Chapter 16
Emotional Intelligence and Post-Secondary Education: What Have We Learned and What Have We Missed?

James D. A. Parker, Robyn N. Taylor, Kateryna V. Keefer, and Laura J. Summerfeldt

Abstract The transition from high school to a post-secondary setting is a stressful period for most individuals, and difficulties with social and emotional adjustment are strong predictors of student dropout and underachievement. In this context, emotional intelligence (EI) has been studied as a possible explanatory variable for a range of post-secondary adjustment and attainment outcomes. However, the empirical evidence from two decades of research is rather mixed. In this chapter, we summarize the current state of evidence on the links between EI and post-secondary outcomes, review several mediating pathways through which EI may impact these outcomes, and point out important methodological limitations that have confounded research in this area. Using examples from our own research program, we demonstrate that careful treatment of these methodological issues yields informative and promising results. We then discuss a number of practical applications of EI in post-secondary settings, from utilizing EI assessments to improve the delivery of student services to targeted EI interventions.

The transition from high school to a post-secondary setting (whether academic or vocational) is a stressful period for most individuals and one which also coincides with a major developmental transition to young adulthood (Arnett, 2004; Lüdtke, Roberts, Trautwein, & Nagy, 2011). Important markers of the transition to adulthood include completing post-secondary education, living independently, becoming financially self-sufficient, starting a career, and forming a romantic partnership. Rapidly changing technology, increased competition, and globalization of markets of the last few decades have made completing college or university one of the most important milestones of this transition. As employment shifts toward highly skilled and knowledge-intense work, more jobs in the developed world will require

J. D. A. Parker (✉) · R. N. Taylor · K. V. Keefer · L. J. Summerfeldt
Department of Psychology, Trent University, Peterborough, ON, Canada
e-mail: jparker@trentu.ca; robyntaylor@trentu.ca; katerynakeefer@trentu.ca; lsummerfeldt@trentu.ca

education and skill levels beyond a high school diploma (Jepsen, Troske, & Coomes, 2014; Toutkoushian & Paulsen, 2016). At present in most parts of the developed world, even just attending a college or university for a short period of study appears to have important future economic benefits (Xu & Trimble, 2016).

Given this importance for future quality of life, it is not surprising that the transition from high school to a post-secondary environment is perceived as a stressful experience by most students (Pascarella & Terenzini, 2005). It is likely that the stress levels experienced during this period contribute to low retention rates observed in many universities and colleges. For much of the last few decades, these rates have been highly stable: almost half of the students in Canada and the United States who start their post-secondary studies after high school will withdraw from the institution before completing their program of study (Ross et al., 2012; Shaienks, Gluszynski, & Bayard, 2008).

A key reason for this trend in dropout rates is that post-secondary students face a bewildering set of evolving personal and interpersonal challenges (Pascarella & Terenzini, 2005) – challenges that may become compounded if post-secondary students attend college or university away from their home towns (Witkow, Huynh, & Fuligni, 2015). Not only must they modify existing relationships with friends and family, but students making the transition from high school to university or college need to adapt to a dynamic learning environment – one that evolves substantially from first year to upper years of study (Fussell, Gauthier, & Evans, 2007). Compared to the experience of earlier generations of post-secondary students, higher financial costs add even more complexity to this transition. Increased tuition costs mean that increasing numbers of students need to balance school and work-related activities (Moulin, Doray, Laplante, & Street, 2013); rising tuition costs also put added pressure on families and complicate a set of family dynamics already under stress as older adolescents "toil" to become independent young adults (Fingerman et al., 2012; Kins, Soenens, & Beyers, 2013).

Traditionally, researchers studying post-secondary achievement and persistence have relied on a roster of demographic and academic variables such as gender, socioeconomic status, aptitude tests, and high school performance (Tinto, 1993). More recently, models of student success and persistence recognize the importance of a more complex network of variables connected to student engagement and motivation, as well as emotional and interpersonal adjustment (Pascarella & Terenzini, 2005; Robbins, Allen, Casillas, Peterson, & Le, 2006; Rowan-Kenyon, Savitz-Romer, Ott, Swan, & Liu, 2017). Among these more recent predictor variables is the construct of emotional intelligence (EI), which has held the attention of educational researchers for several decades now (Salovey & Sluyter, 1997).

Broadly defined, EI encompasses social and emotional competencies related to perceiving, understanding, utilizing, and managing emotions in self and others, although precise operational definitions of these competencies vary from model to model (for a review see Stough, Saklofske, & Parker, 2009). Mayer, Caruso, and Salovey (1999), for example, are representative of theorists who define the EI construct as a set of intelligence-like abilities, assessed with performance-based tests where individuals solve problems designed to estimate their maximal level of

emotional knowledge (see Chap. 2 by Fiori & Vesely-Maillefer, this volume). Researchers like Bar-On (1997, 2000) and Petrides (2010), on the other hand, conceptualize the EI construct as a set of emotion-related personality dispositions that can be measured with self-report questionnaires designed to tap into individuals' typical behaviors, beliefs, values, and self-concepts (see Chap. 3 by Petrides, Sanchez-Ruiz, Siegling, Saklofske, & Mavroveli, this volume). It is important to note that both the ability EI and trait EI theoretical perspectives have influenced the field with respect to understanding post-secondary achievement.

In this chapter, we summarize the current state of evidence on the links between EI and post-secondary outcomes, review several mediating pathways through which EI may impact these outcomes, and point out important methodological limitations that have confounded research in this area. Using examples from our own research program, we demonstrate that careful treatment of these methodological issues yields informative and promising results. We then discuss a number of practical applications of EI in post-secondary settings, from utilizing EI assessments to improve the delivery of student services to targeted EI interventions.

What Do We Know About EI and Post-secondary Success?

Although both ability EI and trait EI have been linked with important academic outcome variables, the trait approach would appear to have generated the largest body of work. In a recent meta-analysis of 47 independent effect sizes based on data from approximately 8700 participants, Perera and DiGiacomo (2013) found a low-to-moderate validity coefficient ($r = 0.20$) for the link between trait EI and academic achievement across all educational levels, although the effect size was weaker at the post-secondary level ($r = 0.18$) compared to primary school level ($r = 0.28$). As noted by Perera (2014), "this mean effect size for the TEI-academic performance relation not only exceeds effects obtained for extraversion, neuroticism, agreeableness and openness but also approaches the effects observed for conscientiousness in comparable meta-analytic designs" (p. 137).

Although encouraging, the results from this meta-analysis can only be suggestive, since many of the empirical studies included have a number of methodological limitations (Parker, Saklofske, Wood, & Collin, 2009). Notably, previous research on the link between post-secondary achievement and EI has typically assessed academic success over quite narrow timelines (e.g., a single academic term), or compromised the interpretability of results by combining into common datasets full-time and part-time students, young adults and mature students, and students at different stages of the transition process (e.g., first year students with students about to graduate). The types of stressors and the competencies needed to cope with them would be rather different across these diverse student subgroups. Academic success is usually operationalized as a cumulative grade point average (GPA), and more frequently than not, it is assessed via self-report. The latter approach is quite problematic, because self-reported grades are subject to known

systematic biases (Kuncel, Credé, & Thomas, 2005). Moreover, the preoccupation with GPA misses opportunities to explore broader features of academic success like engagement, learning, persistence, and time-to-graduation rates (Parker et al., 2009). It is also important to note that the broad range of trait EI measures included in meta-analyses, like the one performed by Perera and DiGiacomo (2013), taps a heterogeneous set of EI-related constructs, assessed with varying degrees of reliability and validity. Total EI in this context is quite broad relative to the more limited and homogeneous sets of measures typically used in meta-analyses of other predictors like neuroticism, conscientiousness, or openness to experience (Richardson, Abraham, & Bond, 2012).

The relationship between EI and post-secondary success has produced much more inconsistent results when ability EI measures have been used compared to studies using trait EI measures. With a few exceptions (e.g., Amelang & Steinmayr, 2006; MacCann REF), most of the ability EI research has utilized the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2002). Although Chew, Zain, and Hassan (2013) found a low but significant association between GPA and ability EI, Lanciano and Curci (2014) and MacCann, Fogarty, Zeidner, and Roberts (2011) reported moderate associations for the same variables. The majority of published work using the MSCEIT, however, has generally failed to find a link between ability EI and academic success in post-secondary students (Barchard, 2003; Bastian, Burns, & Nettlebeck, 2005; O'Connor & Little, 2003; Rode et al., 2007; Rossen & Kranzler, 2009). It is quite likely that methodological limitations in studies using ability measures of EI have contributed to the inconsistent results. Virtually all of this published work used blends of student populations (e.g., students at different years of study; mature and young students) and narrow time frames for measuring academic success. MacCann et al. (2011), for example, who report some of the strongest associations between ability EI and academic success, used a sample of post-secondary students who ranged in age from 17 to 56 years attending five different community colleges. They also used only self-reported GPA.

What we can say definitively about the relationship between EI and academic success in post-secondary students is that the topic has spawned a large literature (Perera & DiGiacomo, 2013; Richardson et al., 2012). As a whole, these results are mixed – the likely result of a broad range of methodological shortcomings. If we take a closer look at work that has attempted to account for some of these shortcomings, the evidence seems to suggest that trait EI is at least a moderate predictor of academic success in post-secondary students. A case in point is the series of studies conducted by the authors (and various collaborators) over the past 15 years as part of the Trent Academic Success and Wellness Project (TASWP; Parker, Summerfeldt, Hogan, & Majeski, 2004). This work draws heavily on Bar-On's (1997) multidimensional trait EI model, which outlines four core EI dimensions: intrapersonal (self-awareness and understanding of one's own emotions), interpersonal (empathy and responsiveness to other's emotions), adaptability (emotional flexibility in the face of challenge and change), and stress management (resilience and regulation of strong negative emotions). An important reason for using this model is the availability of reliable and valid parallel measures of trait EI for

different age groups, namely, the Emotional Quotient Inventory-Short Form (EQi:S; Parker, Keefer, & Wood, 2011) for adults and the EQi-Youth Version (EQi-YV; Bar-On & Parker, 2000) for children and adolescents (although only the work with post-secondary samples is reviewed in the next section; for review of trait EI in secondary school settings, see Chap. 3 by Petrides et al., this volume).

Trent Academic Success and Wellness Project (TASWP)

The objective of the TASWP was to evaluate the prospective utility of trait EI for predicting academic achievement and persistence of students undergoing the transition from high school to university. Four consecutive cohorts of newly registered full-time undergraduate students at a medium-sized Canadian university (3500 students in total) were recruited university-wide at the start of the academic year. The study participants were homogeneous with respect to their age (under 25 years), academic background (within the last 2 years of graduation from high school), and enrollment status (full time only). Participants were asked to complete the EQi:S and provide consent for us to obtain their high school grades and track their subsequent degree progress via official university records. At the end of the first academic year, students' EQi:S scores were matched with their official academic standing (succeeded vs. failed) and registration status for second year (persisted vs. withdrew). Results showed that, despite having comparable age, course load, and high school grades, students who entered university with lower trait EI were significantly more likely to fail academically (Parker et al., 2004) or withdraw from the university entirely (Parker, Hogan, Eastabrook, Oke, & Wood, 2006) than their higher trait EI peers. These original TASWP findings have been since independently replicated and extended by other research groups with university samples from the United States (Parker, Duffy, Wood, Bond, & Hogan, 2005), England (Qualter, Whiteley, Morley, & Dudiak, 2009), Scotland (Saklofske, Austin, Mastoras, Beaton, & Osborne, 2012), and Cyprus (Sanchez-Ruiz, Mavroveli, & Poullis, 2013).

To better understand the impact of trait EI on students, transition from a secondary to a post-secondary environment, Summerfeldt, Kloosterman, Antony, & Parker (2006) used the TASWP dataset to examine the relationship between trait EI and social interaction and performance anxieties and their combined impact upon interpersonal adjustment in the first few weeks of the students' post-secondary experience. Trait EI was found to be highly related to social interaction anxiety, but less so to performance anxiety. With respect to predicting interpersonal adjustment, a major factor linked to student persistence (Napoli & Wortman, 1996), trait EI was the dominant predictor (explaining 64% of the variability in adjustment scores), reducing the unique contribution made by the two social anxiety variables to marginal levels (neither one explaining more than 3–4% of the variability).

As noted earlier, one of the limitations of the research on the link between EI and academic success is the limited time frame used to study academic success. Parker, Saklofske, Wood, Eastabrook, and Taylor (2005) examined the long-term stability

of trait EI over several years in one of the TASWP cohorts, as well as the impact of the transition from high school to university on trait EI levels. Approximately 32 months after completing the EQi:S during the first week of their start at university, a random subset of the TASWP students ($N = 238$) completed the measure for a second time. Consistent with the maturity principle that trait EI should increase with age, students' trait EI scores showed significant improvements over the 3-year period. Interestingly, this positive change in trait EI was more than could be attributed to the increased age of the participants, suggesting that successfully transitioning to university and completing several years of post-secondary education can have added benefits for students' emotional maturation (Parker, et al., 2005). A similar life experience effect was recently reported by Schutte (2014), who found that living in a college residence characterized by a higher collective trait EI level resulted in larger increases in trait EI for the individual residents. This set of findings underscores the importance of post-secondary education for socioemotional development in addition to academic qualifications.

The TASWP database was subsequently used to examine the long-term utility of trait EI for predicting students' degree completion outcomes (Keefer, Parker, & Wood, 2012). University records of the first two cohorts of participants were accessed to obtain their registration status (graduated vs. withdrew) at a 6-year follow-up. By that time, 86% of the participants had successfully graduated, whereas the remaining 14% had left without completing their studies. The greatest vulnerability for degree non-completion was associated with a combination of low overall trait EI level and a notable absence of perceived individual strengths in any particular trait EI domain. Interestingly, having at least one solid area of personal strength (e.g., interpersonal abilities or stress management) appeared to offset the negative effects of deficits in other areas. An independent corroboration of the role of specific trait EI dimensions in predicting graduation rates has been found by UK researchers (Pope et al., 2012).

In the most recent follow-up with the TASWP dataset, Parker, Saklofske, and Keefer (2016) examined the academic success of 171 gifted students in the sample (i.e., exceptionally high-achieving students with a high school GPA of 90% or better). The gifted students who entered university with lower trait EI scores were significantly less likely to graduate with a degree 6 years later, compared to their gifted peers with high trait EI. As an interesting secondary finding, Parker et al. (2016) also found that the gifted students did not differ from their non-gifted peers on trait EI. This result is not that surprising, since the trait EI measure used in the TASWP (EQi:S) was designed to correlate only weakly with cognitive intelligence (Bar-On, 2002). What is more notable is that trait EI is equally predictive of post-secondary attainment for all students, regardless of their cognitive intelligence or exceptional academic ability.

The study by Parker et al. (2016) on trait EI and giftedness is part of a growing body of work exploring the relationship of EI with various academic variables in specific subgroups of students and types of academic programs. We review this promising research next.

Specific Post-Secondary Populations

Among the first post-secondary subgroups to receive special attention with regard to the link between EI and academic success were students in business programs (Boyatzis & Saatcioglu, 2008). Rozell, Pettijohn, and Parker (2002), for example, using samples of undergraduate and graduate business students, found a significant relationship between various trait EI dimensions and academic performance (GPA). Fall, Kelly, MacDonald, Primm, and Holmes (2013), taking the view that the undergraduate curriculum in business schools needs to foster a cross section of emotional and social competencies, examined the link between trait EI and intercultural communication skills. A variety of trait EI dimensions significantly predicted less intercultural communication apprehension in a large sample of business students. This work is part of a rich literature on EI and success in MBA education; one such program of research is highlighted in Chap. 15 by Boyatzis and Cavanagh (this volume).

The importance of EI in teacher education is another area which has produced a rich literature (see Chap. 14 by Vesely-Maillefer & Saklofske, this volume), suggesting that various EI-related abilities are essential to successful teacher training outcomes (Dolev & Leshem, 2017). EI-related abilities have also been identified as critical skills for students in professional programs as diverse as accounting (Durgut, Gerekan, & Pehlivan, 2013), architecture (Erbil, 2015), engineering (Lappalainen, 2015; Lopes, Gerolamo, Del Prette, Musetti, & Prette, 2015), law (Silver, 1999), and pharmacology (Romanelli, Cain, & Smith, 2006).

Perhaps one of the largest literatures with a specific post-secondary subgroup has developed on the various EI-related abilities linked to success in medical school and related programs (Mintz & Stoller, 2014). Not surprisingly, a number of medical schools have begun to use EI measures to evaluate the performance of individuals entering the health profession system (Talarico et al., 2013). A similar trend can be found in the evolving literature in dentistry (Hannah, Lim, & Ayers, 2009; Victoroff & Boyatzis, 2013), nursing (Fernandez, Salamonson, & Griffiths, 2012; Holston & Taylor, 2016), and other specialized medical professions like psychiatry (Schrimpf & Trief, 2013), surgery (Chan, Petrisor, & Bhandari, 2014), anesthesiology (Talarico, Metro, Patel, Carney, & Wetmore, 2008), and radiography (Mackay, Hogg, Cooke, Baker, & Dawkes, 2012).

Does EI predict success in training to become a doctor, dentist, or nurse? As with other areas of post-secondary achievement, clear generalizations are often hard to make, since research in this area has many of the same methodological shortcomings described earlier with respect to the research on post-secondary success in general populations including academic success variables assessed over narrow timelines (e.g., a single term) and the interpretability of results compromised by combining heterogeneous groups of students (full-time with part-time students, older with younger learners, sophomores with senior students). Furthermore, the distinction between ability and trait measures of EI is often not appreciated in this area. For example, in a recent review on the relationship between EI and success in medical

school, the authors did not differentiate between trait and ability EI measures (Arora et al., 2010). Given the disparate links between EI and academic success typically found with trait versus ability measures, the lack of conceptual differentiation has the potential to create considerable confusion when it comes to evaluating EI-related research. For example, most of the existent work using EI to predict academic success in medical school has used the MSCEIT (see, Patterson et al., 2016), with a large number of studies reporting low or nonsignificant correlations with ability EI (Carr, 2009; Chew et al., 2013; Humphrey-Murto, Leddy, Wood, Puddester, & Moineau, 2014; Leddy, Moineau, Puddester, Wood, & Humphrey-Murto, 2011). Doherty, Cronin, and Offiah (2013), for example, found no significant association between the total MSCEIT score and academic success in medical school. However, they also included a trait EI measured (EQi) and found that total trait EI was a significant moderate predictor of academic success for preservice educators.

Why Should Trait EI Predict Academic Achievement?

Along with academic success variables, trait EI has been consistently linked to a number of other positive outcomes in post-secondary students, including fewer physical fatigue symptoms (Brown & Schutte, 2006; Thompson, Waltz, Croyle, & Pepper, 2007), better overall adjustment and life satisfaction (Saklofske, Austin, & Minski, 2003), and less social anxiety and loneliness (Summerfeldt, Kloosterman, Antony, & Parker, 2006). Overall, it would appear that students who have higher trait EI experience more constructive and fewer maladaptive coping strategies (Austin, Saklofske, & Mastoras, 2010; Saklofske, Austin, Galloway, & Davidson, 2007). Not only is it important to be able to document empirically the relationship between EI and academic success, but it is also equally important to be able to explicitly account for the mechanisms underlying this relationship. "The failure to sufficiently elaborate theoretical links of [trait] EI with various life outcomes in line with the complexity of the construct may not only obfuscate the true nature of the construct but also complicate empirical research efforts" (Perera, 2016. p. 231). Based on conceptual models proposed by Perera (2016) and Corcoran and Slavin (2016), several mechanisms can be put forward for the empirical link found in the literature between trait EI and academic success in individuals of various ages.

Coping with Stress

Coping with stress is one of the chief mechanisms that has been proposed to mediate the links between trait EI and a range of student behaviors (Keefer, Parker, & Saklofske, 2009). This rich literature is reviewed extensively elsewhere in this book (see Chap. 4 by Zeidner & Matthews, this volume); here, we will focus on some of the other, less well-elaborated factors.

Cognitive Factors

Attention, self-control, planning, and decision-making are all critical cognitive processes in purposeful, goal-directed behavior (Shonkoff & Phillips, 2000). As noted by Derryberry (2002), the ability to comply with rules, to put off or delay an activity, as well as to monitor behavior to match changing environmental demands is often referred to as "executive control." Given the cognitive tasks involved, it is not surprising that Zimmerman and Kitsantas (2005) found executive control to account for the vast majority of variance in students' performance on standardized achievement tests. Emotional and social competencies play a key role in the efficacy of executive control (Elias & Haynes, 2008), as students who are better able to control impulses or sustain focus are more likely to have higher academic performance. Students with high trait EI may be better able to stay focused and use attention in the service of learning during the stress and strain of post-secondary studies (Rhoades, Warren, Domitrovich, & Greenberg, 2010). For individuals with lower levels of trait EI, on the other hand, negative affect may be more likely to get them "offtrack" and promote distracting behaviors (Valiente, Swanson, & Eisenberg, 2012).

Motivational Factors

One of the core features of trait EI models is the assumption that people high in trait EI are typically more optimistic than individuals low on the trait (e.g., Bar-On, 2000; Petrides & Furnham, 2001). Being predisposed to optimism is hypothesized to have a critical motivating capacity, as the ability to remain positive despite perceived setbacks, uncertainty, and boredom has been found to predict a number of work and school-related outcomes (Zeidner, Matthews, & Roberts, 2012). Several meta-analytic studies present fairly solid evidence that people high on trait EI experience more optimism than people lower on the trait (Sánchez-Álvarez, Extremera, & Fernández-Berrocal, 2016; Schutte, Malouff, Thorsteinsson, & Bhullar, 2007). Post-secondary students with high trait EI may be better able to stay engaged with their studies because, on a day-to-day basis, they have more positive beliefs about the future – a state of mind that has been linked with increased efforts to reach desired academic goals (Carver & Connor-Smith, 2010; Nes & Segerstrom, 2006). Students who experience more positive emotions are often more engaged in their learning activities, whereas individuals who tend to experience less positive emotions are often less engaged (Linnenbrink, 2007).

Interpersonal Factors

One of the characteristics shared by all EI models, both trait and ability, is that the construct is to a large part defined by a cluster of interpersonal competencies (Bar-On, 1997; Petrides, 2010): recognizing, understanding, and appreciating how

other people feel; being able to articulate an understanding of another person's perspective and behaving in a way that respects the other person's feelings; and skills in developing and maintaining mutually satisfying relationships. The ability to establish and maintain a satisfying romantic relationship requires the capacity to identify emotions, as well as the ability to self-disclose these emotions to a partner (Carton, Kessler, & Pape, 1999; Meeks, Hendrick, & Hendrick, 1998). The ability to understand and empathize with the feelings of one's partner is also critical to positive relationships (Wachs & Cordova, 2007). Post-secondary students with low trait EI, who have problems identifying and understanding their emotions, as well as communicating these experiences to others, are less likely to turn to other people for emotional support. Not only are they more likely to feel alienated and discon-nected from life on campus – a leading predictor of dropout (see Wilcox, Winn, & Fyvie-Gauld, 2005) – but they are also more likely to be disadvantaged in many academic contexts. As others have noted, success in post-secondary environments is not just linked with individual achievement but also with one's ability to work col-laboratively with others (Wang, MacCann, Zhuang, Liu, & Roberts, 2009).

It is important to emphasize that the coping, cognitive, motivational, and interper-sonal mechanisms are interrelated, and much of the impact of trait EI on academic success may be indirect, mediated by these other variables. As noted by Perera and DiGiacomo (2015), people high on trait EI may be more engaged with their aca-demic activities because they can mobilize greater effort in the face of adversity, as well as better offset the negative influence of various types of emotionally distracting situations – a profile of student behavior typically linked with the successful transi-tion to a post-secondary learning environment (Credé & Niehorster, 2012).

Implications of EI for Student Support Services

Given the evidence presented earlier in this chapter that trait EI significantly pre-dicts various educational outcomes in post-secondary students, a number of impli-cations can be identified with respect to post-secondary education. Student retention programs are probably the most obvious application for information regarding stu-dent trait EI levels, but before exploring the implications for these types of pro-grams, it is worth exploring other places on campus where trait EI information might prove quite useful.

Learning Assistance Programs

Virtually every university and college has learning assistance centers designed to provide students with a variety of academic supports (Wurtz, 2015). These institu-tional supports generally offer academic enhancement activities, study skills assis-tance, and support for a cross section of academic disciplines (Perin, 2004). It is

important to note that many study-related behaviors are readily compromised by poor coping behaviors and problematic stress management skills – a profile connected to individuals with low trait EI levels (Valiente et al., 2012). Thus, individuals working with students in the context of improving academic skills may want to routinely assess potential low trait EI areas in their clients. In addition, a common challenge for individuals managing learning assistance resources is that only a small number of students who might benefit from learning support utilize these resources (Higbee, Arendale, & Lundell, 2005). Trait EI assessment tools could be used to screen for students likely to benefit from learning assistance programs and implement additional outreach activities for this group.

Career Counseling

Another application where information about trait EI might be particularly useful is in the area of career counseling. A critical factor in post-secondary retention is the student perceptions about the value of their programs and degrees, as well as the ability to see potential links to employment opportunities after graduation (Allen & Robbins, 2010; Fong et al., 2016). Not surprisingly, most universities and colleges have invested in career counseling resources, including opportunities for students to complete various types of vocational interest assessments (Gore & Metz, 2008). Students are often encouraged to use the feedback from these assessment tools as part of career planning activities (i.e., identifying potential career strengths and by implication career "weaknesses"). As part of career readiness programming, university- and college-based career centers may also want to give students opportunities to assess their trait EI profiles. Indeed, EI competencies and other "soft" skills are viewed by many employers as valuable assets (see Chap. 13 by Di Fabio & Saklofske, this volume).

Health Services

A recent comprehensive study of mental health issues in post-secondary students in 21 countries found that mental disorders are exceedingly common (Auerbach et al., 2016). The authors of this cross-cultural study found that almost 20% of students had experienced a serious mental health problem in the previous 12 months, with the vast majority of problems having an onset before the individuals had started college or university. It is also noteworthy that for the majority of students the mental health problems had gone untreated. Not surprisingly, Auerbach et al. (2016) also found that the presence of mental health problems was a significant predictor of student attrition. This poses a number of resource issues for post-secondary institutions, given the strong evidence that mental health problems are on the rise in undergraduate populations (Beiter et al., 2015; Stewart, Moffat, Travers, & Cummins, 2015).

In response to these demographic trends, universities and colleges have been advised to provide better access to mental health services, as well as to focus priorities on fostering better resilience in post-secondary students (Bilodeau & Meissner, 2016; Eisenberg, Lipson, & Posselt, 2016). The lack of resilience has been proposed as a major contributor to the rising rates of mental health problems in post-secondary students (see also Hartley, 2010, 2013). In response, increasing numbers of post-secondary institutions have invested in programs designed to teach or promote improved stress management and coping behaviors – core factors not only in trait EI but also in most resilience models (Steinhardt & Dolbier, 2008). As with other student support initiatives discussed above, counseling centers may want to routinely assess trait EI in their clients. Assessing and promoting resilience may provide post-secondary institutions with programming to prevent mental health problems from becoming more serious (Hartley, 2012). As noted earlier in this chapter, the transition to post-secondary study is a stressful event for most students, regardless of pre-existing mental health problems, but it can exacerbate or re-trigger pre-existing conditions.

Another reason that counseling professionals may want to collect information about their students' trait EI levels is the consideration that individuals with low trait EI respond quite poorly to some types of intervention. There is a rich clinical literature on alexithymia pointing to techniques for working with individuals who would score low on typical trait EI measures (for reviews, see Parker, 2005; Taylor, Bagby, & Parker, 1997). In particular, a number of practical issues and concerns arise when using group interventions, a psychoeducational format commonly adopted by campus programs. As noted by McCallum and Piper (1997), the poor interpersonal skills of individuals with low trait EI often generate boredom and frustration in other group members. Information regarding trait EI levels would allow group facilitators to head off potential negative group experiences and to both nurture positive group dynamics and lessen the likelihood that members will drop out.

Sports Programs

Another place on campus where EI may play an important role is the gym (Laborde, Dosseville, & Allen, 2016). There has been a growing interest in EI among coaches and athletes because the construct appears to be connected to both sport coaching efficacy (Barlow & Banks, 2014; Thelwell, Lane, Weston, & Greenlees, 2008) and athlete performance (Meyer & Fletcher, 2006). As noted by Laborde et al. (2016), the link between athletics and EI should not be surprising. Athletics involves situations where the individual has to motivate themselves to address long-term goals through substantial training and preparatory activities. For student athletes the time frame for training may last years, during which they must learn to cope with the stress and strain of competitive pressure while continuing to pursue academic programs. Not surprisingly, many post-secondary athletic programs have begun to utilize psychoeducational programs designed to teach and foster various EI-related competencies in their students (Campo, Laborde, & Mosley, 2016; see also Chap. 11 by Laborde et al., this volume).

EI Interventions

The Work-Readiness Curriculum: Teaching EI to Students

The employability of post-secondary students after their time on campus is a topic of growing importance across the developed world (Jameson, Strudwick, Bond-Taylor, & Jones, 2012; Knight & Yorke, 2003; O'Leary, 2017). It is a complicated issue since the major stakeholders – students, families, institutions, employers, and governments – often have differing timelines and expectations about what skills and abilities are relevant. As noted by Jameson et al. (2012), "it is well documented that the possession of a degree is related to economic prosperity; however, with more people accessing HE [higher education] than ever before and an increasingly dynamic and competitive graduate employment marketplace, the general view is that having a degree is not enough on its own to ensure graduate-level employment" (p. 26). While a plethora of potential skills and abilities have been targeted as critical for employability, it is safe to say that little consensus has appeared to help prioritize innovations for post-secondary officials (O'Leary, 2017).

Given the growing evidence that EI significantly contributes to both occupational and educational performance (Brackett, Rivers, & Salovey, 2011; O'Boyle, Humphrey, Pollack, Hawver, & Story, 2011), it is hardly surprising that there have also been calls that universities and colleges provide programming to develop or enhance EI-related competencies (Seal, Naumann, Scott, & Royce-Davis, 2010; VanderVoort, 2006). A key assumption here is that since EI is also a critical variable in occupational success, post-secondary institutions should think of EI as a set of critical skill their students will need once they graduate. With this broad goal in mind, Seal et al. (2010) developed a broad framework for developing and promoting relevant competencies in post-secondary students. This was proposed using both best practice issues in teaching EI-related competencies (e.g., Boyatzis, Stubbs, & Taylor, 2002), as well as the developmental context of working with emerging adult populations. A similar framework has been proposed more recently by Allen, Shankman, and Miguel (2012) to teach leadership abilities to post-secondary students.

To date, little research has been published on teaching EI-related competencies specifically to post-secondary students, apart from colleges and universities offering full-day workshops or seminars to introduce students or staff to the importance of the topic for educational success (for recent examples, see Allen, Shankman, & Haber-Curran, 2016). As noted by Zeidner, Roberts, and Matthews (2008), these types of brief information-focused sessions are unlikely to lead to substantial changes in EI levels or behavior. Lasting improvement requires multiple sessions spread out over weeks to give participants opportunities to practice and reflect on their enhanced emotional understanding.

To date, there are several published studies that suggest various EI-related competencies can be enhanced using classroom-based psychoeducational instruction. Schutte and Malouff (2002), for example, provided first year post-secondary students with several hours of information and skills training related to EI. They found that students who received the training scored significantly higher on trait EI measures at the end of the academic term. Burgess-Wilkerson, Benson, and Frankforter (2010)

conducted a similar study with undergraduate and graduate students with similar results. Nelis, Quoidbach, Mikolajczak, and Hansenne (2009) tested the efficacy of a brief program (four classes of 2.5 h each) designed to develop competencies derived from the ability EI model proposed by Mayer and Salovey (1997). The programming, which included a blend of readings, short lectures, and group activities, was found to significantly improve several EI abilities. In a longer and more controlled study, Dacre-Pool and Qualter (2012) documented significant improvement in EI (also as per the Mayer and Salovey ability model) in a large group of post-secondary students. Their intervention program consisted of 11 2-h sessions that also used a blend of classroom-based activities. Schutte, Malouff, and Thorsteinsson (2013), in a review of EI-related intervention programs with various types of adult populations, found that the overall effect size for the impact of training on EI was moderate ($g = 0.46$).

The Emotionally Intelligent Professor

The link between EI and effective pedagogy has been the focus of substantial literature (Mortiboys, 2005). This is consistent with work, cited earlier, documenting the importance of EI for a cross section of professions and disciplines (Chan et al., 2014; Holston & Taylor, 2016; Schrimpf & Trief, 2013; Talarico et al., 2008; Victoroff & Boyatzis, 2013). University or college instructors who are higher in EI are often more effective at classroom management. Not only are they more likely than their low EI peers to better recognize and understand their students' emotional experiences, but they are more likely to be skillful in using emotional expressions and nonverbal information to motivate and manage their students' learning (Jennings & Greenberg, 2009). As noted by Armour (2012), individuals who understand the dynamics of a classroom know that without positive emotional engagement the session is likely to be perceived as dull and boring. "Staff can promote student engagement by making their sessions interesting, communicating well and allowing time for questions. This requires EI in the sense of awareness of the interpersonal and intrapersonal factors to help manage emotions" (Armour, 2012, p. 6). In the context of post-secondary initiatives to address student retention problems, a number of writers have suggested that post-secondary institutions need to direct more attention to developing EI-related competencies in both their teaching faculty (Gliebe, 2012; Jennings & Greenberg, 2009; Sharma & Arora, 2012) and administrative staff (Coco, 2011; Dick, 2016; Maxwell, 2017).

Another reason for promoting EI to professors is that teaching can be a stressful and emotionally demanding occupation. The role of EI in both managing stress and promoting psychological resilience suggests that post-secondary institutions may want to provide opportunities for their staff to develop and enhance EI-related competencies. Instructors with high EI "set the tone of the classroom by developing supportive and encouraging relationships with their students, designing lessons that build on student strengths and abilities, establishing and implementing behavioral guidelines in ways that promote intrinsic motivation, coaching students through

conflict situations, encouraging cooperation among students, and acting as a role model for respectful and appropriate communication and exhibitions of prosocial behavior" (Jennings & Greenberg, 2009, p. 492). Given the obvious implications for both professional burnout among faculty and poor retention among students, post-secondary institutions may want to adapt or incorporate EI training programs designed for teacher education and professional development (Vesely, Saklofske, & Leschied, 2013). For example, Gardner, Stough, and Hansen (2008) have developed a set of curriculum materials (workshops, workbooks for home use, and assignments) that focuses on the development of a cross section of EI-related competencies of particular relevance to the educators. The effectiveness of programs like Gardner et al. (2008) suggests that they provide important long-term professional benefits to teachers (Vesely, Saklofske, & Nordstokke, 2014; see also Chap. 14 by Vesely-Maillefer & Saklofske, this volume).

Student Retention and Persistence Programs

All post-secondary institutions in Canada and the United States have developed and implemented retention programs that target students predicted to be at academic risk due to a number of common demographic variables (Berger & Lyon, 2005). Common at-risk groups include being from various ethnic minorities and from lower socioeconomic backgrounds, parents who did not attend college or university, and having the lowest high school GPAs (Habley, Bloom, & Robbins, 2012). While these types of demographic variables certainly predict academic success in many institutions, individuals charged with managing at-risk programs on campus may want to consider using EI assessment tools to identify at-risk individuals. While interventions aimed at increasing EI may have positive implications for many post-secondary students, simply knowing which students have low EI levels may be very useful in itself. One of the key goals of most retention programs is to raise awareness and connect at-risk students to the many existing student support resources available to them on campus. As noted earlier in this chapter, many of these departments, centers, and groups would likely benefit by considering the role of EI in campus life.

Trent Mentoring Project Building on the availability of trait EI information about incoming students from the TASWP (described earlier), a unique mentoring program was conducted with several cohorts of students at the authors' home institution. As described by Taylor, Philippi, Kristensen, and Wood (2013), the overall goal of the mentoring program was to provide immediate and ongoing support to first year students identified to be "at risk" for dropping out based on their below-average levels of trait EI. The philosophy behind the program was that the longer a student stays in university, the greater their EI improves compared to students who drop out (Parker, Saklofske, et al., 2005). Thus, no explicit EI training or instruction was provided as part of this mentoring program. Rather, staying in university

increases the chance that a student will benefit from the diverse range of learning and socialization opportunities that are already part of typical university experience (Palmer, O'Kane, & Owens, 2009).

All of the students had completed a trait EI measure, the College Achievement Inventory (CAI; Wood, Parker, & Taylor, 2005), before the start of their studies as part of an intake survey conducted by several administrative units (e.g., registrar's office). The CAI was designed to assess competencies closely aligned with the Bar-On (1997) trait EI model. At-risk students were identified based on low trait EI profiles and were contacted throughout the year by a trained mentor assigned to them. The mentors' role was to provide peer-based coaching for specific issues experienced by the students, and mentors received formal training on various aspects of intrusive advising: a common strategy in post-secondary programming designed to identify student risk issues and to work dynamically with students to solve problems and reach targeted goals (Abelman & Molina, 2002; Jeschke, Johnson, & Williams, 2001). Mentors made regular contact with the at-risk students via phone and email throughout the year if they continued to be enrolled at the university. During the first year of the program, the mentors took a "triage" approach to their mentees: a key goal was to try to identify students who probably needed to withdraw (at least temporarily) or transfer due to dire family, economic, and/or health issues versus students who were at risk because of generally poor adjustment. The program continued for several consecutive years with most students having the same mentor for more than 1 year.

Initially, there were 778 first year students involved in the student mentoring program: all had started their studies at the university as full-time domestic students (international students were not included) and had graduated high school within the previous 24 months. Based on cutoff scores on the trait EI measure, 480 students were determined to be at risk for academic problems. Of these, 380 were randomly assigned to the mentoring program, and the remaining 100 were to an at-risk control group. The at-risk mentoring group and the at-risk control group did not differ on age or high school GPA.

For students not at risk, the dropout rate between first and second year was 12%; this rate had grown by 28% at the start of the fourth year of their studies (2 years later). For at-risk students in the control group, the dropout rate between first and second year was 28%; this rate had grown to 47% at the start of the fourth year of study. For at-risk students in the mentoring program, the dropout rate between first and second year was 18% (significantly lower than the control group's 28%); this rate had grown to 33% at the start of the fourth year of study (also significantly lower than the control group; with 47%).

To explain the success of the Trent mentoring program, it is useful to consider a variety of factors. As has been noted by many writers, post-secondary students are at risk for dropping out because of a broad range of factors (Bowen, Chingos, & McPherson, 2009). Thus, the overall efficacy of programs targeting at-risk students often lies in their ability (or inability) to connect specific institutional resources and supports with a student body that has a broad range

of "risk" profiles (DeAngelo, 2014; Martin, 2015). For example, programs providing learning assistance may be somewhat irrelevant to help retain students who are at risk because of housing or roommate issues. On the other hand, expanded career counseling resources may do little to help retain a socially anxious student who just cannot see a path to surviving the small-group seminars and tutorials of upper-year courses. Complicating the situation is the fact that most post-secondary programming is voluntary or designed on a first-come first-helped basis. Thus, students most likely to benefit from specific programs and resources are often the least likely to seek them out and take part (Ciarrochi, Deane, Coralie, & Rickwood, 2002).

The Trent mentoring program worked, we suspect, because it identified problems earlier and operated by stealth – a key quality in successful programs designed to promote student achievement (Yeager, Walton, & Cohen, 2013). All that the students knew about the program was just that they had a mentor who was going to check in with them from time to time. We suspect that if students had been told that they were in a program for people with "poor EI," the stigmatizing perceptions alone would have offset the potential benefits (Walton, 2014). The program worked because the mentors knew from the first day of classes that these new students were at elevated risk for experiencing a broad range of academic and nonacademic problems (they all had low scores across a range of trait EI domains). By checking in regularly, mentors were able to intervene early, before minor problems could snowball into major crises – another critical feature of successful programs designed to promote student success (Garcia & Cohen, 2012). One of the things we learned from the project is that students often make major life decisions, such as dropping out of university, for relatively mundane and minor reasons, such as things "not working out" (Martin, 2015). Sometimes the "intervention" from mentors involved specific referrals to university programs and resources, but more times than not, it was just an emphatic conversation designed to provide helpful tips about daily matters or induce some positive mood – critical features of intrusive advising (Abelman & Molina, 2002). The fact that the dropout rate of at-risk students in the mentoring program was only 33% at the start of fourth year, compared to almost half of the at-risk control group, suggests that our program of regular contact and gentle nudges had a positive long-term impact. The key to its success was the utilization of a trait EI measure – backed by the research on its predictive utility – to identify the best candidates for such a program.

Future Directions

This chapter described the growing body of literature on the importance of EI in post-secondary education. In a review of the empirical literature on EI and education written almost a decade ago, Parker et al. (2009) noted that "despite the recent influx of empirical papers, much work remains to be done. Some of the recent evidence is conflicting and leaves many unanswered questions and avenues to be

explored. A discrepancy in the findings that tends to stand out is the difference in results based on whether an ability-based measure of EI … or a trait-based measure of EI is used" (p. 251). What was true of the general education field a decade ago is still very much true now of EI and post-secondary education. When evaluating work on specific topics relevant to the post-secondary area, one needs to be very careful in taking into account the trait-ability EI distinction.

Future research investigating the link between EI and academic success also needs to be more methodologically rigorous than past practice. Research on the topic is seriously confounded when the samples combine full-time and part-time students, older adolescents with mature adults, and first year students with students about to graduate. More longitudinal work also needs to be done examining the link between EI and multiple years of study, not just a single term or academic success within specific courses (for review of research on trait EI in different majors and programs of study, see Chap. 3 by Petrides et al., this volume).

A sizeable body of work reviewed in this chapter is connected to teaching or developing EI-related skills in students and other groups on campus. It is worth noting that systematic empirical information supporting these types of programs is still very sparse (Zeidner et al., 2008), although there appears to be growing interest in initiatives to teach EI on campus (Schutte et al., 2013). Given the potential importance of these types of initiatives, it is essential that program developers follow best practice recommendations for documenting the efficacy of their programs. Zeidner et al. (2002), for example, provide a set of detailed guidelines for developing and documenting EI programming.

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