Chapter 1
Three Decades of Emotional Intelligence Research: Perennial Issues, Emerging Trends, and Lessons Learned in Education: Introduction to *Emotional Intelligence in Education*

Kateryna V. Keefer, James D. A. Parker, and Donald H. Saklofske

Abstract Education is one of the largest applied areas for the construct of emotional intelligence (EI). The emphasis on social-emotional learning (SEL) is rapidly growing at all levels of the education delivery system, from preschool and secondary school curricula to post-secondary, professional, and continuing education programs. The book *Emotional Intelligence in Education* brings together leading world experts in the fields of EI and SEL to highlight current knowledge, new opportunities, and outstanding challenges associated with scientifically based applications of EI in education. In this introductory chapter to the book, we take stock of almost three decades of EI research, addressing three common concerns: (1) that EI is nothing more than old wine in new bottles, (2) that EI is poorly defined and measured, and (3) that claims about the importance of EI for various life success outcomes are dramatically overblown. We also highlight a number of new and emerging trends that point to the increasing maturity of the EI field as an area of study. Having taken the pulse of the chapters comprising the book, we propose that the field of EI would benefit from paying greater attention to the social context within which EI operates.

It is often said that psychology has a long past but a short history; the same dictum applies to the construct of "emotional intelligence." Although others had used the term earlier (e.g., Greenspan, 1989; Leuner, 1966), the contemporary origins of "emotional intelligence" come from a pivotal paper by Salovey and

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

D. H. Saklofske
Department of Psychology, University of Western Ontario, London, ON, Canada
e-mail: dsaklofs@uwo.ca

K. V. Keefer et al. (eds.), *Emotional Intelligence in Education*, The Springer Series on Human Exceptionality, https://doi.org/10.1007/978-3-319-90633-1_1

Table 1.1 Number of EI-related papers in Web of Science (1990 to November 2017)

Time period	Number of papers	% of total
1986–1990	1	<0.1
1991–1995	6	0.1
1996–2000	108	2.3
2001–2005	447	9.7
2006–2010	1050	22.8
2011–2015	2142	46.5
2016–November 2017	857	18.6

Mayer published in 1990. To introduce their "new" construct, Salovey and Mayer proposed that emotional intelligence (EI) consisted of three broad and interrelated abilities: (1) the appraisal and expression of emotion, (2) the regulation of emotion, and (3) the utilization of emotion to motivate and plan. In proposing the construct, the authors drew on a prior literature from a variety of areas – particularly clinical, cognitive, educational, and personality psychology – suggesting that EI was part of a long-standing tradition within the intelligence area of researchers exploring people's specific "intelligences" within subareas like "social behavior" and "emotion." Although interest in Salovey and Mayer's new construct developed somewhat gradually (as will be outlined below), it is clear that EI has grown to become a substantial research area over the past decade. Using the Thomson Reuters' Web of Science database, Table 1.1 presents the number of research papers, by half-decade intervals, from 1986 to November 2017 using "emotional intelligence" in either the publications' keywords, title, or abstract. Of the 4611 EI-related papers in the database, the vast majority (65%) were published since 2010.

Salovey and Mayer (1990) had originally predicted that EI could become a major research area, since they believed that the construct had considerable "heuristic value in drawing together literatures that are often left unintegrated" (p. 200). If we break down the 4611 papers from Table 1.1 into the Web of Science's broad set of "research areas," it would appear that Salovey and Mayer were quite right to foresee that the EI construct would appeal to researchers in a multitude of fields. Table 1.2 presents the proportion of papers in the top 10 research areas, representing the vast majority of published papers. Apart from the sizable body of EI-related work within the general psychology field (48.8% of published papers), a substantial body of work has also evolved in applied fields like business/economics (16.6% of papers), education (13.5% of papers), and health (12.8% of papers). The large number of EI papers directly connected to education (N = 622) is just one important indicator of the need to take stock of current issues and trends in this area – a key goal of this book.

Although a large EI literature has now evolved, it is interesting to note that almost from the start when this construct was introduced, it was met with a sizeable critical response (for early examples of critiques, see Davies, Stankov, & Roberts, 1998; Fisher & Ashkanasy, 2000; Izard, 2001; Newsome, Day, & Catano, 2000; Pfeiffer,

Table 1.2 Proportion of EI-related papers by Web of Science research area (top 10)

Rank	Topic	*N*	%
1	Psychology	2252	48.8
2	Business/economics	766	16.6
3	Education	622	13.5
4	Social sciences other	308	6.7
5	Psychiatry	306	6.6
6	Nursing	199	4.3
7	Computer science	188	4.1
8	Neurosciences/neurology	179	3.9
9	Engineering	135	2.9
10	Healthcare sciences/services	87	1.9

2001; Roberts, Zeidner, & Matthews, 2001; Sternberg, 1999; Thingujam, 2002). While the EI area has grown exponentially over the past three decades in diverse disciplines (e.g., psychology, business, education, and psychiatry), the critical response has tended to focus on three recurrent concerns: (1) that EI is nothing more than a new name for related constructs that have been studied for many decades, (2) that EI is poorly defined and measured, and (3) that claims about the importance of EI for various life success outcomes are dramatically overblown (for the most detailed example of this type of critical response, see Murphy, 2006). As we solicited, edited, and contributed chapters to this book, these perennial concerns about EI were foremost on our minds to be addressed. Before we introduce the themes and chapters presented in this book, it is important that we first address these three common criticisms about EI.

Perennial Issues and Emerging Trends

EI: Old Wine in New Bottles?

Although EI has a relatively short history as a discrete construct, overlapping and related constructs can be traced back to the beginnings of the twentieth century. The most obvious example is the concept of "social intelligence," which was first introduced by Thorndike in 1920 as the "ability to understand and manage people." The new concept quickly spawned a very rich literature (see the review by Thorndike & Stein, 1937 for evidence of how large and nuanced the early work on social intelligence had become) that foreshadows many conceptual developments to come later in the century. A case in point is the model of social intelligence used by Moss et al. (1927) to develop a new test for social intelligence. This multifaceted measure had separate subscales to assess judgment in social situations, recognition of the mental state of the speaker, memory for names and faces, sense of humor, and identification of emotional expression. Specific items and tasks on this Social Intelligence Test were very similar to those used in recently developed measures of EI abilities (e.g., Mayer,

Salovey, & Caruso, 2002). Landy (2006) makes a very compelling argument that most of the core constructs linked to the recent EI area can be traced directly back to the social intelligence literature of the 1920s and 1930s.

Ultimately, the issue of EI being old wine in new bottles is a problem mostly for those concerned with priority claims in psychology (Gross, 1998) – a partisan and small group at most. As historians of psychology have long noted, with "objective" moments of discovery quite rare in the discipline, fixating on priority claims for constructs like EI is very much an intellectual dead end (see Danziger, 1994, and Smith, 1988, for detailed discussions of this issue with a number of key concepts in psychology). Perhaps what is more important to take note of, however, is that for over a century now a cyclical pattern of events has taken place with respect to EI-related constructs. One cohort of researchers documents the importance of emotional and social competencies for various life success outcomes, only to have these insights fade from the zeitgeist as more pressing research priorities and topics take hold. Time passes, and then a new cohort of researchers "discovers" the importance of EI-related competencies for a new generation. Rather than worry about priority claims in the EI area, perhaps the bigger question is why various generations of psychologists, and those working in allied fields, periodically lose sight of the important relationship between EI-related competencies and life success (Kaufman & Kaufman, 2001). What is it about a discipline where the need to "discover" new psychological concepts dooms it to constantly squander precious research time and resources?

It is important to acknowledge that research paradigms are influenced by the wider sociocultural, economic, and political currents of their place and time. Indeed, the old-wine-in-new-bottles argument can be similarly extended to the current applications of EI in the education sector under the trademark of "social-emotional learning" (SEL; Durlak, Domitrovich, Weissberg, & Gullotta, 2015). The widespread implementation of school-based SEL programs is part of a broader "character education" movement aimed at "helping young people become responsible, caring, and contributing citizens" (Character Education Partnership; http://www.character.org). It has been said that "character education is as old as education itself" (Lickona, 1991, p. 6), with both religious (e.g., "moral" education) and secular roots (e.g., "civic" education), and a common goal of rectifying or preventing pressing societal problems like underachievement, unemployment, violence, criminality, poverty, and public health. In reviewing the history of character education in the USA, Sojourner (2012) points out how various societal trends have contributed to the temporary abandonment of character education in the 1960s and 1970s, as well as its resurgence in the late 1980s and increased momentum throughout the 1990s. The tenets behind the twenty-first century SEL movement are very much aligned with the general goals of character education: to develop "the whole child" and stave off societal crises (see Chap. 12 by Elias, Nayman, & Duffell, this volume). What seems to set it apart from earlier iterations is the increased emphasis on rigorous program evaluation research and evidence-based practice (see Chap. 8 by Humphrey, this volume).

EI: Poorly Defined and Measured?

Conceptual Heterogeneity Since Salovey and Mayer (1990) published their original EI model, a variety of alternative conceptualizations have been proposed for the EI construct, some substantially more varied than others (Stough, Saklofske, & Parker, 2009). Most models, however, continue to share the core elements introduced in 1990, namely, that EI involves competencies of perceiving, understanding, and managing emotions and that these competencies can be exercised both intrapersonally (i.e., dealing with one's own emotions) and interpersonally (i.e., dealing with emotions of others). All EI models implicitly posit these competencies to have important implications for constructive problem solving and psychosocial adaptation (for detailed reviews of EI models, see Mayer, Roberts, & Barsade, 2008; Zeidner, Roberts, & Matthews, 2008).

While there has been general agreement about the types of competencies involved in EI, one of the most divisive issues in the EI area, and certainly a factor contributing to the perception that EI is a poorly defined construct, is the coexistence of two conceptually distinct approaches to defining the key competencies. In one key approach, EI is viewed as a set of emotion-related abilities, congruent with how cognitive intelligence is generally conceptualized (reviewed in Chap. 2 by Fiori and Vesely-Maillefer, this volume). In the other approach, EI is treated as a set of emotion-related personality and behavioral dispositions that can be self-reported or observed by others (reviewed in Chap. 3 by Petrides, Sanchez-Ruiz, Siegling, Saklofske, & Mavroveli, this volume). Early EI research is quite a confusing body to interpret, since the two approaches were often treated as interchangeable (Zeidner et al., 2008), yet they produced divergent results. Petrides and Furnham (2001), in an influential paper in the EI area, proposed the conceptual distinction between "ability EI" and "trait EI" for the two broad approaches, which has considerably disambiguated the field. Subsequent empirical work in the EI area has tended to be explicit about whether the measured EI variables are abilities or traits.

The conceptual distinction between ability and trait EI derives from their methods of measurement. Ability EI is assessed with performance-based tests where individuals respond to stimuli or solve problems designed to estimate their maximal level of knowledge and aptitude (e.g., Mayer, Salovey, & Caruso, 2002). Trait EI is measured with self-report questionnaires designed to tap into individuals' typical behaviors, values, and self-concepts (e.g., Bar-On, 1997; Petrides, 2009). Accordingly, ability EI resides within the intelligence domain and overlaps with other forms of cognitive abilities (Mayer, Caruso, & Salovey, 1999; MacCann, Joseph, Newman, & Roberts, 2014), whereas trait EI is part of the personality hierarchy and overlaps with basic personality traits (Petrides, Pita, & Kokkinaki, 2007). Knowing their distinctive nomological networks, it is not surprising that ability and trait EI measures have been found to correlate only weakly to moderately with each other and to relate differentially to a host of other constructs and outcome criteria (Brackett & Mayer 2003; Van Rooy & Viswesvaran, 2004; Zeidner, Shani-Zinovich, Matthews, & Roberts, 2005).

There is now a wide consensus that the ability and trait approaches to EI are complementary rather than a sign of confusion in the field and that both ought to be included in EI research and theorizing (Hughes & Evans, 2016; Roberts, MacCann, Guil, & Mestre, 2016; Schutte, Malouff, & Hine, 2011; Petrides, 2011). In fact, the present decade is witnessing a paradigm shift toward more integrative approaches, with several research groups putting forth models that incorporate EI abilities *and* EI traits within a unified theoretical framework (Boyatzis, 2009; Cherniss, 2010; Matthews, Zeidner, & Roberts, 2012; Mikolajczak, 2009). These integrative models recognize that scores on ability and trait EI measures reflect distinct strata of a person's overall EI profile. Tests of ability EI tend to capture individuals' explicit knowledge about emotions and about emotionally "intelligent" ways of dealing with them, along with their ability to apply that knowledge when instructed to do so. However, knowing what to do and having the aptitude for emotionally intelligent behavior offers no guarantee that a person will act on it in practice. Indeed, individuals may have solid EI knowledge and abilities that they can demonstrate on a structured EI test but lack the propensity, self-efficacy, or practice opportunities to apply them routinely in their day-to-day behaviors. Because trait EI instruments attempt to capture individual's EI at the behavioral manifestation level (i.e., what people *typically* do), what they end up measuring often reflects a "mix" of EI-related competencies, attitudes, self-concepts, and dispositions.

Articulating the conceptual differences between ability and trait EI has been especially helpful in making sense of the "messy" research on EI's criterion validity (discussed in a later section). The distinction between "knowing what to do" and "actually doing it" is also prominent in the models of change underpinning many successful EI interventions, which recognize that teaching EI knowledge and skills alone is not enough; the new learning must be accompanied by regular practice opportunities and reinforcing feedback in order to produce lasting behavioral change at the dispositional (trait EI) level (see Chap. 15 by Boyatzis & Cavanagh, this volume; Chap. 11 by Laborde, Mosley, Ackermann, Mrsic, & Dosseville, this volume; Chap. 14 by Vesely-Maillefer & Saklofske, this volume).

The integrative approach has also jump-started several new research lines exploring the dynamics between EI abilities and traits, including their differential developmental trajectories (e.g., Keefer, Holden, & Parker, 2013), reciprocal influences on each other (e.g., Schutte & Malouff, 2012), as well as additive and interactive effects on life outcomes (e.g., Hughes & Evans, 2016; Salguero, Extremera, Cabello, & Fernández-Berrocal, 2015). In pursuing these research questions, EI researchers have made new connections to other domains of individual differences (beyond the "home" bases of intelligence and personality), including the rich literature on social-cognitive constructs such as self-efficacy (Alessandri, Vecchione, & Caprara, 2015) and self-concept (Keefer, 2015).

In sum, most researchers in the EI area see the multiplicity of EI models as a healthy indicator of a relatively new and generative research area (Austin, Parker, Petrides, & Saklofske, 2008; Petrides et al., 2016). A subgroup of scholars, however, continue to interpret this situation as an ongoing problem that can only be resolved when the EI area rejects the trait approach and unites around the ability

model (Antonakis & Dietz, 2010; Mayer, Caruso, & Salovey, 2016). If we use the general intelligence area as a relevant analogy, it is quite clear that a discipline can handle a multiplicity of conceptual models. After 100+ years of work on intelligence, it is worth noting that conceptual hegemony is still far from sight (i.e., Cattell, 1987; Sternberg, 1985). Yet the area continues to flourish with a diversity of conceptual models – some of them theoretically quite incompatible with each other (Flanagan & Harrison, 2012).

Measurement Challenges Fueling the lingering perception in the literature that EI is poorly conceptualized (e.g., Antonakis, 2004) is the inevitable methodological baggage associated with the assessment approaches for both ability and trait EI. With respect to ability EI tests, concerns have been expressed about the validity of the right-or-wrong scoring format (Brody, 2004), particularly when these tools are used in very different cultural groups (Fernández-Berrocal & Extremera, 2006; see also Chap. 5 by Huynh, Oakes, & Grossmann, this volume). With correct answers usually determined by consensus with the majority, some scholars have also questioned whether high scores may reflect conformity to social norms rather than any form of intelligence (Matthews, Emo, Roberts, & Zeidner, 2006). In addition, the hypothetical scenarios and static stimuli used in most of these tests may have poor generalizability to the dynamic interactions of real life (for a detailed discussion of issues associated with ability EI measures, see Chap. 2 by Fiori & Vesely-Maillefer, this volume).

Given the widespread use of self-report measures within the trait EI approach, many writers have stressed the inappropriateness of using self-reports for assessing actual EI abilities, due to the well-known systematic biases that plague people's estimates of their own competencies (Dunning, Heath, & Suls, 2004; Freund & Kasten, 2012; see also Keefer, 2015, for a detailed discussion of issues associated with self-report EI measures). Neither is the use of EI questionnaires appropriate in high-stakes assessments, where the responses can be easily faked (Day & Carroll, 2008; Grubb & McDaniel, 2007). Other critics have raised concerns over the "mixed" content of trait EI measures due to their overlap with measures of basic personality and other motivation variables (Brackett & Mayer, 2003).

Again, the general intelligence area offers important perspective about the assessment of EI. While the intelligence researchers have been developing assessment tools for well over a century, ongoing gaps and major shortcomings (see Ackerman, 2017) are a reminder about how difficult it is to develop valid and reliable measures for core human competencies. Critics of the EI area have long been quick to highlight psychometric problems with assessment tools for the construct (e.g., Brody, 2004; Davies et al., 1998; Newsome et al., 2000; Roberts et al., 2001). In many ways, it is quite understandable that many commonly used assessment tools in the EI area have their limitations. They are all first-generation measures for the construct.

While the first generation of EI measures are quite varied with respect to their psychometric properties (Zeidner et al., 2008), it is important to point out that it was the development of tools like Bar-On's (1997) Emotional Quotient Inventory (EQ-i),

Schutte et al.'s (1998) self-report EI scale, and the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer et al., 2002) that propelled the substantial expansion of published work on EI documented in Table 1.1. If one looks at the 10 most frequently cited papers among those included in Table 1.1, it is interesting to note that half of them appeared at the turn of the millennium and introduced or highlighted new EI measures (e.g., Mayer, Salovey, Caruso, & Sitarenios, 2003; Petrides & Furnham, 2000, 2001; Schutte et al., 1998; Wong & Law, 2002). These empirical facts should refute a common origin myth in the EI area that the publication of Goleman's (1995) popular book on EI precipitated the dramatic growth of research on the topic (e.g., McCleskey, 2014; Pérez, Petrides, & Furnham, 2005; Sjöberg, 2001). As indicated in Table 1.1, relative to the period after 2000, the 1990s actually produced a very small body of EI work (2.5% of published papers). The new area needed the arrival of assessment tools linked explicitly to the EI construct for broad research interest to take hold.

Although the first-generation tools like the EQ-i and MSCEIT continue to be widely used and have been updated and revised, the past decade has also seen the development of second-generation ability and trait EI measures in attempts to address the limitations of their predecessors. These developments are especially welcome for the area of ability EI, where the MSCEIT was the only available test for a long time. The new wave of ability EI tests utilize more ecologically valid multimedia presentations of emotion stimuli and scenarios (for a review, see Chap. 2 by Fiori & Vesely-Maillefer, this volume) and have started to explore alternative theory-driven methods of scoring (Mestre, MacCann, Guil, & Roberts, 2016).

Recent efforts in the assessment of trait EI have been directed at creating tools that are less "mixed" and more tightly aligned with a particular theoretical paradigm. For example, Petrides' (2009) Trait Emotional Intelligence Questionnaire (TEIQue) is theoretically connected to the Big Five model of personality (McCrae & John, 1992) and assesses emotion-related aspects of personality. Questionnaires like the Emotional Self-Efficacy Scale (Kirk, Schutte, & Hine, 2008) and the Regulatory Emotional Self-Efficacy Scale (Caprara et al., 2008) are informed by Bandura's (1997) social-cognitive theory and assess competence beliefs in relation to specific EI abilities. Of note, the titles of these newer trait EI scales make it explicitly clear that these are not measures of "intelligence."

Another emerging trend includes the development of more differentiated assessments of specific EI competencies. For example, the Profile of Emotional Competence (Brasseur, Grégoire, Bourdu, & Mikolajczak, 2013) assesses EI competencies separately for the intrapersonal and interpersonal domains, which are often conflated with each other in other measures. Separate scales have also been created to assess EI competencies in relation to discrete emotions (e.g., anger, sadness, fear, shame, guilt; see Caprara, Di Giunta, Pastorelli, & Eisenberg, 2013). The emergence of these highly differentiated tools reflects a maturing research area that is ready to move beyond the crude index of "global" EI toward more nuanced, multidimensional, and person-centered predictive models (Keefer, Parker, & Wood, 2012; Parker, Keefer, & Wood, 2011).

EI: Overblown Importance?

The Criticisms The criticism that the importance of EI for life success has been exaggerated, or at the very least over extended, is a fair comment for the first decade of the EI research. How could it not be? As documented in the previous section, the first measures for the EI construct did not appear in the peer-reviewed literature until the late 1990s. Thus, a great deal of the enthusiasm for EI during the 1990s was undoubtedly connected to the theoretical and applied potential of the construct. Virtually all of the early empirical work was indirect, capitalizing on assessment tools and measures developed for other constructs. For example, in an early paper on the clinical implications of the EI construct, Parker (2000) focused on the large prior clinical and psychiatric literature on alexithymia (Sifneos, 1973). Alexithymia is an older construct with clear theoretical connections to EI (Taylor, Parker, & Bagby, 1999), and one of several pre-existing literatures Salovey and Mayer drew heavily upon when they first proposed the EI construct in 1990.

The scarcity of reliable and valid EI measures did not go unnoticed to early commentators and reviewers of the EI area (e.g., Davies et al., 1998; O'Connor & Little, 2003; Roberts et al., 2001). To say that these writers were critical of the state of EI assessment is an understatement. Writing about the EI area in 2001, Zeidner, Matthews, and Roberts wrote that "It remains to be seen whether EI, like the canals of Mars, is the product of the tendency of even expert observers to see, in complex data, patterns that do not exist" (p. 227). While the views of these specific researchers appear to have softened with respect to EI measures (e.g., Matthews, Zeidner, & Roberts, 2012), negative perceptions persist, with many still blaming the early "hype": "Goleman's claims have done considerable harm to the field" (Antonakis, Ashkanasy, & Dasborough, 2009, p. 247).

The ongoing writings on EI by Antonakis and colleagues is a good example of the persistence of negative schema about the construct, regardless of the fact that the measurement literature is vastly improved from 2000. Writing in 2004 about the usefulness of the EI construct for business (and citing all of the sources from the previous paragraph), Antonakis echoed serious concerns about the measurement of the EI construct: "It is unconscionable that organizations might be basing their hiring, promotion, or retention decisions wholly or in part on EI models – models that simply do not have enough scientific backing to be used in industrial settings. Thus, it is imperative that future research be conducted using rigorous tests to determine whether EI really matters" (p. 172). A decade later, and almost 2000 more published papers, the bottom line for Antonakis and colleagues is that the EI area has yet to produce a valid assessment tool (Fiori & Antonakis, 2012).

The Evidence While the EI area continues to have its critics, the research has matured substantially from its first decade. With the accumulation of a large body of studies on similar outcome variables (and using comparable assessment tools), researchers have begun to systematize the links between EI and important life success variables. Much of the meta-analytic evidence to date pertains to trait EI, as it

has produced considerably more research studies than ability EI. The bottom line from this meta-analytic work is that individuals high in trait EI tend to enjoy greater subjective well-being ($r = 0.38$) and quality of intimate relationships ($r = 0.32$), suffer from fewer physical and mental health problems ($r = 0.34$), and achieve higher academic ($r = 0.20$) and occupational ($r = 0.30$) performance (Malouff, Schutte, & Thorsteinsson, 2014; Martins, Ramalho, & Morin, 2010; O'Boyle, Humphrey, Pollack, Hawver, & Story, 2011; Perera & DiGiacomo, 2013; Sánchez-Álvarez, Extremera, & Fernández-Berrocal, 2016).

Although the moderate magnitude of these effect sizes may seem underwhelming, there are several reasons to take these findings to heart. First, it is important to remember that broad life outcomes – such as overall health, academic achievement, or occupational performance – are products of numerous interacting factors reflecting both individual characteristics and environmental influences. As such, any single factor alone can only explain a small portion of the outcome variance, and its effects are likely to be moderated by a host of other variables. Put in perspective, the effect sizes found for trait EI are comparable to those of other well-established personality constructs in relation to the same criteria (DeNeve & Cooper, 1998; Judge & Bono, 2001; Hurtz & Donovan, 2000; Poropat, 2009).

Of course, trait EI overlaps with basic dimensions of personality, which raises the question of whether it can explain incremental criterion variance over and above basic personality. One of the meta-analyses cited above (O'Boyle et al., 2011) included tests of incremental validity and found that measures of trait EI explained an additional 6.8% of variance in job performance beyond cognitive intelligence and the Big Five personality traits. Another study (Andrei, Siegling, Aloe, Baldaro, & Petrides, 2016) meta-analyzed incremental validity studies of trait EI (as measured with the TEIQue) and found that the TEIQue scores consistently explained an additional 6% of variance in a range of mental health criteria beyond basic personality and other variables (e.g., optimism, cognitive ability). These findings should alleviate the common concern that trait EI is redundant with other personality constructs and provide further support for its utility as an independent predictor of life success outcomes.

It is also useful to look beyond the statistical "modesty" of effect sizes and consider their "practical" significance in terms of the personal or economic impacts connected to improvements of even a few percentage points. An illustration of this issue in the health domain was provided by Mikolajczak et al. (2015; Mikolajczak & Van Bellegem, 2017) based on their analyses of 12 years of health insurance records for a population-based sample from Belgium. These researchers reported significant but weak associations (r's < 0.20) between trait EI and objective health outcomes (e.g., fewer doctor visits, shorter hospitalizations, reduced use of medications). Yet based on these associations, every 1% increase in trait EI was estimated to yield a 1% decrease in healthcare expenditures, amounting to a difference of two billion euros in annual health costs between those with above-average versus below-average trait EI. In the world of public policy, this would be considered a worthwhile return on investment (Mikolajczak & Van Bellegem, 2017). Similar economic impact analyses have been conducted in the education sector for school-based SEL

programs, which have been shown to produce significant but weak effects ($r = 0.11$–0.13) on students' social behavior and academic performance (Durlak et al., 2011), yet their economic return is estimated to be $11 for every dollar invested in a school program (Belfield et al., 2015). In fact, effect sizes as low as $r = 0.10$ have been suggested to be of potential policy interest, particularly for objective and difficult to change outcomes such as academic grades (Durlak, 2009).

The few meta-analyses that included studies of ability EI have found significant but weaker associations compared to those of trait EI, linking higher scores on ability EI measures to greater subjective well-being ($r = 0.22$), fewer physical and mental health problems ($r = 0.17$), and higher occupational performance ($r = 0.24$) (Martins et al., 2010; O'Boyle et al., 2011; Sánchez-Álvarez, Extremera, & Fernández-Berrocal, 2016). Although they had no direct data to support the idea, Salovey and Mayer (1990) speculated at the end of their seminal paper introducing the EI construct that the "person with emotional intelligence can be thought of as having attained at least a limited form of positive mental health" (p. 200). Almost 30 years later, the empirical evidence has borne out their cautious predictions but also revealed trait EI measures to be stronger predictors of life outcomes relative to ability EI measures. In a recent theoretical update of their ability EI model, Mayer et al. (2016) acknowledged that EI abilities cannot be expected to "correspond neatly" to emotionally intelligent behavior and that they need to be considered in tandem with personality dispositions when predicting outcome criteria.

So where does the evidence leave us with respect to EI's importance in life? The hard numbers reviewed in this section indicate that it would be prudent for researchers to tone down their expectations about how much variance EI measures can explain in statistical predictive models (e.g., about 6% of incremental variance for trait EI, and even less for ability EI). At the same time, one must be careful not to dismiss entirely the very real practical implications of higher versus lower EI traits and abilities for the individuals and the society. As cogently summed up by Mayer et al. (2016), "the prediction from intelligence to individual instances of 'smart' behavior is fraught with complications and weak in any single instance... At the same time, more emotionally intelligent people have outcomes that differ in important ways from those who are less emotionally intelligent." (Mayer et al., 2016; p. 291).

With new and refined EI measures and conceptual models being actively developed, the next big task for EI researchers is to establish EI's causal role in the associated outcomes. The overwhelming majority of research being conducted in this area is still correlational, and more randomized controlled experiments and longitudinal designs are sorely needed.

Lessons Learned from Applications of EI in Education

Despite all the theoretical and methodological challenges, the construct of EI has had an undeniable impact on the applied area of education. At the turn of the twenty-first century, scholars commenting on the early attempts to implement EI programs

in schools expressed strong concerns over their dubious theoretical foundations and limited or entirely lacking evaluation research (Zeidner, Roberts, & Matthews, 2002). Today, SEL is an internationally recognized trademark for hundreds of classroom curricula and school-wide programs unified within a common (albeit rather loose) conceptual framework (Collaborative for Academic, Social, and Emotional Learning; https://casel.org) and, more importantly, supported with rigorous evidence base (Durlak et al., 2015). A seminal meta-analysis of over 200 randomized controlled trials of universal school-based SEL programs supported their overall efficacy in boosting students' socioemotional competencies and improving their behavioral, social, academic, and well-being outcomes (Durlak et al., 2011). Of course, not all SEL programs are created equal, and the quality of implementation does matter (see Chap. 8 by Humphrey, this volume), but these controlled intervention studies illustrate what is possible.

It appears that while EI researchers were debating over definitions and effect sizes, applied researchers and educators devised an EI-infused recipe for making positive change in children's lives. Of course, the causal role of EI in these programs is difficult to ascertain due to the complex network of factors, processes, and mechanisms involved in the delivery of a whole-school SEL intervention. All we can infer is that there is a common set of ingredients that produces positive changes in both EI competencies and other behavioral outcomes. Given that the criterion validity of EI has proven to be moderate at best, it is likely that the EI area as a whole has overlooked some key variable(s) in its explanations of the EI-life success nexus. As we gathered and edited contributions to this book from leading experts in the fields of both EI and SEL, we searched for clues as to the possible missing ingredients. This process has led us to consider the fundamental tacit assumptions that have governed thought and research in the two fields.

We observed that mainstream EI researchers have tended to adopt an individual differences perspective, where EI is treated almost exclusively as a predictor variable for other outcomes, with little consideration given to reverse causality or reciprocal influences. Researchers operating within this paradigm are preoccupied with three main issues: (1) measurement, because EI is assumed to be a relatively stable (and therefore measurable) property of individuals; (2) construct validity, dominated by efforts to differentiate EI from other individual differences constructs (e.g., cognitive intelligence, basic personality); and (3) criterion validity, investigated primarily through correlational research designs. Researchers working from this perspective are more likely to view EI as a universally adaptive property, in that higher EI is assumed to be linearly related to more positive outcomes. This latter assumption is especially true of ability EI models and some (but not all, see Petrides, 2009) trait EI models that include adaptiveness in their very definition (e.g., Bar-On, 1997). Viewed through this individualizing lens, low EI is interpreted to mean that something is lacking *within* the person (e.g., poor skills or lack of motivation or confidence to use them), and so the chief approach to intervention is to directly target these psychological processes within the individual.

In contrast, we noted that educational and SEL researchers have tended to view EI through a developmental lens, where EI is treated not only as a predictor of other variables but also as an important outcome in its own right, with bidirectional influences assumed to be the norm rather than exception. Researchers operating within this paradigm are concerned with identifying factors and mechanisms (both within and outside the individual) that contribute to EI's development over time, utilizing a mix of longitudinal, experimental, and intervention research designs. Moreover, educational researchers tend to adopt an interactionist perspective that explicitly recognizes the role of broader sociocultural and contextual influences on an individual's behavior. From this perspective, adaptiveness is necessarily viewed in context: what might be considered as abnormal behavior under normal circumstances may have developed as a normal adaptive response to abnormal circumstances. Viewed through this ecological lens, low EI is interpreted to mean that something failed to *happen* to the individual (e.g., lack of appropriate role models, practice opportunities, reinforcements), and so the chief approach to intervention is to modify the social environment which would then facilitate changes at the individual level. Indeed, provision of supportive interpersonal interactions and positive classroom and school climates is regarded as a necessary active ingredient in effective school-based SEL programs (see Chap. 7 by Hoffmann, Ivcevic, & Brackett, this volume; Chap. 8 by Humphrey, this volume).

By bringing the EI and SEL perspectives under the same roof, this book aims to highlight both the contrasts and the points of intersection between these two paradigms, with the hope of facilitating their greater integration and mutual advancement. Indeed, what one paradigm does well, the other tends to overlook and vice versa. For example, the mainstream EI research could benefit from more longitudinal and experimental research designs to better address the issue of causality. Conversely, the SEL practice would be strengthened by greater conceptual clarity (particularly with respect to the ability-trait distinction) when assessing EI competencies and evaluating program outcomes. But if there is one major lesson for EI researchers to be learned from education, it is the pressing need to pay greater attention to the social context within which EI operates and which moderates EI's effects on life success outcomes. This latter sentiment runs as a consistent chorus throughout *every* chapter in this book, accompanied by an accord of growing dissatisfaction with the individualizing paradigm on all fronts – conceptual, measurement, and predictive (e.g., Chap. 2 by Fiori & Vesely-Maillefer, this volume; Chap. 5 by Huynh, Oakes, & Grossmann, this volume; Chap. 4 by Zeidner & Matthews, this volume). Once again, this signals a new level of maturity for the EI field. To facilitate a true paradigm shift, we encourage EI researchers to consider social contextual influences not merely as add-ons to the existing individual-focused models but rather as the foundational ingredients that are built into the models up front and constitute the defining assumption of the new look on EI.

Scope of this Book

There are many topical areas of research that would undoubtedly be relevant to the subject of EI in education, including academic emotions, emotion regulation, resilience, and, of course, SEL. We chose to limit the scope of this book to the literature explicitly linked to EI theory and measurement, supplemented with selected SEL topics, for several reasons. First, many of the concepts listed above have been covered in recently published handbooks dedicated to that specific area (e.g., Durlak et al., 2015; Goldstein & Brooks, 2013; Gross, 2014; Pekrun & Linnenbrink-Garcia, 2014) – which further attests to the timeliness of the present volume. Rather than duplicating those efforts here, we refer the reader to those respective texts instead. Second, we wanted to take stock of the EI field as it approaches the end of its third decade, highlighting current knowledge, new opportunities, and outstanding challenges associated with its scientifically based applications. We chose to focus on education because it is one of the most active areas where EI is currently being applied (second only to business/economics), and because EI applications through SEL provide a valuable feedback loop to reflect further on the nature and workings of EI.

This book is organized in three parts. Part I focuses on the theoretical, measurement, and criterion validity issues concerning EI. The first three chapters represent the theoretical backbone of the EI literature, providing critical but constructive appraisals of ability EI (Chap. 2 by Fiori and Vesely-Maillefer, this volume), trait EI (Chap. 3 by Petrides et al., this volume), and their role in stress and coping – the chief theoretical mechanism through which EI is postulated to exert its effects on life outcomes (Chap. 4 by Zeidner and Matthews, this volume). Chapter 5 (Huynh et al., this volume) is a new voice within the EI literature, but one that we hope will become a theoretical mainstay, as it underscores the very serious pitfalls associated with ignoring the role of culture when attempting to define, assess, and develop EI.

Part II of the book is dedicated to SEL applications in preschool and secondary school contexts. Three of the chapters address crosscutting issues related to developmental considerations (Chap. 6 by Denham & Bassett, this volume); program principles, best practices, and barriers to implementation (Chap. 8 by Humphrey, this volume); and broader sociocultural and policy implications (Chap. 12 by Elias et al., this volume). Three other chapters explore selected special topics in SEL, including bullying prevention and intervention (Chap. 9 by Espelage, King, & Colbert, this volume), atypically developing populations (Chap. 10 by Montgomery, McCrimmon, Climmie, & Ward, this volume), and a relatively new applied area of EI in sports (Chap. 11 by Laborde et al., this volume). Although detailed coverage of specific SEL programs was outside the scope of this book (for comprehensive program reviews, see Durlak et al., 2015), we did include one program-specific chapter on the RULER approach, as it is the only example of a school-wide SEL program that is explicitly derived from EI theory (Chap. 7 by Hoffmann et al., this volume). Most other chapters in this section provide numerous other examples of relevant SEL programs.

Part III of the book extends the educational implications of EI into post-secondary and tertiary education settings, with topics ranging from youth career readiness (Chap. 13 by Di Fabio and Saklofske, this volume) and college success (Chap. 16 by Parker, Taylor, Keefer, & Summerfeldt, this volume), to case examples of preservice EI training programs for future educators (Chap. 14 by Vesely-Maillefer and Saklofske, this volume) and organizational leaders (Chap. 15 by Boyatzis and Cavanagh, this volume).

Given its topical coverage, international expertise, and a balanced emphasis on scientific research and practical applications, we believe this book will be a valuable resource for researchers, policy makers, psychologists, educators, administrators, student support personnel, and professional coaches working at all levels of the education hierarchy, as well as graduate students and professors in developmental, personality, and school psychology, social work, and education.

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