

A Competence Development Approach for Entrepreneurial Mindset in Entrepreneurship Education

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Abstract

In recent years Entrepreneurship Education (EE) has become prevalent throughout Higher Education (HE), with a proliferation of programming for learners from Undergraduate to Post-experience studies. Despite the rapid scaling of provision, the majority of extant EE offerings demonstrate little conceptual evolution and development from early programs. Many approaches fall short of enabling the cognitive and behavioral change so critical to supporting entrepreneurial action. In this article we consider the concept of entrepreneurial mindset (EM) as a framing for EE programming, conceptualizing it as an approach to support the development of multidimensional cognitive and emotional competences and behavioral outcomes to enable entrepreneurial value creating activity across a range of contexts. We focus specifically on how educators can actively support the development of an EM through EE programming and start a conversation on the practicalities of operationalizing the EM concept within HE teaching and learning activity.

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Background to the Study

Over the past three decades Entrepreneurship Education (henceforth EE) has seen significant interest and development, becoming an integral part of educational programming across disciplines within Higher Education (HE), from Undergraduate to Post-Experience courses. Aligned to this, research on EE has also flourished, providing a mechanism through which to critically engage in debates on not only the content of EE, but also how the learning and teaching of EE can (and should) take place (Neck & Corbett, 2018). As this scholarly debate has developed, conversations have slowly evolved from EE focused solely on creating new ventures towards EE as a mechanism to promote and support wider value creating activity (Hylton et al., 2020; Larsen, 2022) as well as the development of the life skills “necessary to live productive lives even if one does not start a business” (Neck & Corbett, 2018, p. 10).

In this vein, many now speak of the concept of entrepreneurial mindset (henceforth EM) to underpin - and to augment - current approaches to EE. An EM has for some time been recognized as important for individuals to operate in the 21st century economy (McGrath & MacMillan, 2000; Ireland et al., 2003) and has gained significant traction within HE and other academic institutions (Schoonmaker et al., 2020), albeit often in a superficial form (Heuer & Kolvereid, 2014). Yet the recent Covid-19 pandemic has proved a stark reminder of the turbulence and unpredictability of the economic environment. It has brought into sharp focus the need for an EM to support individuals in developing their resilience and ability to cope with feelings of discomfort, vulnerability and uncertainty (Berglund et al., 2020) whilst also engaging in value creating activity. Despite the burgeoning dialogue on EM, there remains a lack of definitional and conceptual clarity on what an EM entails (Hylton et al., 2020; Nabi et al., 2017), notwithstanding attempts to seek consensual understanding among EE educators (Neck. & Corbett, 2018). The first step in resolving this definitional ambiguity is to recognize that an EM is, at its core, a 'state of mind' and thus an inherently cognitive phenomenon (Ireland et al., 2003; Nabi et al., 2017). If we start with this premise, it then follows that EE built on EM should link thinking (i.e. cognition) with other entrepreneurial skills and competences (Morris et al., 2013) that support the taking of entrepreneurial action (McMullen & Shepherd, 2006; Kuratko et al., 2021b).

This paper makes two main contributions. First, it extends existing conceptual understandings of EM (Kuratko, Fisher, & Audretsch, 2021) by substantiating its cognitive, emotional and behavioral dimensions with evidence from entrepreneurship and competence development studies with a view to distill an indicative set of learnable entrepreneurial competences suitable for EE. In doing so, we also make a novel contribution to entrepreneurship education research by identifying key competences and considering what these mean for educators in terms of developing and delivering EM EE. This article is structured as follows. First, we review theoretical foundations of EM, considering foundational principles as well as more recent developments. Next, we distill empirical evidence from academic entrepreneurship and competence development studies in conjunction with evidence-informed policy frameworks to substantiate the cognitive, emotional and behavioral dimensions of EM. We then continue with a

discussion on how these competences can be implemented in EE teaching and learning contexts and consider the implications for EE educators looking to foster and support an EM. The paper concludes briefly with some limitations and areas for further work.

Review of the Entrepreneurial Mindset Literature Theoretical and Definitional Foundations of Entrepreneurial Mindset

As noted earlier, conversations within EE have for some time encompassed the notion of EM. Indeed, we would argue that, thanks to the seminal book from McGrath and MacMillan (2000), it has become something of a 'word du jour' adopted widely across the entrepreneurship and small business disciplines. A recent review of EM studies has identified a sharp increase in publication activity, particularly around individual-level antecedents of EM including metacognition, self-efficacy, experience, self-exploration, and disposition (Daspit et al., 2021). The EM concept and language have also taken hold within HE (Schoonmaker et al., 2020), with institutions seeking to encourage an EM for learners not only within specific classes but across entire curricula (Hylton et al., 2020)¹. Nearly 50 percent of the extant empirical studies on EM are classed as pedagogical (Daspit et al., 2021), with work covering nearly all broad international contexts to varying degrees.

Despite this proliferation of research, the conceptual and theoretical foundations of EM remain notably underdeveloped (Larsen, 2022; Naumann, 2017; Pidduck et al., 2021). At its inception, the concept of EM was based on the foundational principle of sensing and acting on opportunities during conditions of uncertainty (McGrath & MacMillan, 2000). In line with the received wisdom at the time, this principle highlighted the role of a number of 'traits' or 'characteristics' in determining the presence of an EM, with scholars looking to common trait concepts such as the "big 5"² (Antoncic et al., 2015) to determine which individuals or groups were more likely to have an EM and thus to behave more entrepreneurially. The conversation has since evolved, particularly given that personality traits and characteristics yield limited explanatory power when explaining entrepreneurial activity (Gartner, 1988; Ramoglou et al., 2020). Most importantly, a trait-based approach to EM is fundamentally at odds with EE. If traits are assumed to be inborn, then they are unlikely to be developed through teaching and learning activity.

Entrepreneurial Mindset as Competence Development

As with EM, work on entrepreneurial competences has flourished in recent years. Whilst different approaches exist to individual-level competence (for an overview, please see (Le Deist & Winterton, 2005), within entrepreneurship scholars have adopted a holistic approach to competence which encompasses "the knowledge, skills, attitudes, values, and behaviors that people need to successfully perform a particular activity or task" (Morris et al., 2013, p. 353). The framing of competence development has become particularly prevalent within EE, as educators have called into question "old school" EE (Neck & Corbett, 2018, p.31) which pushes 'about entrepreneurship' or 'how to' approaches.

Traditionally, the 'about entrepreneurship' approach focuses on learning about entrepreneurship theory (e.g. Schumpeterian, Kirznerian) and concepts (e.g. effectuation, bricolage) and promotes knowledge acquisition. On the other hand, 'how to' approaches usually promote skill development, often taking the form of specific business modelling (e.g. Osterwalder & Pigneur, 2010) and new venture planning (e.g. Aulet, 2013) skills. Whilst knowledge is of course an important part of one's learning and development, it is not in itself sufficient to develop individual competence (Larsen, 2022; McEvoy et al., 2005). The same is true with skills, particularly when they have been 'artificially' fostered within controlled environments such as HE classrooms and incubators. In these settings, learners are often insulated from many of the harsh realities and uncertainties of the economic environment (Casulli, 2022) and thus theoretical knowledge and applied skills take on greater perceived contextual relevance in order to meet assessment requirements and standardized start-up milestones. As a result, these traditional EE approaches are recognized to fall short of encouraging the development of the cognitive components of competence, specifically the attitudes and values that in turn shape behavioral adaptation. Yet attitudes and values are crucial to the effectiveness of EE. Not only are attitudes and subjective norms (i.e. socially derived values) considered to be core drivers of entrepreneurial behavior (Ajzen, 1991), they are also critical in allowing for contextual variations of how the entrepreneurial self is constituted (Berglund et al., 2020) amongst different learners and over periods of time.

Empirical Evidence Base Supporting the Conceptualization of Entrepreneurial Mindset as Competence Development

As noted earlier, in this paper we seek to address how educators can actively support the development of EM teaching and learning activity to instigate and support competence development and linked behavioral change conducive to value creation activity. To do so we distill evidence from both empirical academic studies and evidence-informed policy frameworks to support a conceptualization of EM as competence development aligned to Kuratko et al.'s (2021a) triadic model of EM. This model is an appropriate and useful orienting framework as it acknowledges the fundamental interlinkages between emotion, cognition and behavior. Indeed, recent findings from neuroscience show the close interplay between emotion and cognition (Damasio, 2000; Adolphs & Damasio, 2001) in the entrepreneurial process (for a review, please see Delgado García et al., 2015). Similarly, neuroscience has provided significant evidence that human action is a manifestation of cognitive-affective mechanisms (Damasio, 2021).

Before presenting our conceptualization of EM and considering the supporting evidence, it is useful to define the terms 'cognition' and 'emotion'. Cognition is a central tenet of entrepreneurial activity, with all entrepreneurial action (no matter how big or small) underpinned by reasoning (i.e. cognition) (Krueger & Carsrud, 1993; Shepherd & Patzelt, 2018). Perhaps the most cited definition of entrepreneurial cognition is from (Mitchell et al. 2002, p. 97), who define it as "the knowledge structures that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation, and growth." Whilst this definition usefully situates cognition within the context of new

venture creation, it is now, we contend, too narrow to accommodate cognition as a competence conducive to other forms of entrepreneurial value creating activity outside a start-up context. To remedy this, we can instead draw on cognition (Braisby, Gellatly & Refstlyed, 2012) and social cognition (Fiske & Taylor, 1991) psychology to consider the cognitive dimension of EM as the set of an individual's mental functions, mental processes (e.g. thought, judgment), mental states (Estes, 1975) and mental models (Fiske & Taylor, 1991) that underpin action conducive to value creation. Whilst we adopt the term 'emotion' within this paper, we recognize that the terms 'emotion' and 'affect' are often used inter-changeably in the literature (Cardon et al., 2012) in order to refer to different types of feelings experienced by individuals, including dispositional affect, specific emotions and mood.

Cognitive Competence in Entrepreneurial Mindset

A range of competences have been identified which align to the cognitive dimension of EM. Perhaps the most comprehensive inventory of cognitive competences to master as part of an EM for value creation is the European EntreComp Framework (Bacigalupo et al., 2016). This evidence-informed framework highlights the importance for learners to develop creativity, vision and opportunity spotting competences that underpin the start of value creation processes. It also highlights the cognitive competences necessary to effectively start and navigate the process: initiative and action orientation, perseverance, self-efficacy, reasoning and coping under uncertainty (Bacigalupo et al., 2016). Whilst studies testing the outcomes of EntreComp application are limited, emerging evidence indicates a strong relationship between the cognitive competences outlined and entrepreneurial start-up behavior (Joensuu-Salo et al., 2022).

A final cognitive competence, linked to the competences above as well as to perceived self-efficacy (Chen et al., 1998) is growth mindset. Often associated with the work of Carol Dweck, growth mindset is a set of values and attitudes that considers all attributes and skills to be shaped by effort and practice, rather than inherent within an individual (Dweck & Leggett, 1988). This prioritizes skill development (and ultimately mastery), seeking learning from both successes and setbacks over a sustained period of time. Studies have found that students who receive growth mindset educational interventions report greater entrepreneurial self-efficacy than control groups (Burnette et al., 2020).

Emotional Competence in Entrepreneurial Mindset

Research from neuroscience has shown that emotion and cognition continually interact with each other (Damasio, 2000; Adolphs & Damasio, 2001). Entrepreneurship scholars have drawn on evidence from such fields as neuroscience to infer that this is also the case in the entrepreneurial process (Delgado Garc´ia et al., 2015). As yet, the emotion and affect literature largely fails to consider emotion from the perspective of competences or competence development, despite interest in the role emotion plays in shaping cognition and behaviors. However, scholars have for some time found evidence that the entrepreneurial journey is an emotional one, with individuals experiencing significant 'ups' and 'downs' (please see Delgado Garc´ia et al., 2015). Emotions have also been found

to play a critical role at the very start of the entrepreneurial process. Significantly, the Global Entrepreneurship Monitor (2022) reports that 50 percent of individuals with an entrepreneurial idea would not take action to start a business because of fear of failure (GEM, 2022). Empirical evidence on fear of failure has further highlighted that fear itself does not necessarily stop entrepreneurial action, but rather it is how individuals interpret the feeling of fear that matters. A 'state of arousal' can be interpreted as horrific fear by one individual, yet as excitement and a push for action by another (Cacciotti et al., 2016). This empirical evidence stresses the importance of developing competences around emotional management and regulation (Shepherd, 2004). This way, the negative interpretation of emotions may not prevent behaviors to support entrepreneurial action whilst, by the same token, the interpretation of emotions as overly positive may be prevented from potentially clouding rational judgment and decision making (Delgado García et al., 2015).

Behavioral Outcomes of Entrepreneurial Mindset

The ultimate intended outcome of developing cognitive and emotional dimensions of EM in EE is to encourage and shape entrepreneurial behavior (McMullen & Shepherd, 2006). Given the recent application of the EM concept beyond business venturing in favor of wider career trajectories, it is perhaps unsurprising that the behaviors linked to EM in this context are conceptually underdeveloped. Indeed, whilst many national and supranational organizations (e.g. the World Economic Forum, the Kauffman Foundation, European Commission etc.) speak of entrepreneurial behaviors in the context of mindset, there is often conflation between knowledge, skills, attitudes and behaviors. For example, the (European Commission 2012, p. 3) states that “the ability to think critically, take initiative, problem solve, and work collaboratively will prepare individuals for today's varied and unpredictable career paths”, classing these as the core entrepreneurial competences for the 21st century. It is, however, unclear which of these are cognitive competences, which are emotional competences, and which are in fact observable behaviors. These boundaries are further confused by conversations within the EE literature on the development of 'life skills' (Costello et al., 2012), with little consideration of how individuals use these to undertake action in the form of discernible behaviors.

Discussion and Implications for Entrepreneurship Education Educators

Having distilled the empirical evidence to conceptualize and substantiate the cognitive, emotional and behavioral dimensions of EM, we now consider the implications for EE and EE educators of conceptualizing EM as competence development. In terms of competence development generally, there is consensus that learners move through a multi-stage process (e.g. Broadwell, 1969; Dalton & Thompson, 1986; McEvoy et al., 2005), starting with becoming aware of one's own current stance in relation to the competence to be developed (conscious incompetence stage). This is then followed by applied and reflective practice which is sustained over time (conscious competence) in order to arrive at a high level of mastery in the competence so that it becomes unconsciously embedded in the individual (unconscious competence) (Ambrose et al., 2010; Getha-Taylor et al., 2013). This process is of particular relevance when we consider how educators can

support the operationalization of EM as competence development in EE. Critically, it places a strong focus on reflection and self-awareness as the generative mechanisms that enable progression through the competence development stages (McEvoy et al., 2005) over a period of time.

Fostering Entrepreneurial Mindset Cognitive Competence in Entrepreneurship Education

Whilst critical thinking, reasoning and decision making are common learning outcomes within EE activity (Kakouris & Liargovas, 2021), when considering EM EE from a competence development perspective we need to consider how actively and directly cognitive activities are explained, explored and developed. We suggest that EE educators encourage identification of learners' own attitudes and values, aligned to their perceived skills and abilities, ideally through focused personal reflection and meta-cognition (Haynie et al., 2010). Learners should be set tasks that promote focused consideration of their own thought processes and awareness of the factors underpinning such thoughts. For example, in the development of a growth mindset, it is important that students reflect on whether they believe in the power of effort or in inborn talent. Digging even deeper, one may guide students in probing which contextual values (educational, professional, cultural, etc.) underpin their thought processes towards or away from a growth mindset. Similar guidance on reflective practice may be used in order to address the beliefs and values underpinning reasoning, judgment and decision making. Such learning activities align to a range of EE classes, both general intro-uctions to the subject as well as more niche 'deep dives' into, for example, the venture planning process or raising entrepreneurial finance.

Fostering Entrepreneurial Mindset Emotional Competence in Entrepreneurship Education

Looking at the development of EM emotional competence in EE raises a number of additional considerations. Educators should challenge the dominant narrative of entrepreneurship as stimulating, exciting and inherently positive (think visually stimulating and high-energy 'Demo Days'). Instead, educators will need to take a more balanced (or indeed critical) perspective on emotion in the entrepreneurial process, paying attention to both positive and negative emotions in order to help learners develop robust emotional competence. In doing so, educators can consider building awareness and openness by encouraging discussion on a range of emotional responses to different situations.

Entrepreneurial Mindset Behavioral Outcomes in Entrepreneurship Education

Perhaps most importantly, we as EE educators need to further consider EM competence development as a developmental process requiring sustained effort over time. The timeline for behavioral change is likely to be contingent on the baseline behavior compared to the desired behavior and will also likely to depend on a number of other factors such as cognitive flexibility and personal engagement with the intervention. Thus, EE programs and educators seeking to address and support EM need to be clear about

what is realistic in terms of aims and objectives within time-constrained classroom interventions. With many EE interventions lasting a number of weeks or months, we must consider which timelines best align to the behaviors we seek to develop. This will likely require the design of 'legacy' activity to support any nascent behavioral change that may be beginning to surface when a specific activity, module or program comes to an end. Such legacy activity could draw on longitudinal independent learning tools such as cognitive-behavioral journaling (Fritson, 2008) or peer-based learning communities.

Table 1: How to Develop Entrepreneurial Mindset Competences in Entrepreneurship Education

EM Competences to be developed	Knowledge component development	Skills component development	Attitudes and values component development
Cognitive competence	Entrepreneurial cognition literature (e.g. Shepherd & Patzelt, 2018)	Practicing critical thinking, adaptive thinking, reasoning and decision making (e.g. Kakouris & Liargovas, 2021)	Identification of learners' own attitudes and values underpinning situated cognitive processes (e.g. Burnette et al., 2020) through metacognition (Haynie et al., 2010)
Emotional competence	Entrepreneurial emotion and affect literature (e.g. Delgado García et al., 2015)	Discussion and analysis of emotional responses to different situations (e.g. Cardon et al., 2012 ; Shepherd, 2004)	Uncover (often hidden) values and beliefs underpinning emotional responses to situations (e.g. hidden fears, Cacciotti et al., 2016)

Practical implementation of EM competence development is likely to vary across HE institutions, given the scale and scope of their wider EE programming. For institutions offering a wider range of EE programming, we would argue for the need for EM focused classes which go beyond awareness of the importance of EM by also addressing competence development rooted in awareness of current attitudes and values. In our own teaching, we approach this through the use of "self-audits" on both personal and interpersonal competencies relevant to EM. Specifically, we use self-audits on Growth Mindset, Positive Explanatory Style, Deliberative Mindset and Outward Mindset (based on Gottfredson, 2020). Following the self-audits, we encourage reflection on how these attitudes and values play a role in the student's responses to daily occurrences through the practice of journaling (please see Casulli, 2022, for further guidance on these tools).

The approaches illustrated above are intended to create self-awareness of where EM competences currently are. Further shifting attitudes and values in order to develop EM competences requires practice over a longer period of time - often well beyond the timescales of EE programs (Casulli, 2022). It is also not our intention to prescribe particular tools or resources - in our experience the value lies in effective facilitation of reflection on action and learning with regard to EM, rather than the specific learning resources themselves. That said, we recognize that future studies could usefully contribute to our discussion of EM by identifying pedagogically supported approaches to EM course design and delivery.

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1. Our thanks to an anonymous reviewer who astutely identified that this arguably stems from the continued (if not growing) need to ensure the sustained relevance of EE programming for students regardless of their intention to start a venture.
2. These are commonly considered to be conscientiousness, openness to experience, emotional stability, extraversion and agreeableness.
3. Metacognition refers to the act of thinking about one's own thinking to shape cognitive strategies.
4. Cognition refers to all functions of mental information processing, including acquiring knowledge and building understanding.
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