Canadian Post-Secondary Students’ Evaluations of an Online Discussion Forum as a Course-Related Activity: Predictors of Perceived Interpersonal Benefits

by
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ABSTRACT

CANADIAN POST-SECONDARY STUDENTS’ EVALUATIONS OF AN ONLINE DISCUSSION FORUM AS A COURSE RELATED ACTIVITY: PREDICTORS OF PERCEIVED INTERPERSONAL BENEFITS

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Forming healthy relationships as a post-secondary student is an important factor in maintaining general well-being and academic success. The current study examined whether participating in a course-related e-forum was associated with participant self-ratings of improvements in their relationship effectiveness. 167 students at a Canadian university completed surveys about their e-forum participation and experience, social inhibition, and demographics. Participants also completed several open-ended questions about their online experiences and their perception of improvements in their effectiveness in offline relationships. Results indicated that a majority of participants found that participating in the e-forum (most significantly self-disclosing online) was beneficial in terms of perceived increases in relationship effectiveness offline. Further, feeling validated on the e-forum mediated the relation between e-forum participation and perceived increases in relationship effectiveness. Results are discussed in terms of the potential benefit of non-academic university-led supports to undergraduate students.
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Pursuing higher education can be a rewarding endeavor for many emerging adults, but it can also be fraught with challenges. Possible challenges that undergraduate students face include moving away from home, balancing stressful school demands with financial responsibilities, and managing the difficult developmental tasks of adolescence and young adulthood (e.g., Chang, 2012; Diramio & Payne, 2007; Erb, Renshaw, Short, & Pollard, 2014; Hartley, 2013; Scanlon et al., 2007). Emerging adults must also contend with significant developmental demands during this period, which are characterized by prolonged identity formation and the pursuit of close, intimate relationships (Arnett, 2000; Erikson, 1965). Mental health difficulties, suicide, and high attrition rates are some of the major issues facing students at post-secondary institutions in the 21st century (e.g., Macaskill, 2013; Mitchell et al., 2012). As a result, institutions of higher learning are investing more in student success in an effort to augment traditional markers of academic achievement (e.g., Hanlon, 2012; Hartley, 2013). In recent years, Canadian universities and colleges have expanded their involvement in developing prevention-based programs in order to promote safeguards against risks (e.g., social isolation, poor academic progress, dropping out, mental health issues) for all students, rather than a limited focus on only the most at-risk students (Hanlon, 2012; MacKean, 2011). This trend aligns with research on promoting healthier and more successful post-secondary students that often includes elements that go beyond academic achievement (e.g., Buote et al., 2007; Howell, 2010; Scanlon et al., 2007). For instance, researchers have found that promoting students’ social networks and developing high-quality interpersonal relationships are important investments for post-secondary institutions (e.g., Erb et al., 2014).
Despite these efforts, many barriers exist that prevent the implementation of student health initiatives (Dunn, 2014), including students’ minimal time for non-academic pursuits, not positioning well-being programming as institutional priorities, and related to that, financial barriers (Hartley, 2013). Fortunately, online initiatives offer a possible avenue for reaching students that may circumvent these barriers to student well-being programming, while they are also relevant to a post-secondary student population that is widely available and highly used (Amichai-Hamburger, 2013). The following sections outline the potential risk factors that face the student population and the potential benefits of an online discussion forum (e-forum) that may be a useful tool to support students.

**Risk Factors as a Post-Secondary Student**

Students at post-secondary institutions make up an increasingly vulnerable population (e.g., Lisznyai et al., 2014; Macaskill, 2013). Many students who attend university are faced with demands that they have never had to manage before, such as independent living and financing their education (e.g., Diramio & Payne, 2007; Rosenberger, 2011). These demands are in addition to the stress of academic achievement and formation of new support networks (Swenson et al., 2008). As universities become more competitive and post-secondary financial supports decrease, the stressors for these students’ lives are inevitably on the rise (e.g., Chang, 2012). According to some researchers, the most vulnerable period during a student’s time at university is after the first year because additional supports offered to first year students are no longer available (e.g., Howell, 2010). Many students move out of residence during this time, which often comes with the additional challenges of independent living and financial burdens. In fact, a recent study of university students conducted by Macaskill (2013) found that second and third
year university students have the highest prevalence of anxiety and other mental health struggles compared to other university students.

A number of psychological theories highlight the challenging developmental processes that can occur during the transition from youth to adulthood - the period referred to as emerging adulthood (Arnett, 2000). Most notably, Erikson’s theory of psychosocial developmental (1965) asserts that a key developmental undertaking in adolescence is identity development followed by establishing intimacy in meaningful, close friendships and romantic relationships as an emerging adult (Beyers, 2010). More recently, Arnett (2000) similarly concluded that the period between adolescence and adulthood is associated with key developmental tasks related to one’s own identity and building relationships with others. Additionally, emerging adults encounter additional challenges, including the need to contemplate a greater number of important life decisions, which can contribute to additional stress during this developmental stage (e.g., Lisznyai et al., 2014).

Given these significant stressors, it is not surprising that mental health difficulties, substance abuse, and suicide are becoming greater concerns at universities and colleges across Canada (Chang, 2012; Hartley, 2013; Macaskill, 2013). Canadian students are not the only ones at risk as this trend is observed in many Western countries. For instance, the American College Health Association and Centre for Collegiate Mental Health in the United States have deemed the prevalence of mental health problems among post-secondary students to be a significant public health concern (Mitchell et al., 2012). In England, the Royal College of Psychiatrists have reported an increase in campus counseling visits and the severity of the mental health issues that students confront in that setting (Connell, 2007). Other European countries and Australia report similar trends (e.g., Lisznyai et al., 2014). Greater awareness and more creative solutions
involving all facets of campus communities are necessary to deal with this evolving crisis (Hanlon, 2012).

**Fostering Healthy Relationships and Social Supports: Importance and Challenges**

Promoting healthy relationships and social supports on campus is an important step in preventing and/or mitigating mental health issues, stress, and other problems that are prevalent in the competitive and demanding environment of large, post-secondary institutions (Hartley, 2013). Enhancing these protective factors can help minimize negative consequences of stress by increasing individuals’ abilities to cope (e.g., Rutter, 2007). Individual characteristics, such as temperament, self-esteem, drive, and academic success are some of the protective factors that are considered important for students in pursuit of higher education (Macaskill, 2013). Equally important are positive relational or environmental factors including a strong and secure social group, familial support, and positive interactions with roommates, peers, faculty, and school personnel (e.g., Lidy & Kahn, 2006; Swenson, Nordstrom & Hister, 2008). Importantly, forming positive relationships as an undergraduate student is associated with successful adjustment to university, completing one’s degree, psychological well-being, and academic achievement (e.g., Friedlander, Reid, Shupak, & Cribbie, 2007; Tinto, 1993). Moreover, the quality of students’ friendships at university predicts their adjustment to university and their ability to cope with academic stress (e.g., Buote et al., 2007). Indeed, students who live in shared accommodations and report getting along with roommates predict student retention and academic achievement (Erb et al., 2014). Overall, these positive relational factors can serve to strengthen individual characteristics, thereby enhancing both realms of resiliency (i.e., individual and relational factors (Rosenberger, 2011).
Barriers to Forming Relationships and Creating Community in the Post-Secondary Setting

Although developing new, close and emotionally supportive friendships and relationships at university can be a daunting task for the typical post-secondary student, mental health challenges (such as anxiety) can further hinder one’s ability to form intimate social bonds (e.g., Baez, 2005). While it is possible that students may have maintained pre-university friendships, a survey in the U.S. found that more than 40% of first-year university students did not make any meaningful friendships in their first ten weeks at university (Collins & Madsen, 2006). Emerging adults between the ages of 19 and 30 report more loneliness than other age groups in the general population (Rokach, 2000; Schultz & Moore, 1986 in Chang, 2012). Within a campus context, loneliness can contribute to poor physical health, risky behaviours, academic failure, and sometimes program dropout (in Chang, 2012; McBroom, 2008; Megan, 2007). According to multiple studies conducted in Hungary, social loneliness, or a lack of quality relationships, is the most significant issue students must contend with in today’s post-secondary institutions (Lisznyia et al., 2014). As class sizes increase and campuses expand, a sense of community may be more elusive for many students. As mentioned previously, forming close, intimate relationships is an integral part of an emerging adult’s development and when this task is not accomplished, there can be adverse outcomes (e.g., Mitchell, 2012; Tinto, 1993). In a study conducted at a Canadian university, an increase in social support from friends among first-year undergraduate students was associated with better adjustment to university (Friedlander et al., 2007). Taken together, these findings illustrate the value of positive and intimate connections in this particular demographic. However, even when post-secondary students are successful in this domain, there are often challenges in managing interpersonal relationships. One of the top two presenting problems at university counselling services is having difficulties within relationships.
(Connell, 2007). Relationship problems can include issues with peers, roommates, faculty, and/or romantic partners. Accordingly, improving students’ skills to successfully navigate their relationships may merit consideration when developing programs for strengthening interpersonal relationships on campuses.

**University-led Initiatives for Promoting Student Health**

The best practices with regard to promoting resiliency and mental health that are currently advocated in higher education by organizations, such as the Ontario Committee on Student Affairs (OCSA), are rooted in research dating back to at least the 1960’s (e.g., Chickering, 1969). Chickering (1969) developed a theoretical framework that advanced a holistic understanding of student wellness. The seven elements of his initial theory are competency, emotion regulation, and autonomy, identity formation, nourishing interpersonal relationships, purpose, and integrity. His theory has had a substantial influence on the student affairs movement in the 1970’s and contributed significantly to Hettler’s (1976) multi-dimensional wellness model. Yet another model, proposed by Tinto (1975; revised in 1993), claimed that social integration is as important to student retention as academic integration. These models continue to serve as guidelines for mental health and wellness programming in numerous post-secondary academic settings (Howell, 2010). In a recent publication (Wade, Marks & Hetzel, 2015), researchers discuss the benefit of extending positive psychology tenets (e.g., Seligman’s theory of well-being) into post-secondary institutions. According to Seligman’s (2011) theory of well-being, individuals thrive through five factors: positive emotion, engagement, meaning, accomplishment, and, most relevant to the current study, positive relationships.

In the last decade, there has been an increase in the number and scope of institution-led initiatives on Canadian campuses to combat mental illness, promote resiliency, and support
students in building supportive networks (e.g., Chang, 2012; Hartley, 2013). Task forces have been created to develop programs that heighten awareness and introduce solutions for student success outside of academics. Yet, there are some limitations regarding the scope and reach of these initiatives. Use of these programs is sometimes limited because of mental illness stigma, which remains a significant barrier to the success of these kinds of initiatives (Lally, O’Conghaile, Quigley, Bainbridge & McDonald, 2013). Researchers have found that fear of being stigmatized will often inhibit young people from engaging with mental health services (e.g., Bowers, Manion, Papadopoulos & Gauvreau, 2013; Faulkner, Irving, Paglia-Boak & Adlaf, 2010; Hartman et al., 2013). Despite society’s progress on destigmatizing mental illness and decreasing barriers to help-seeking, researchers have found that access to campus counselling services has declined over the past decade (Mitchell, 2012). Moreover, mental health interventions on campus, such as psychological counselling services, are only aimed at a small segment of students who self-refer either for mental health problems or because they are experiencing acute distress. As such, a drawback of these programs is that they do not necessarily address the needs of the general student body that, as noted above, require support for building and maintaining relationships within an inclusive campus community (e.g., Keeling, 2002; Patterson & Kline, 2008). Another downside of some of these programs is that they often do not involve the staff who interact with students consistently, most notably teaching faculty (Stone, 2008). Researchers suggest that the staff who interact with students most often, who also have institutional knowledge, might be ideal candidates for implementing such initiatives (Stone, 2008; Wade et al., 2015).

Some post-secondary institutions are increasingly taking on more responsibility and coordinating efforts to promote student success and health within the general student body, as
these institutions realize the benefits of prevention-based programs alongside the necessary interventions already in place to combat mental health, substance abuse, and suicide (Hanlon, 2012). Driven by research in this field, some recent programs have incorporated campus-coordinated general wellness training such as the University of British Columbia’s Thrive Week and Mental Health Awareness Week at McMaster University, which offer students opportunities to focus on central, albeit non-academic topics for success in higher education (e.g., healthy food choices, social inclusion). Another example of non-academic programming that has recently been initiated is the effort at the University of Guelph to promote well-being and health, beyond specific mental health support, through programs such as Student Health 101 - an online tutorial about healthy living in university (Hanlon, 2012).

Researchers examining the importance of promoting general well-being among all students have emphasized the importance for students to integrate socially, establish supportive networks, and have positive interpersonal relationships while pursuing an academic degree (Erb et al., 2014; Mitchell et al., 2012; Tinto, 1993; Tovar, 2014), and the key role post-secondary institutions have in helping students realize these goals (Howell, 2010; Kuh, 2009). Researchers have also called for post-secondary institutions to initiate and become more actively involved in these objectives (e.g., Howell, 2010). However, there are significant challenges for implementing successful programs of this nature. First and foremost, these programs are often quite costly. As university budgets are disproportionately cut during economically challenging times (Zumeta, 2010), developing and implementing these programs during an economic downturn can be too much of a financial burden. Furthermore, one of the five main tenets of Hackman’s (1985) theory of institutional resource allocation is the centrality of a particular program (i.e., the commonality between the program’s aims and the institution’s core objectives – mainly teaching
and research), which these programs do not currently possess. Given that the importance of such programming has only gained traction in recent years, allocation of funds to such programs might therefore not be easy to accomplish. Another difficulty related to changing the current culture of higher education is that administration and faculty positions have not generally included participation in these types of initiatives (Hartley, 2013). Although researchers have called for greater participation from faculty because they are the ones who have the most direct and extensive contact with students (Stone, 2008), faculty already carry a heavy workload (Hartley, 2013) and may not have the resources to participate. In addition to the challenges of faculty and administration involvement, engaging students in programming outside of academics is tricky because many students cannot find time outside of managing the demands of college living, work, and academics for any extra-curricular activities.

**Introducing e-Forums to Promote Student Health and Support Networks**

A plausible solution in promoting social support networks for post-secondary students to overcome the aforementioned difficulties is the advancement of online initiatives. Research has found that online initiatives are cost-effective, accessible, and convenient (Amichai-Hamburger, 2013) and therefore, provide a potentially effective means of engaging students (Hanlon, 2012). Given that instructor involvement may be beneficial to promoting student health initiatives in general (Stone, 2008; Wade et al., 2015), the current study aimed to focus on online discussion groups (hereafter referred to as e-forums) that are initiated and moderated by course instructors. Importantly, there is flexibility in designing e-forums in order to fit the needs of a specific course curriculum or certain campus culture. For example, e-forums could range in terms of whether and how much an instructor is involved, the level of anonymity among students, and what content is discussed.
Furthermore, some studies have found that e-forums can provide unique advantages as effective tools for building supportive networks and interpersonal connections that face-to-face programming cannot (e.g., Barak & Dolev-Cohen, 2006). Some authors argue that anonymous e-forums may be less inhibiting social environments than face-to-face relationships (e.g., Barak, Boniel-Nissim, & Suler, 2008; Turkle, 1995) as they can encourage a sense of safety and openness that students might find very useful as they struggle to find community and close friendships at university or college. Suler (2004) suggests several qualities of the Internet that may account for this. For instance, the physical arrangement of sitting in front of a screen, can lead to a safe feeling that fosters more open sharing. E-forums also allow people to respond at their own pace, without the need for an immediate response and the nervousness that may entail for some individuals (Suler, 2004); this, in turn, can render the resulting response as less guarded and more frank (Bargh, McKenna & Fitzsimons, 2002). In fact, researchers have found that for some young people, online communication is a preferred medium to discuss intimate topics such as love, sex, and other potentially taboo topics (Schouten, Valkenburg, & Peter, 2007). These topics may be a significant part of a student’s life during their time at post-secondary, however, they may avoid discussing these sensitive topics with friends or romantic partners so as not to feel criticized, embarrassed, or vulnerable (Guerrero & Afifi, 1995).

An important component of building a close, intimate relationship is an individual’s ability to be vulnerable with others by disclosing personal information that might be considered stigmatizing (Altman & Taylor, 1973). There is some evidence to suggest that e-forums may provide a safe space for disclosure (i.e., e-disclosure) of such personal issues as well as exposure to others’ personal disclosures, in a way that is unparalleled in offline communication (Suler, 2004; Turkle, 2012). Even reading others’ disclosures and observing their confident
interpersonal behaviour online may normalize the practice of disclosing and possibly lead to a subsequent increase in a participant’s own comfort with being able to disclose sensitive, personal information in their online communication (Laurenceau, Barrett, & Pietromonaco, 1998). Researchers have demonstrated that these types of online experiences in a supportive e-forum not only fosters an increase in supportive online relationships but that the benefits in social interactions may generalize to improved offline communication and other positive behaviours (e.g., Bartlett & Coulson, 2011; Malik & Coulson, 2008; McKenna & Bargh, 1998; Tanis, 2008; Whitty & Joinson, 2009).

While one might speculate that an anonymous e-forum might have benefits for participants, such forums have also been linked to undesirable consequences because of negative posts from anonymous users (Turkle, 2012). Because anonymity protects the identity of the online poster, it can be both beneficial (e.g., help create a safe space for disclosing) and potentially negative (e.g., allow hurtful posts with minimal accountability). Without being anchored to one’s offline identity, people may take advantage and say hurtful things in an e-forum where one’s identity cannot be traced to what one contributes to the e-forum. Extending from Turkle’s (2012) findings (i.e., that when participants post hurtful words online, those who are attacked feel hurt), there is reason to believe that positive responses to another user’s comments might change the experience and outcomes for that user. In other words, if harmful reactions can have negative effects offline it may also be the case that validating comments may have beneficial effects offline. The literature on validation in face-to-face interactions has found that receiving validation of one’s behaviour, thoughts, and emotions can lead to self-acceptance and ultimately change behavioural patterns (Lynch, Chapman, Rosenthal, & Linehan, 2006). Other researchers who study validation also discuss how vulnerability (in this case, the
disclosure of information that may be considered private or shameful) can lead to behavioural changes following disclosure but that they are contingent on the listener’s validation of the disclosing individual (Berg, 1987; Reis & Shaver, 1988). Extending this research from offline disclosures, we speculate that a similar mechanism for change (i.e., validation from the listeners) may be possible following online disclosures.

**Evaluating a Course-Related e-Forum: Mechanisms for Promoting Social Support**

Positive interpersonal relationships act as a potential protective factor for university-age students (e.g., Tinto, 1993; Wade et al., 2015) and forming these relationships is an important task for emerging adults (Arnett, 2000). As post-secondary students are major consumers of online material (Amichai-Hamburger, 2013), it may be worthwhile to investigate an online tool that might facilitate greater perceived ability to be effective in post-secondary students’ offline relationships. A dearth of research exists on whether course-related e-forums are effective in creating supportive environments for students and whether they promote interpersonal relationships outside of the online context. The question remains as to whether there are any measured benefits for students beyond the scope of the supportive environment of the e-forum and what those benefits might be.

It is unclear whether all university students would benefit from an online forum equally, depending on the nature of students’ e-forum behaviours (i.e., type of participation, level of disclosure) and participants’ individual differences (i.e., personality traits). With respect to online behaviours within the e-forum, there are different types of e-forum behaviours. Researchers have found that, for the most part, individuals who participate in e-forums by posting messages gain more benefits from their e-forum participation (e.g., less emotional distress and better coping strategies) when compared to those who predominately read e-forum
content (e.g., Barak & Dolev-Cohen, 2006). Online behaviours consist of reading, a more passive online behaviour, compared to more active online behaviours such as initiating new threads (i.e., discussions) and replying to others’ posts. In addition to examining these quantitative markers, another useful way to measure online behaviour is to assess the participants’ qualitative sense of self-disclosure (hereafter referred to as e-disclosure). The nature of the content discussed online may be significant because while some people may post frequently but in a trivial or superficial way, others may post infrequently but their posts may contain a high level of self-disclosure or intimacy.

In addition to examining e-forum behaviours, students’ individual traits are equally important to examine. There are two contrasting theories in the literature that predict who might benefit most from online interactions: the rich-get-richer hypothesis and the social compensation hypothesis (e.g., Wang et al., 2011). The rich-get-richer hypothesis contends that online communication is most beneficial to individuals with a higher degree of extraversion, as these individuals use the Internet as a platform to socialize in a similar way as they do offline (e.g., Kraut et al., 2002), while the social compensation hypothesis posits that people who are more socially inhibited seek out online communication more and benefit from their increased social involvement online because they feel safer disclosing in an anonymous group of participants (e.g., Amichai-Hamburger, 2007; McKenna & Bargh, 1998; Valkenburg, Peter & Schouten, 2006). An established literature supports the rich-get-richer hypothesis, wherein those with a higher degree of extraversion use e-communication most because these individuals already communicate to a high degree in their offline lives. (Valkenburg & Peter, 2009). This view considers online communication to be an extension of a person’s offline communication tendencies wherein online communication can provide individuals with a higher degree of
extraversion more socializing opportunities while people who consider themselves to be more socially inhibited would not change their habits simply because they are online.

Researchers on the other side of the debate cite empirical studies showing that those who are socially inhibited in face-to-face situations are more likely to disclose online (Caplan, 2007; McKenna, Green & Gleason, 2002). These investigators argue that the anonymity of e-forums affords individuals who tend to be more socially inhibited the opportunity to take advantage of a low-threat situation (McKenna et al., 2002). According to this view, it is possible that the anonymity provided in e-communication (Suler, 2004; Turkle, 2012) feels safer to these individuals because the criticism or rejection they may receive is not linked to their offline identities.

The Current Study

The purpose of the present study was to examine the potential perceived interpersonal benefits of a course related e-forum for university student participants. Further, this study examined potential predictors of whether students found the e-forum helpful including their level of participation and participant characteristics. The specific e-forum and the measures used in this study are described below. The primary question addressed in this study was whether students perceived a course related e-forum as advantageous. In particular, the present study focused on participant ratings of perceived improvements in their offline relationships following the completion of the course related e-forum. For the purposes of this study, perceived relationship effectiveness (RE) was defined as the self-perceived capacity to navigate interpersonal problems by being vulnerable in relationships. The notion of RE was drawn from the literature on adaptive traits and behaviours: self-efficacy (Connolly, 1989), psychological empowerment (Zimmerman, 1995), agency (Bandura, 2006), and self-disclosure (Jourard, 1971).
Of interest in the current study were whether individual differences and varying online
behaviours differentially predicted the outcome measure of interest – a perceived increase in RE
after the completion of the course, and whether this relationship was mediated by validating
responses received from the online community.

Hypotheses

Although it is recognized that a range of different benefits could be conferred from
participating in an e-forum, this study specifically examined perceived RE in offline
relationships as an outcome. RE may be relevant as one would expect that an e-forum that
allowed for anonymous e-disclosures would contribute to an increase in participants’ exposure to,
and practice of, interpersonal risk-taking (i.e., self-disclosures about personal and potentially
stigmatizing things) and vulnerability with others (Bargh et al., 2002; Turkle, 1995), which are
central to the construct of RE.

Hypothesis 1: Given the previously described research demonstrating that online social
interactions in an e-forum can lead to improved social interactions offline (e.g., Bartlett &
Coulson, 2011; Malik & Coulson, 2008; McKenna & Bargh, 1998; Tanis, 2008; Whitty
& Joinson, 2009), it was hypothesized that participants would view the e-forum as
beneficial to their level of effectiveness in their interpersonal relationships outside of the
e-forum environment, (measured as an increase in self-perceived RE).

As mentioned above, the potential benefit of e-forum participation, as measured by
perceived increases in RE, may not necessarily be shared equally by all students. It was
hypothesized that there may be a differential amount of perceived increases in RE, depending on
the nature of students’ e-forum behaviours (i.e., type of participation, level of disclosure) and
participants’ individual differences (i.e., personality traits). The amount that a participant posts
may not be the best measure of significant interpersonal interactions on the e-forum because the content of a post (e.g., a high level of self-disclosure) may be more meaningful to a person than a high volume of impersonal posts. Moreover, given the predicted relation between e-forum participation and offline interpersonal benefits (i.e., an e-forum as a low-threat environment that facilitates an increase in e-disclosure), it is hypothesized that the quality of the online behaviour (i.e. e-disclosure) will be more important than the quantity (i.e. the number of new threads, replies, reads) when predicting a perceived increase in RE.

**Hypothesis 2:** It was predicted that e-forum participation, as measured by the various online behaviours, would be associated with perceived increase in RE. Specifically, it was postulated that active online behaviours (*e-disclosure, new threads and replies*) would be associated with a higher level of RE, compared to reading other people’s messages (*reads*). Further, it was postulated that e-disclosure would be a particularly important predictor of perceived increase in RE.

In order to examine which students might use and benefit most from anonymous course-related e-forums, the students’ level of social inhibition will be considered. The current study will use self-silencing (i.e., inhibiting agentic self-assertions and self-expression of one’s feelings and beliefs to one’s own detriment; Hennig & Walker, 2008) as the measure of social inhibition. The self-silencing construct is relevant to the hypothesized outcome variable of interest (perceived increase in RE) because self-silencing can be a barrier to positive interpersonal relationships (Hennig & Walker, 2008). An e-forum where the identity of a message’s author is not known might provide individuals who have a higher degree of social inhibition with the opportunity to relate to others in a less socially challenging environment (McKenna et al., 2002; Barak et al., 2008). Therefore, in the current study, it is hypothesized that the e-forum, given its
anonymous platform and implicit function for sharing personal information with other students in a low-threat social sphere, will be most beneficial to students who do not often disclose in offline relationships because of a tendency to self-silence.

**Hypothesis 3a:** Consistent with the social compensation hypothesis, it is predicted that higher levels of self-silencing will be associated with more e-forum use.

**Hypothesis 3b:** Further, assuming that using the e-forum to self-disclose is associated with higher levels of perceived increase in RE (H2), it is predicted that perceived increases in RE will differ based on different levels of self-silencing, such that individuals who report a tendency to self-silence in their offline relationships will demonstrate more perceived increase in RE than individuals who report less self-silencing.

Another aspect of online behaviour that is important to take into account when considering the offline interpersonal benefits of e-forum participation is the response of the e-forum members to participants’ postings. As mentioned above, individuals may take advantage of the lack of accountability in an anonymous online forum and post hurtful messages (Turkle, 2012). As such, it is important to consider the response of others in the e-forum to users’ posts as a potential influence on the outcome measure. In the current study, the risks of this type of harm were minimized since users were participating in this particular e-forum for class credit, it was known that the other users were their in-class peers, and the e-forum was moderated by the course instructor. Even so, the response of participants to users’ posts will be investigated to determine if validation is associated with perceived increases in RE. The current study will test whether validation of one’s online posts explains, at least in part, the potential change in RE after participating in the e-forum.
Hypothesis 4: Given the current literature on online activity, the effect of online validation on social relations is unknown. Research on validation in face-to-face interactions demonstrates that validation has an impact on social relations. For example, research on the effects of validation in offline communication suggests that validation can impact social relations (Berg, 1987; Lynch et al., 2006; Reish & Shaver, 1988). Extending this research, it is possible that similar effects might be observed across mediums (i.e., from online to offline contexts). Consistent with this, it was hypothesized that online validation of personal disclosures and discussions of a sensitive nature might mediate the possible self-perceived increase in relationship effectiveness.

Method

Participants

The participants in the current study (N = 167) were undergraduate students in two third-year psychology courses at a university in southwestern Ontario. The participants were predominantly female (153 females and 14 males), with an ethnic composition that was largely Caucasian (n = 145). Participants ranged from age 19 to 54 (M = 21.3; SD = 3.7).

Measures

Online Behaviours/e-Forum Use. Participants were asked to describe their online behaviour by recalling “What percentage of the total number of e-community posts did you read?” (reads), “How many threads did you start on the e-community?” (new threads), and “How many replies to other people’s posts did you post on the e-community?” (replies). As well, five items were developed for the present study to measure one’s level of self-disclosure (e-Disclosure) on the e-forum (example items read, “I shared things in the e-community about things I would not do in public”, “Negative thoughts about myself that I never used to share with anyone”). A copy
of the full e-Disclosure scale is included in Appendix A. Internal consistency for the 5 item scale was .86.

**Relationship Effectiveness (RE).** A scale to measure an increase in one’s offline perceived RE following the completion of the course was created for this study. Seven items assessed the respondents’ self-perceived ability to be more effective in their off-screen encounters (e.g., “It increased my ability to talk about embarrassing topics with another person, face to face”, “Being involved in the e-community helped me resolve my own interpersonal problems”). Participants responded to these items using a 7-point Likert scale from 1 (strongly disagree) to 7 (strongly agree). A copy of the full scale is included in Appendix B. Internal consistency for the RE scale in the current sample was .93. Additionally, two open-ended questions were asked about what general impact participants felt from involvement in the e-forum (“Please describe in your own words how the e-community has or has not had an impact on you” and “If you feel more empowered after your involvement with SpeakEasy, please describe in detail. Include an example if possible”).

**e-Forum Validation.** The extent to which participants felt validated in their involvement on the e-forum was measured using a 9 item scale created for the present study that asked participants to compare their experience of being validated, reassured, and accepted online as compared to the same experiences in face-to-face interactions (i.e., relationships with family, friends, and romantic partners). Regardless of the participants’ offline relationships, this scale asked about the additional or unique validation perceived on the e-forum. As such, this scale implicitly controlled for varied offline validation between participants and considers only the additional validation the participants received through participating in the e-forum. An example item is: “I felt more validated (i.e., understood or ‘heard’) in the e-community than in
relationships with my family.” A copy of the full scale is included in Appendix C. Participants responded using a 7-point Likert agreement scale ranging from 1 (strongly disagree) to 7 (strongly agree). Internal consistency in the current sample was .88.

**Self-Silencing.** The self-silencing subscale of the 2-Vector Unmitigated Communion Inventory (2-VCI; Hennig & Walker, 2008) was used to assess participants’ reluctance to self-disclose with others. This 11-item subscale was used to measure self-perceived self-silencing (e.g., “I keep silent if I think my opinions might create conflict”) on a 7-point agreement scale from 1 (strongly disagree) to 7 (strongly agree). A copy of the full scale is included in Appendix E. In the current study, internal consistency for the self-silencing scale was .92.

**Procedure**

The instructor of a third year undergraduate psychology course at a university in southwestern Ontario incorporated an anonymous e-forum as a compendium to the in-class course curriculum. The e-forum was referred to as “SpeakEasy” in the course. Participation in the e-forum was worth 5% of the students’ final grade. The e-forum was intended for advice-seeking and discussion about topics considered difficult to discuss in the students’ offline social circles, such as sexuality or struggles with mental health. Although moderated by the course instructor, the e-forum was primarily a peer support network wherein students exchanged support in an online context via on-line discussions. Students could read the online discussions (reads), initiate new conversations (new threads), and respond to others’ posts (replies). The e-forum was hosted by the university’s encrypted, secure server and the author of all posts was named “unknown” to ensure anonymity within the online forum.

At the completion of two semester-long third-year psychology courses, students who had participated in the e-forum were asked to participate in the current study by completing an online
survey about their e-forum participation and questionnaires about personality factors, and other measures of individual characteristics and demographics. Participants received a 1% credit toward their final course grade for participating in the current study.

Results

Analytic Strategy

The RE scale measured participants’ perceptions of the degree to which their RE increased as a result of using the e-forum. Initially, to determine whether use of the e-forum was beneficial on this measure, the proportion of respondents who agreed or strongly agreed that their RE increased as a result of e-forum use was calculated (H₁). All subsequent analyses were conducted on the entire sample.

Next, we examined whether using the e-forum was related to higher levels of perceived increases in RE (H₂). To do this, bivariate correlations between online behaviours (i.e., new threads, replies, reads, and e-disclosure) and perceived increases in RE were conducted. To test whether active online behaviours would predict improvements in RE over and above passive participation on the e-forum, a simultaneous regression was conducted wherein the four predictor variables were regressed on the measure of RE. Semi-partial correlations of the four predictor variables were examined to determine the unique contributions of each to the variance in the outcome variable (perceived increase in RE). Since the present study used four different metrics of e-forum use (new threads, replies, reads, and e-disclosure), the subsequent analyses only used the variable with the highest significant relation to perceived increase in RE in the interest of parsimony.

Next, to determine whether higher levels of self-reported self-silencing was associated with more e-forum use (H₃a), bivariate correlations between these measures and e-disclosure
were conducted. In order to examine whether individuals with high levels of perceived self-silencing were more likely to report improvements in offline RE when compared to individuals with lower levels of perceived self-silencing (H₃b), a one-way analysis of variance (ANOVA) was used to compare the measure of perceived increases in RE across varying levels of self-silencing. Self-silencing was classified into low, medium, and high levels by dividing the sample into three similarly sized groups.

Lastly, a mediation model was tested to examine whether validation on the e-forum mediated the relationship between e-forum participation and RE (H₄). The mediation analysis was conducted using the PROCESS macro (Hayes, 2014) for IBM SPSS 22.0. The independent variable entered in this model was the strongest predictor in the hierarchical regression conducted as part of testing hypotheses 2. The dependent variable was perceived increases in RE and the mediation variable was self-ratings on online validation.

**Preliminary Results**

The zero-order correlations for all variables in the study are displayed in Table 1, along with their means and standard deviations. Table 2 provides additional information about the frequencies of the online behaviours (except for e-disclosure which is a continuous variable).

**Examination of Hypotheses**

*H₁: Overall, participants would report interpersonal benefits of the e-forum.* A majority of the participants (67%) reported that participating in the e-forum contributed to greater perceived RE in their offline interpersonal interactions (as indicated by responses greater than 4 on the RE scale). To provide a richer account of what positive interpersonal changes these participants experienced, a sample of illustrative responses to open-ended questions were examined. These particular responses were chosen because they were succinct, well-written, and
reflected a range of experiences from the participants. Some of the participants described an experience on the e-forum that changed their subsequent interactions with others. For example, one participant shared the following:

Prior to my involvement in SpeakEasy I would avoid revealing private things about myself. This would include feelings opinions and difficulties I was facing. Although I still experience troubles expressing myself I feel more willing to share some things I otherwise would not have. I'm not longer worried of how others will react when I express my opinion or seek advice.

Some participants described improved communication in their offline relationships. To illustrate, one participant shared the following:

Reading that the majority of other people advocate clear communication in relationships and reading their specific examples where they communicated and their relationship was strengthened, empowered me to discuss more things with my partner that I have not discussed with partners in the past.

Some of the participants who reported an increase in RE described having a greater sense of agency and ability to take action in offline relationships. For example, one young woman described a change in exchanges with a roommate: “I had problems with my roommate and it [the e-forum] made me feel like I could stand up to her and do the things I wanted to do with my life (empowering!).”

H2: Online behaviours would be associated with an increase in perceived RE.

Specifically, it was hypothesized that more active behaviour (i.e., initiating new threads, replying, and e-disclosure) would be more related to perceived increases in RE than passive e-forum participation (i.e., reading) and e-disclosure would be particularly related to perceived improvement in offline RE.

Bivariate correlations among the four online behaviour variables (new threads, replies, reads, and e-disclosure) and perceived increases in RE were measured using Pearson (r) correlations (refer to Table 1 for results). First, the relations among these four online behaviour
variables were analyzed. New threads and replies were strongly and positively correlated ($r = .51, p < .001$). There were also significant positive relations between the number of reads and the number of new threads ($r = .23, p < .001$) and between the number of reads and the number of replies ($r = .32, p < .001$), such that as participants reported more posting via new threads or replies, they also reported more reading. Interestingly, e-disclosure was not related to new threads ($r = .10, p = ns$) and it was similarly not related to the other online behaviours; replies ($r = .08, p = ns$) and reads ($r = .00, p = ns$). This indicates that a higher degree of e-disclosure did not correspond to a greater amount of posting, replying, or reading.

With regard to associations between participants’ online behaviours and the dependent variable (RE), e-disclosure was strongly correlated with the dependent variable ($r = .49, p < .001$), such that a higher degree of e-disclosure corresponded to greater perceived RE. New threads and reads were also positively related to perceived increases in RE, $r = .17, p < .05$ and $r = .16, p < .05$, respectively which indicates that as participants initiated more threads and read more, greater perceived RE was reported. Replies were not significantly related to perceived increase in RE, $r = .13, p = ns$.

To determine to what extent the online behaviours contributed to perceived increases in RE, and whether active behaviours (e-disclosure, new threads, and replies) were more related to perceived gains in RE than passive ones (reads), a simultaneous regression was conducted. Because the replies variable was not related to a perceived increases in RE, it was excluded from the hierarchical regressions. The total variance of RE accounted for by these online behaviours was $27\%$, $R^2 = .27, F(3,161) = 20.05, p < .001$. In order to determine what each predictor variable uniquely contributed to perceived increases in RE, semi-partial correlations were calculated. The most significant predictor of perceived increases in RE was e-disclosure which
uniquely explained 23% of the total variance in perceived increases in RE, $sr^2 = .23$, $t(164) = 7.08, p < .001$, whereas reads only accounted for an additional 2%, $sr^2 = .02$, $t(164) = 2.07, p = .04$. New threads were not found to uniquely predict RE, $sr^2 = .01$, $t(164) = 1.28, ns$. Since e-disclosure was the strongest predictor of perceived increases in RE amongst the four online behaviours, e-disclosure is used as the predictor of perceived increase in RE in subsequent analyses.

$H_{3a}$: Individuals with a higher degree of self-silencing would be more likely to participate in the e-forum. According to the correlation analyses presented in Table 1, a higher degree of self-silencing was not correlated with the amount of e-forum participation (i.e. new threads, replies, and reads). However, higher levels of e-disclosure were associated with higher degrees of self-silencing ($r = .17, p < .05$).

$H_{3b}$: Individuals who report high self-silencing, as a group, will report higher levels of perceived increase in RE when compared to individuals who report low self-silencing.

To test this hypothesis, a one-way ANOVA was computed on perceived increases in RE across low, medium, and high levels of self-silencing. Prior to conducting the ANOVA, the relevant assumptions were tested. An alpha level of .05 was used for all analyses. The homogeneity of variance assumption was violated, $F(2, 164) = 3.11, p = .047$ and, as such, Welch’s $F$ test was applied. Using Welch’s $F$ test, the one-way ANOVA results showed that there was a significant between-group difference in perceived increase in RE, Welch’s $F(2, 102.6) = 3.55, p = .03$, $est. \omega^2 = .03$. The level of self-silencing did have an effect on perceived increase in RE, however further analyses were necessary to determine which levels of self-silencing were significantly different. Since the homogeneity of variance assumption was not met, specific differences among group means were examined using Games-Howell post hoc comparisons.
Participants who considered themselves to have a low level of self-silencing reported significantly less improved RE ($M = 3.95; SD = 1.16$) than those who reported medium-level self-silencing ($M = 4.50; SD = 1.02$). Participants in the high self-silencing group did not report a significantly higher degree of perceived increases in RE compared to either of the other two lower self-silencing groups ($M = 4.28; SD = 1.47$) (Table 4).

$H_4$: Validation in the e-forum as a mediator of perceived increase in RE. For hypothesis 4, it was stipulated that validation on the e-forum would mediate the relation between participating in the e-forum and an increase in RE offline. Based on the findings from the regression, the measure of e-forum participation that was used in the mediation model as the independent variable was e-disclosure. The mediation model that was tested is presented in Figure 1. In order to satisfy the conditions of a mediation analysis, it is required that the independent variable (e-disclosure) correlates with the mediator variable (e-forum validation), the mediator variable correlates with the dependent variable (RE), and that the independent variable correlates with the outcome variable. Based on the corresponding correlations (refer to Table 1), these conditions were met. The mediation macro created by Hayes (2012) uses bootstrapping to establish whether the model is significant, and therefore this method was used in the current study. Bootstrapping is a procedure that repeats the analysis many times (ten thousand resamples were used in the current study). Mediation is considered to occur if the lower and upper confidence intervals of the indirect effects of the independent variable on the dependent variable do not cross zero. The estimate of the $\alpha$-path was $t(165) = 7.63, p < .001$, $b = 1.33[95\% CI = 0.98, 1.67]$, and the estimate of the $\beta$-path was $t(164) = 2.99, p < .01$, $b = 0.07[95\% CI = 0.02, 0.12]$, demonstrating that the indirect effect of e-disclosure on perceived increase in RE did not cross zero, and as such, the mediation is considered to be significant. The direct effect, $c'$ path, was $t(164) = 4.75, p$
<.001, b = 0.30[95% CI = 0.17, 0.42]. The results of the overall mediation model indicated that e-forum validation mediated the relation between e-forum participation and perceived increase in RE, $R^2 = .14$ [95% CI .08, .22].

**Discussion**

The goal of the present study was to evaluate the possible perceived offline interpersonal benefit of a course-related e-forum designed for post-secondary students by examining the self-perceived increase in relationship effectiveness (RE) subsequent to students’ use of the e-forum. The evaluation was twofold – to determine whether different types of online behaviours and individual traits differentially predicted participant reports of an increase in RE - if at all - and also to determine whether perceived validation from the community of students’ e-forum responses mediated the relationship between e-forum use and perceived increases in RE. To address these aims, the current study tested four hypotheses.

For hypothesis 1, it was postulated that in general, students would view the e-forum as beneficial to their offline relationships by increasing their RE. Indeed, a majority of students found that the e-forum contributed positively to their effectiveness in offline relationship. Comments from some of these students, collected from the responses to open-ended questions in the survey, corroborated the overall positive ratings of perceived effectiveness in relationships.

These results are consistent with previous studies wherein participating in e-forums leads to a variety of positive offline outcomes. Previous research has found that participating in e-forums led to gains in psychological well-being (Shaw & Gant, 2002), emotional relief (Barak & Dolev-Cohen, 2006), and physical health-related outcomes (e.g., Bartlett & Coulson, 2011; Malik & Coulson, 2008; Tanis, 2008). In the area of interpersonal relationships, researchers have found that participating in e-forums led to increased empowerment in patients’ relationships with
their medical doctors offline (van Uden-Kraan, Drossaert, Taal, Seydel, & van de Laar, 2009). In the current study, participation in an e-forum was associated with perceived gains in offline interpersonal effectiveness in university students. The current study adds to the body of literature by demonstrating that participating in a particular course related e-forum can lead to perceived improvements in offline interpersonal effectiveness. That being said, it is important to note that the sample on which this was examined was relatively homogeneous (e.g., all were in a psychology course and most were female) and other cohorts may use this e-forum differently, and may therefore experience different effects.

As stated in hypothesis 2, it was proposed that e-forum use, as measured by the amount of new threads, replies, reads, and engaging in online self-disclosure (e-disclosure), would be associated with perceived increases in RE. Specifically, it was hypothesized that among the online behaviours, active e-forum participation would contribute to perceived increases in RE more than passive participation (i.e., reading). Results demonstrated that all of the online activities, except for replying to posts, were associated with higher levels of perceived increases in RE, thereby partially supporting the hypothesis. Although initiating new threads was associated with perceived increases in RE, it was not a significant predictor of perceived increases in RE when it was entered into the regression model. E-disclosure emerged as the strongest predictor of perceived increase in RE. As a result, e-disclosure was used as the measure of e-forum participation for all subsequent analyses. This finding is important for future research about e-forum participation when researchers consider what metric to use for measuring online activity. There is a lack of consensus in the literature on how to measure participation in e-forums; previous studies have often used a broad metric to assess online participation (e.g., number of online hours per week, number of visits to a particular e-forum) that does not capture
participants’ specific online activity (e.g., Gross, Juvonen & Gable, 2002; Tanis, 2008; Valkenburg & Peter, 2009). Moreover, some past researchers who have considered a more nuanced approach, have used a dichotomous representation of e-forum participation by classifying e-forum users as passive or active participants while most studies have also conflated quantity and quality of online participation (e.g., McKenna & Bargh, 1998; van Uden-Kraan, Drossaert, Taal, Seydel, & van de Laar, 2008).

By investigating participants’ multiple online behaviours and the relations among these behaviours, the current study has extended the ways in which e-forums have previously been studied (Wang et al., 2011), by using a more specific measure of online behaviour. Since the findings from the current study demonstrated that e-forum users are involved in multiple online behaviours, future research may benefit from using different online activities as indicators of online behaviour rather than simply classifying participants as active or passive as previous studies have done (van Uden-Kraan et al., 2009). The results also suggest that examining the level of disclosure in e-forums rather than focusing only on the frequency of use may be of benefit. This is also a departure from previous studies that have often used frequency of online activity or length of membership as the measure of online activity (e.g., Bargh & McKenna, 1998). While examining the correlations among the four online behaviours, e-disclosure was not linked to any particular type of online activity or frequency of use, suggesting that this online behaviour does not reflect a higher frequency of posting or reading but rather might better reflect the quality of the posting. These results indicate that perceived gains in RE are more strongly associated with participants’ personal disclosures online than the frequency or type of behaviour. Findings from the current study show the importance of examining e-disclosure as a potential
measure of online activity, highlighting the need for further research on operationalizing online activity.

For hypothesis 3, it was predicted that higher degrees of self-silencing would be associated with more e-forum use. The findings partially supported this hypothesis. A higher degree of self-silencing was significantly correlated with a greater increase in RE. These findings are consistent with researchers that have suggested that the anonymity of e-forums allows socially inhibited individuals to take advantage of the lower threat opportunity and practice relating to others in a less socially challenging environment (McKenna et al., 2002). Next, it was postulated that individuals with high levels of perceived self-silencing would be more likely to report increases in offline RE. As expected, there was significantly less perceived offline increase in RE in the lowest self-silencing group than when compared to the middle level of self-silencing (i.e., the group who reported more self-silencing, perceived greater improvements in RE). These results are in keeping with the social compensation hypothesis as described earlier, in which individuals who tend to self-silence are purported to benefit more from a low-threat opportunity to disclose than those who self-silence to a lesser degree, or not at all (e.g., Valkenburg et al., 2006). Surprisingly though, the highest self-silencing group did not indicate a significantly higher degree of perceived increase in RE as compared to the moderate and low self-silencing groups. Thus, it appears that for individuals who self-silence to a modest degree, participating in the e-forum was associated with self-perceived improvements in offline RE, however, this relationship did not hold for high self-silencers during the period measured in the current study. While the current study did not examine the reasons why this may be, there are a number of possibilities that can be speculated about. It is possible that the measure may not have adequately captured the perceived change in increased RE. This may have happened because
those who reported more extreme self-silencing tendencies might underestimate improvements in RE in offline relationships because of their general perception of themselves and how they relate to others. Alternatively, perhaps there was no actual change in the high self-silencing group.

Although not examined in the current study, it is possible that the one semester-long experience in the e-forum was not enough for the high self-silencers to perceive any increase in RE. Both of these possible explanations are informed by research on post-event processing in socially anxious individuals. Although this body of research is in an offline context, similar communication processes may occur in online and offline domains given the permeability between these domains that has been found in previous research (Barak et al., 2008). The research on post-event processing has found that socially anxious individuals have a tendency to maintain negative self-appraisals for a long period of time following social interactions (e.g., Abbott & Rapee, 2004; Brozovich & Heimberg, 2008, meta-analysis; Clark & Wells, 1995). For instance, in a study conducted by Abbott and Rapee (2004), socially anxious individuals and controls gave speeches and one week later, were asked to rate their performance. Socially anxious individuals rated significantly higher on negative self-appraisals than the control group.

The finding in the current study, that high self-silencing group did not perceive a greater increase in RE as was hypothesized, is intriguing and potentially consistent with the findings from post-event processing of socially anxious individuals, however further research is necessary to test these speculations.

With regards to the final hypothesis, it was postulated that validation on the e-forum (e-validation) would serve as a mediator between e-forum use and perceived increases in RE. As predicted, e-validation was a mediator between e-disclosure and perceived increase in RE. This suggests that the benefit of perceived increase in RE may only be effective insofar as the
membership of that e-forum is perceived as validating. As discussed earlier, there is research that has found validation to be an important response to an individual’s self-disclosure, albeit in an offline context. This includes Reis and Shaver’s interpersonal process model of intimacy (1988) as well as Marsha Linehan’s work related to Dialectical Behavioural Therapy (DBT) (Lynch et al., 2006). The current study found that validation serves as an important response to self-disclosures in an online context. Online validation helped explain the underlying relationship between e-forum participation and subsequent perceptions of increased RE. Since validation may only be perceived if the e-forum includes mainly or only affirming and positive responses and comments, it is possible that an e-forum should be moderated by a course instructor, as was the case for the e-forum in the current study, in order to minimize the risks of negative comments and inappropriate responses, as discussed above. Further research is needed, however, to confirm this speculation.

Limitations and Future Directions

Given that the current study evaluated an e-forum that included membership of students that knew one another from class, the participants may not have been as forthcoming as students may be in a wider e-forum participant pool, such as all students on campus. As such, the anonymity in the current study was more limited than the more widely understood anonymity associated with not knowing other anonymous users online from one’s off-line context (e.g., Turkle, 1995). As such, the findings from course-related e-forums may not be generalizable to campus-wide e-forums. Another limitation is that because the current study evaluated an e-forum that was limited to a psychology course of third year students, the benefits of the e-forum might not generalize to a wider student body. For future studies, it would be beneficial to evaluate such an e-forum on a sample of students from a wide range of disciplines as well as different stages of
post-secondary education. Another limitation of the current study’s sample was the mainly female participation. Although a majority of students enrolled in Canadian colleges and universities are women (56%) (Statistics Canada, 2012/2013), the sample in the current study did not accurately reflect post-secondary enrollment with regards to gender. It would be beneficial to address gender in future studies.

With regards to measurement, the metrics about students' participation was based on self-perceived e-forum use and benefits rather than objective ratings. Therefore, results based on participants' subjective impressions should be interpreted with caution. For example, the results related to the first hypothesis were self-reported perceived increase in RE rather than a measure that compared participants' relationship effectiveness prior to participation on the e-forum and after participating. Still, a majority of participants reported a perceived increase in RE and comments in response to open-ended questions were positive and included specific instances of better RE offline as a result of participating in the e-forum. However, future research may want to include measures of actual RE from the beginning of the course and then compare these to the same objective measures after the students participated in an e-forum. Comparison of pre and post relational effectiveness of students participating in the same course without a corresponding e-forum would also be informative in determining if the e-forum added benefit beyond just completing the course, something that was not examined in the current study.

To determine what aspects of the e-forum were most beneficial to participants, future research should include an examination of individual experiences on the e-forum and inquire directly about what aspects were beneficial. Since the literature on student well-being has found that a focus on well-being and supportive networks for students in higher education are related to better academic outcomes, it would be of interest to include offline benefits other than RE in
future studies that include both academic (e.g., retention rates, grades) and non-academic outcomes (e.g., increased engagement in campus life, overall mood). Given that the e-forum seemed to be most beneficial to students with moderate levels of self-silencing, it would be of interest to include features in the e-forum that might benefit those with higher levels of self-silencing. For example, given that socially anxious individuals tend to maintain a negative view of a social interaction for an extended period, it might be beneficial to have the course-related e-forum be active for longer than one semester.

**Implications and Recommendations**

University-led initiatives that go beyond academic support, such as the course-related e-forum in the current study, can serve as important supports for post-secondary Canadian students. Academic success, lower attrition rates, and general well-being have all been associated with maintaining strong social support on campus (e.g., Buote et al., 2007; Erb, 2014; Tinto, 1993). Findings from the current study provide insight into the importance and effectiveness of e-forums. Further research in this area may inform Canadian post-secondary institutions on the incorporation and application of student-centred e-forums into their course curricula. As such online initiatives become more popular across Canadian campuses it is important to further study their effectiveness through standard models of program evaluation or randomized control trials to monitor the benefits and harms associated with such e-tools. In this way, post-secondary institutions may be able to deliver quality and successful educational experiences in the digital age. Since the perceived benefit of the e-forum in the current study was mediated by validation received online, it may be useful to have the course instructor moderate the e-forum to ensure that students are not using the online platform as an opportunity to bully other students but instead, will create a warm and validating environment.
References


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Turkle, S. (2012). *Alone together: Why we expect more from technology and less from each other*. Basic books.


Table 1.

Inter-correlations Among Online Behaviours, Self-Silencing, Validation, and Relationship Effectiveness

<table>
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<th>Variable</th>
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<th>Reads</th>
<th>e-Disclosure</th>
<th>Self-Silencing</th>
<th>Validation</th>
<th>Relationship Effectiveness</th>
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<td>.42**</td>
</tr>
<tr>
<td>7</td>
<td>4.26</td>
<td>1.24</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: * indicates p < .05; ** indicates p < .01
Table 2.

*Online Behaviour Frequencies (excluding e-disclosure\(^1\)) (N = 162\(^2\))*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Min</th>
<th>Max</th>
<th>Specific Range</th>
<th>Frequency (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Threads</td>
<td>0</td>
<td>20</td>
<td>0</td>
<td>30.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 – 5</td>
<td>54.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>6 – 10</td>
<td>12.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11 – 15</td>
<td>1.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>16 – 20</td>
<td>1.2</td>
</tr>
<tr>
<td>Replies</td>
<td>0</td>
<td>110</td>
<td>0</td>
<td>9.6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1 – 10</td>
<td>52.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11 – 20</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>21 – 30</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>More than 30</td>
<td>4.8</td>
</tr>
<tr>
<td>Reads(^3)</td>
<td>0</td>
<td>100</td>
<td>0 – 20</td>
<td>13.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>21 – 40</td>
<td>12</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>41 – 60</td>
<td>16.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>61 – 80</td>
<td>22.2</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>81 – 100</td>
<td>33.3</td>
</tr>
</tbody>
</table>

*Note.* \(^1\) e-Disclosure is a continuous variable. \(^2\) 3 responses > 100% were deleted and 2 missing cases; \(^3\) percentage of total posts.
### Table 3.

**Regression Results of Online Behaviours as Predictors of Perceived Increase in Relationship Effectiveness**

<table>
<thead>
<tr>
<th></th>
<th>$B$</th>
<th>SE</th>
<th>beta</th>
<th>$r$</th>
<th>$sr^2$</th>
<th>Fit</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Model 1</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(Intercept)</td>
<td>2.61</td>
<td>0.24</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reads</td>
<td>0.01</td>
<td>.00</td>
<td>.14</td>
<td>.16</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>New Threads</td>
<td>0.03</td>
<td>.02</td>
<td>.09</td>
<td>.17</td>
<td>.01</td>
<td></td>
</tr>
<tr>
<td>e-Disclosure</td>
<td>0.39</td>
<td>.055</td>
<td>.48</td>
<td>.49</td>
<td>.23</td>
<td></td>
</tr>
</tbody>
</table>

$R^2 = .27^{**}$

$F(3,161) = 20.05$

*Note: * indicates $p < .05$; ** indicates $p < .01$*
Table 4.

Means and Standard Deviations of Perceived Increase in RE by Levels of Self-Silencing

<table>
<thead>
<tr>
<th></th>
<th>Low Self-Silencing</th>
<th>Medium Self-Silencing</th>
<th>High Self-Silencing</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>M (SD)</td>
<td>n</td>
</tr>
<tr>
<td>Increased RE</td>
<td>50</td>
<td>3.95 (1.16)</td>
<td>63</td>
</tr>
</tbody>
</table>
Figure 1. The mediation model with e-forum validation as a mediator of the relationship between e-forum participation (measured by e-disclosure) and an increase in offline relationship effectiveness.
Appendix A: e-Disclosure Scale

I shared things on SpeakEasy about...

… something I had done which I felt guilty about.

… things I would not do in public.

… my deepest feelings.

… an important secret that I had not shared with anyone.

… negative thoughts about myself that I never used to share with anyone.
Appendix B: Relationship Effectiveness Scale

Instructions: In this section, we ask you to reflect on your involvement in SpeakEasy and how it may or may not have impacted you. We are interested in the impact from POSTING in SpeakEasy, as well as READING other people's posts.

Resulting from my involvement in SpeakEasy…

… it increased my ability to talk about embarrassing topics with another person, face to face.

… being involved in SpeakEasy helped me resolve my own interpersonal problems.

… I have found greater satisfaction in my relationships (off-line).

… I increased my ability to talk about difficult subjects with another person, face to face.

… it increased my level of courage.

… I feel more empowered.

… I increased my willingness to share private things or secrets with another person, face to face.
Appendix C: e-Forum Validation

I felt more validated (i.e., understood or ‘heard’) on SpeakEasy than…

… in relationships with my family.

… with friends in my life.

… in my romantic relationship (if not currently in a relationship, answer about past relationship).

I felt more accepted on SpeakEasy than…

… in relationships with my family.

… with friends in my life.

… in my romantic relationship (if not currently in a relationship, answer about past relationship)

I felt more reassured on SpeakEasy than…

…. in relationships with my family.

… with friends in my life.

… in my romantic relationship (if not currently in a relationship, answer about past relationship).
Appendix D: Self-Silencing Scale

Instructions. Please indicate the extent to which each statement is descriptive of you. Think of friends and the people close to you when completing this questionnaire.

1. I keep silent if I think my opinions might create conflict.
2. Instead of risking confrontations with my friends I would rather not rock the boat.
3. I am afraid of making mistakes in conversations.
4. When with friends I get anxious at the possibility of saying something wrong.
5. When my friends' opinions conflict with mine, rather than asserting my own point of view I usually end up agreeing with them.
6. I try to bury my feelings when I think they will cause trouble with my friends.
7. I think it's better to keep my feelings to myself when they conflict with my friends' feelings.
8. If I can't get along with somebody, I worry that something is wrong with me.
9. I tend to judge myself by how I think my friends see me.
10. Making mistakes in conversations does not bother me.
11. When I make decisions, my friends' thoughts and opinions influence me more than my own thoughts and opinions.