314	3.41	.655
A peer supporter should be comfortable offering constructive criticism	314	3.31	.621
Support from my peers helps me cope with my negative emotions	314	2.91	.744
I would not seek peer support for emotional comfort	314	2.47	.812
I am aware of peer support programs offered by my university	314	2.61	.864
I have no time to seek peer support from campus programs	314	2.68	.761
I feel like support from my peers is never there when I need it	314	2.28	.799
If I receive peer support from a formal program, people might think something is wrong with me or my mental health	314	2.51	.871

When asked about their perceived motivations for seeking out peer support, students expressed the strongest agreement, on average, that they seek out peer support for academic advice (*M*=2.92, *SD*=.744) and practical problem solving (*M*=2.97, *SD*=.620). They also agreed, that they will seek out peer support for emotional comfort (*M*=2.83, *SD*=.744) and validation of

their feelings (M=2.75, SD=.766). They also indicated agreement that peer support helps them to cope with negative emotions (M=2.81, SD=.744). This suggests that students perceive peer support as a strategy for dealing with both a variety of issues related to their studies and their personal lives.

Students were also asked about what they perceive as the important qualities of a peer supporter. Overall they expressed the strongest agreement that a peer supporter should be trustworthy (M=3.14, SD=.655), non-judgemental (M=3.32, SD=.672), and comfortable offering constructive criticism (M=3.31, SD=.621). They also expressed agreement that a peer supporter be someone who is close to their age (M=2.69, SD=.741), has gone through similar life experiences (M=2.98, SD=.695), is relatable (M=3.07, SD=.621), and also able to offer different perspectives from their own (M=3.09, SD=.597).

Sense of Belonging, Peer Support, School to Work Efficacy and Demographic Variables

In order to address the second research question and examine the demographic factors that impact peer support, sense of belonging, and school to work efficacy an analysis of variance (ANOVA) was performed for the sample with gender, age, ethnicity, international student, year of study, faculty, grade point average, place of residence, current living arrangement, having lived in residence, and participated in orientation as the independent demographic variables. Scores on the sense of belonging scales (SOBI-P, SOBI-A, PSSM, SB-Gains and Outcomes and SB-Challenges), perceived peer support scales (ISEL – on campus; ISEL – work term), and school to work efficacy scale (SWEF) were the dependent measures. Post Hoc tests (Tukeys' HSD and Levene's Test) were also performed to examine which groups within each demographic variable differed and as the groups within each variable are not equal to ensure that the assumption of homogeneity of variance was not violated. The results of the ANOVA and

post hoc tests for each of these demographic variables on perceived sense of belonging and peer support are summarized in the following sections.

Sense of Belonging

The results of the analysis of variance ANOVA showed no significant main effect of gender, international student status, living in Kitchener-Waterloo, or having lived in university residence for all five measures of sense of belonging (SOBI-P, SOBI-A, PSSM, SB-Gains and Outcomes, and SB-Challenges). The F ratios for the demographic variables observed as not having an impact on sense of belonging are summarized in Table 6.

Table 6 - ANOVA F ratios for Non-Significant Demographic Variables x Sense of Belonging Measures

	ANOVA				
Independent Variable	SOBI-P	SOBI-A	PSSM	SB-Gains	SB-Challenges
Gender	.951	1.767	1.245	.986	1.12
Distance from KW	.460	.062	.105	.122	.899
Lived in Residence	.057	2.911	.046	.786	.033
Living Arrangement	2.730	.312	1.289	1.13	2.23
International Student	3.987	.207	.044	.554	.233

The results of the ANOVA found a significant main effect for the independent demographic variables of age, ethnicity, faculty, international student status, faculty, year of study, grade point average (GPA), and participation in orientation activities on sense of belonging (as summarized in Table 7). Each significant demographic variable is examined in more detail in the following sections. Levene's test was performed for all demographic variables listed below and for all variables the assumption of homogeneity of variance was satisfied.

Table 7 - ANOVA F ratios for Significant Demographic Variables x Sense of Belonging Measures

	ANOVA				
Independent Variable	SOBI-P	SOBI-A	PSSM	SB-Gains	SB-Challenges
Age	1.039	.934	4.396*	.916	.088
Ethnicity	4.236**	2.459*	3.387**	.126	.859
Faculty	2.199*	2.377*	2.292	.766	.033
Year of Study	1.567	3.699*	1.829	1.13	2.23
GPA	.193	2.168	5.377***	.455	.232
Participated in Orientation	8.233**	.561	2.829	.345	.066

Note: F ratios are Wilk's approximation of F's. *p<0.05, **p<0.01, ***p<0.0001

Sense of Belonging Differences by Age

Scores on the Psychological Sense of School Membership (PSSM) were found to be significantly different between students in the four age categories (17-19 years; 20-22 years; 23 to 25 years, and 25 years and older: Table 8). Specifically the scores on the PSSM were highest for students in the 17-19 years of age category (*M*= 62.58, *SD*=9.008) and lowest for those 25 years of age and older (*M*=52.8, *SD* = 10.932). The differences between group were confirmed using a Tukey HSD post hoc test and it was observed that only the mean scores for students in aged 25 years and older were significantly different from all other groups.

Table 8 - Sense of Belonging x Age

Dimension		Scores			
Age	N	Mean[a]	SD	F	Sig
PSSM					
17-19 years	135	62.58	9.008		
20-22 years	147	60.75	9.802	4.396	<0.05
23-25 years	22	58.27	9.019		
25 years+	10	52.8	10.932		

[a] Higher scores represent stronger sense of school membership

Sense of Belonging Differences by Ethnicity

The ANOVA indicated that scores on three of the sense of belonging measures were significant by ethnicity (SOBI-P, SOBI-A, and PSSM: Table 9). On the SOBI-P, Caucasian, Native American and students who indicated their ethnicity as "other" had the lowest means scores compared to Asian, Middle Eastern, and Hispanic Students. The mean scores were highest for the Hispanic Students. However, when the differences between groups were confirmed using a Tukey HSD post hoc test it was observed that only the mean scores for Hispanic students were significantly different from all other groups.

On the SOPI-A, African American, Asian, Caucasian, and students who identified their ethnicity as "other" had lower mean scores than Native American and Hispanic Students. However, when the differences between groups were confirmed using a Tukey HSD post hoc test it was observed that only the mean scores for Hispanic students were significantly different from all other groups.

On the PSSM, Middle Eastern, African American, Asian, and students who identified their ethnicity as "other" had lower mean scores than Caucasian, Native American and Hispanic students. However, when the differences between groups were confirmed using a Tukey HSD

44

post hoc test it was observed that only the mean scores for Hispanic and African American students were significantly different from all other groups.

Table 9 - Sense of Belonging x Ethnicity

Dimension		Scores			
Ethnicity	N	Mean[a]	SD	F	Sig
SOBI-P					
Caucasian	97	38.55	10.019		
Hispanic	6	57.17	20.875		
Middle Eastern	20	44.65	10.767		
African American	6	42.5	12.661	4.236	<.001
Native American	11	39.18	7.291		
Asian	162	41.49	9.548		
Other	12	38.58	9.904		
SOBI-A					
Caucasian	97	37.51	5.615		
Hispanic	6	43.67	6.088		
Middle Eastern	20	36.5	7.141		
African American	6	34.33	7.448	2.459	<.005
Native American	11	39.36	4.567		
Asian	162	36.8	4.989		
Other	12	38.75	3.745		
PSSM					
Caucasian	97	63.73	9.769		
Hispanic	6	66.67	4.033		
Middle Eastern	20	58.4	8.438		
African American	6	55.33	10.801	3.387	<.005
Native American	11	65.64	8.812		
Asian	162	59.61	9.402		
Other	12	60.58	8.959		

[a] Higher scores represent stronger sense belonging for SOBI- A and PSSM; Lower scores represent a stronger sense of belonging for the SOBI-P

Sense of Belonging Differences by Faculty

The ANOVA indicated that scores on two measures of sense of belonging measures were significant by faculty (SOBI-P, SOBI-A: Table 10). On the SOBI-P, students from Applied Health Science had the lowest means score (M=36.59, SD=9.203) and students from Engineering had the highest mean scores (M=43.08, SD=9.74). The differences between groups were confirmed using a Tukey HSD post hoc test; it was observed that the mean scores for both applied health science and engineering students were significantly different from all other

groups. As higher scores on the SOBI-P indicate a lower overall perceived sense of belonging, the results indicate that Applied Health Science student experience the strongest sense of belonging while Engineering students experience the lowest sense of belonging.

On the SOPI-A, engineering students had the lowest mean scores (M=35.12, SD=5.54) and students from Environmental studies had the highest mean scores (M=48.65, SD=4.24). The differences between groups were confirmed using a Tukey HSD post hoc test it was observed that the mean scores for both engineering and environmental studies students were significantly different from all other groups. As higher scores on the SOBI-A indicate a stronger perceived sense of belonging, the results indicate that Environmental students experience the strongest sense of belonging while Engineering students again experience the lowest sense of belonging.

Table 10 - Sense of Belonging x Faculty

Dimension		Scores			
Faculty	N	Mean[a]	SD	F	p-value
SOBI-P					
ARTS	79	41.33	10.92		
AHS	41	36.59	9.203		
ENG	49	43.08	9.714	2.199	<.005
ENV	20	40.95	10.831		
MATH	46	39.98	8.838		
SCIENCE	78	42.09	11.06		
SOBI-A					
ARTS	79	37.76	5.26		
AHS	41	38.12	6.619		
ENG	49	35.12	5.54		
ENV	20	38.65	4.246	2.377	<.005
MATH	46	37.91	4.491		
SCIENCE	78	36.86	5.434		

[a] Higher scores represent stronger sense belonging for SOBI- A; Lower scores represent a stronger sense of belonging for the SOBI-P

Sense of Belonging Differences by Year of Study

The ANOVA indicated that scores on one measure of sense of belonging measures were significant by year of study (SOBI-A: Table 11). First and fourth year students had the lowest

46

mean scores (M=35.64, SD=5.809 and M=36.75, SD=4.912, respectively) on the SOBI-A while third and second year students had the highest mean scores (M=38.3, SD=5.31 and M=37.48, SD=5.425, respectively). The differences between groups were confirmed using a Tukey HSD post hoc test; it was observed that the mean scores were significantly different between the lowest and highest scoring groups. As higher scores on the SOBI-A indicate a stronger overall perceived sense of belonging, the results indicate that second and third year students experience the strongest sense of belonging while first and fourth year students experience the lowest sense of belonging.

Table 11 - Sense of Belonging x Year of Study

Dimension		Scores			
Year of Study	N	Mean[a]	SD	F	Sig
SOBI-A					
1st year	66	35.64	5.809		
2nd year	116	38.3	5.31	3.968	<0.05
3rd year	69	37.48	5.425		
4th year	63	36.75	4.912		

[a] Higher scores represent stronger sense belonging for SOBI-A

Sense of Belonging Differences by GPA

When comparing the student's grade point average to their scores on the PSSM scale, the results indicated that there was a significant difference between groups (Table 12). Students who reported a GPA of 70% or lower students had the lowest perceived sense of school membership (*M*=52.75, *SD*=8.137), and scores on the PSSM increased for each category of GPA. These differences were confirmed using a Tukey HSD post hoc test which observed that the mean

scores for students with the lowest GPA were significantly different from the mean scores for students in all other GPA categories.

Table 12- Sense of Belonging x GPA

Dimension			Scores		
GPA	N	Mean[a]	SD	F	Sig
PSSM					
<70%	12	52.75	8.137		
70%-74%	63	59.68	9.647	5.377	<0.001
75%-80%	97	60.67	9.067		
80%-85%	99	61.49	8.957		

[a] Higher scores represent a stronger sense of psychological school membership

Sense of Belonging Differences by Participation in Orientation

Scores of the SOBI-P were shown to be significantly higher for students who had not participated in orientation activities compared to those who had (M=40.33, SD=9.928 and M=45.68, SD=12.691, respectively: Table 13). It is important to note that the students who had not participated in orientation actives represented a much smaller group (N=34) than those who had (N=280). As higher scores on the SOBI-P indicate a lower sense of belonging, the results indicate that students who have participated in orientation week activities experience a greater sense of belonging than those who have not.

Table 13- Sense of Belonging Differences x Participation in Orientation Activities

Dimension	Scores				
Participation in Orientation Activities	N	Mean[a]	SD	F	Sig
SOBI-P					
Yes	280	40.33	9.928	8.233	<.005
No	34	45.68	12.691		

[a] Higher scores represent less strong sense belonging for SOBI-P

Peer Support

The results of the analysis of variance ANOVA found no significant main effect of age, ethnicity, living in Kitchener-Waterloo, grade point average (GPA), and having lived in residence on measures of perceived peer support, the ISEL (Appraisal Support, Belonging Support, Tangible Support Subscales: Table 14).

Table 14 - ANOVA F ratios for Non-Significant Demographic Variables x Peer Support Measures

	ANOVA					
	Appraisal Support - campus	Belonging Support - campus	Tangible Support – campus	Appraisal Support - work term	Belonging Support- work term	Tangible Support - work term
Gender	4.618	2.480	.862	3.975	1.332	.432
Age	1.115	1.079	2.061	.738	1.319	.568
Ethnicity	1.115	1.079	2.06	738	1.319	.568
Live in KW	.039	.376	.027	2.042	.802	.254
Living Arrangement	2.856	2.163	3.468	2.217	1.306	1.311
GPA	.400	.223	.984	.702	1.029	.754
Lived in residence	.143	.749	1.560	1.665	.015	.000

The results of the ANOVA showed a significant main effect for the independent variables of international student status, year of study, faculty, and participation in orientation activities (as summarized in Table 15) on the measures of peer support.

Table 15- ANOVA F ratios for Significant Demographic Variables x Sense of Belonging Measures

	ANOVA					
	Appraisal Support - campus	Belonging Support – campus	Tangible Support – campus	Appraisal Support - work term	Belonging Support- work term	Tangible Support - work term
International Student	2.045	3.179	12.697***	.173	.259	6.423**
Year of Study	3.968*	1.541	.741	3.016*	437	1.706
Faculty	3.405*	1.689	.612	2.079*	.588	1.613
Participated in Orientation	3.845*	4.0928*	1.922	.701	.632	.255

Note: F ratios are Wilk's approximation of F's. *p<0.05, **p<0.01, ***p<0.0001

Peer Support Differences by International Student Status

Scores on the Tangible Support Subscale of the ISEL were found to be significantly lower for international students compared to non-international students (see Table 16), for both on campus (*M*= 9.63, *SD*= 2.151 and *M*=11.25, *SD*=2.275, respectively) and while on a work term (*M*=9.96, *SD*=2.047 and *M*=11.15, SD=2.343, respectively). As this subscale measures perceived availability of material aid, these results indicate that international students may have less access to this kind of support during both their campus term and work term.

Table 16- Peer Support x International Student Status

Dimension		Scores			
International Student	N	Mean[a]	SD	F	sig
Tangible Support -on campus					
Yes	27	9.63	2.151	12.697	<0.001
No	287	11.25	2.275		
Tangible Support -work term					
Yes	27	9.96	2.047	6.423	<0.001
No	287	11.15	2.343		

[a] Higher scores represent stronger perceived access to material support

Peer Support Differences by Year of Study

Scores on the Appraisal Support Subscale of the ISEL were found to be significantly lower for students in 1st year compared to students in all other years of study (see Table 17) during both when on campus (M=11.08, SD=2.063) and on work terms (M=10.68, SD=2.113). Post hoc comparisons using the Tukey HSD test confirmed this significant difference and that the mean scores for 2nd, 3rd, and 4th year students did not significantly differ from each other. Essentially, students in first year perceive less personal support when worried, faced with a crisis, or when needing advice.

Table 17- Peer Support x Year of Study

Dimension	Scores				
Year of Study	N	Mean[a]	SD	F	sig
Appraisal Support on campus					
1st year	66	11.08	2.063		
2nd year	116	12.27	2.426	12.697	<0.001
3rd year	69	11.94	2.589		
4th year	63	11.57	2.1		
Appraisal Support on work term					
1st year	66	10.68	2.113		
2nd year	116	11.8	2.457	6.423	<0.001
3rd year	69	11.58	3.089		
4th year	63	11.67	2.258		

[a] Higher scores represent stronger perceived access to interpersonal support/discussion

Peer Support Differences by Faculty

Scores on the Appraisal Support Subscale of the ISEL (both on campus and while on a work term; Table 18) were found to be lowest for students in the Engineering (M=11.08, SD=1.776 and M=11.58, SD=2.146, respectively) and highest for students in Applied Health Science (M=12.51, SD=2.441 and M=12.12, SD=2.304, respectively). Post hoc comparisons using the Tukey HSD test revealed that only the mean score on the Appraisal Support Scale (work term) for engineering students was significantly lower than all other faculties' and the same mean score for AHS was significantly higher than the other faculties. The mean Appraisal Support scores for students in arts, science, math and environment did not significantly differ from each other. Overall, it appears that students in engineering perceive less personal support when worried, faced with a crisis, or when needing advice, while students in AHS perceive more of this support.

Table 18- Peer Support x Faculty

Dimension			Perceptions		
Faculty	N	Mean[a]	SD	F	sig
Appraisal Support on campus					
ARTS	79	11.82	2.464		
AHS	41	12.51	2.441		
ENG	49	11.08	1.766	3.405	<0.05
ENV	20	13.2	2.093		
MATH	46	11.61	2.314		
SCIENCE	78	11.58	2.426		
Appraisal Support work term					
ARTS	79	11.58	2.535		
AHS	41	12.12	2.304		
ENG	49	11	2.264	2.079	<0.05
ENV	20	11.55	2.46		
MATH	46	11.89	2.47		
SCIENCE	78	11.09	2.348		

[a] Higher scores represent stronger perceived access to interpersonal support/discussion

Peer Support Differences by Participation in Orientation

Scores on both the Appraisal Support Subscale – on campus and Belonging Support – on campus Subscales of the ISEL (Table 19) were found to be significantly lower for students who did not participate in orientation week activities (*M*= 11.06, *SD*= 2.335 and *M*=10.71, *SD*=2.368 respectively) compared to those who did participate (*M*= 11.90, *SD*=2.354 and *M*=11.59, *SD*=2.40, respectively). As these subscales of the ISEL measure the perceived availability of someone to discuss issues of personal importance (Appraisal), and the perceived availability of others to interact with socially (Belonging), respectively, the results indicate that students who have participated in orientation week activities appear to have more interpersonal support resources while on campus.

Table 19- Peer Support x Participation in Orientation

Dimension		Scores			
Participation in Orientation Activities	N	Mean[a]	SD	F	Sig
Appraisal Support on Campus				3.845	<0.05
Yes	280	11.90	2.354		
No	34	11.06	2.335		
Belonging Support on Campus				4.092	<0.05
Yes	280	11.59	2.420		
No	34	10.71	2.368		

[a] Higher scores represent stronger perceived access to interpersonal support/discussion and stronger perceived availability of social support

School to Work Efficacy

The results of the analysis of variance ANOVA found no significant main effect of ethnicity, faculty, living in Kitchener-Waterloo, grade point average (GPA), current living arrangement, having lived in residence, or having participated in orientation activities on measures of perceived school to work efficacy (SWEF: Table 20). The results of the ANOVA did find a significant main effect for the independent demographic variables or gender, age, and year of study on school to work efficacy (as summarized in Table 20). Each significant demographic variable is examined in more detail in the following sections. Levene's test was performed for all demographic variables listed below and for all variables the assumption of homogeneity of variance was satisfied.

Table 20 - ANOVA F ratios for Demographic Variables x School to Work Efficacy

	ANOVA
Independent Variable	SWEF
Gender	5.601*
Age	4.779*
Ethnicity	1.115
International Student	.375
Faculty	1.729
Year of Study	2.741*
GPA	1.211
Live in KW	.275
Living Arrangement	2.239
Lived in residence	.105
Participated in orientation	.665

Note: F ratios are Wilk's approximation of F's. *$p<0.05$, **$p<0.01$, ***$p<0.0001$

School to work efficacy and gender

Scores on the School to Work Efficacy scale (SWEF: Table 21) were found to be significantly higher for male students (M= 25.15, SD=4.870) compared to female students (M= 21.25, SD=4.147). As the SWEF measures students perceived confidence in their ability to make a successful transition from school to the work place the results indicate that overall male students tend to have higher self-efficacy regarding this type of life change.

Table 21- School to Work Efficacy x Gender

Dimension	Scores				
Gender	N	Mean[a]	SD	F	Sig
SWEF					
Male	97	25.15	4.87		
				5.601	<0.05
Female	214	21.25	4.147		

School to work efficacy and age

Scores on the School to Work efficacy scale (SWEF: Table 22) were found to be significantly different between students in the four age categories (17-19 years; 20-22 years; 23 to 25 years, and 25 years and older). Specifically, the scores on the SWEF were highest for students in the 17-19 years of age category (M: 25.26 SD=3.609) and lowest for those 25 years of age and older (M=20.13). The differences between groups were confirmed using a Tukey HSD post hoc test and it was observed that only the mean scores for students in aged 17-19 years and students aged 25 years and older were significantly different from all other groups.

Table 22 – School to Work Efficacy x Age

Dimension		Scores			
Age	N	Mean[a]	SD	F	Sig
SWEF					
17-19 years	135	25.26	3.609		
20-22 years	147	24.42	4.646	4.522	<0.05
23-25 years	22	23.73	5.889		
25 years+	10	20.13	4.612		

[a] Higher scores represent stronger sense of school to work efficacy

School to work efficacy and year of study

The ANOVA revealed that scores on the SWEF were significant by year of study (Table 23). First and second year students had the highest mean scores (M=24.90 and M=25.08, respectively) while third and second year students had the lowest mean scores (M=21.65 and M=21.69 respectively). The differences between groups were confirmed using a Tukey HSD post hoc test it was observed that the mean scores were significantly different between the lowest and highest scoring groups. This finding indicates that students who are earlier in their studies

perceive themselves to be better able to transition from school into the work place than students reaching the end of their university program.

Table 23- School to Work Efficacy x Year of Study

Dimension	Scores				
Year of Study	N	Mean[a]	SD	F	Sig
SWEF					
1st year	66	24.90	4.434		
2nd year	116	25.08	4.368	5.913	<0.05
3rd year	69	21.65	4.706		
4th year	63	21.59	4.263		

[a] Higher scores represent stronger sense school to work efficacy

Peer Support and Sense of Belonging by Participation in Co-operative Education

To address the third research questions and examine how participation in different kinds of post-secondary programs (specifically co-operative education) influence perceived sense of belonging and peer support an analysis of variance (ANOVA) was performed for the sample with participation in co-operative education as the independent demographic variable and scores on the sense of belonging scales (SOBI-P, SOBI-A, PSSM) and perceived peer support scales (ISEL – on campus; ISEL – work term) as the dependent measures. The results of the ANOVA for participation in co-operative education on perceived sense of belonging and peer support are summarized in the following sections.

Sense of Belonging and Participation in Co-operative Education

The results of the ANOVA revealed no significant main effect of co-operative education participation with all three measures of sense of belonging (SOBI-P, SOBI-A, PSSM, SB-Gains,

SB-Challenges) and are summarized in Table 24. While there were no significant main effects of

co-operative education on sense of belonging measures the means scores for both groups on the

SOBI-P indicate that both co-op and non co-op tend to experience a positive psychological state

in terms of their sense of belonging. Similarly, the mean scores for both groups on the SOBI-A

indicate that overall students experience a moderate amount of antecedents to their sense of

belonging. Furthermore, the scores for both co-op and non-co-op students on the PSSM scale

indicate a moderately strong sense of personal belonging, respect, and support within the

university community.

Table 24- Perceptions of Sense of Belonging x Participation in Co-operative Education

Dimension	Perceptions				
Co-op Participation	N	Mean[a]	SD	F	sig
SOBI-P					
Co-op	181	40.36	9.928	1.185	.277
Non Co-op	133	41.65	10.945		
SOBI-A					
Co-op	181	37.35	5.057	.160	.690
Non Co-op	133	37.11	5.932		
PSSM					
Co-op	181	61.35	9.658	.278	.598
Non Co-op	133	60.77	9.553		

[a] Higher scores represent stronger sense belonging for SOBI- A and PSSM; Lower scores represent a stronger sense of belonging for the SOBI-P

Peer Support, School to Work Efficacy, and Participation in Co-operative Education

The results of the ANOVA revealed no significant main effect of co-operative education participation with all measures of perceived peer support (ISEL – on campus and ISEL – on work term; Table 25). However, the overall mean scores for both co-op and non co-op students on the ISEL subscales (appraisal support, belonging support, and tangible support) were moderately high for both on campus and on work term measures. The findings indicate that when examining differences in peer support as a function of co-op, students in both programs appeared to be similar with generally good perceptions of social and material support.

Table 25- Perceptions of Peer Support and School to Work Efficacy x Participation in Co-operative Education

Dimension	Perceptions				
Co-op Participation	N	Mean[a]	SD	F	sig
Appraisal Support					
On campus					
Co-op	181	11.93	2.351	1.255	.264
Non Co-op	133	11.63	2.376		
Belonging Support					
On campus					
Co-op	181	11.68	2.498	2.435	.120
Non Co-op	133	11.25	2.311		
Tangible Support					
On campus					
Co-op	181	11.31	2.33	3.245	0.73
Non Co-op	133	10.84	2.256		
Appraisal Support					
Work term					
Co-op	181	11.43	2.55	.235	.628
Non Co-op	133	11.57	2.514		
Belonging Support					
Work term					
Co-op	181	11.09	2.184	.105	.746
Non Co-op	133	11.17	1.939		
Tangible Support					
Work term					
Co-op	181	10.92	2.421	1.161	.282
Non Co-op	133	11.21	2.223		
SWEF					
Co-op	181	27.89	3.821	2.793	<.005
Non-co-op	133	24.79	4.193		

[a]Higher scores indicate stronger perceived support

Sense of Belonging, Peer Support, Co-operative Education and Mental Health and Well-Being

In order to address the fourth research question and to examine how sense of belonging and peer support are related to mental health, and other psychological and health related outcomes in post-secondary students both a correlation analysis and regression analysis were

conducted to determine the predictive relationship between theses constructs. As the literature

has suggested and as hypothesized in this paper, sense of belonging and peer support appear to

have a strong predictive relationship to students' quality of life and the experience of positive

mental health and well-being outcomes.

The measures of Sense of Belonging considered in this study were the SOBI-P, SOBI-A,

and PSSM. The total raw scores on the SOBI-P had a range of scores spanning from 19-72

(SOBI-P total raw scores have an absolute range of 18-72). The scores were in slightly above the

middle of the scoring range with a mode score of 39, mean score of 40.91, median score of 40.5,

and a standard deviation of 10.374. This indicates that the participants tended to experience a

neutral psychological state in terms of their sense of belonging. The total raw scores on the

SOBI-A had a range of scores spanning from 13-37.5 (SOBI-P total raw scores have an absolute

range of 19-36). Scores were on the lower end of the scoring range with a mode score of 39,

mean score of 37.25, median score of 37 and a standard deviation of 5.437. This indicates that

the participants reported experiencing a low to moderate amount of antecedents to their sense of

belonging. The total raw scores on the PSSM had a range spanning from 32-84. The scores were

in slightly above the middle of the scoring range with a mode score of 59, mean score of 61.12,

median score of 61, and a standard deviation of 9.616. This indicates that the participants tended

to experience a positive psychological state in terms of their sense of school membership. The

descriptive statistics for the SDQ III – Emotional Stability Subscale overall rating scores showed

the majority of the sample population to be rated as experiencing average or high level of

emotional stability. Only a cumulative 18.1% of the sample obtained ratings in the lower

quartiles. The descriptive statistics for the Satisfaction with Life (SWLS) measure showed a

mean score of 22.4 which indicated that the majority of the sample was moderately satisfied with

life. The possible range of scores is 5-35, with a score of 20 representing a neutral point on the scale. Only a cumulative 6% of the sample had scores low enough to indicate the respondent was extremely dissatisfied with life.

The measures of Peer Support considered in this study were the ISEL which has three distinct subscales: Appraisal Support, Belonging Support, and Tangible Support. The ISEL was measured for both times when the student was on campus and when the student was away from campus for an extended period (e.g. work term). The total raw scores on the Appraisal Subscale –on campus of the ISEL had a range of scores spanning from 5-16 (Appraisal Support total raw scores have an absolute range of 4-16). The scores were on the higher end of the scoring range with a mode score of 11.81, mean score of 12, median score of 12, and a standard deviation of 2.363. This indicates that the participants tended to perceive a high level of appraisal support from peers. The total raw scores on the Belonging Subscale –on campus of the ISEL had a range of scores spanning from 4-16 (Belonging Support total raw scores have an absolute range of 4-16). The scores were again on the higher end of the scoring range with a mode score of 10, mean score of 11.50, median score of 11, and a standard deviation of 2.426. This indicates that the participants tended to perceive a high level of belonging support from peers. The total raw scores on the Tangible Support –on campus of the ISEL had a range of scores spanning from 4-16 (Tangible Support total raw scores have an absolute range of 4-16). The scores were on the higher end of the scoring range with a mode score of 10, mean score of 11.11, median score of 11, and a standard deviation of 2.307. This indicates that the participants tended to experience an above average level of tangible support from peers. The raw scores for the subscales of the ISEL – on work term were very similar to the on-campus measure. The Appraisal Support- work term scores had a mode score of 11, mean score of 11.49, median score of 12, and a standard

deviation of 2.532. The Belonging Support- work term scores had a mode score of 11, mean score of 11.12, median score of 12, and a standard deviation of 2.532, and the Tangible Support-work term scores had a mode score of 11, mean score of 11.04, median score of 12, and a standard deviation of 2.340.

Table 26 - Correlation Matrix for Sense of Belonging, Peer Support, and Mental Health and Well-being Scales

	SDQ –III	SWLS	Mental Balance	Happiness	SOBI-P	SOBI-A	PSSM	Appraisal Support - on campus	Belonging Support - on campus	Tangible Support - on campus	Appraisal Support - work term	Belonging Support - work term	Tangible Support- work term
SDQ –III	1												
SWLS	.005	1											
Mental Balance	.604**	.523**	1										
Happiness	.604**	.613**	.604**	1									
SOBI-P	-.321**	-0.014	-0.039-	0.12	1								
SOBI-A	.132*	0.052	0.055	0.081	0.032	1							
PSSM	.282**	.492**	0.032	0.078	.415**	.301**	1						
Appraisal Support - on campus	.351**	0.014	-0.045	0.02	.331**	.129*	.392**	1					
Belonging Support - on campus	.385**	0.09	0.071	0.11	.455**	0.101	.438**	.577**	1				
Tangible Support - on campus	.320**	0.039	0.022	0.03	351**	0.081	.361**	.532**	.559**	1			
Appraisal Support - work term	.544**	0.079	0.002	0.077	.340**	0.068	.308**	.595**	.372**	.393**	1		
Belonging Support - work term	.102	0.024	-0.004	0.049	.321**	.132*	.282**	.351**	.385**	.320**	.544**	1	
Tangible Support - work term	.538**	0.031	-0.028	0.059	.253**	0.051	.267**	.372**	.326**	.458**	.633**	.538**	1

**. Correlation is significant at the 0.01 level (2-tailed).*. Correlation is significant at the 0.05 level (2-tailed).

Sense of Belonging and Mental Health

A multiple regression analysis was conducted to evaluate if the SOBI measures (both psychological state & antecedents) and PSSM could predict the raw scores on the SDQ-III Emotional Stability Subscales, the Satisfaction with Life measure and the Mental Health and Happiness Subscales of the WBMMS.

The SOBI-P and SOBI-A scores were found to be statistically significant in their predictive relationship to the SDQ-III. The sample multiple correlation coefficient was .633, indicating that approximately 30% (R Square=0.3) of the variance of the SDQ-III raw scores in the sample can be accounted for by the SOBI measures. The correlation between SOBI-A scores and the SDQ-III raw scores were positively correlated (Pearson Correlation = .132) negatively correlated between the SOBI-P and SDQ-III raw scores Pearson Correlation =-.321), and both were statistically significant (p<.05). Table 27 provides a summary of data. Neither of SOBI-P and SOBI-A scores were found to be statistically significant in their predictive relationship to the SWLS or the Happiness and Mental Balance Subscales of the WBMSS.

Table 27- Summary of Multiple Regression for SOBI Scores Predicating SDQ-III Scores

	SDQ III – Emotional Stability Subscale Raw Score		
	B	Beta	Sig
SOBI-P	-.10	-.58	<.05
SOBI-A	.65	.51	<.05
R Square	.30		
F	20.55*		
N	314		

*significant at the .05 level

The PSSM was shown to be statistically significant in its predictive relationship to the SWLS. Table 28 provides a summary of data. The sample correlation coefficient was .14, indicating that approximately 25% (R Square=0.25) of the variance of the SWLS raw scores in the sample can be accounted for by the PSSM measure. The bivariate correlation between PSSM scores and the SWLS raw scores were positively correlated (Pearson Correlation = .492.), and was statistically significant ($p < .05$).

Table 28- Summary of Linear Regression for PSSM Score Predicating SWLS Scores

	SWLS Raw Score		
	B	Beta	Sig
PSSM	.10	.64	<.05
T	6.1*		
N	314		

*significant at the .05 level

Peer Support and Mental Health

As previously discussed, the descriptive statistics for the SDQ III – Emotional Stability Subscale overall rating scores showed the majority of the sample population to be rated as experiencing average or high level of emotional stability. A linear regression analysis was conducted to evaluate if the ISEL subscales (both on campus and on work term) could predict the raw scores on the SDQ-III Emotional Stability Subscales, the Satisfaction with Life measure and the Mental Health and Happiness Subscales of the WBMSS. Neither the linear combination of ISEL scores nor the individual subscales were found to be statistically significant in their predictive relationship to neither the SDQ-III -Emotional Stability Subscale nor the SWLS. However, the Appraisal Support and Belonging Support Subscales of the ISEL-on campus were

found to be statistically significant in their predictive relationship to the Happiness Subscale of the WBMSS. Table 29 provides a summary of data. The bivariate correlation between Appraisal Support and Happiness raw scores were positively correlated (Pearson Correlation = .110), and was statistically significant (p<.05). The bivariate correlation between Belonging Support and Happiness raw scores were also positively correlated (Pearson Correlation = .110), and was statistically significant (p<.05).

Table 29 - Summary of Linear Regression for Appraisal Support and Belonging Support Predicting WBMSS Happiness Subscale Scores

	WBMSS Happiness Subscale Raw Score		
	B	Beta	Sig
Appraisal Support	.195	.110	<.05
T	2.59		
N	314		
Belonging Support	.286	.165	<.05
T	2.165		
N	314		

*significant at the .05 level

The Appraisal Support and Belonging Support Subscales of the ISEL-on campus were also found to be statistically significant in their predictive relationship to the Mental Subscale of the WBMSS (Table 30). The bivariate correlation between Appraisal Support and Mental Balance raw scores were positively correlated (Pearson Correlation = .045 and was statistically significant (p<.05). The results showed that Belonging Support and Mental Balance raw scores were also positively correlated (Pearson Correlation = .071), and was statistically significant (p<.05).

Table 30- Summary of Linear Regression for Appraisal Support and Belonging Support Predicting WBMSS Mental Balance Subscale Scores

	WBMSS Mental Balance Subscale Raw Score		
	B	Beta	Sig
Appraisal Support	.205	.168	<.05
T	2.018		
N	314		
Belonging Support	.175	.147	<.05
T	1.936		
N	314		

*significant at the .05 level

Co-operative Education and Mental Health

In order to address the fifth research question and determine how participation in co-operative education is related to mental health and well-being outcomes an ANOVA was conducted with participation in co-operative education as the independent variable and measures of mental health and well-being (SDQ-III, SWLS, WBMMS- Mental Balance, WBMSS – Happiness) as the dependant measures. The results of the ANOVA revealed no significant main effect of co-operative education participation with all three measures of mental health and well-being (as summarized in Table 31). While there were no significant main effects of co-operative education on sense of belonging measures the means scores for both groups on the SDQ-III indicate that both co-op and non-co-op tend to experience a high level of emotional stability. The mean scores for both groups on the SWLS indicate that overall students experience an average

level of life satisfaction. Furthermore, the scores for both co-op and non-co-op students on the

WBMSS subscales indicate a moderately strong level of mental balance and happiness in life.

Table 31- Mental Health and Well-being Measures x Participation in Co-operative Education

Dimension		Perceptions			
Co-op Participation	N	Mean[a]	SD	F	sig
SDQ III					
Co-op	181	47.06	10.797	.151	.698
Non Co-op	133	46.61	9.307		
SWLS					
Co-op	181	22.76	6.709	.895	.345
Non Co-op	133	22.03	6.755		
Mental Balance					
Co-op	181	14.12	2.726	.073	.788
Non Co-op	133	14.21	3.102		
Happiness					
Co-op	181	17.5	4.086	1.300	.255
Non Co-op	133	16.95	4.367		

[a] for all scales higher scores represent more positive mental health and well-being outcomes

Peer Support, Sense of Belonging, and Social Media

The Social Media Use Scale (McBeath, Drysdale, Bohn, 2015) was used to measure the

frequency and duration of time spent by participants on social media websites and to better

understand how students perceive social media use to relate to their experience of peer support

and sense of belonging. In order to address the last research question and determine the impact of

social media on sense of belonging and peer support 10 items from the Social Media Use Scale

(McBeath, Drysdale, Bohn, 2015) were selected (6 items addressed Sense of Belonging and 4

items addressed Peer Support). For these items the measure required respondents to select their

level of agreement with each item on a scale of 1 to 4 (1=Strongly Disagree to 4=Strongly

Agree). For the items in the scale it was decided that a cut-off mean of 2.75 and above indicates

'general agreement' and a cut-off of 2.25 or below as 'general disagreement'. All items with

means between 2.25 and 2.75 were seen as indicating *neither* general agreement nor disagreement. The description of the social media perceptions can be found in Table 32.

Sense of Belonging and Social Media

The items listed in Table 32 measured how strongly students feel that social medial helps them to feel connected to their school and peer networks. Overall the students agreed most strongly that social media helps them to feel connected to their friends (M=2.97, SD=.785), and also agreed that social media helps them to feel more connected to their University of Waterloo peers (*M*=2.83, *SD*=0.765) and the University in general (*M*=2.8, *SD*=0.752). They also agreed, they relied on social media to stay connected during a summer or co-op work term (*M*=2.84, *SD*=0.854). However, students neither agreed nor disagreed that they feel disconnected when they do not login to or update their social media accounts (*M*=2.47, *SD*=0.87) or that they feel disconnected from friends during summer or co-op work terms even if communicating via social media networks (*M*=2.6, *SD*=.819). This indicates that while students perceive social media use as enhancing their sense of belonging to peers and the university community, they do not rely on it exclusively for feelings of connectedness.

Table 32- Perceptions of Social Media Use and Sense of Belonging

Items	N	Mean	Std. Deviation
Social media helps me to feel more connected to my UW peers	314	2.83	0.765
Social media helps me to feel more connected to my friends	314	2.97	0.785
Social media helps me to feel more connected to UW in general	314	2.8	0.752
I feel disconnected when I do not login to or update my social media accounts	314	2.47	0.87
During a summer work term or co-op work term, I rely on social media to stay connected	314	2.84	0.854
During a summer work term or co-op work term, I feel disconnected from my friends even when I communicate with them using social media	314	2.6	0.819

Peer Support and Social Media

Several of the items listed in the measure (Table 33) asked students if they use social media to seek out peer support. Overall the students disagreed that they will seek support on social media if having a school related problem (M=2.26, SD=0.842) or work term related problem (M=2.22, SD=0.829). However, they did agree overall that they will talk to their friends face-to-face if having a school related problem (M=3.1, SD=.748), and also agreed that social media helps them to feel more connected to their University of Waterloo peers (M=2.83, SD=0.765) and the University in general (M=2.8, SD=0.752). Student generally agreed that they seldom disclose personal information over social media (M=2.79, SD=0.87). This indicates that when students want to seek out peer support for school or work term related problems they prefer to do this in person rather than via social media. This preference may be influenced in part by their general reluctance to disclose personal information over social media networks.

Table 33- Perceptions of Social Media Use and Peer Support

Items	N	Mean	Std. Deviation
If I am having school related problems, I seek support on social media	314	2.26	0.842
If I am having school related problems, I will talk to my friends face to face	314	3.1	0.748
If I am having work term (summer or co-op) related problems, I seek support on social media	314	2.22	0.829
There are times during a work term (summer or co-op) when I feel alone even when I use social media	314	2.71	0.818
I seldom disclose personal information to my friends using social media	314	2.79	0.842

Social Media Usage and Intensity

In order to understand the social media usage habits of students items in the Social Media Use Scale (McBeath, Drysdale, Bohn, 2015) were included to indicate the respondents' frequency and intensity of social media use and to understand the various social networking applications students were using and how they are used (Table 34). The overwhelming majority of students indicated that they use social media daily (Strongly Agree – 54.7% and Agree 33.1%) and that they use social media as a primary means of communication with their friends (Strongly Agree – 31.5% and Agree 48.4%). On average respondents spend 22 hours per week using social media and reported connecting with an average of 193 friends and of those indicated that of their overall total of friends connected with on social media an average of 19 are considered close friends. Despite overall frequency and generally high levels of intensity in social media use, the majority of students in the sample did not agree that social media is their preferred method for communicating with friends (Disagree -44.9% and Strongly Disagree -14.6%) but instead prefer to communicate with friends via phone texting (Strongly Agree – 20.9%, Agree - 48.1%) or talking with them on the phone (Strongly agree - 29.9%, Agree- 39.5%). Overall these

responses indicate that while students are frequent and active users of Social Media, and use it as
a primary means of communication with friends; they actually prefer to use more personal forms
of communication (texting and telephone).

Table 34 - Social Media Use Frequency and Intensity

Statement Response	N (314)	Percent
I use social media daily		
Strongly Agree	172	54.7
Agree	104	33.1
Disagree	21	6.7
Strongly Disagree	17	5.4
I use Social Media as primary means of communication with friends		
Strongly Agree	99	31.5
Agree	152	48.4
Disagree	47	14.9
Strongly Disagree	16	5.2
Number of hours spent using Social Media per week		
1 to 5 hours	132	42.0
5 to 10 hours	47	14.9
10 to 15 hours	59	18.8
More than 15 hours	76	24.2
My preferred method for communicating with friends is social media		
Strongly Agree	27	8.6
Agree	100	31.8
Disagree	141	44.9
Strongly Disagree	46	14.6
My preferred method for communicating with friends is phone texting		
Strongly Agree	64	20.9
Agree	151	48.1
Disagree	81	28.8
Strongly Disagree	18	5.73
I would prefer talking with my friends on the phone directly rather than using social media or texting		
Strongly Agree	94	29.9
Agree	124	39.5
Disagree	75	23.9
Strongly Disagree	21	6.7
Avg # of friends I connect with on social media	193 friends	-
Avg # of close friends I connect with on social media	19 friends	-

As summarized in Table 35, the majority of respondents reported having personal accounts with multiple social networking sites - the most popular being Facebook (95.2%), Instagram (67.7%), Twitter (61.8%) and Google+ (60.5%). However, respondents overwhelmingly reported that Facebook was the Social Networking Site that they use most often (65%). Most of the respondents also indicated that they have a Skype Account (89.2%) and that they utilize Skype to connect with a variety of associates including non-university friends (64.9%), family (63.3%), and friends at university (39.2%).

Table 35- Social Networking Site (SNS) Usage

Item	N	Percent
Which of the following social media sites do you have an account with?		
Facebook	299	95.2
Instagram	213	67.8
Twitter	194	61.8
Google+	190	60.5
Linkedin	146	46.5
Other	50	15.9
Which social media site do you use most often?		
Facebook	204	65.0
Instagram	57	18.2
Twitter	37	11.8
Google+	6	1.9
Other	10	3.2
I have a Skype Account		
Yes	280	89.2
No	34	10.8
I use Skype to connect with		
Non-school friends	204	64.9
Family	199	63.3
School Friends	123	39.2
Coworkers	24	7.64

Social Media Use Intensity and Mental Health and Well-being

Finally, to examine how the intensity of social media use influences mental health and well-belling outcomes in students an analysis of variance (ANOVA) was performed for the sample with level of social media use as the independent demographic variable and scores on the measures of well-being and mental health (SDQ-III, SWLS, WBMMS - Mental Balance Subscale and WBMMS – Happiness Subscale) as the dependent measures (Table 36).

The results of the ANOVA revealed a significant main effect of intensity of social media use on students' reported emotional stability (SDQ-III) with students who are the heaviest users of social media having significantly lower scores than all other groups (M=41.38, SD=9.044) There were no significant main effects of intensity of social media use on all other measures of mental health and well-being. This finding indicates that students who spend 15 hours or more per week on social media are experiencing less emotional stability than those who spend under 15 hours.

Table 36- Social Media Use Intensity x Mental Health and Well-being

Dimension	Perceptions				
Co-op Participation	N	Mean[a]	SD	F	Sig
SDQ III					
Light User	132	47.17	10.943		
Moderate User	46	47.93	10.083	2.794	<0.05
Heavy User	59	47.29	9.893		
Very Heavy User	76	40.38	9.044		
SWLS					
Light User	132	22.25	6.901		
Moderate User	47	22.62	6.609	.789	0.34
Heavy User	59	22.95	7.028		
Very Heavy User	76	22.3	6.356		
Mental Balance					
Light User	132	14.16	2.993		
Moderate User	47	13.79	2.458	1.09	.076
Heavy User	59	14.19	2.968		
Very Heavy User	76	14.37	2.911		
Happiness					
Light User	132	14.16	2.993		
Moderate User	47	13.79	2.458	.678	.344
Heavy User	59	14.19	2.968		
Very Heavy User	76	14.37	2.911		

[a] for all scales higher scores represent stronger perceived sense of belonging

Summary of Key Findings

The results of this study revealed a number of important findings related to the relationships between sense of belonging, peer support, and social media on school to work transitions and indicators of mental health and well-being. It was shown that students perceived sense of belonging to university community and access to high quality peer support as being strongly related to their overall mental health and well-being. As well, several demographic factors were found to be significantly related to sense of belonging, peer support, and confidence in school to work transitions. These included age, gender, year of study, ethnicity, international student status, faculty, GPA, and participation in university orientation activities. Notably,

students who participated in co-operative education were revealed to have a significantly stronger sense of school to work efficacy than non-co-operative education students. As hypothesized, stronger levels of sense of belonging and peer support where shown to predict better outcomes on measures of mental health and well-being. Specifically, the results revealed that students who reported a strong sense of belonging to school and peers were more likely to report experiencing greater emotional stability. Also students who experienced a stronger sense of appraisal and belonging support within the campus community were more likely to report that they experienced better mental balance and happiness. It was also found that while students perceived social media as playing an important role in supporting their sense of belonging to peers and the university community, they preferred to seek support through more traditional channels such as face to face communication. Additionally, the results revealed that the majority of students are active users of social networks but that high intensity of social media use is significantly related to lower emotional stability in students.

Discussion

Summary of Study

The primary objectives of this study were to examine student perceptions of sense of belonging, peer support, and social media use and how these factors influence their mental health, overall well-being, and confidence regarding school to work transitions (i.e., school-to-work efficacy); to examine the role of social media on sense of belonging, peer support, and mental health; and to examine these variables in the context of co-operative education.

The following research questions guided this study:

1. What perceptions do students have about sense of belonging and peer support?

2. What demographic factors impact sense of belonging and peer support and school to work self-efficacy?

3. Does participation in co-operative education influence peer support, sense of belonging, and school to work self-efficacy?

4. How are peer support and sense of belonging related to mental health?

5. How is participation in co-operative education related to mental health?

6. What role does social media use play in students' perceptions of their sense of belonging, peer support, and mental health?

Summary of Results

Research Question 1

In order to develop the descriptive portrait of student perceptions of sense of belonging and peer support the data from the related measures was analyzed using frequencies, means, and standard deviations. According to the descriptive analysis, the students felt most strongly that connections with peers, having approachable professors, feeling connected to the campus community, and feeling connected to specific campus clubs, societies and spaces were important contributors to their sense of belonging. Students perceived the major benefits of a strong sense of belonging to be their sense of security on campus and level of motivation to perform well academically and engage with the university community. Importantly, students also indicated that they perceived a strong sense of belonging to be related to their ability to cope with stress and to their overall mental health and well-being. Students indicated strongly that they felt that detachment from the university community increases their stress levels and feelings of loneliness. These findings support the conclusions of a qualitative research study on peer support and sense of belonging by McBeath, Drysdale, and Bohn (2015) which found that sense of belonging provided positive benefits to students in terms of both emotional and social support, as well as for engagement in university life, sense of connection, and overall general acceptance. The results of the present study also showed that students perceive sense of belonging as playing a key role in their mental health and having the ability to cope with life stressors which aligns with the findings of the McBeath et al., (2015) study.

However, contrary to the findings of McBeath et al., (2015) which indicated that students experience isolation and disconnection from the university during work or summer terms, the results of this study indicated that students did not perceive that it is difficult for them to

maintain a sense of belonging within the university community from term to term. They also indicated that they do not generally feel isolated or disconnected when away from campus on a summer or work term. Taken together these findings suggest that while students agreed that sense of belonging was an important factor for mental health and well-being they do not necessarily have to be physically on campus in order to feel connected to their peers and the university community.

The descriptive results of the student's perceptions of peer support showed that students preferred to seek out informal peer support from close friends and emphasized its importance in their lives. However, they also indicated that despite their awareness of formal peer support programs they generally did not utilize them. These results are supported by the findings of the qualitative study by McBeath et al., (2015) in which most students reported that they accessed peer support informally and did not seek out the more structured formal avenues of support on campus - such as an organized mentoring program.

The results also showed that students sought out peer support for a variety of reasons including academic advice, problem solving, and emotional support and that they perceived trustworthiness, confidentiality, shared experience, and ability to give constructive criticism as important qualities of a peer supporter. This finding is supported by other studies of peer support in which students rated the most important qualities of peer supporters to be open-mindedness, lack of prejudice, receptiveness, and impartiality (Astin, 1993; Rüssel & Skinkle, 1990; Schmidt, Marks, & Derrico, 2004).

Research Question 2

To examine how specific demographic factors impact sense of belonging and peer support, and school to work efficacy an analysis of variance (ANOVA) was conducted between

the independent demographic variables (gender, age, ethnicity, year of study, faculty, GPA, living arrangement, international student status, having lived in university residence, and having participated in orientation week activities) with the dependant measures of Sense of Belonging and Peer Support. The analysis revealed a significant main effect for the following independent demographic variables on sense of belonging: age, faculty, and international student status, and faculty, year of study, GPA, and participation in orientation activities. The analysis also revealed a significant main effect of international student status, year of study, faculty, and participation in orientation activities on the measures of peer support; and of gender, age, and year of study on the measure of school to work efficacy. Each significant demographic variable is discussed further in the following sections:

Age

Age was found to have a significant impact on students' scores on the measure of school belonging (PSSM). More specifically, younger students (aged 17-19) had a stronger sense of perceived school belonging compared to older students in the sample (≥25 years of age). This result may stem from the fact that younger students are more likely to be in the early stages of their studies, and hence more likely to be living in a university residence - which could enhance their feelings of belongingness or membership to the campus community. Older students are more likely to be living off campus with friends or on their own and may have other commitments (e.g. part-time job or family) that interfere with time spent on campus. Older students are also likely to be further along in their academic programs and may be thinking more about transitioning away from school rather than connecting with the university.

Age was also found to be significantly related to perceived school to work efficacy, with younger students indicating higher levels of perceived confidence in their ability to transition from school to the work force compared to older students. This is a counterintuitive finding, as older students

81

(who are likely to be in the later years of their studies) are closer to making the transition from school into the labour market and ideally would have the most confidence overall. This finding may indicate that younger students have less experience applying for jobs and less work experience, and hence they are over-confident whereas older students have more realistic expectations about the job market and its related challenges. It is recommended that further research be conducted to examine differences in age groups in more detail to better understand why older students are experiencing less confidence than younger students.

Gender

Gender was also found to have a significant impact on school to work confidence (SWEF), with male students reporting a higher level of self-efficacy than female students. This finding may reflect the gender inequality that exists within the labour market (particularly in engineering and high tech industries) and is supported by research that has found that higher education and workplace-based vocational training (such as co-op) may increase the speed of transition to the workforce, but tends to benefit men more strongly than women (Mills & Prag, 2014). Other research has also indicated that female post-secondary students feel more anxiety than males regarding their future outcomes, and that female students who participate in co-operative education programs are the most anxious overall (Drysdale et al. 2015). Research has shown that cognitive worry about success in future tasks can be a cause of self-criticism and irrational thoughts and has a negative impact on performance and mental health (Weinstein, & Palmer, 2002). Females in science and engineering fields may be more aware of the competitive job market and may feel more pressure to do well in order to be recruited over their male counterparts and this may be contributing to their lower overall school to work self-efficacy. It is recommended that gender be examined in more detail in regards to school to work efficacy to ensure new cohorts of female students are not unduly anxious or lacking in confidence compared to male students.

82

Ethnicity

Several measures of sense of belonging (SOBI-P, SOBI-A, PSSM) were shown to be significant by ethnicity with students who were Caucasian, Native American, or "other" having the lowest means scores compared to Asian, Middle Eastern, and Hispanic Students. Overall the mean scores were highest for the Hispanic Students and this was the only group with scores that were significantly different from the other groups. The number of Hispanic students in the sample was very small (n=6) and as such this is a somewhat mixed finding lacking statistical power – however – it could indicate that ethnicity may play a role in perceived sense of belonging. In fact, a number of studies have determined that sense of belonging does differs across racial and ethnic identities (Johnson et al., 2007; Maestas et al., 2007; Stewart et al., 2009; Strayhorn, 2008). A study by Johnson et al. (2007) determined that race differentially influenced sense of belonging, with White Caucasian students demonstrating the greatest sense of belonging, followed by multiethnic students, Hispanic/Latino students, Asian Pacific American students, and lastly, African American students. Still, other studies seem to indicate that the relationship between race or ethnicity and sense of belonging is not as clear. For instance, respondents in Stewart et al.'s (2009) qualitative study suggested that socioeconomic status, more so than ethnicity, influenced their sense of belonging with others in their community. Hagerty et al.'s (1996) study also provided some contradictory findings as it pertains to the connection between race and ethnicity and sense of belonging. In light of the research, this finding may indicate that the conceptualization of race and the suggested influence on sense of belonging may be influenced by other contextual factors not taken into account by the measure of ethnicity alone.

International Student Status

Measures of perceived tangible interpersonal support (ISEL – Tangible Support Subscale) were found to be significant by international student status for both when students are on campus and when on a summer or work term. Overall, international students had much lower perceived access to tangible supports than non-international students. Perceptions of less tangible support are understandable for international students who are living far apart from their families and who likely lack ready access to a stable source of support, assistance, and material aid. Many post-secondary students rely on their parents and extended families to provide financial support and also to provide frequent help and assistance for common life events (e.g. helping them to move house during a work term). International students are unique among the larger population of post-secondary students as their circumstances require them to be more self-sufficient. Their lack of tangible support may be especially challenging as they navigate a new city, culture, and potentially have to learn a new language and may exacerbate stress and anxiety during times of transition. More research is needed to understand how perceived tangible support can impact the mental health and well-being of international students, and how institutions can better support international students and alleviate some of the stresses related to their lack of tangible support compared to non-international students.

Faculty

Measures of sense of belonging (SOBI-P, SOBI-A) and social support (ISEL – Appraisal Support Subscale) were found to be significant by faculty. Students enrolled in engineering were found to have significantly lower sense of belonging than students from all other faculties from all other groups. Engineering students also had significantly lower perceived interpersonal support than students from all other faculties. These findings indicate that engineering students

84

perceived themselves to be less connected to the university community and also perceived that they have less access to support from peers when worried, faced with a crisis, or when they need help with a personal issue when on campus. These findings may stem from the fact that all co-operative education is a mandatory requirement for all engineering students at the University of Waterloo and many of the engineering disciplines require students to complete a work term during their second semester of first year studies. This means that many first year students in the engineering faculty will spend only one semester on campus in their first year of studies before they are required to leave the campus and transition into a four-month work term. Engineering students are also required to complete six work terms overall which results in a cumulative 16-months away from campus during their undergraduate studies. This interruption of first year studies and constant movement between school and work may be interfering with the engineering student's ability to make meaningful connections to the campus community. This lack of connectedness and perceived social support may be particularly problematic for engineering students who have existing mental health disorders or who are at risk of experiencing mental health issues. More research is needed to fully understand the consequences of both diminished sense of belonging and perceived peer support in this specific population of students and to identify how students in demanding co-operative education programs can be best supported by the university both when they on and off campus.

Year of Study

Measures of sense of belonging (SOBI- A) and school to work efficacy (SWEF) were found to be significant by year of study. Specifically, the results indicate that second and third year students experience the strongest perceived sense of belonging compared to first and fourth year students. Additionally, students in first and second year studies had significantly higher

85

levels of school to work efficacy than third and fourth year students. These findings indicate that

overall sense of belonging appears to improve as students move through their undergraduate

years, but drops off as they near graduation. This finding makes intuitive sense as first year

students are in the process of establishing their connections to the university campus, while

fourth year students are in the process of letting go and looking forward to the transition they

will make from school to the workforce. In light of this, it is of particular concern that

confidence in one's ability to make a successful transition into the workforce also lessens as

students move closer to the end of their undergraduate studies. The findings indicate that fourth

year students are experiencing more anxiety about the transition away from university and are

starting to doubt their ability to establish themselves outside of the university community. These

findings are supported by the outcomes of the McBeath, Drysdale, Bohn (2015) study which

found that upper year students expressed heightened anxiety about the transition out of university

and felt that the university community provided a level of support that could not be realistically

expected in the 'real world'. Students who are not able to make a successful transition out of

university are at increased risk of mental health problems and these findings coupled with current

mental health trends in the workplace emphasize the need for more resources for our students

and more research on how best to prepare them for life after graduation.

Grade Point Average

The measure of psychological school membership (PSSM) was found to be significant by

student grade point average (GPA). Specifically, students who reported a GPA of 70% or lower

were found to have the lowest perceived sense of school membership. This result indicates that

students who are not performing well academically feel less connected to the campus community

and are either unaware of services and support programs that are offered by the university to help

them succeed academically or unwilling to utilize them. This finding is important in light of

research that has connected sense of belonging to increased motivation, positive social behavior and academic achievement (Wentzel, Barry, & Caldwell, 2004) and shown that valued participation in the school community is also associated with a high sense of belonging and results in higher motivation and academic engagement (Goodenow & Grady, 1994). This finding warrants further investigation as it indicates that students with poor academic achievement are more likely to feel disconnected. As feelings of belongingness or acceptance has also been shown to foster healthy emotional patterns (Osterman, 2000) students with a low GPA may be at a higher risk of developing mental health and wellness issues compared to students who are performing well academically.

Participation in Orientation

Participation in university orientation activities was found to be significantly related to both perceived interpersonal support (ISEL) and measures of sense of belonging (SOBI A). Specifically, students who had not participated in orientation week activities had a significantly lower perceived sense of belonging and lower perceived interpersonal support on campus than students who had participated. These findings suggest that orientation activities have an important role to play in establishing sense of belonging and connection to social support networks for incoming university students. Orientation week activities also facilitate relationship building between junior and upper year students who can assist new students in navigating the campus community and make them aware of "tribal knowledge" that is relevant to academic and social success on campus. This finding warrants further study as orientation week appears to play an important role in helping to acculturate new students to the campus community. By encouraging all students to participate in orientation week activities institutions may be able to provide a buffer for students who are at risk of mental health or wellness issues.

Research Question 3

In order to understand if participation in co-operative education influenced peer support and sense of belonging and school to work self-efficacy, an analysis of variance (ANOVA) was conducted between the independent variable of participation in co-op and the dependant measures of Sense of Belonging, peer support, and school to work efficacy. The results revealed that there were no significant main effects of participation in co-operative education on sense of belonging measures or peer support measures. However, the mean scores for both groups indicated that generally students experience a relatively strong sense of belonging and school membership within the university community and that they perceived themselves as having sufficient access to peer support regardless of participation in co-operative education. While participation in co-operative education does not appear to be influencing student's perceived sense of belonging and peer support as hypothesized, it may be that the co-op and non co-op students experience different factors which contribute to their perceptions of these constructs. For example, students in co-operative education receive additional support from the university, such as access to professional development courses (WatPD), guidance from career services, and oversight from work term counsellors, which may enhance their perceived sense of school belonging and social support. These additional programming supports are made available only to co-operative education students and may message to them that the University is invested in them and is actively ensuring they gain the required skills needed for success. Conversely, students who are not enrolled in co-operative education typically remain on campus from September to May and could be benefiting from having more consistent access to their classmates and friends, more access to university resources, and the ability to maintain affiliations with student societies, clubs, sports teams and similar organizations. Further research is needed to understand how

different student populations are accessing supports in the university and exactly which factors contribute to overall sense of belonging.

In terms of school to work transitions, co-operative education students were found to have more confidence than non-co-operative education students in their ability to make a successful transition into the workforce. This finding aligns with the intended outcomes of the co-operative education program which aim to prepare students for a career in their field of study and is likely also influenced by the additional support and training co-operative education experience both on-campus and during their work terms. However, this finding does indicate that students who did not participate in co-operative education felt less prepared for the transition into the workplace and hence they may be more likely to experience difficulty in obtaining employment and be more vulnerable to mental health issues related to unemployment. More research is needed to determine how best to prepare all students for the transition into the workforce, and particularly, how to help students who do not participate in co-operative education develop the skills needed to be competitive and successful when they enter the labour market.

Research Question 4

In order to determine how sense of belonging and peer support were related to mental health, a correlational and regression analysis was conducted. The results of both analyses revealed that sense of belonging and peer support appeared to have a strong predictive relationship with students' quality of life and their overall mental health and wellbeing. More specifically, the analysis of this study support the following results: students who experience a high sense of belonging and who report high levels of the antecedents to sense of belonging are more likely to report experiencing greater emotional stability. Also the results suggest that

89

students who experience a higher sense of appraisal and belonging support are more likely to report experiencing better mental balance and happiness. These results are important as many studies have shown that a lower sense of belonging and lower perceived social support is related to poorer psychological and social functioning and can contribute to feelings of isolation, and loneliness (Baumeister & Leary, 1995; Cohen & Wills, 1985; House & Kahn, 1985). These findings reinforce the important influence of sense of belonging and peer support on mental health and wellness outcomes and provide justification for further research on how these constructs can best be supported in post-secondary students.

Research Question 5

There were no significant main effects of co-operative education on sense of belonging measures. The means scores for both groups on the SDQ-III indicate that both co-op and non co-op tend to experience a high level of emotional stability. The mean scores for both groups on the SWLS indicate that overall students experience an average level of life satisfaction. Furthermore, the scores for both co-op and non-co-op students on the WBMSS subscales indicate a moderately strong level of mental balance and happiness in life. These findings indicate that co-operative education alone may not directly impact mental health and well-being outcomes. However, this study has revealed that a number of variables are relevant to mental health and well-being (such as age and gender) and these should be further investigated in the context of co-operative education to better understand the influence, if any, of co-operative education programs on student health and emotional well-being.

Research Question 6

In order to develop the descriptive portrait of student use of social media and their

perceptions of its importance to their sense of belonging and peer support the data from the related measures was analyzed using frequencies, means, and standard deviations. According to the descriptive analysis, the students perceived social media as playing an important role in supporting their sense of belonging amongst peers and the university community. However, they prefer to seek out peer support through more personal channels (i.e. text messaging, phone, and face to face interactions) and indicated that they are reluctant to disclose personal information over social networking sites (SNSs). Students also indicated that they do not rely on social media to connect with peers when they are off campus, and are unlikely to use social media to seek support when they are experiencing a personal problem. The results also revealed that students are active users of social media, updating their accounts frequently and utilizing many different SNSs to connect with friends and classmates. Taken together, these findings indicate that students are actively engaged in maintaining a social media presence and perceive social media as a useful tool for staying in touch with peers, but do not view social media as a replacement or substitute for more intimate forms of social connection. Interestingly, the results also revealed that students who reported the highest intensity of social media use had significantly lower scores on the measure of emotional stability. This finding is supported by research that has shown that while social media can enhance feelings of connection and increased social capital, high intensity of use also correlates with high levels of disconnection, emotional instability, negative affect, and loneliness (Sheldon, Abad, & Hinsch, 2011; Klingensmith, 2010).

Study Limitations

The findings of this study certainly contribute to a better understanding of the relationship between sense of belonging, peer support, social media use and outcomes related to mental health, well-being, and school-to-work transitions in co-operative and non-co-operative education students. However, the findings must be interpreted in light of several important limitations. First, the cross-sectional, self-report nature of the data collected by the survey instrument and used in the current study, is itself a limitation. Cross-sectional studies have a number of advantages which include the facilitation of a one-time data collection process and the ability to collect data from a large sample without the concern of attrition that is generally associated with longitudinal studies. However, cross-sectional data is a snapshot in time which does not account for changes or development that have taken place as a result of experiences that occurred prior to, or after, data collection. In the case of this study data collection occurred during the Summer and Fall term of 2015 and hence the data collected is reflective of students' perceptions and interpretations of their perceived sense of belonging, peer support, and overall mental health and well-being as informed by the events of those terms. This could include the demands of the current course load, as well as the cumulative effect of each term outcomes. For instance, students who were struggling academically towards the end of the Spring term may have been more likely to provide responses that indicated mental health and wellness issues due to anxiety and worry about their grades. While cross-sectional survey research does provide important information about students and their experiences, results must be viewed in light of the point in time during which students took the survey. Also all of the measures included in the study were self-reported. Hence, the truthfulness and accuracy of the constructs assessed cannot

be ascertained with certainty as participants might have consciously or otherwise biased their responses, particularly on measures of a more sensitive nature such as mental health status.

A second limitation is related to the statistical methods used in this study. The purpose of this study was to understand sense of belonging, peer support and mental health and well-being outcomes for students, and therefore the chosen methods of descriptive statistics, ANOVA and regression analyses were appropriate for an analysis of the data at the participant/student level. . However, in electing to analyze the data at the student level, institutional effects that could have an important impact on the constructs of peer support and sense of belonging and could have been analyzed using multi-level modeling were not considered.

A third limitation is that while a number of independent variables that are thought to be related to perceived sense of belonging and peer support were included in this study (e.g. gender, ethnicity, type of program etc.) this list could have included several other variables. For example, there are several studies that have indicated that faculty characteristics and interactions such as faculty being committed to students' development (Astin, 1993; Freeman et al., 2007; Maestas et al., 2007) and the extent to which faculty foster a classroom climate conducive to learning and student participation (Freeman et al., 2007) play an important role in students' sense of belonging. When selecting the variables for the current study, factors such as institution and faculty characteristics were not included and thus it is not possible to speculate on the how these factors may be contributing to the dependant variables). Other variables, such as level of participation in extracurricular activities, the availability of meaningful co-op or summer work term employment, and variety in student support programs and professional development programs offered by the various university faculties may also be related to sense of belonging, peer support and school to work transitions but were not considered.

93

Lastly, it is also important to note the limitations of study in regards to sample size and the overall generalizability and external validity of the study findings. The total sample size (N=314) was relatively small. Although the sample demographics and composition were similar to that of the University of Waterloo population (see Table 1), the small sample size made comparisons within subjects difficult due to small cell sizes for some of the demographic variables. Also, as the data collection for this study took place at only one institution (University of Waterloo) it is difficult to generalize the findings to other student populations. The University of Waterloo has an intensive focus on science, technology, math and engineering and is also unique as it has one of the world's largest co-operative education programs, with over half of the school population participating in co-operative education. Institutional differences are likely to exist in the emphasis and importance of these skills and focus on school to work transitions. Future research should compare institutions that offer co-operative education with those that do not and between institutions with different academic concentrations (i.e. a Polytechnic University vs. Liberal Arts University) in order to better generalize the findings to all Canadian post-secondary students.

Implications and Directions for Future Research

As was described early on in this study, the increasing number of students with mental health conditions attending universities warrants a better understanding about how the university experience helps or hinders the success of students with psychological conditions. The results of this study support the growing consensus in the literature that sense of belonging and peer support are important protective factors for student mental health and wellbeing. As such future research focused on better understanding of how institutions can enhance student experience of

these factors for students from all backgrounds, academic and co-operative education programs, and throughout all years of study is warranted.

Importantly, the findings of this study also indicate that co-operative and non co-operative education students differ in their level of confidence in making successful transitions from school to work and that older students and students in their final years of study also have less confidence regarding transitioning. Given these findings, it is strongly recommended that additional research be conducted to understand and address how best to prepare students for life after graduation and during their transition to the workforce. This is particularly vital as mental health problems have become one of the leading causes for absenteeism from work (WHO, 2011) and because mental health problems in the workplace have serious effects not only for the individual but also for the productivity of businesses and thus the economy and society as a whole, it is essential that universities and colleges prepare the 'whole' person for the transition from post-secondary education to the labour market.

Lastly, more thought should be given to the methods used to study and understand the factors which influence mental health issues in university students. This study employed descriptive, correlational and multiple regression analyses to examine how sense of belonging and peer support impact health and wellbeing outcomes for students. However, multi-level modeling could be used to explore sense of belonging and peer support both at the individual and the institutional levels. This type of procedure would allow for a more complex analysis of institutional level factors that impact sense of belonging and peer support, or moderate the variables that influence sense of belonging and perceived peer support. For example, in this study GPA was found to be significant predictor of sense of belonging for students. As the University of Waterloo has a strong focus on co-operative education (where students must

maintain a specified department minimum grade average to remain in their co-op program) GPA could be more salient to students as a variable that predicts sense of belonging. Perhaps if the culture of the institution is one that has less emphasis on academic performance, as may be the case for a school focused on athletics or fine arts, GPA may be a less important predictor of sense of belonging and multi-level modeling is a method that could be used to further explore this theory.

Other research methods, such as qualitative or intervention based research should also be used to better understand the lived experiences of university students, particularly those who experience mental health issues. While quantitative research, such as this study, provides useful numeric and statistical evidence to support theoretical models it is also helpful to understand how students experience the university environment and conceptualize and develop peer support networks and a sense of belonging. For example, a randomized control trial of a peer support program for university students would provide both qualitative and quantitative data that could directly shape the development of effective intervention programs for students. The findings of this study suggests that there are not many differences between students who participate in co-operative education and those who do not in terms of perceived sense of belonging, peer support, and social media use.

The significance of this line of research is particularly important as addressing the mental health and well-being amongst emerging adults in post-secondary education is currently a priority for universities, public health agencies, and government. Additionally, academic institutions, such as the University of Waterloo, strive to help students feel connected to the campus community and to ensure that all students enjoy satisfying levels of health and wellbeing. The findings of this study provide important insight into the importance of peer

support, sense of belonging, and social media use, on mental health and well-being outcomes for post-secondary students, and will help to guide future research that can support the development of campus health programs, initiatives, and policies. Moreover, findings from this study may help to guide the development of larger research projects, which will develop and pilot evidence-based interventions for improving mental health outcomes for students and can guide government agencies and universities to prioritize the allocation of resources towards further research and the development of initiatives related to peer support and sense of belonging.

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Appendix A – Participant Recruitment Letter

Title of Project: Sense of Belonging, Peer Support, Social Media, and Well-Being: Comparing Co-op and Non Co-op Student Perceptions and Experiences

You are invited to participate in a research study conducted by Dr. Maureen Drysdale, Psychology Department, of St. Jerome's University (University of Waterloo), Canada. The objectives of the research study are to examine peer support, sense of belonging, social media usage, and well-being amongst co-op and non co-op post-secondary students. If you decide to volunteer, you will be asked to complete a 20-30 minute online survey that is completed anonymously. Survey questions focus on basic demographic information (i.e., year of study, co-op/non co-op), peer support, sense of belonging, social media usage, and overall well-being. Participation in this study is voluntary. You may decline to answer any questions that you do not wish to answer and you can withdraw your participation at any time by not submitting your responses.

There are no known or anticipated risks from participating in this study – however some questions may make you question your own support networks. Should you require someone to talk to regarding support, there are a number of peer support, mentoring, and advising resources available to you on campus. These include:

- https://uwaterloo.ca/student-success/ (student success office - study and life skills workshops)

- https://uwaterloo.ca/student-success/resources/pee... (student success office - peer mentoring)

- http://uwmates.weebly.com/ UW MATES one on one peer support)

- https://uwaterloo.ca/counselling-services/workshop... (counseling services wellness, health, and coping skills workshops)

- https://uwaterloo.ca/health-services/mental-health... (Health services, mental health programs)

- https://uwaterloo.ca/career-action/ (UW career advising)

- https://uwaterloo.ca/international-students/progra... support for international students)

- http://www.feds.ca/co-op/ (Peer support program for students on work term run by feds)

- http://www.feds.ca/women/ (Women's center peer support)

- http://www.feds.ca/glow/(GLOW center peer support for LGBTQ students)

These resources will also be listed on the feedback page at the end of the survey.

In appreciation for your time, you will receive a $6.00 gift card to either Starbucks or UW Retail Services. The amount received is taxable. It is your responsibility to report this amount for income tax purposes. At the end of the survey, you will receive a verification number and details about collecting your gift card. Please record the verification number as it is needed to receive the gift card.

It is important for you to know that any information that you provide will be confidential. This survey uses QuestionPro™ whose computer servers are located in the USA. Consequently, USA authorities under provisions of the Patriot Act may access this survey data. If you prefer not to submit your data through QuestionPro (TM), please contact one of the researchers so you can participate using an alternative method (such as through an email or paper-based questionnaire). The alternate method may decrease anonymity but confidentiality will be maintained. All of the data will be summarized and no individual could be identified from these summarized results. Furthermore, the web site is programmed to collect responses alone and will not collect any information that could potentially identify you (such as machine identifiers). Contact information gathered for the purposes of the draw will be separated from the data and will be destroyed following the administration of the draw. The data, with no personal identifiers, collected from this study will be maintained on a password-protected computer database in a restricted access area of the university. As well, the data will be electronically archived after completion of the study and maintained for a minimum of 7 years and then erased.

Should you have any questions about the study, please contact Dr. Maureen Drysdale at

mldrysdale@uwaterloo.ca. Further, if you would like to receive a copy of the results of this study, please

contact the investigator. I would like to assure you that this study has been reviewed and received ethics

clearance through a University of Waterloo Research Ethics Committee. However, the final decision

about participation is yours. If you have any comments or concerns resulting from your participation in

this study, please feel free to contact Dr. Maureen Nummelin in the Office of Research Ethics at 1-519-

888-4567, Ext. 36005 or maureen.nummelin@uwaterloo.ca. Thank you for considering participation in

this study.

Consent to Participate

With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

 I agree to participate

Appendix B – Study Questionnaire

<div align="center">

University of Waterloo

Sense of Belonging, Peer Support, Well-Being, and Social Media

M. Drysdale & M. McBeath

Questionnaire Sections and Subscales

</div>

Total number of questions including the demographics and verification items: 211

The complete questionnaire has been pilot tested for time requirements. The time required to complete all the scales ranged from 20 - 30 minutes.

<div align="center">

Demographics

</div>

Directions: Please indicate your response to the following items:

This demographic questionnaire is intended to obtain information for use to compare various groups in the population. For example, we intend to compare students in co-operative education programs to students in regular programs of study. You will not be identified from data obtained from this questionnaire. All data collected is confidential and will be secured on a password-protected database in a restricted access location. Only researchers associated with this project will have access to this data. You may choose to decline answering any of these questions at any point in time.

1. Gender: a. Male   b. Female

2. Age: _____

3. What is your ethnic group?

   a. White   b. Hispanic or Latino   c. Middle Eastern d. Black or African American   e. Native American or American Indian   f. Asian/Pacific Islander   g. Other

4. Are you an international student?   a. Yes   b. No

5. If yes, what is your country of origin? _____

6. What is your primary language? _____

7. Have you lived in a university residence during any term at UW?   a. Yes   b. No

8. In your first year at UW, did you participate in the Orientation Week social activities? a. Yes   b. No

9. Do you live in Kitchener/Waterloo?   a. Yes   b. No

10. If no, how far is your commute to UW?

    a. <50 kms (e.g., Guelph, Stratford)   b. 50-75 kms (e.g., Milton, Hamilton, Woodstock)

         c. 75-100 kms (e.g., Mississauga, Oakville)   d. >100 kms (e.g., London, Toronto)

11. Which of the following best describes your current living arrangement?

a. Residence   b. Alone in off campus housing   c. With friends in off campus housing   d. With parent(s)   d. With partner/spouse

12. What Faculty are you in?

    a. Arts   b. Applied Health Sciences   c. Engineering   d. Environment   e. Math   f. Science

13. What is your intended Major?   _____

14. What is your year of study?

    a. 1A/1B   b. 2A/2B   c. 3A/3B   d. 4A/4B

15. If you are in 2A or higher, what is your cumulative university average?

    a. <70%   b. 70-74%   c. 75-79%   d. 80-85%   e. >85%

16. What do you predict your average will be for the current term?

    a. <70%   b. 70-74%   c. 75-79%   d. 80-85%   e. >85%

17. Are you in co-op?   a. Yes   b. No

    If yes, please answer the following

        a) How many work terms have you had?

            a. 1   b. 2   c. 3   d. 4   e. 5 or more

        b) What have been the geographic locations (ie cities) of your past work terms? (provide up to five text boxes)

<u>**Sense of Belonging and School Belonging**</u>

A. *Sense of Belonging Instrument* **(SOBI-P and SOBI-A: Hegarty & Patusky, 1995)**

Directions: Here are some statements with which you may or may not agree. Using the scale below, select the number that most closely reflects your feelings about each statement.

Strongly Disagree	Disagree	Agree	Strongly Agree
1	2	3	4

SOBI001	I often wonder if there is any place on earth where I really belong	1	2	3	4
SOBI002	I am just not sure if I fit in with my friends				
SOBI003	I would describe myself as a misfit in most social situations	1	2	3	4
SOBI004	I generally feel that people accept me				
SOBI005	I feel like a piece of a jig-saw puzzle that doesn't fit into the puzzle	1	2	3	4
SOBI006	I would like to make a difference to people or things around me, but I don't feel that what I have to offer is valid	1	2	3	4
SOBI007	I feel like an outsider in most situations	1	2	3	4
SOBIX01	*I generally feel that people do not accept me*	*1*	*2*	*3*	*4*
SOBI008	I am troubled by feeling like I have no place in this world	1	2	3	4
SOBI009	I could disappear for days and it wouldn't matter to my family	1	2	3	4
SOBI010	In general, I don't feel a part of the mainstream of society	1	2	3	4
SOBI011	I feel like I observe life rather than participate in it	1	2	3	4
SOBI012	If I died tomorrow, very few people would come to my funeral	1	2	3	4
SOBI013	I feel like a square peg trying to fit into a round hole	1	2	3	4
SOBI014	I don't feel that there is any place where I really fit in this world	1	2	3	4
SOBI015	I am uncomfortable that my background and experiences are so different from those who are usually around me	1	2	3	4
SOBI016	I could not see or call my friends for days and it wouldn't matter to them	1	2	3	4
SOBI017	I feel left out	1	2	3	4
SOBI018	I am not valued by or not important to my friends	1	2	3	4
SOBI019	It is important to me that I am valued or accepted by others	1	2	3	4
SOBI020	In the past, I have felt valued and important to others				
SOBI021	It is important to me that I fit somewhere in this world	1	2	3	4
SOBI022	I have qualities that can be important to others				
SOBI023	I am working on fitting in better with those around me	1	2	3	4
SOBI024	I want to be a part of things going on around me	1	2	3	4
SOBI025	It is important to me that my thoughts and opinions are valued	1	2	3	4
SOBI026	Generally, other people recognize my strengths and good points	1	2	3	4
SOBI027	I can make myself fit in anywhere	1	2	3	4
SOBI028	All of my life I have wanted to feel like I really belonged somewhere	1	2	3	4
SOBI029	Fitting in with people around me matters a great deal	1	2	3	4
SOBI030	I feel badly if others do not value or accept me	1	2	3	4
SOBI031	Relationships take too much energy for me	1	2	3	4

B. *Psychological Sense of School Membership* **(PSSM: Goodenow, 1993)**

Directions: Here are some statements with which you may or may not agree. Using the scale below, select the number that most closely reflects your feelings about each statement.

Completely False	Mostly False	More True Than False	Mostly True	Completely True
1	2	3	4	5

PSSM001	I feel like a real part of the University of Waterloo	1	2	3	4	5
PSSM002	People here notice when I'm good at something.	1	2	3	4	5
PSSM003	It is hard for people like me to be accepted here.	1	2	3	4	5
PSSM004	Other students in this university take my opinions seriously.	1	2	3	4	5
PSSM005	Most professors and instructors at the University of Waterloo are interested in me.	1	2	3	4	5
PSSM006	Sometimes I feel as if I don't belong here.	1	2	3	4	5
PSSM007	There's at least one professor, instructor, or staff member in this university I can talk to if I have a problem.	1	2	3	4	5
PSSM008	People at this university are friendly to me.	1	2	3	4	5
PSSM009	Professors and instructors here are not interested in people like me.	1	2	3	4	5
PSSM010	I am included in lots of activities at the University of Waterloo.	1	2	3	4	5
PSSM011	I am treated with as much respect as other students.	1	2	3	4	5
PSSM012	I feel very different from most other students here.	1	2	3	4	5
PSSM013	I can really be myself at this university.	1	2	3	4	5
PSSM014	The professors and instructors here respect me.	1	2	3	4	5
PSSM015	People here know I can do good work.	1	2	3	4	5
PSSM016	I wish I were in a different university.	1	2	3	4	5
PSSM017	I feel proud of belonging to the University of Waterloo.	1	2	3	4	5
PSSM018	Other students here like me the way I am.					

C. *Sense of Belonging* **items constructed by McBeath, Drysdale, & Bohn (2015; Based on the results from several focus groups during Phase One of this study)**

Directions: Here are some statements with which you may or may not agree. Using the scale below, select the number that most closely reflects your feelings about each statement.

Strongly Disagree 1	Disagree 2	Agree 3	Strongly Agree 4

SB001	Feeling accepted by my peers contributes to my sense of belonging at my university	1	2	3	4
SB002	Having approachable professors makes me feel like I belong at my university	1	2	3	4
SB003	A sense of belonging at university means feeling connected to the university as a whole	1	2	3	4
SB004	My sense of belonging at university means feeling connected to specific areas, societies, or clubs on campus rather than the university as a whole	1	2	3	4
SB005	My sense of belonging at university is affected by its reputation	1	2	3	4
SBX02	*Feeling accepted by peers has little to do with my sense of belonging to the university*	*1*	*2*	*3*	*4*
SB006	Feeling like I belong at university provides me with a sense of security on campus	1	2	3	4
SB007	Feeling like I belong to the campus community motivates me to actively engage in university activities	1	2	3	4
SB008	Feeling like I belong at my university increases my academic motivation	1	2	3	4
SB009	The campus community allows me to be myself	1	2	3	4
SB010	Feeling like a member of the campus community eases the transition from high school to university	1	2	3	4
SB011	My sense of belonging at the university is important for my mental health	1	2	3	4
SB012	My sense of belonging at the university increases my ability to cope with stress	1	2	3	4
SB013	Feeling detached from the university increases my stress levels	1	2	3	4
SB014	Feeling detached from the university contributes to feelings of loneliness	1	2	3	4
SB015	I have trouble maintaining a sense of belonging within the university community from term to term	1	2	3	4
SB016	I often feel isolated from my friends and the campus community	1	2	3	4
SB017	Feelings of loneliness and isolation have made me think of changing the trajectory of my studies	1	2	3	4
SB018	Feeling like I don't belong on campus has made the transition from high school to university difficult	1	2	3	4

Peer Support

A. *Interpersonal Support Evaluation List* (ISEL - shortened version: Cohen, Mermelstein, Kamarck, & Hoberman, 1985; In public domain and free).

On campus academic term version: *ISEL-A*

Directions: Here are some statements each of which may or may not be true about you during an academic term at university (i.e., when you are attending classes full time). For each statement, select "4" if you are sure it is true about you during an academic term and "3" if you think it is true but are not absolutely certain. Similarly, you should select "1" if you are sure the statement is false about you during an academic term and "2" if you think it is false but are nor absolutely certain.

Definitely False	Probably False	Probably True	Definitely True
1	2	3	4

ISEL-A01	If I wanted to go on a trip for a day (for example, to the country or mountains), I would have a hard time finding someone to go with me.	1	2	3	4
ISEL-A02	I feel that there is no one I can share my most private worries and fears with.	1	2	3	4
ISEL-A03	If I were sick, I could easily find someone to help me with my daily chores.	1	2	3	4
ISEL-A04	There is someone I can turn to for advice about handling problems with my family.	1	2	3	4
ISEL-A05	If I decide one afternoon that I would like to go to a movie that evening, I could easily find someone to go with me.	1	2	3	4
ISEL-A06	When I need suggestions on how to deal with a personal problem, I know someone I can turn to.	1	2	3	4
ISEL-A07	I don't often get invited to do things with others.	1	2	3	4
ISEL-A08	If I had to go out of town for a few weeks, it would be difficult to find someone who would look after my house or apartment (the plants, pets, garden, etc.).	1	2	3	4
ISEL-A09	If I wanted to have lunch with someone, I could easily find someone to join me.	1	2	3	4
ISEL-A10	If I was stranded 10 miles from home, there is someone I could call who could come and get me.	1	2	3	4
ISEL-A11	If a family crisis arose, it would be difficult to find someone who could give me good advice about how to handle it.	1	2	3	4
ISEL-A12	If I needed some help in moving to a new house or apartment, I would have a hard time finding someone to help me.	1	2	3	4

B. *Interpersonal Support Evaluation List* **(ISEL - shortened version: Cohen, Mermelstein, Kamarck, & Hoberman, 1985; In public domain and free).**

Summer work term or co-op work term version: *ISEL-W*

Directions: Here are some statements each of which may or may not be true about you when you are away from campus for an extended time such as on a co-op work term or during your summer job. For each statement, select "4" if you are sure it is true about you during a work term and "3" if you think it is true but are not absolutely certain. Similarly, you should select "1" if you are sure the statement is false about you during a work term and "2" if you think it is false but are nor absolutely certain.

Definitely False	Probably False	Probably True	Definitely True
1	2	3	4

ISEL-W01	If I wanted to go on a trip for a day (for example, to the country or mountains), I would have a hard time finding someone to go with me.	1	2	3	4
ISEL-W02	I feel that there is no one I can share my most private worries and fears with.	1	2	3	4
ISEL-W03	If I were sick, I could easily find someone to help me with my daily chores.	1	2	3	4
ISEL-W04	There is someone I can turn to for advice about handling problems with my family.	1	2	3	4
ISEL-W05	If I decide one afternoon that I would like to go to a movie that evening, I could easily find someone to go with me.	1	2	3	4
ISEL-W06	When I need suggestions on how to deal with a personal problem, I know someone I can turn to.	1	2	3	4
ISEL-W07	I don't often get invited to do things with others.	1	2	3	4
ISEL-W08	If I had to go out of town for a few weeks, it would be difficult to find someone who would look after my house or apartment (the plants, pets, garden, etc.).	1	2	3	4
ISEL-W09	If I wanted to have lunch with someone, I could easily find someone to join me.	1	2	3	4
ISEL-W10	If I was stranded 10 miles from home, there is someone I could call who could come and get me.	1	2	3	4
ISEL-W11	If a family crisis arose, it would be difficult to find someone who could give me good advice about how to handle it.	1	2	3	4
ISEL-W12	If I needed some help in moving to a new house or apartment, I would have a hard time finding someone to help me.	1	2	3	4

C. *Peer Support* **items constructed by McBeath, Drysdale, & Bohn (2015; Based on the results from several focus groups during Phase One of this study)**

Directions: Here are some statements with which you may or may not agree. Using the scale below, select the number that most closely reflects your feelings about each statement.

Strongly Disagree 1	Disagree 2	Agree 3	Strongly Agree 4

PS001	I have sought peer support in formal settings such as from university peer support and mentoring programs	1	2	3	4
PS002	I only seek peer support from my closest friends	1	2	3	4
PS003	Peer support is best when provided in an informal setting	1	2	3	4
PS004	I would seek emotional support from a university peer support group	1	2	3	4
PS005	I would seek academic support from a university peer support group	1	2	3	4
PS006	A peer supporter should be within my age group	1	2	3	4
PS007	A peer supporter should have gone through similar experiences to be of value	1	2	3	4
PS008	A peer supporter should offer a different perspectives to my problems	1	2	3	4
PS009	I look for someone I can relate to in a peer supporter	1	2	3	4
PS010	I seek support from peers who are non-judgemental	1	2	3	4
PS011	A peer supporter must be trustworthy	1	2	3	4
PS012	A peer supporter should be comfortable offering constructive criticism	1	2	3	4
PS013	I seek peer support to obtain emotional comfort	1	2	3	4
PS014	I seek peer support to obtain academic advice	1	2	3	4
PS015	I seek peer support for practical problem solving advice	1	2	3	4
PS016	I seek peer support so that my feelings may be validated	1	2	3	4
PS017	Support from my peers helps me cope with my negative emotions	1	2	3	4
PSX03	*I would not seek peer support for emotional comfort*	*1*	*2*	*3*	*4*
PS018	I am aware of peer support programs offered by my university	1	2	3	4
PS019	I have no time to seek peer support from campus programs	1	2	3	4
PS020	I feel like support from my peers is never there when I need it	1	2	3	4
PS021	If I receive support from a formal program, people might think something is wrong with me or my mental health	1	2	3	4

Well-Being and School-to-Work Confidence

A. *Self-Description Questionnaire III* – **Emotional Stability subscale (***SDQ-III***: Marsh & O'Neill, 1984)**

Directions: The following are a series of statements that are more or less true (or more or less false) descriptions of you. Please use the following eight-point response scale to indicate how true (or false) each item is as a description of you. Respond to the items as you now feel even if you felt differently at some other time in your life.

Definitely False	False	Mostly False	More False Than True	More True Than False	Mostly True	True	Definitely True
1	2	3	4	5	6	7	8

SDQ001	I am usually pretty calm and relaxed		1 2 3 4 5 6 7 8
SDQ002	I worry a lot		1 2 3 4 5 6 7 8
SDQ003	I am happy most of the time		1 2 3 4 5 6 7 8
SDQ004	I am anxious much of the time.		1 2 3 4 5 6 7 8
SDQ005	I hardly ever feel depressed		1 2 3 4 5 6 7 8
SDQ006	I tend to be highly – strung, tense, and restless		1 2 3 4 5 6 7 8
SDQ007	I do not spend a lot of time worrying about things.		1 2 3 4 5 6 7 8
SDQ008	I am often depressed		1 2 3 4 5 6 7 8
SDQ009	I am inclined towards being an optimist		1 2 3 4 5 6 7 8
SDQ010	I tend to be a very nervous person		1 2 3 4 5 6 7 8

B. School-to-Work Self-Efficacy items constructed by McBeath, Drysdale & Bohn (2015; Based on the results from several focus groups during Phase One of this study)

Directions: Here are some statements with which you may or may not agree. Using the scale below, select the number that most closely reflects your feelings about each statement.

Strongly Disagree 1	Disagree 2	Agree 3	Strongly Agree 4

SWEF001	The university experience will help me when I a moving towards the work force	1	2	3	4
SWEF002	What I am learning in my courses is applicable to the jobs in my field	1	2	3	4
SWEF003	I feel emotionally prepared for the transition to the work place	1	2	3	4
SWEF004	The thought of the transition to the work place after graduation is a source of anxiety	1	2	3	4
SWEF005	The university is guiding me towards an easy transition to the work force	1	2	3	4
SWEF006	I feel I am not emotionally stable enough to enter the real world	1	2	3	4
SWEF007	When I enter the work force after graduation I will look back fondly on my time at university	1	2	3	4
SWEF008	I feel that I will have no support in my transition to the work force	1	2	3	4
SWEF009	I am not anxious about my transition to the labour market after university	1	2	3	4

C. *Satisfaction with Life Scale* **(SWLS: Pavot, & Diener, 2008)**

Directions: Here are some statements with which you may or may not agree. Using the scale below, select the number that most closely reflects your feelings about each statement. Respond to the items as you now feel even if you felt differently at some other time in your life.

Strongly Disagree	Disagree	Slightly Disagree	Neither Agree nor Disagree	Slightly Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

SWLS001	In most ways my life is close to my ideal.	1 2 3 4 5 6 7
SWLS002	The conditions of my life are excellent.	1 2 3 4 5 6 7
SWLS003	I am satisfied with my life.	1 2 3 4 5 6 7
SWLS004	So far I have gotten the important things I want in life.	1 2 3 4 5 6 7
SWLS005	If I could live my life over, I would change almost nothing.	1 2 3 4 5 6 7

D. *Well-Being Manifestation Measure Scale* (WBMMS: Massé, R., et al., 1998)

Directions: Using the scale below, select the number that most closely reflects the frequency of each statement in the last month.

	Never	Rarely	Sometimes	Frequently	Almost Always
	1	2	3	4	5

<u>DURING THE LAST MONTH:</u>

WBMMS001	I had self-confidence	1 2 3 4 5
WBMMS002	I felt that others loved me and appreciated me	1 2 3 4 5
WBMMS003	I felt satisfied with what I was able to accomplish, I felt proud of myself	1 2 3 4 5
WBMMS004	I felt useful	1 2 3 4 5
WBMMS005	I felt emotionally balanced	1 2 3 4 5
WBMMS006	I was true to myself, being natural at all times	1 2 3 4 5
WBMMS007	I lived at a normal pace, not doing anything excessively	1 2 3 4 5
WBMMS008	My life was well-balanced between my family, personal, and school activities	1 2 3 4 5
WBMMS009	I had goals and ambitions	1 2 3 4 5
WBMMS010	I was curious and interested in all sorts of things	1 2 3 4 5
WBMMS011	I had lots of "get up and go", I took on a lot of projects	1 2 3 4 5
WBMMS012	I felt like having fun, doing sports, and participating in all my favourite activities and pastimes	1 2 3 4 5
WBMMS013	I smiled easily	1 2 3 4 5
WBMMS014	I had a good sense of humour, easily making my friends laugh	1 2 3 4 5
WBMMS015	I was able to concentrate and listen to my friends	1 2 3 4 5
WBMMS016	I got along well with everyone around me	1 2 3 4 5
WBMMS017	I was able to face difficult situations in a positive way	1 2 3 4 5
WBMMS018	I was able to clearly sort things out when faced with complicated situations	1 2 3 4 5
WBMMS019	I was able to find answers to my problems without trouble	1 2 3 4 5
WBMMSX04	*I was not able to concentrate and listen to my friends*	*1 2 3 4 5*
WBMMS020	I was quite calm	1 2 3 4 5
WBMMS021	I had the impression of really enjoying and living life to the fullest	1 2 3 4 5
WBMMS022	I felt good and at peace with myself	1 2 3 4 5
WBMMS023	I found life exciting and I wanted to enjoy every moment of it	1 2 3 4 5
WBMMS024	My morale was good	1 2 3 4 5
WBMMS025	I felt healthy and in good shape	1 2 3 4 5

Social Media for Peer Support and Sense of Belonging

A. *Social Media Usage* **items constructed by McBeath, Drysdale, & Bohn (2015; Based on the results from several focus groups during Phase One of this study)**

Directions: Here are some statements with which you may or may not agree. Using the scale below, select the number that most closely reflects your feelings about each statement.

Strongly Disagree 1	Disagree 2	Agree 3	Strongly Agree 4

SM001	I use social media (e.g. twitter, facebook, Instagram, etc) on a daily basis	1	2	3	4
SM002	I use social media as a primary form of communication with friends	1	2	3	4
SM003	I use social media as a primary form of communication with UW students	1	2	3	4
SM004	I update my social media page(s) several times a day	1	2	3	4
SM005	Social media helps me to feel more connected to my UW peers	1	2	3	4
SM006	Social media helps me to feel more connected to my friends	1	2	3	4
SM007	Social media helps me to feel more connected to UW in general	1	2	3	4
SM008	I feel disconnected when I do not login to or update my social media accounts	1	2	3	4
SM009	During a summer work term or co-op work term, I rely on social media to stay connected	1	2	3	4
SM010	During a summer work term or co-op work term, I feel disconnected from my friends even when I communicate with them using social media	1	2	3	4
SM011	My preferred method for communicating with friends is social media	1	2	3	4
SM012	My preferred method for communicating with friends is phone texting	1	2	3	4
SM013	Given a choice, I would prefer talking with my friends on the phone directly rather than using social media or texting	1	2	3	4
SM014	If I am having school related problems, I seek support on social media	1	2	3	4
SM015	If I am having school related problems, I will talk to my friends face to face	1	2	3	4
SM016	If I am having work term (summer or co-op) related problems, I seek support on social media	1	2	3	4
SMX05	*Given a choice, I would prefer social media or texting my friends rather than talking with them directly on the phone*	*1*	*2*	*3*	*4*
SM018	There are times during a work term (summer or co-op) when I feel alone even when I use social media	1	2	3	4
SM019	I seldom disclose personal information to my friends using social media	1	2	3	4
SM020	Using social media make me happy	1	2	3	4

Additional Social media items to be included:

SM021   Which of the following social media sites do you have an account with? Select all that apply
a) Facebook   b) Instagram   c) Twitter   d) Google+   e) LinkedIn
d) Other (please specify)

SM022   Which of the following social media sites do you use most often?
a) Facebook   b) Instagram   c) Twitter   d) Google+   e) LinkedIn
d) Other (please specify)

SM023   Do you currently have a Skype account?
a) yes   b) no
If yes, please indicate with whom you communicate with on Skype:
a) Non-UW friends   b) UW friends c) Co-workers d) Family   e) Other

SM024   How frequently do you use social media to connect with your friends at UW during an academic term?
a) daily   b) several times a week but not daily   c) 1 – 2 times per week

SM025   How frequently do you use social media to connect with your friends at UW during the summer work term or on a co-op work term?
a) daily   b) several times a week but not daily   c) 1 – 2 times per week
d) 2 – 4 times a month

SM026   Approximately how many hours per week do you spend using social media sites?
Hours_____   Minutes _____

SM027   Approximately how many TOTAL friends do you connect with over social media?

SM028   Approximately how many of your TOTAL social media friends do you consider close friends that you can talk to about personal things?