What Do We Talk About When We Talk About Entrepreneurial Mindset Training?

Lucrezia Casulli

1 Introduction

Entrepreneurial mindset is much talked about by business owners, policy-makers and entrepreneurship educators alike. But what are we referring to when we talk about entrepreneurial mindset (EM)? What entrepreneurial mindset training is relevant but missing in Undergraduate Entrepreneurial Education? How can we extend entrepreneurial mindset training?

In this chapter, I offer a critically discursive answer to these questions followed by setting-out a pedagogical approach to entrepreneurial mindset training.

I argue that extant definitions of entrepreneurial mindset as applied to entrepreneurial education are too narrowly defined, focusing primarily on venture idea generation and early-stage venturing. I propose moving to an understanding of mindset that aligns with extant scholarly appreciation

L. Casulli (✉)
Hunter Centre for Entrepreneurship, University of Strathclyde Business School, Glasgow, Scotland, UK
e-mail: Lucrezia.Casulli@strath.ac.uk

G. J. Larios-Hernandez et al. (eds.), *Theorising Undergraduate Entrepreneurship Education*,
https://doi.org/10.1007/978-3-030-87865-8_8

of entrepreneurship as a journey requiring sustained effort over time and in the face of ups and downs (e.g. McMullen & Dimov, 2013).

I propose that such an approach to EM training is important in Undergraduate Entrepreneurial Education because students may not necessarily emerge from secondary education with the cognitive skills to sustain their entrepreneurial efforts over time and in the face of adversity as well as successes.

Following this, I suggest that EM training should prepare students for grappling with uncertainty and ambiguity, and associated setbacks, mistakes and failures (Peschl et al., 2021). Whilst the latter require the development of *individual level* mindsets, *interpersonal level* mindsets such as empathy and open mindedness are also key to persuade investors, understand customers and balance one's own visions with feedback from the environment.

2 To *What* Are We Referring When We Talk About Entrepreneurial Mindset (EM)?

Entrepreneurial mindset has become something of a buzzword in recent times, used by policymakers, business owners and researchers alike. The term "entrepreneurial mindset" has been used loosely to describe entrepreneurial intentions (Pfeifer et al., 2016), a set of attitudes and approaches to tackling entrepreneurial tasks (e.g. McGrath & MacMillan, 2000); as a set of specific skills such as the ability to spot opportunities and exploit them (McMullen & Kier, 2016); and the capacity to bear uncertainty (Ireland et al., 2003).

In an attempt to unravel the different and often vague uses of the word *entrepreneurial mindset*, Kuratko et al. (2020) identify three overarching meanings for the use of entrepreneurial mindset in the literature: the entrepreneurial thinking/cognition aspect, the entrepreneurial behaviour aspect (behaviours conducive to entrepreneurship) and the entrepreneurial emotion aspect (what entrepreneurs feel).

In this chapter, I seek to position the notion of entrepreneurial mindset firmly in the cognitive sphere and as an antecedent to behaviour (e.g. Krueger & Carsrud, 1993). The reader may find that the emotional component of mindset is not addressed directly in the chapter. This is because, whilst our thinking cannot easily be decoupled from emotions (i.e. we are more likely to have negative thoughts when we are sad and vice versa), the focus of the chapter is on training students to engage their

"rational" brain, whilst acknowledging the role of their emotional (or less "rational") brain.

Entrepreneurial mindset is therefore treated here as a cognitive phenomenon (how someone thinks) which in turn influences the behavioural phenomenon (what someone does). Cognitive-behavioural models in entrepreneurship, such as the theory of planned behaviour (Krueger & Carsrud, 1993), suggest that behaviours can be explained by underlying cognitions (either conscious or unconscious). Conversely, a shift in behaviour is harder to achieve without a change in the cognitive pathways that underpin action (Bogdan et al., 2004).

Recently, early evidence has suggested that cognitive competences development in entrepreneurship students result in shifting behaviours (Burnett et al., 2020). Whilst the application of these interventions may be new in the setting of higher education and entrepreneurship, cognitive intervention has successfully demonstrated shifts in the behaviours of school pupils for the past fifteen years (Savvides & Bond, 2021). By implication, if we are seeking to foster behaviours conducive to entrepreneurial activity, we may start by developing the cognitive competencies that underpin those behaviours. This leads to the questions of what a cognitive lens to entrepreneurial mindset may be.

Extant definitions of entrepreneurial mindset have mixed cognition with the related but distinct area of psychological traits (e.g. Naumann, 2017). Thus, it is important to keep in mind that cognition is distinct from personality constructs such as traits (Burnett et al., 2020). Cognition is focused on thinking processes (assessments, judgements, decisions, coding and decoding of information) rather than on fixed personality traits (e.g. *the big five*—Burnett et al., 2020). The fundamental distinction between cognition and traits is that the former can be developed through intervention, whereas the latter tend to be much more stable throughout a person's adult life (Conley, 1985; Roberts & DelVecchio, 2000).

In this sense, a cognitive lens to entrepreneurial mindset more usefully aligns with the notion of entrepreneurship as something that can be taught, rather than an innate skill. It also aligns with research concluding that entrepreneurs cannot be defined by a set of distinctive characteristics that sets them apart from non-entrepreneurs (Gartner, 1988; Greenberger & Sexton, 1988; Ramoglou et al., 2020). Rather, extant approaches suggest that it is *how entrepreneurs think* that matters (Mitchell et al., 2002), thus giving rise to the cognitive lens to entrepreneurship.

The cognitive lens in entrepreneurship has shifted the focus from *who an entrepreneur is* to *how an entrepreneur thinks* (e.g. Baron, 2004; Mitchell et al., 2007). This lens has produced a significant and robust body of literature on the cognitive perspective to entrepreneurial mindset (Shepherd & Patzelt, 2018). Thus far, the focus of this work has been on how entrepreneurs think differently than other people. To make this more relevant and applicable to entrepreneurial education, I suggest that we flip this notion on its head and focus on what individuals (including students) can do to think in ways that are conducive to entrepreneurial, value-adding behaviour.

In the light of the above and in line with the focus of this chapter on undergraduate entrepreneurial education, I define **entrepreneurial mindset training** as:

> *Cognitive Competence Development Which Draws on Psychological Intervention and is Intended to Elicit Behaviours Conducive to Entrepreneurial Activity.*

3 How Can Entrepreneurial Mindset Training Complement Existing Undergraduate Entrepreneurial Education?

The entrepreneurial education curriculum often includes classes and activities centring on venture idea generation and associated new venture modelling (e.g. Osterwalder & Pigneur, 2010). The creativity and idea generation component in particular is arguably a cognitive competence (Ward, 2004) and is essential in entrepreneurship education at all levels. However, the focus on creativity and venture ideation alone places a large emphasis on the early stage of the entrepreneurial process, neglecting the longer-term journey.

Increasingly, research has emphasised that it is not until individuals act on their ideas that they discover what their real options are (McMullen & Dimov, 2013; Sarasvathy, 2001). This literature places emphasis on entrepreneurship as practice and on entrepreneurial action rather than the idea. It suggests that viable entrepreneurial ventures are ultimately a function of engaging with others and the environment over time. This requires individuals to grapple with a journey laden with uncertainty (McMullen & Dimov, 2013), as the person has to deal with unexpected as well as with partially known scenarios.

Mindsets for grappling with uncertainty and ambiguity have long been a neglected component in undergraduate entrepreneurial education. More recently, some programmes are filling this gap (e.g. Arpiainen & Kurczewska, 2017; Peschl et al., 2021). However, the focus inherently remains on early-stage venturing, since start-ups emerging during undergraduate education can only be supervised for a few, initial years whilst they are in university incubators.

The capacity to grapple with uncertainty is likely to be needed particularly by undergraduate students coming from schooling systems constrained by sets of rules and procedures for measuring attainment (Dehler & Welsh, 2014). These rules apply equally to the teachers in these systems, who are incentivised to "coach" students on passing assessments. Consequently, students learn there are set parameters for performing well in an educational setting. They also learn that there is an established set of criteria against which they will be evaluated. This is possible in educational settings because both the means and the ends for evaluating students are knowable and known upfront. Whilst setting evaluation criteria is a fair way to measure attainment in the schooling system, this may create a way of thinking that is not geared up to cognise under conditions of uncertainty, where both the means and the ends cannot be fully known upfront, as in the entrepreneurial process (Packard et al., 2017). Consequently, students often struggle with uncertainty and ambiguity. They may look to identify the "right way" or the established protocol, both of which run counter to the unchartered territory that truly innovative ventures are required to travel.

On a related but distinct note from the above, university training programmes have traditionally focused on positive images of entrepreneurship by proposing aspirational models of entrepreneurs and entrepreneurial ventures (e.g. Warren, 2005). These individuals seem to never doubt themselves nor carry fear, which contradicts what research on entrepreneurial fear of failure has shown (Cacciotti et al., 2016). There seems to be a disconnect between the models we present in the classrooms and the experiences of struggle of the majority of entrepreneurial journeys (McMullen & Dimov, 2013). Whilst it is important to inspire students through models of ultimate success, we should also prepare them with a realistic expectation of the "downs" of the entrepreneurial process associated with disappointments, false starts and returns to the drawing board. They should develop a critical appreciation of the doubts and fears that more often than not characterise the entrepreneurial process, even for

those who eventually succeed (Minniti & Bygrave, 2001). For undergraduate entrepreneurial education, this means that student mindset training should include training on how to deal with setbacks, mistakes and failures in the entrepreneurial process (Funken et al., 2020). This will be particularly important for students coming from schooling systems where a failure is considered final rather than from schooling systems promoting a mindset that sees failure as a learning opportunity (Glerum et al., 2020). In entrepreneurship, setbacks and failures are not necessarily final. In fact, they are commonplace enough that they should be expected and students should be trained to embrace them and learn from them (e.g. Cope, 2011).

Lastly, entrepreneurial mindset training should seek to build student cognitive competencies on self-reflection. Undergraduate students may not necessarily be trained in self-reflection. School curricula globally have traditionally tended to place stronger emphasis on hard skills, such as maths, literacy or even physical education and arts. Less widespread in curricula are reflective-based competencies such as self-awareness and self-reflection. Yet, research has increasingly shown that reflectiveness and self-awareness empower individuals to harness their strengths and become cognisant of their weaknesses, ultimately leading to personal and professional success (Gottfredson, 2020).

Self-awareness is a highly desirable soft skill for undergraduate students, as it enables them to become aware of their existing thinking patters (i.e. metacognition) and the extent to which those may promote or hinder their entrepreneurial mindset and associated behaviour (Ustav & Venesaar, 2018).

The self-reflective, inside-out pedagogical approach advocated in this chapter represents a clear departure from extant approaches to teaching mindset through the medium of student entrepreneurial experiences (e.g. Arpiainen & Kurczewska, 2017; Peschl et al., 2021). The latter activities involve creativity for problem solving and opportunity identification, framing solutions and business modelling, pitching to potential stakeholders, simulated ambiguity in the entrepreneurial endeavour, etc. (Peschl et al., 2021). Whilst those approaches are useful to engage in real-life issues as they manifest in the entrepreneurial context, they may have limited external validity for students. That is, students are unlikely to experience the same thoughts and the full range and intensity of emotions that they would in a real-business situation with the associated high stakes attached (e.g. failings with real cognitive and affective consequences

rather than projects intended to gain class credits). Put differently, it is not always possible to replicate the full cognitive and affective impact of the entrepreneurial experience through entrepreneurial activities in the higher education settings.

To complement these limitations of entrepreneurial projects, the pedagogical approach proposed here is focused on reflections on students' lived experiences. Those lived experiences should be of situations requiring acting under conditions of ambiguity and facing adversity, regardless of them taking place in an entrepreneurial setting or other. The core criterion is that those experiences should be impactful enough in the person's life to be salient and vivid in their psyche (e.g. Cope & Watts, 2000). In turn, reflecting on those experiences though developing self-awareness allows for self-development (e.g. MacKay et al., 2020).

In summary, I propose that the **content** of Entrepreneurial Mindset Education should complement training on creativity and early venturing with the cognitive skills required to engage effectively with the entrepreneurial journey over time and through ups and downs.

In terms of **approach** to Entrepreneurial Mindset Education, I propose a reflective practice approach to the cognitive competencies development of students, focused on metacognition and self-awareness development. This approach focuses on the student's reflection and appraisal of impactful life experiences and the mindsets emerging from such experiences. Awareness development is the starting point for cognitive competence development. This reflective approach is intended to complement, not replace, extant business venturing experience approaches to developing an entrepreneurial mindset.

In the remainder of this chapter, I propose an extension of the syllabus for entrepreneurial mindset training that builds on the complementary components to existing syllabi in undergraduate entrepreneurial education programmes and I offer suggestions for pedagogical tools that draw on a self-reflective approach (e.g. MacKay et al, 2020).

4 How Can We Extend Entrepreneurial Mindset Training?

The conclusion from the discussion above is that entrepreneurial mindset training should aim to build cognitive (as well as affective) competencies for dealing with the venturing journey in its entirety, beyond the initial idea and beyond the aspirational images of entrepreneurial success.

It was mentioned earlier in the chapter that entrepreneurs face uncertainty, ambiguity and risk throughout the journey and that they need to develop cognitive competencies enabling them to grapple with such uncertainty. This begs the question: *what mindsets are conducive to grappling with uncertainty?*

I suggest that mindsets conductive to grappling with uncertainty and ambiguity can be categorised into *personal level mindsets* and *interpersonal level mindsets* (Fig. 1).

Personal level mindsets may be developed to grapple with mistakes and setbacks. Setbacks are difficult to avoid during the entrepreneurial process because the behavioural path taken in the pursuit of novel ideas is an unchartered one that is often navigated through trial and error (Lindholm-Dahlstrand et al., 2019). In turn, responses to mistakes and setbacks require the development of different mindsets, depending on whether the *errors are clearly discernible because the causes are known* or whether the *causes of the setbacks are unclear and subject to individual interpretation*.

Interpersonal level mindsets may be developed to effectively engage with other stakeholders in the entrepreneurial process. Those may include fellow founding team members, employees, prospective customers or investors. For the sake of parsimony, I propose that there are two broad mindsets to be developed at an interpersonal level. The first is

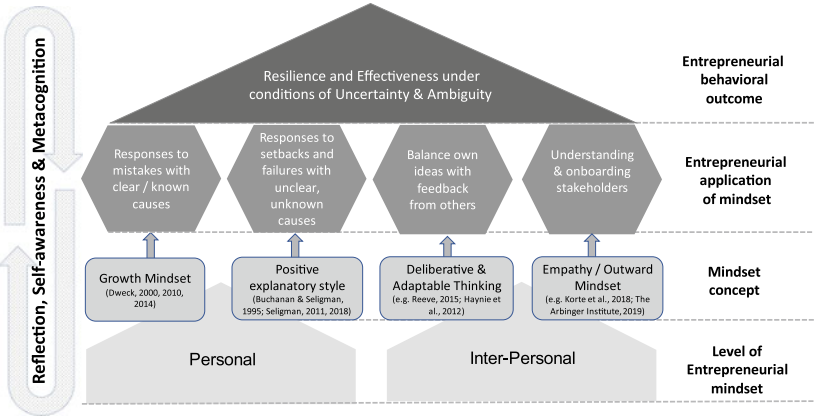

Fig. 1 Mindsets and applications underpinning entrepreneurial behaviour

a deliberative mindset needed to balance one's own vision and ideas with information (e.g. feedback) from others and from the environment. In such circumstances, entrepreneurs need to strike a balance between persevering with their own ideas and be open to feedback from others, which may run counter to the entrepreneur's thoughts (Holland & Shepherd, 2013). The second is an *Empathetic* (or *Outward) Mindset*, which is needed to build teams, on-board investors and serve prospective customers.

5 Individual Level Mindsets to Grapple with Mistakes, Setbacks and Failures

The entrepreneurial literature suggests that it is desirable for entrepreneurs to engage with mistakes and failures and learn from them (Cope, 2005, 2011). Engaging with and learning from mistakes is, in itself, a behaviour that stems from a particular mindset. Research in the area of competence motivation and self-theories (Dweck, 2000; Elliot & Dweck, 2013) has shown that those who believe that they can improve on their abilities through effort are more likely to learn from mistakes, whereas those who believe that their abilities are fixed are unlikely to engage and learn from mistakes.

The work of Carol Dweck has usefully highlighted that many students come to believe that they must be "talented" and that, if they have to try hard, they are probably not talented enough or smart enough (Dweck, 2010). Thus, when students join undergraduate degree programmes, they may already come with self-theories about their stance in relation to prospective academic achievements. By addressing this *fixed mindset* early on in undergraduate entrepreneurial education, students are more likely to develop a *growth mindset*. The latter encourages students to engage with their own mistakes as opportunities for growth and improvement and is conducive to resilience, which is a desirable behaviour at all stages of the entrepreneurial process (Burnett et al., 2020).

Burnett and colleagues propose an entrepreneurial growth mindset intervention through an adaptation of the assessment tool developed by Carol Dweck (Burnett et al., 2020). This tool presents students with multiple choice questions intended to ascertain the degree to which they exhibit a fixed or growth mindset in relation to entrepreneurship. Because this intervention starts with the student's own self-assessment, it aligns with the inside-out, reflective approach argued for earlier in the chapter.

A further extension to this intervention which has proven effective in my entrepreneurial mindset teaching is to combine self-assessment with journaling. Following Dweck's self-assessment, students are encouraged to keep a journal of their behavioural responses to everyday setbacks and mistakes and are invited to analyse those along the fixed-growth mindset continuum to identify the self-theories at the core of such behaviours. In a further reflection exercise, they are invited to also identify the root causes of their growth or fixed mindset by recollecting critical experiences that have shaped their core beliefs to date. Finally, students are also invited to consider how they experience their mindset as they interact with others.

Through these exercises, students become aware of their thinking surrounding mistakes and how that thinking, in turn, affects behaviour. They discover, for example, that when they feel uncomfortable with mistakes, they are more likely to hide them, run away from them and stop trying. They come to reflect that their self-worth is contingent on being "perfect" and not making mistakes, often because of the implicit messages received through their upbringing. On the flipside, those who are comfortable with mistakes often attach their self-worth on constant improvement and are less concerned with what others think of their mistakes. Individuals who do not see mistakes as defining them are also much more tolerant of the mistakes of others, thus creating environments conducive to openness and learning (e.g. Dweck, 2014; Syed, 2015).

The thinking style discussed above focuses on facing mistakes, setbacks and failures for which the cause can be tracked down. That is, the source of the error can be identified and the error corrected. This is because most of the work on growth mindset has focused on disciplinary settings such as maths and sciences, in which there are often right and wrong solutions to problems. Namely, the ends are known (the right answer) and any deviation from the correct ends can be identified and the error attributed to the student. However, in entrepreneurial settings some setbacks may be the consequence of complex interactions and not have a clear root cause, leaving space for idiosyncratic sensemaking of the setback and failure (Cardon et al., 2011) or heuristic judgements. Other setbacks, problems or outright disasters may be beyond human control. The COVID-19 pandemic is such an example. In such cases, a thinking style conducive to resilient behaviour may not be developed solely through growth mindset intervention. Other interventions are needed to prepare students to grapple with setbacks for which the causes or outcomes are unknown or unknowable.

Scholars from the emerging field of positive psychology (Peterson & Steen, 2002) have suggested that a resilient behavioural response depends whether or not the person has an optimistic or a pessimistic explanatory style. Put simply, those who have a positive pattern of thinking are more likely to be resilient and those who have a pessimistic thinking pattern are less likely to exhibit resilient behaviour.

The notion of optimism is not new in entrepreneurship. Early academic literature listed optimism as a trait of the entrepreneur (e.g. Chell, 1986). Whilst there is some evidence of individual disposition for optimism in entrepreneurship (Crane & Crane, 2007), work stemming from Penn State University suggests that optimism as a thinking pattern is learnable and that this acquired optimistic thinking is the foundation of resilient behaviour (Gillham et al., 2013; Seligman, 2011). The work of Seligman and colleagues offers evidence that whether or not the person decides to bounce back depends on how they make sense of events which, in turn, informs what they may expect to happen in the future (Buchanan & Seligman, 1995). The framework for this explanatory style features three dimensions: *permanence*, *pervasiveness* and *personalisation* (Seligman, 2018).

> *Permanence* is the temporal dimension of a positive explanatory style. Those who master an optimistic explanatory style come to view the causes of bad events as temporary, whilst believe that causes of good events can be permanent.
> *Pervasiveness* is the spatial dimension of a positive explanatory style. Those who master an optimistic explanatory style come to view the causes of bad events as limited to a specific sphere of life, whilst they believe that the causes of good events can be universal.
> *Personalisation* is the personal responsibility dimension of an optimistic explanatory style, whereby bad events are attributed to external forces and good events to one's own doing.[1]

This approach promotes a shift in thinking by reframing how students explain setbacks in the absence of clear causation. The itemisation of this frameworks by the three constituent dimensions of optimistic thinking

[1] It is worth noting that Seligman does not mean to encourage externalisation of responsibility. Rather, studies show that individuals with a pessimistic explanatory style tent to err on the side of blaming themselves for bad events regardless of evidence.

allows for a detailed analysis of current explanatory style and for reframing such thinking. Similarly to growth mindset, intervention on explanatory style starts with a self-assessment test (in Seligman, 2018), through which students become aware of their (often unconscious) optimistic or pessimistic thinking patterns. Students are then encouraged to engage in journaling their thinking and expectations surrounding events that bear a direct impact on their professional lives. For example, during the COVID-19 pandemic, entrepreneurship students have been encouraged to reflect on how they expect events to unfold and the likely impact of those events on their business venturing plans post-graduation. The aim of the intervention is to develop self-awareness of the explanatory style currently in use and coach students on reframing their thinking as well as taking notice of the behavioural changes that may follow.

In summary, preparing students for grappling with mistakes and setbacks through a growth mindset (Dweck, 2000, 2010, 2014) is useful when the causes of those mistakes are clearly knowable and known. Conversely, preparing students for setbacks and failures in the entrepreneurial process through a positive explanatory style (Seligman, 2018) is useful when the courses of setbacks are unclear, complex or unknown (Fig. 1).

6 Interpersonal Level Mindsets to Engage with Stakeholders in the Entrepreneurial Process

Entrepreneurs have long been characterised in popular culture as lone heroes who feel strongly about their venturing ideas and don't stop in the face of any obstacle or criticism (Warren, 2005). Indeed, images of visionary entrepreneurs such as Jeff Bezos and Elon Musk continue to fuel the entrepreneurship theme on media entertainment, with students benchmarking their entrepreneurial potential against these hyper stylised models (Swail et al., 2014).

However, increasingly in the academic sphere there is a recognition that entrepreneurs do not and cannot accomplish venture goals single-handedly. Interaction with the environment is essential for entrepreneurs because it allows for the gathering of new resources and new ideas (Sarasvathy, 2001). Often, entrepreneurs work in teams coming from different backgrounds and with different knowledge basis and thinking styles. This calls for preparing entrepreneurship students to engage fruitfully with others in the environment in order to turn entrepreneurial ideas

into sustainable ventures. For instance, rather than simply persevering with their own ideas regardless of setbacks, entrepreneurs are increasingly required to strike a balance between maintaining a vision and being open to input from others (e.g. information, opinions, feedback), which may run counter to the entrepreneur's own ideas (Holland & Shepherd, 2013). Entrepreneurship scholars put the ability to take environmental feedback on board at the very core of the definition of entrepreneurial resilience (Holland & Shepherd, 2013).

This calls for the development of an *Open (Deliberative) mindset,* which may be defined as *a thinking style that recognised the transient and incomplete nature of information held by the individual at any point in time, thus making them open to external inputs and to shifts in thinking* (the author, based on Reeve, 2014; Haynie et al., 2012).

Developing an open mindset not only requires the individual to be able to adapt their thinking as they integrate new information (Haynie et al., 2012), they must also believe that changing one's mind is not a sign of non-committal posture but a sign of intellectual humility (Spiegel, 2012). This runs against traditional academic research on entrepreneurial thinking and judgement, which often reports of overconfident entrepreneurs making swift judgements based on intuition (Mitchell et al., 2005) and heuristics (Busenitz & Barney, 1997). Whilst potentially useful for speeding-up decision processes and acting fast to capitalise on opportunities, this thinking style may also result in incomplete analysis and biased decisions.

Thus, entrepreneurial mindset training should convey that the image of the intuitive and overconfident entrepreneur needs to be tempered with the appreciation that there are likely to be blind spots in entrepreneurial thinking. Open mindset training may start with student self-reflections and self-appraisal on the following (the author, adapted from Gottfredson, 2020):

- How do we react when we have our ideas challenged? Are we open to it (open mindset) or do we get defensive (closed mindset)?
- What motivates us most: the pursuit of the truth (open mindset) or having our current ideas confirmed (closed mindset)?
- Do we debate to learn (open mindset) or to prove our points (closed mindset)?
- Do we prefer interactions with those who challenge us (open mindset) or those who agree with us (closed mindset)?

- When interacting with others, do we ask more questions (open mindset) or we offer more statements (closed mindset)?

It is recognised that deliberative versus implemental mindset is a continuum along which each individual sits, rather than a binary measure. It is also recognised that our responses to the questions above may change depending on the momentary state of our mind. However, the point is that developing an awareness of when and why we adopt an open or closed mindset is a first important step in mindset shift.

A deliberative mindset alone may not suffice to fully and effectively engage with and gain feedback from the environment. Recently, scholars have emphasised the importance of being able develop empathy as a mindset in order to understand others in the entrepreneurial process (Korte et al., 2018; Packard & Burnham, 2021). This is particularly important when entrepreneurs have to anticipate the needs and wants of others through offerings that were not previously available (Packard & Burnham, 2021). Also, stakeholders may not volunteer their views, needs and wants to the entrepreneur in the form of codified, explicit information for consideration. Finally, feedback from customers, employees or boards of investors may be subtle and come in the form of behaviours to decipher. Empathy has been found to be beneficial to entrepreneurs as it allows them to put themselves in the shoes of customers, investors and employees, to understand what they may need and thus be best placed in engaging productively with their input (Korte et al., 2018). More broadly, the ability to consider the needs and wants of others has been put forward as a win–win approach in today's business world (The Arbinger Institute, 2019).

Whilst empathy has both cognitive and affective components (Korte et al., 2018), it has been suggested that empathy in entrepreneurship should be developed as a cognitive competence rather than an affective one. Specifically, Packard and Burnham (2021) propose a model of vicarious mental simulation whereby the individual uses their deliberate rational thinking, along with information, in order to understand what others think and feel.

Developing empathy in undergraduate students has been identified as a priority, because there is evidence to suggest that students do not believe that empathy is a valuable skill in today's business environment. This is because the aggressive and Darwinian portrayal of business in the

twentieth century has created the impression that in order to succeed in business, one must adopt a zero-sum attitude (Holt & Marques, 2012).

Thus, I propose that the first step in developing empathy in undergraduate entrepreneurship students should be to demonstrate the power of empathy as a win–win, non-zero-sum approach to doing business (The Arbinger Institute, 2019).

Self-assessment may follow (Zhou et al., 2003), in order for the student to appraise their empathy levels before intervention. The act of intervention itself has proven effective in improving student empathy both emotionally and cognitively (Stehlíková & Valihorová, 2016) using established instruments by Davis (2018).

To summarise, in order for students to engage effectively in the entrepreneurial process, they need to develop the ability to be open and receptive to inputs from the environment and respond accordingly. Preparing students for being open to inputs through a deliberative and adaptive thinking style (e.g. Haynie et al., 2012; Reeve, 2014) is useful when they need to balance their own ideas with ideas, feedback and information from others and the environment. On the other hand, developing empathy and an Outward Mindset (The Arbinger Institute, 2019) is useful to understand and respond to the often unspoken and uncodified needs of stakeholders at different points of the entrepreneurial process (e.g. Korte et al., 2018; Packard & Burnham, 2021; Fig. 1).

To conclude, this chapter has highlighted the need to extend undergraduate entrepreneurship education to include cognitive competencies training that enables students to navigate the uncertain entrepreneurial process beyond the early ideation phase. The author has proposed drawing on entrepreneurial cognition literature as well as self-theories psychology and positive psychology in order to design a novel entrepreneurial mindset syllabus.

It has been argued that entrepreneurial mindset training should develop both personal and interpersonal level entrepreneurship-related mindsets in undergraduate students. The development of these mindsets is intended for grappling effectively with situations often encountered in the post-ideation stage of business venturing and for which students emerging from secondary education may not yet be equipped.

At the *individual level*, students need to be coached on confronting mistakes and learning from them whenever possible, as those are sometimes unavoidable in the entrepreneurial process. Also, given that the root cause of setbacks and adverse events in entrepreneurship cannot always

be known, it has been proposed that it is important to coach students on developing a positive explanatory style. This is particularly important to sustain students' resilience even when they are facing misfortunes through no fault of their own.

Interpersonally, it has been highlighted that entrepreneurship undergraduate students should be fostered in developing empathy in order to be receptive to the needs and wants of stakeholders in the entrepreneurial process, such as prospective customers, investors and employees. Another interpersonal component of entrepreneurial mindset highlighted in the chapter is that of open mindedness, modelled on the notion of deliberative reasoning. That is, students should be encouraged to constantly seek input from others and look for what they do not yet know rather than focus on what they already know. This will help them avoid overconfidence in their existing knowledge and views, given that overconfidence can be detrimental when making judgements under uncertainty in the entrepreneurial process. Remaining actively open to inputs from others and from the environment is likely to promote robust testing of ideas and prototypes so as to avoid poor judgement and costly mistakes.

The ultimate goal of developing those mindsets, both personal and interpersonal, is to behave in ways that are conducive to entrepreneurial resilience and effectiveness long after the students have left higher education.

The proposed conceptual model of entrepreneurial mindset training will require development and refinement over time. In this sense, the model is put forward more as a starting point for consideration rather than as a tool ready for use. Future work should consider context-specific applications of the notions presented here, including (but not limited to) cultural and institutional contexts. The author also invites entrepreneurship educators worldwide to critique and extend the notions presented in this chapter, so that we can collectively move towards a cognitive competence development approach to entrepreneurial mindset.

References

Arpiainen, R. L., & Kurczewska, A. (2017). Learning risk-taking and coping with uncertainty through experiential, team-based entrepreneurship education. *Industry and Higher Education, 31*(3), 143–155.

Baron, R. A. (2004). The cognitive perspective: A valuable tool for answering entrepreneurship's basic "why" questions. *Journal of Business Venturing, 19*(2), 221–239.

Bogdan, D., Christian, G., Volker, B., Gerhard, S., Ulrich, B., & Arne, M. (2004). Neuroplasticity: Changes in grey matter induced by training. *Nature, 427*(6972), 311–312.

Buchanan, G. M., & Seligman, M. E. (1995). Afterword: The future of the field. *Explanatory style*, 247–252.

Burnette, J. L., Pollack, J. M., Forsyth, R. B., Hoyt, C. L., Babij, A. D., Thomas, F. N., & Coy, A. E. (2020). A growth mindset intervention: Enhancing students' entrepreneurial self-efficacy and career development. *Entrepreneurship Theory and Practice, 44*(5), 878–908.

Busenitz, L. W., & Barney, J. B. (1997). Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making. *Journal of Business Venturing, 12*(1), 9–30.

Cacciotti, G., Hayton, J. C., Mitchell, J. R., & Giazitzoglu, A. (2016). A reconceptualization of fear of failure in entrepreneurship. *Journal of Business Venturing, 31*(3), 302–325.

Cardon, M. S., Stevens, C. E., & Potter, D. R. (2011). Misfortunes or mistakes? Cultural sensemaking of entrepreneurial failure. *Journal of Business Venturing, 26*(1), 79–92.

Chell, E. (1986). The entrepreneurial personality: A review and some theoretical developments. *The Survival of the Small Firm, 1*, 102–119.

Conley, J. J. (1985). Longitudinal stability of personality traits: A multitrait–multimethod multioccasion analysis. *Journal of Personality and Social Psychology, 49*(5), 1266.

Cope, J. (2005). Toward a dynamic learning perspective of entrepreneurship. *Entrepreneurship Theory and Practice, 29*(4), 373–397.

Cope, J. (2011). Entrepreneurial learning from failure: An interpretative phenomenological analysis. *Journal of Business Venturing, 26*(6), 604–623.

Cope, J., & Watts, G. (2000). Learning by doing—An exploration of experience, critical incidents and reflection in entrepreneurial learning. *International Journal of Entrepreneurial Behavior & Research.*

Crane, F. G., & Crane, E. C. (2007). Dispositional optimism and entrepreneurial success. *The Psychologist-Manager Journal, 10*(1), 13–25.

Davis, M. H. (2018). *Empathy: A social psychological approach.* Routledge.

Dehler, G. E., & Welsh, M. A. (2014). Against spoon-feeding. For learning. Reflections on students' claims to knowledge. *Journal of Management Education, 38*(6), 875–893.

Dweck, C. S. (2000). *Self-theories: Their role in motivation, personality, and development* (Essays in social psychology). Psychology Press.

Dweck, C. S. (2010). Even geniuses work hard. *Educational Leadership, 68*(1), 16–20.

Dweck, C. S. (2014). Talent: How companies can profit from a "growth mindset." *Harvard Business Review, 92*(11), 7.

Elliot, A. J., & Dweck, C. S. (Eds.). (2013). *Handbook of competence and motivation*. Guilford Publications.

Funken, R., Gielnik, M. M., & Foo, M.-D. (2020). How can problems be turned into something good? The role of entrepreneurial learning and error mastery orientation. *Entrepreneurship Theory and Practice, 44*(2), 315–338.

Gartner, W. B. (1988). "Who is an entrepreneur?" is the wrong question. *American Journal of Small Business, 12*(4), 11–32.

Gilham, J. E., Abenavoli, R. M., Brunwasser, S. M., Linkins, M., Reivich, K. J., & Seligman, M. E. P. (2013). Resilience education. In I. Boniwell, S. A. David, & A. C. Ayers (Eds.), *Oxford handbook of happiness*. Oxford University Press.

Glerum, J., Loyens, S. M. M, & Rikers, R. M. J. P. (2020). Mind your mindset. An empirical study of mindset in secondary vocational education and training. *Educational Studies, 46*(3), 273–281.

Gottfredson, R. (2020). *Success mindsets: Your keys to unlocking greater success in your life, work, & leadership*. Morgan James Publishing.

Greenberger, D. B., & Sexton, D. L. (1988). An interactive model of new venture creation. *Journal of Small Business Management, 26*(3), 1–7.

Haynie, J. M., Shepherd, D. A., & Patzelt, H. (2012). Cognitive adaptability and an entrepreneurial task: The role of metacognitive ability and feedback. *Entrepreneurship Theory and Practice, 36*(2), 237–265.

Holland, D. V., & Shepherd, D. A. (2013). Deciding to persist: Adversity, values, and entrepreneurs' decision policies. *Entrepreneurship Theory and Practice, 37*(2), 331–358.

Holt, S., & Marques, J. (2012). Empathy in leadership: Appropriate or misplaced? An empirical study on a topic that is asking for attention. *Journal of Business Ethics, 105*(1), 95–105.

Ireland, R. D., Hitt, M. A., & Sirmon, D. G. (2003). A model of strategic entrepreneurship: The construct and its dimensions. *Journal of Management, 29*(6), 963–989.

Korte, R., Smith, K. A., & Li, C. Q. (2018). The role of empathy in entrepreneurship: A core competency of the entrepreneurial mindset. *Advances in Engineering Education*, *7*(1), n1.

Krueger, N. F., & Carsrud, A. L. (1993). Entrepreneurial intentions: Applying the theory of planned behaviour. *Entrepreneurship & Regional Development, 5*(4), 315–330.

Kuratko, D. F., Fisher, G., & Audretsch, D. B. (2020). Unraveling the entrepreneurial mindset. *Small Business Economics*, 1–11.

Lindholm-Dahlstrand, Å., Andersson, M., & Carlsson, B. (2019). Entrepreneurial experimentation: A key function in systems of innovation. *Small Business Economics, 53*(3), 591–610.

MacKay, B., Arevuo, M., Meadows, M., & Mackay, D. (2020). *Strategy: Theory, practice*. Oxford University Press.

McGrath, R. G., & MacMillan, I. C. (2000). *The entrepreneurial mindset: Strategies for continuously creating opportunity in an age of uncertainty* (Vol. 284). Harvard Business Press.

McMullen, J. S., & Dimov, D. (2013). Time and the entrepreneurial journey: The problems and promise of studying entrepreneurship as a process. *Journal of Management Studies, 50*(8), 1481–1512.

McMullen, J. S., & Kier, A. S. (2016). Trapped by the entrepreneurial mindset: Opportunity seeking and escalation of commitment in the Mount Everest disaster. *Journal of Business Venturing, 31*(6), 663–686.

Minniti, M., & Bygrave, W. (2001). A dynamic model of entrepreneurial learning. *Entrepreneurship Theory and Practice, 25*(3), 5–16.

Mitchell, J. R., Friga, P. N., & Mitchell, R. K. (2005). Untangling the intuition mess: Intuition as a construct in entrepreneurship research. *Entrepreneurship Theory and Practice, 29*(6), 653–679.

Mitchell, R. K., Busenitz, L. W., Bird, B., Marie Gaglio, C., McMullen, J. S., Morse, E. A., & Smith, J. B. (2007). The central question in entrepreneurial cognition research 2007. *Entrepreneurship Theory and Practice, 31*(1), 1–27.

Mitchell, R. K., Busenitz, L. W., Lant, T., McDougall, P. P., Morse, E. A., & Smith, J. B. (2002). Toward a theory of entrepreneurial cognition: Rethinking the people side of entrepreneurship research. *Entrepreneurship Theory and Practice, 27*(2), 93–104.

Naumann, C. (2017). Entrepreneurial mindset: A synthetic literature review. *Entrepreneurial Business and Economics Review, 5*(3), 149–172.

Osterwalder, A., & Pigneur, Y. (2010). Business model canvas. *Self-published. Last*.

Packard, M. D., & Burnham, T. A. (2021). Do we understand each other? Toward a simulated empathy theory for entrepreneurship. *Journal of Business Venturing, 36*(1).

Packard, M. D., Clark, B. B., & Klein, P. G. (2017). Uncertainty types and transitions in the entrepreneurial process. *Organization Science (Providence, R.I.), 28*(5), 840–856.

Peschl, H., Deng, C., & Larson, N. (2021). Entrepreneurial thinking: A signature pedagogy for an uncertain 21st century. *The International Journal of Management Education, 19*(1), 100427.

Peterson, C., & Steen, T. A. (2002). Optimistic explanatory style. *Handbook of Positive Psychology*, 244–256.

Pfeifer, S., Šarlija, N., & Zekić Sušac, M. (2016). Shaping the entrepreneurial mindset: Entrepreneurial intentions of business students in Croatia. *Journal of Small Business Management, 54*(1), 102–117.

Ramoglou, S., Gartner, W. B., & Tsang, E. W. (2020). "Who is an entrepreneur?" is (still) the wrong question. *Journal of Business Venturing Insights*, *13*, e00168.

Reeve, J. (2014). *Understanding motivation and emotion*. Wiley.

Roberts, B. W., & DelVecchio, W. F. (2000). The rank-order consistency of personality traits from childhood to old age: A quantitative review of longitudinal studies. *Psychological Bulletin, 126*(1), 3.

Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review, 26*(2), 243–263.

Savvides, H., & Bond, C. (2021). How does growth mindset inform interventions in primary schools? A systematic literature review. *Educational Psychology in Practice*, 1–16.

Seligman, M. E. (2011). Building resilience. *Harvard Business Review, 89*(4), 100–106.

Seligman, M. E. (2018). *Learned optimism: How to change your mind and your life*. Vintage.

Shepherd, D. A., & Patzelt, H. (2018). *Entrepreneurial cognition: Exploring the mindset of entrepreneurs*. Springer Nature.

Spiegel, J. S. (2012). Open-mindedness and intellectual humility. *Theory and Research in Education, 10*(1), 27–38.

Stehlíková, J., & Valihorová, M. (2016). Possibilities of targeted development of empathy in teachers' undergraduate training. *The New Educational Review, 45*(3), 186–198.

Swail, J., Down, S., & Kautonen, T. (2014). Examining the effect of 'entretainment' as a cultural influence on entrepreneurial intentions. *International Small Business Journal, 32*(8), 859–875.

Syed, M. (2015). *Black box thinking: The surprising truth about success*. Hachette UK.

The Arbinger Institute. (2019). *The outward mindset: How to change lives and transform organizations* (2nd ed.). Berrett-Koehler Publishers.

Ustav, S., & Venesaar, U. (2018). Bridging metacompetencies and entrepreneurship education. *Education & Training (london), 60*(7/8), 674–695.

Ward, T. B. (2004). Cognition, creativity, and entrepreneurship. *Journal of Business Venturing, 19*(2), 173–188.

Warren, L. (2005). Images of entrepreneurship: Still searching for the hero? *The International Journal of Entrepreneurship and Innovation, 6*(4), 221–229.

Zhou, Q., Valiente, C., & Eisenberg, N. (2003). Empathy and its measurement. In *Positive psychological assessment: A handbook of models and measures*. (pp. 269–284). American Psychological Association.