



UNIVERSITY OF LEEDS

This is a repository copy of *Understanding students' emotional reactions to entrepreneurship education: A conceptual framework*.

White Rose Research Online URL for this paper:
<http://eprints.whiterose.ac.uk/115238/>

Version: Accepted Version

Article:

Jones, S and Underwood, S (2017) Understanding students' emotional reactions to entrepreneurship education: A conceptual framework. *Education + Training*, 59 (7/8). pp. 657-671. ISSN 0040-0912

<https://doi.org/10.1108/ET-07-2016-0128>

© Emerald Publishing Limited 2017. This is an author produced version of a paper published in *Education + Training*. Uploaded in accordance with the publisher's self-archiving policy.

Reuse

Unless indicated otherwise, fulltext items are protected by copyright with all rights reserved. The copyright exception in section 29 of the Copyright, Designs and Patents Act 1988 allows the making of a single copy solely for the purpose of non-commercial research or private study within the limits of fair dealing. The publisher or other rights-holder may allow further reproduction and re-use of this version - refer to the White Rose Research Online record for this item. Where records identify the publisher as the copyright holder, users can verify any specific terms of use on the publisher's website.

Takedown

If you consider content in White Rose Research Online to be in breach of UK law, please notify us by emailing eprints@whiterose.ac.uk including the URL of the record and the reason for the withdrawal request.



eprints@whiterose.ac.uk
<https://eprints.whiterose.ac.uk/>



Understanding students' emotional reactions to entrepreneurship education: A conceptual framework

Journal:	<i>Education + Training</i>
Manuscript ID	ET-07-2016-0128.R3
Manuscript Type:	Research Paper
Keywords:	Emotion, Pedagogy, Emotional Ecology, Entrepreneurship Education

SCHOLARONE™
Manuscripts

+ Training

Understanding students' emotional reactions to entrepreneurship education: A conceptual framework

Keywords: Impacts of emotion, entrepreneurship education, pedagogy, emotional ecology

ABSTRACT

Purpose: This conceptual paper focuses on approaches that acknowledge and make explicit the role of emotion in the entrepreneurship education classroom. As entrepreneurship educators, we are aware of the affective impacts that entrepreneurship education has on our students and we continuously reflect on and support our students through, what is acknowledged in practice, as an emotionally charged experience. With this in mind, we outline how a variety of disciplines engage with the role of emotions and how an interdisciplinary approach to the topic, can support pedagogy.

Approach We synthesise relevant arguments from four discrete disciplines: Neuroscience; Psychology, Education and Entrepreneurship, which have not previously been combined. We argue that the role of emotion in learning generally, has been investigated across these disparate disciplines, but has not been brought together in a way that provides practical implications for the development of pedagogy.

Findings: Through synthesising the findings from four bodies of knowledge that engage with emotion, entrepreneurship and education, we start to develop a theoretical model based around the concept of the emotional ecology of the classroom.

Research Implications: The role of emotion in entrepreneurship education is an emerging topic and our synthesis of research supports further investigation. Our insights will support educators to develop classroom environments that acknowledge relationships between students and between students and educators. Such engagement could help educators and

1
2
3 students to appreciate, acknowledge and address the emotional aspects of entrepreneurship
4
5 education.

6
7 **Value:** The paper starts to develop new theory around emotions in entrepreneurship
8
9 education, developing the idea of the emotional ‘ecology’ of teaching environments and
10
11 highlighting how this might support future research agendas.
12
13

14 15 16 **Introduction**

17
18 Entrepreneurship education and early exposure to (simulated) new venture creation are
19
20 important determinants in students’ propensity to have a positive attitude towards starting a
21
22 new business (Phan *et. al.*, 2002) and their ability deal with complex decisions in the early
23
24 stages of business start-up. In addition, it is argued that students who have undertaken a
25
26 venture creation course are better able to assess risks and, therefore, make better decisions
27
28 (see Clouse, 1990). It has long been established that entrepreneurship education not only
29
30 develops students as independent thinkers, but also encourages attitudinal change by focusing
31
32 on skills, behaviours and personality in addition to the academic content of typical higher
33
34 education (HE) courses (Pittaway and Cope, 2007). However, this paper questions whether
35
36 the emotional impact of such change is brought into pedagogic design.
37
38
39
40
41
42

43 Emotions have “evolved through their adaptive value in dealing with fundamental life tasks.”
44
45 (Ekman, 1992, p.169). Basic emotions include happiness, sadness, anger and fear. Such
46
47 emotions can occur without an object, but others, such as love, hatred and disgust require an
48
49 object (Oatley and Johnson-Laird, 2014). Indeed, Oatley and Johnson-Laird (2014, p.134)
50
51 stress the relational aspects of emotions, arguing that they:
52
53
54
55
56
57
58
59
60

1
2
3 ... are also communications to others, by gestures, postures, facial
4 expressions, and verbalizations. Emotions often produce empathy in others and
5 they can create and maintain relationships such as happy cooperation or angry
6 conflict. “

7
8
9
10
11
12
13
14 As the title of this paper suggests, it is accepted that students react emotionally to stimulus
15 within formal entrepreneurship education, and that enterprise educators have developed
16 mechanisms for managing emotional responses. However, our reading of the literature
17 suggests this is a woefully under-researched, and perhaps undervalued, facet of
18 entrepreneurship teaching. Additionally, emotions and their impact on learning, is an area
19 that is dispersed across many fields of knowledge. Indeed, this paper's first concerns were to
20 establish what literature is available for educators to draw on, how this literature frames the
21 role and importance of emotion in education generally, and in entrepreneurship education
22 more specifically. We focus on the current major contributing thematic areas of study;
23 neuroscience, psychology, education and entrepreneurship to synthesise and summarise
24 current understanding.
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40

41 In doing so, we respond to the practical concerns of educators developing and delivering
42 entrepreneurship education. We also respond to wider calls for interdisciplinary research and
43 theory-building that synthesises findings and debates from a variety of relevant fields with
44 entrepreneurship theory (Ratten, 2011; Lackeus, 2012). Ultimately, this research enables
45 educators to develop new pedagogies that take into account the emotional aspects of teaching
46 and learning, and to consider how these may differ in entrepreneurship education.
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 Beginning with a brief outline of the narrative review methodology underpinning this paper,
4
5 we move to explore four discrete bodies of knowledge that have helped to develop
6
7 understanding of the role of emotion in learning, education and entrepreneurship.
8
9 Considering the themes, debates and issues highlighted, a theoretical model is developed to
10
11 integrate and extend these, as a starting point for further research into emotion in
12
13 entrepreneurship education. We conclude with some suggestions for future research based
14
15 upon this theoretical model.

20 21 **Methodology**

22
23 There is little research within entrepreneurship education that focuses on, or encompasses, the
24
25 role of emotion in pedagogic design or delivery. Therefore, we explored the disciplines that
26
27 are having conversations about both 'emotions and learning' and 'entrepreneurship and
28
29 emotion'. From this, a narrative literature review was conducted to identify themes and
30
31 findings that could support further exploration of this topic.

32
33
34
35
36 Narrative literature reviews, which consist of a broad overview of a body (or bodies) of
37
38 literature, do not follow strict systematic methods to locate a precise selection of articles
39
40 (Bryman and Bell, 2007). This was deemed necessary, as the topics under investigation are
41
42 across a number of different disciplines. It was therefore, likely that a systematic search
43
44 would limit the variety of sources from which information could be drawn. In addition, these
45
46 areas of study are relatively new and rapidly developing. Subsequently, we include sources
47
48 that are not typically covered in systematic literature searches, such as conference papers,
49
50 working papers and books.
51
52
53
54
55
56
57
58
59
60

1
2
3 One of the main critiques of this methodology is the bias of researchers selecting what will
4 support their work (Green *et al.*, 2006). However, as the research is exploratory and there is
5 not a specific hypothesis to prove or disprove, we considered this methodology to be
6 appropriate.
7
8
9
10

11
12
13 The narrative review was conducted by searching sources such as JSTOR, EBSCO and
14 Google Scholar, using specific keywords such as “pedagogy of emotion”, “emotional
15 pedagogy” and “entrepreneurship and emotion”. This approach highlighted four main bodies
16 of knowledge that engage with the interplay between emotion and education, and emotion
17 and entrepreneurship. These were: Neuroscience; Psychology; Education; and
18 Entrepreneurship. It was decided that research generated within these disciplines would form
19 a theoretically robust literature base. These four bodies of knowledge subsequently
20 underpinned our exploration of the main theoretical themes, and teaching approaches. In
21 drawing together these rather disparate bodies of knowledge, and working in an
22 interdisciplinary way, we sought to develop an understanding of this area and an agenda to
23 take forward as educational researchers.
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40

41 **The Impacts of Emotion on Learning and Entrepreneurship**

42
43 In line with calls for interdisciplinary approaches (Geake and Cooper, 2003), this paper draws
44 together literature focused on the expression and role of emotion within education and
45 pedagogic design, not necessarily the psychological perspective, which is a more traditional
46 viewpoint. Throughout this review, there is specific identification of theories and/or
47 techniques that support educators to develop pedagogic understanding.
48
49
50
51
52
53
54

55 *Neuroscience*

1
2
3 Neuroscience is a relatively new discipline spanning neurology, psychology and biology
4 (Goswami, 2004). Broadly defined, neuroscience “investigates the processes by which the
5 brain learns and remembers, from the molecular and cellular levels right through to brain
6 systems (e.g., the system of neural areas and pathways underpinning our ability to speak and
7 comprehend language).” (Goswami, 2004, p.1). Neuroscience challenges traditional
8 psychological conceptualizations of emotion, viewing “emotional brain processes (as) more
9 typically unconscious than conscious.” (Franks, 2006, p.38). It was not until the mid-1990s
10 that neuroscientists began to apply their understanding of the link between cognition and
11 emotion to the social sciences, particularly in education. Yet, it is now widely accepted that
12 emotions are a “basic form of decision making, a repertoire of know-how and actions that
13 allow people to respond appropriately in different situations.” (Immordino-Yang and
14 Damasio, 2007, p.7). Immordino-Yang and Damasio (2007) further suggest that it is at the
15 interface of emotion and cognition, that creativity emerges, one of the most commonly
16 discussed themes in the entrepreneurship literature (Reid and Petocz, 2004). Cognition and
17 emotion can therefore be thought of as overlapping processes in this context.
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37

38 Immordino-Yang and Damasio (2007) contend that the relationship between learning,
39 emotion and body state (e.g. tiredness or hunger) is interwoven with the notion of learning
40 itself; that the emotional state of learners can have a dramatic effect on the way in which
41 information is perceived. For example, a state of anxiety has been shown to decrease
42 attention span and individuals are less receptive to experiences if fearful or stressed. Many
43 techniques employed to enhance students’ understanding of enterprise and entrepreneurship
44 purposefully disrupt the more traditional mode of learning in order to mimic the experiences
45 of entrepreneurs. The resulting anxiety in students, who are unused to and/or unsure about
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 such methods, is well documented (most recently see Engel *et al.*, 2016). This creates an
4
5 obvious tension in designing effective entrepreneurship pedagogy.
6
7

8
9
10 Arguably, the most relevant contributions from the neuroscience literature to emotion and
11
12 (entrepreneurship) education are twofold. Firstly, emotional processes allow the social
13
14 influences of culture to shape learning, thought and behaviour. This suggests that emotional
15
16 cognition, developed through learning, can be linked to student attitudes to entrepreneurial
17
18 activity, for example in opportunity recognition (Welpe *et al.*, 2011). More specifically,
19
20 studies have shown that emotions manifest as behaviours. It is a key point of
21
22 entrepreneurship pedagogy to develop behaviours (often cited in addition to knowledge and
23
24 skills [*e.g.* Garavan and O’Cinneide, 1994]). If educators genuinely seek to develop
25
26 entrepreneurial behaviour in students, it would be remiss not to develop, and be able to
27
28 respond to, their emotional requirements. Secondly, it is suggested that emotional processes
29
30 are critical for enabling students to take their learning and classroom based experiences into
31
32 the ‘real world’ (Saver and Damasio, 1991). This is of huge importance to those engaged in
33
34 enterprise education which, although largely classroom based, is delivered under the
35
36 assumption that students *will* apply their experiences to future, real-world scenarios.
37
38
39
40
41
42

43 What seems clear is that, although great strides have been made over the last 20 years linking
44
45 cognitive and behavioural development to emotional processing, this has not translated into
46
47 widespread development and/or adoption of new pedagogies. Subsequently, the education
48
49 system is still largely based on the promotion of cognition without a role for emotion. By
50
51 focusing educational pedagogy on the development of rational thought alone, such systems of
52
53 education may limit the ability of students to transfer learning in formal, structured settings
54
55 (such as the classroom or laboratory) to the real world. For enterprise educators, this should
56
57
58
59
60

1
2
3 be a serious concern, given the emphasis on developing behaviours and skills focused on
4
5 real-world relevance and application.
6
7

8 9 *Psychology*

10
11 Debates surrounding emotion in the psychology literature have raged between two camps for
12
13 over 60 years; those who argue that emotions can be described as ‘category-based’ and those
14
15 who suggest that emotions are more appropriately coded into dimensional models. A
16
17 category-based approach argues that there are a limited number of ‘basic’ emotions (such as
18
19 happiness, sadness, anger, fear *etc.*), which enables discrete categorisation of the different
20
21 signals (muscular movements and expressions) used to convey these emotions. This argument
22
23 is supported by evidence of cross-cultural recognition of different facial expressions.
24
25 Dimensional models assume that emotional states are more interrelated and, therefore, better
26
27 illustrated with a unifying framework that takes into account additional modes of
28
29 communication, such as vocal timbre. However, despite the prolific research into emotions
30
31 themselves, and how they may be portrayed/recognised, apart from a couple of notable
32
33 exceptions (see Weiner, 1985; Zeidner, 1998), the role of emotion in education has been
34
35 largely ignored until relatively recently (Maehr and Midgley, 1996).
36
37
38
39
40
41
42

43 In the psychology literature, Plato is cited as having described emotions as irrational urges,
44
45 obstacles in the pursuit of truth that should be managed through reason and rationality; a
46
47 stance that has long influenced views of emotions as interfering with the structures of
48
49 education (Jaggar, 1989). This echoes the neuroscience position of segregating emotions
50
51 from other, more highly prioritised, areas of development in education. Dirkx (2001) argues
52
53 that this view of emotions still underpins current educational practices, and psychology
54
55 research into the role of emotions has been restricted to classification of motivators or
56
57
58
59
60

1
2
3 impediments to learning. Such research focuses on particular emotional states, for example
4 anxiety and fear (Tennant, 1997), or frustration and boredom (Pekrun, 2006), and a search for
5 educational contexts that allow students to control or redirect such feelings. However, during
6 the late-1990s, psychology research suggesting emotion is more deeply intertwined with our
7 rational perception and processing of information from external environments, became
8 increasingly prevalent (Dirkx, 2001). Commenting on 10 years of research into learners'
9 motivation, Meyer and Turner (2002, p.107) write:

20
21 “...in looking back at our research, we see how our theoretical and
22 methodological assumptions obscured our ability to recognise the pivotal role
23 of emotions in learning.”
24
25
26
27

28
29 This transformation appears to be (at least in part) linked to neurobiological advances in
30 understanding, as papers from neuroscience begin to be cited in psychological debates with
31 more integrative approaches becoming popular (Pekrun, 2006).
32
33
34
35
36
37

38 Additionally, Goleman (1995), famed for his pioneering work on emotional intelligence,
39 suggests that it is the specific role of the teacher to recognise the emotional state(s) of
40 students, and to respond appropriately, in order to promote a positive learning process.
41 Certainly it seems that students respond to the educator as the “barometer” of ... values,
42 beliefs and practices that help to regulate emotion, motivation and cognition.” (Meyer and
43 Turner, 2002, p.111) within the classroom and there is a common thread, through the
44 psychology literature, that the educator should positively motivate students to learn.
45
46
47
48
49
50
51
52
53
54

55
56 ***Education***
57
58
59
60

1
2
3 Within the education literature, the interplay between emotion and education has been a
4
5 research focus since Dewey suggested his theory of emotion in education in 1925, arguing
6
7 that “reason and emotion are so intertwined...that one never simply thinks without feeling.”
8
9 (Morse, 2010, p.225). This forms the basis of contemporary arguments that emotion leads to
10
11 better retention of cognitive material and provides learners with “seminal learning
12
13 experiences.” (Taylor, 2010, p.1110); essentially that we have to feel in order to learn
14
15 (Chabot and Chabot, 2004). This is also apparent in the emphasis on constructivist
16
17 approaches, which draw upon the work of other influential educational researchers such as
18
19 Vygotsky and Piaget (Lackeus, 2012) and also in ideas around active or experiential learning
20
21 (Kolb, 1984; Boud, *et al.*, 1985; Gundlach and Zivnuska, 2010). Indeed, a recent summary of
22
23 education research suggests that emotions form an important underpinning because:
24
25
26

27
28
29 “...emotions are important to pedagogical practices, to student-teacher
30
31 relationships, to issues of reform efforts and processes of change and to an
32
33 understanding of power relations and social structures in schools and in
34
35 society.” (Zembylas, 2011, p.21)
36
37
38

39
40 Rather than a focus on the (internal) individual, prevalent in neuroscience and psychology
41
42 research on emotion, the education literature increasingly focuses on the social aspects of
43
44 emotions in teaching and learning interaction (Zembylas, 2011). There is also interest in
45
46 macro-level influences linked to developing emotional resilience in students. Some go so far
47
48 as suggesting that emotions are political objectives, pushed by state interventions in
49
50 education, to emphasise the role of education as preparing students “for the rapid change and
51
52 uncertainty of modern life.” (Cummings, 2009, pp.3-4, cited in Amsler, 2009, p.1). This can
53
54 be seen in recent Europe-wide calls for a shift in education to produce “highly skilled and
55
56
57
58
59
60

1
2
3 versatile people who can contribute to innovation and entrepreneurship.” (EC, 2012, p.1).

4
5 This intertwining of the external and internal is highlighted by Johnson (2008), who suggests
6
7 that the *world* possesses emotions, not just the individual, emphasising the role of society,
8
9 culture and context.
10

11
12
13
14 This separation of the internal and external is also evident in calls for distinctions between
15
16 emotions and feelings; with emotions as a neurobiological *response* to ‘external’ stimuli, and
17
18 feelings or moods as the *perception* of emotions within a specific context (Goerge, 2000;
19
20 Gondim and Mutti, 2011). This further suggests that the specific context is important when
21
22 exploring students’ emotions and is supported by research that emphasises the importance of
23
24 the lived experience and active/experiential learning (Dewey, 1925; Kolb, 1984; Gibb, 2009).
25
26
27

28
29 As with the psychology research, the strategic role of educators within this process is
30
31 emphasised in education research. McCaughtry (2004, p.30) suggests that:
32
33

34
35
36 “...how teachers understand student emotion is inextricably linked to their
37
38 thinking and decisions about educational content, curriculum, and pedagogy.”
39
40

41
42
43 However, educators are not often studied as arbiters and negotiators of knowledge in
44
45 entrepreneurship education (Jones, 2015). Something that is also evident in the literature on
46
47 emotion and education generally, with studies more commonly focused on students and their
48
49 emotional response to teaching (Lackeus, 2012).
50
51

52
53
54 ***Entrepreneurship***
55
56
57
58
59
60

1
2
3 Research into the emotions of entrepreneurs is of growing importance. Since 2003, 91 papers
4 that list emotion in any field were published in *Entrepreneurship Theory and Practice*, with
5 those explicitly focused upon emotion totalling six papers. One paper has been published in
6 the *Journal of Business Venturing*. Some of this research focuses on specific emotions such
7 as envy (Biniari, 2011), failure (Shepherd, 2004), and trust (Massis, 2012; Eddleston *et al.*,
8 2012), while others focus on a wider range of emotions. This interest stems from the fact that
9 emotions impact on entrepreneurial decision making (Cardon *et al.*, 2012; Welpe *et al.*, 2012)
10 and opportunity recognition (Souitaris *et al.*, 2007; Foo, 2011, Welpe *et al.*, 2012, Hayton
11 and Cholakova, 2012).

22
23
24
25 Cardon *et al.*, (2012) acknowledge the collective as well as the individual notion of
26 entrepreneurial emotion. Although entrepreneurship is generally positioned as an
27 individualistic activity (Dodd and Anderson, 2007) the social context is further acknowledged
28 by other research. Biniari (2011) highlights the emotional embeddedness of the
29 entrepreneurial act as a moderator of its social embeddedness, drawing upon emotional
30 influences (Hareli and Rafaeli, 2008) and the sociology of emotions (Kemper, 2000; Lawler
31 *et al.*, 2000). However, others argue that self-efficacy and resilience are potential outcomes of
32 overcoming anxiety producing activities (Bullough, 2013).

33
34
35
36
37
38
39
40
41
42
43
44
45 Although emotion is increasingly investigated in entrepreneurship generally, there is a lack of
46 empirical studies about the impact of emotions on learning in entrepreneurship education
47 (Gondim and Mutti, 2011; Lackeus, 2012). Despite this, some researchers conclude that the
48 role of emotions and the affective realm are important considerations in the teaching and
49 learning of entrepreneurship (Man, 2007; Man and Yu, 2007; Gibb, 2005; Pless *et al.*, 2011).
50 Gibb (2005) suggests encouraging students to experience the entrepreneurial lifeworld, while
51
52
53
54
55
56
57
58
59
60

1
2
3 Pless *et al.* (2011, p.237) focus on supporting learners to develop “new lifeworlds (and) a
4
5 new perspective of self and the world” that is linked to the ability to make sense of the
6
7 emotions experienced in this process. This engagement with the lifeworld of the entrepreneur
8
9 suggests the creation of teaching environments where students 'feel' what it is like to be an
10
11 entrepreneur. Shepherd (2003 and 2004) is one of the few authors to consider the impact of
12
13 negative emotions within entrepreneurship. He argues educators might consciously try to
14
15 shield students from negative emotions by emphasising and acknowledging only the positive
16
17 aspects of entrepreneurship; ignoring the fact that business failures do occur and preventing
18
19 students from discussing related worries and concerns. Zampetakis, *et al.* (2015) also suggest
20
21 that students' anticipation of the future negative emotional effects of pursuing
22
23 entrepreneurship should also be acknowledged.
24
25
26
27
28

29
30 Hjorth (2011) discusses the role of the educator and actively promotes the role of the
31
32 pedagogue in entrepreneurship education. Hjorth highlights a tension between the aims of
33
34 entrepreneurship education (to encourage students to aspire to entrepreneurship; helping them
35
36 to feel what entrepreneurship is like) and their position as students, learning to deal with and
37
38 develop emotional resilience.
39
40
41

42
43 These papers, and most of those drawn upon for this literature review, highlight a tendency
44
45 for researchers to concentrate on entrepreneurial emotions in entrepreneurship education.
46
47 This ignores the emotions that may be engendered in students who do not position themselves
48
49 as entrepreneurs, and whose own responses, emotions and lifeworld may not be
50
51 acknowledged in the entrepreneurship education classroom.
52
53
54

55 56 **Discussion** 57 58 59 60

1
2
3 Although there is a developing body of literature focused upon the role of emotion in
4 entrepreneurship, and the role of emotion in education generally, this knowledge has not been
5 synthesised to further the understanding of the role of emotion in entrepreneurship education.
6
7 It is known that entrepreneurs have to learn to harness their emotions, and that their responses
8 can impact on their ability to recognise and respond to opportunities (Souitaris *et al.*, 2007;
9 Foo, 2011, Welpe *et al.*, 2012, Hayton and Cholakova, 2012), therefore, should students also
10 do this? Educators encourage authentic experiences, and often argue that entrepreneurship is
11 best learned by doing (Kolb, 1984; Gibb, 2009), but rarely account for the emotional
12 upheaval associated with such teaching practices. Emotions have a considerable impact on
13 teaching (Meyer and Turner, 2002) and thus, the student experience. We now consider the
14 implications of these complexities for pedagogic design.
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29

30 *Towards a Theoretical Model*

31
32 In recognition of pedagogic design and its impact on the emotional experience of
33 entrepreneurship education, we develop a theoretical model (Fig. 1), which illustrates current
34 conceptualisations of entrepreneurship education and the focus of emotion research in each
35 domain. It illustrates how educators might build on these to develop more robust approaches
36 that actively engage with the affective aspects of teaching and learning in this area. In doing
37 so, we highlight some tensions that have emerged from the literature. These areas of tension
38 seem to be fruitful foci for exploring the struggles of the social space that is entrepreneurship
39 education in HE.
40
41
42
43
44
45
46
47
48
49
50

51
52 This model also allows us to build theory around the emotional ecology (Ek, 2010) of the
53 classroom. We acknowledge that this is highly contextual and varies from setting to setting,
54 depending upon the relationships between the discipline within which is it embedded, the
55
56
57
58
59
60

1
2
3 student (and how they relate to the entrepreneurial lifeworld) and the educator's lifeworld. Of
4
5 course, students are not a homogeneous group, and markers of social difference, such as
6
7 gender and ethnicity, might also inform students' emotional responses and attitudes (Jones,
8
9 2010, Jones 2014). Indeed, the emotional ecology of the classroom is based upon "what
10
11 something (or someone) *does* in relationship to others" (Knudson, 2007, p.240) in teaching
12
13 environments, their effects and affects. The concept of emotional ecology also challenges the
14
15 traditional polarisation of reason and feeling (Lackeus, 2012) by "utilizing them
16
17 simultaneously" (Knudson, 2007, p.240). We believe the concept of emotional ecology has
18
19 real potential to impact on theory development around the relational aspects of emotions
20
21 within teaching environments generally, and entrepreneurship education teaching
22
23 environments in particular.
24
25
26
27
28

29
30 Figure 1 illustrates our theoretical model; mapping the relationships that make up the
31
32 emotional ecology of the entrepreneurship education classroom. The model synthesises key
33
34 points from our review by grouping common conceptual blocks within the different thematic
35
36 areas. Each white circle summarises a hypothesised area of tension.
37
38
39
40

41 --FIGURE 1. HERE--
42
43
44

45 ***Educators***

46
47 In the UK, there is now substantial pressure for universities to include enterprise and
48
49 entrepreneurship studies within the curriculum, from a number of sources including the
50
51 government, regulatory bodies (QAA, 2013) and the European Union (EC, 2016). Institutions
52
53 and educators are pressured to respond to calls to produce "highly skilled and versatile people
54
55 who can contribute to innovation and entrepreneurship." (EC, 2012, p.1). However, it is also
56
57
58
59
60

1
2
3 acknowledged that in teaching entrepreneurship, educators combine external imperatives with
4
5 their own attitudes and experiences (Jones, 2015) and that there are substantial connections
6
7 between a lecturer's prior experiences and their "interpretation of the nature of
8
9 entrepreneurship and how best to teach the subject" (Bennett, 2006, p.9).
10
11

12
13
14 Exploration of the role of educators, as arbiters of entrepreneurship education, represents a
15
16 major gap in our knowledge of classroom interactions and how this may inform the emotional
17
18 ecology of the classroom. Indeed, in all bodies of literature explored here, the importance of
19
20 educators' understanding (and management) of students' emotional responses to
21
22 (entrepreneurship) education is underlined. Allied to this, Carey and Matlay (2011) highlight
23
24 how educators respond to, amongst other issues, the risks and responsibilities of
25
26 entrepreneurship education. This may have particular emotional consequences when
27
28 educators take a hands-off approach, placing the responsibility for the success (or failure) of a
29
30 business idea wholly on students.
31
32
33

34
35
36 Educator perceptions of student entrepreneurial potential has also been found to be lower
37
38 than *student* perceptions of their abilities (Shinnar *et al.*, 2009) and this has the potential to
39
40 impact on how staff and students perceive their chances of success. For this reason, it could
41
42 be argued that, in order to take account of, and understand, the emotional ecology created
43
44 within classrooms, educators should develop reflective practices (Schon, 1991). This requires
45
46 educators to examine critically "the assumptions underlying actions (and) the impact of those
47
48 actions" (Cunliffe, 2004 p.407). Ultimately this involves educators recognising and reflecting
49
50 on the potential effects of conscious, pedagogic choices for students. Part of this would seem
51
52 to involve bringing in the student lifeworld, rather than concentrating solely on the elevation
53
54 of the entrepreneurial lifeworld. Actively bringing the student lifeworld into the classroom
55
56
57
58
59
60

1
2
3 offers opportunities for students to negotiate the curriculum and for educators to acknowledge
4
5 and foreground student experiences, and differences, including the emotions that may be
6
7 prompted during entrepreneurship education.
8
9

10 11 *Students as Learners*

12
13
14 There is evidence from the neuroscience literature that negative emotions, such as anxiety,
15
16 fear and stress, can inhibit the learning process and yet it is widely suggested that students
17
18 should be actively encouraged to feel a sense of uncertainty and to take risks in enterprise
19
20 education (Ratten, 2011; Arpiainen *et al.*, 2013). Often the focus is on the experience of
21
22 students as *entrepreneurs* rather than learners, particularly when attempting to make them
23
24 *feel* what it is to be an entrepreneur. As outlined above, students might expect their
25
26 experiences and attitudes to be drawn upon within the classroom, but it seems that both the
27
28 educator and entrepreneurial lifeworld are privileged (Farny *et al.*, 2016). This has the
29
30 potential to silence students, who may worry about standing out as weak, or as unable to cope
31
32 with the learning activities, if they admit to feeling anxious, angry or uneasy. This may be
33
34 particularly difficult, given that their experiences of more traditional teaching environments
35
36 (and the attainment of ‘good’ grades) may revolve around them understanding, enjoying and
37
38 agreeing with the learning activities they are exposed to. Also, as Shepherd (2004) has
39
40 pointed out, entrepreneurship education is traditionally linked with the promotion of positive
41
42 outcomes that centre upon success, and to acknowledge the difficulties and potential for
43
44 failure associated with entrepreneurship may also undermine such traditional approaches.
45
46
47
48
49

50 51 *Students as Entrepreneurs*

52
53
54 Another tension manifests in the focus on the entrepreneurial lifeworld, as it is argued that
55
56 entrepreneurship is not a neutral or value-free activity, although it is positioned as such in
57
58
59
60

1
2
3 wider society (Lewis, 2006; Jones, 2010). The way that entrepreneurship is framed within the
4
5 curriculum and classroom may cause emotional unease for some students, particularly where
6
7 it might clash with their sense of self, linked to the particular discipline they are studying or
8
9 to their social position relative to entrepreneurship. For example, one could expect different
10
11 perceptions of (and feelings about) entrepreneurship between students from an arts or
12
13 humanities discipline in comparison to business, or for female students who may feel a sense
14
15 of stereotype threat (Steele and Aronson, 1995) when confronted with research that
16
17 emphasises female deficiency discourses (see Ahl, 2004). This has a potential to impact on
18
19 the learning environment because engendering feelings of anxiety and stress can actively
20
21 inhibit the entrepreneurial learning process (Pekrun, 1992; Shepherd, 2003).
22
23
24
25
26
27

28 Furthermore, entrepreneurs have been found to have high levels of emotional intelligence
29
30 (Cross and Travaglione, 2003). Arguments continue about the role and importance of
31
32 emotion in education, with some suggesting that students are not equipped with the social and
33
34 emotional competences to fully capitalise on their academic knowledge (Seal *et al.*, 2011).
35
36
37

38 ***Social Cognition***

39
40 Further exploration of social interaction within entrepreneurship education is warranted,
41
42 particularly the social interaction between entrepreneurship educators and students. This
43
44 interaction is conceptualised as being primarily within the classroom but also includes
45
46 interactions with the curriculum and the framing of entrepreneurship competencies and
47
48 behaviours via educator negotiation, arbitration, assumptions and values. Indeed, it may be
49
50 that social interaction may be a fruitful avenue for exploring the impact of emotions, given
51
52 that this is important for both the way that entrepreneurs learn (Man, 2007; Pittaway and
53
54 Cope, 2007; Foo, 2011; Cardon *et al.*, 2012) and also that the classroom environment is
55
56
57
58
59
60

1
2
3 essentially a space of interaction; between students, between educators and students, and
4
5 between students, educators and the curriculum.
6
7

8
9
10 Within the entrepreneurship and psychology literature, there is much focus on the
11 individualist entrepreneur (and, thus, the student) and their individual emotions, skills and
12 behaviours. This creates a tension within entrepreneurship classroom environments, which
13 increasingly emphasise collaboration and group work (Gibb, 2009). Educators can create a
14 classroom culture of competition (which is often framed around getting good marks) or they
15 can emphasise collaboration. This is often predicated on the *intangibles* and implicit
16 responses of the learning process (and the emotions that students have to cope with during the
17 process) rather than the *explicit* product related outcomes (Ek, 2010). Arguably, these
18 different classroom cultures will have different impacts on the emotional responses of
19 students. Higher Education is built upon the idea that the higher the grade, the more
20 successful the student will be in any future endeavours. Group work immediately challenges
21 this individualistic approach to education and we know, from our own experience, that some
22 students find this diversion from traditional education strategies particularly uncomfortable.
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39

40 Ultimately, our suggested theoretical model acknowledges the need for grounded approaches,
41 which take into account particular contexts, the power relations between students and
42 educators that can emerge, and their impact on the emotional environment (or ecology)
43 created (Ram and Trehan, 2010; Ek, 2010). Reflecting upon whose lifeworld and emotions
44 are privileged in entrepreneurship education classrooms would be a useful starting point for
45 inquiry into these situated and highly contextual emotional ecologies. This also offers scope
46 to bring in more intersectional approaches to research (cf. Crenshaw, 1991), which do not
47
48
49
50
51
52
53
54
55
56
57
58
59
60

1
2
3 position students as homogenous, allowing for more nuanced understandings of the potential
4
5 emotional impacts linked to gender, ethnicity, age, class, etc.
6
7

8 9 **Concluding Thoughts**

10
11 The emotional impacts of entrepreneurship education are increasingly seen as an important
12
13 element of the student experience. Pedagogical interventions are seemingly built around
14
15 supporting students to *feel* what is like to be an entrepreneur and yet there is little research
16
17 into how this might affect the student experience, their ability to learn and the classroom
18
19 environment generally. The claims and arguments in the literature, and the tensions that have
20
21 emerged from this, suggest future research directions could explore how educators might
22
23 address these. In recognising that knowledge and learning are co-constructed, we encourage a
24
25 focus on both students *and* staff in future research. Ideally, the use of reflective student and
26
27 staff accounts should be linked to classroom observations, as these form a large part of the
28
29 emotional ecology that students experience.
30
31
32
33
34
35

36
37 As one purported aim of entrepreneurship education is to support student resilience (Hjorth,
38
39 2011; Bullough *et al.*, 2013) longitudinal research that follows students after their exposure to
40
41 entrepreneurship education could explore whether they have taken this emotional awareness
42
43 /resilience into other aspects of their lives. It could investigate whether, having been through
44
45 the emotionally charged experience of entrepreneurship education, they feel better able to
46
47 cope with the emotional demands of entrepreneurship (or employment in an uncertain
48
49 economic climate generally). Researchers might also consider whether there are any
50
51 differences between the emotions involved in engaging students with learning about for-
52
53 profit and not-for-profit activities. For example, where students are learning *about* and *for*
54
55
56
57
58
59
60

1
2
3 social entrepreneurship, the emotional drivers might be linked to politics and/or principles, as
4
5 well as creating and sustaining a business (see Shrivastava, 2010).
6
7

8
9
10 Educators are also often invisible in educational research, and their role as arbiters and
11
12 facilitators is largely ignored in the entrepreneurship education literature (Jones, 2014). A
13
14 concentration on educators could answer a number of questions: What are the common
15
16 practices already employed? Do staff already employ these pedagogies and practices,
17
18 unaware of the theoretical basis? Are these responses actually *conscious* pedagogical
19
20 interventions or reactions to student responses? What works, for both staff and students and is
21
22 this dependent on the demographics of particular student groups - i.e. business students as
23
24 opposed to arts/humanities students?
25
26
27

28
29
30 The importance of socially situated learning is evident in much of the literature reviewed
31
32 (Kemper, 2000; Lawler, *et al.*, 2000; Biniari, 2011; Zembylas, 2011, 2013) and yet this is
33
34 often missing from empirical studies, particularly those focusing on entrepreneurs, which
35
36 tend to privilege the individual rather than the emotions produced *within* and *through* groups.
37
38 There is also emphasis on the need to research these socially produced emotions as they
39
40 emerge in real-time (Lackeus, 2012) and to develop research that is classroom based.
41
42
43

44
45
46 The obvious outcome of our review is the need for a more interdisciplinary approach to
47
48 enterprise pedagogy design, particularly as important theoretical and empirical research is
49
50 scattered throughout diverse bodies of knowledge (Geake and Cooper, 2003). Specifically,
51
52 there is an argument that new research directions should focus on the emotions embedded
53
54 within social interactions, as the classroom is essentially a social environment built upon the
55
56 relationship between students, educators and the curriculum. We suggest that research
57
58
59
60

1
2
3 focused on the ‘students as learners – students as entrepreneurs – educators/curriculum’
4
5 nexus, as outlined previously, would be the most immediately fruitful area for unpicking and
6
7 addressing the tensions and difficulties identified. There is also a call to use the same
8
9 language across different disciplines, otherwise it is difficult to find each other’s
10
11 research. This is particularly evident in how emotions are discussed, how they are
12
13 conceptualised and the keywords and titles used as identifiers in published work.
14
15

16
17
18 This review, and our theoretical framework, suggests that what is currently missing is an
19
20 emphasis and understanding of the social/interaction and overall emotional ecology of the
21
22 entrepreneurial classroom. To develop learning environments and pedagogies that are both
23
24 effective *and* affective it seems that student emotion must be taken into account, because
25
26 students (and educators) are potentially changed by pedagogic interventions. In
27
28 acknowledging this, it is possible to make tangible the intangible impacts on the teaching and
29
30 learning process. We consider this a major contribution to extending theory development
31
32 within the emerging research agenda on emotions and entrepreneurship education.
33
34
35
36
37

38 **References**

39
40
41 Ahl, H. (2004), *The Scientific Reproduction of Gender Inequality: A Discourse Analysis of*
42
43 *Research Texts on Women’s Entrepreneurship*, Copenhagen Business School Press, Malmo,
44
45 Koege, Herndon VA, Abingdon.
46
47 Amsler, S. A. (2009), “Educating the emotions: the new biopolitics of critical pedagogy”,
48
49 Paper presented at *Changing the Subject: Interdisciplinary perspectives on emotional well-*
50
51 *being and social justice*, Perspectives from International Politics, Oxford Brookes University.
52
53
54
55
56
57
58
59
60

1
2
3 Arpiainen, R. L., Täks, M., Tynjälä, P., and Lackéus, M. (2013), “The sources and dynamics
4 of emotions in entrepreneurship education learning process”, *Trames*, Vol. 17 No. 4, pp. 331-
5 346.
6
7

8
9
10 Bennett, R. (2006), “Business lecturers' perceptions of the nature of entrepreneurship”,
11 *International Journal of Entrepreneurial Behaviour and Research*, Vol. 12 No. 3, pp. 165-
12 188.
13
14

15
16 Biniari, M. G. (2011), “The emotional embeddedness of corporate entrepreneurship: The case
17 of envy”, *Entrepreneurship Theory and Practice*, Vol. 36 No. 1, pp. 141-170.
18
19

20
21 Boud D., Keogh R. and Walker D. (1985), *Reflection: Turning Experience into Learning*,
22 Kogan Page, London.
23
24

25
26 Bryman, A. and Bell, E. (2007), *Business Research Methods*, Oxford University Press, New
27 York, NY.
28
29

30
31 Bullough, A., Renko, M., and Myatt, T. (2013), “Danger zone entrepreneurs: The importance
32 of resilience and self-efficacy for entrepreneurial intentions”, *Entrepreneurship Theory and
33 Practice*, Vol. 38 No. 5, pp. 473-499.
34
35

36
37 Cardon, M.S., Foo, M-D., Shepherd, D., and Wiklund, J. (2012), “Exploring the heart:
38 Entrepreneurial emotion is a hot topic”, *Entrepreneurship Theory and Practice*, Vol. 36 No.
39 1,
40 pp.1-10.
41
42

43
44 Carey, C., and Matlay, H. (2011), “Emergent issues in enterprise education: the educator's
45 perspective”, *Industry and Higher Education*, Vol. 25 No. 6, pp. 441-450.
46
47

48
49 Chabot, D., and Chabot, D. (2004), *Emotional Pedagogy: To feel in order to learn*, Trafford
50 Publishing, Victoria BC, Crewe.
51

52
53 Clouse, V. G. H. (1990), “A controlled experiment relating entrepreneurial education to
54 students' start-up decisions”, *Journal of Small Business Management* Vol. 28 No. 2, pp. 45-
55 53.
56
57
58
59
60

1
2
3 Crenshaw, K. (1991), "Mapping the margins: Intersectionality, identity Politics, and violence
4 against women of color", *Stanford Law Review*, Vol. 43 No. 6, pp. 1241-1299.

7 Cross, B., and Travaglione, A. (2003), "The untold story: is the entrepreneur of the 21st
8 century defined by emotional intelligence?", *International Journal of Organizational*
9 *Analysis*, Vol. 11 No. 3, pp. 221-228.

14 Cunliffe, A. (2004), "On becoming a critically reflexive practitioner", *Journal of*
15 *Management Education*, Vol. 28 No. 4, pp. 407-426.

18 Dewey, J. (1925/1988), "Experience and Nature", in J. A., Boydston, (Ed.). *The Later Works*
19 *of John Dewey, 1925-1953, Volume 1: 1925*, Southern Illinois University Press, Carbondale,
20 IL.

25 Dirks, J. M. (2001), "The power of feelings: Emotion, imagination, and the construction of
26 meaning in adult learning", in S. B., Merriam (Ed.), *The New Update on Adult Learning*
27 *Theory*, Jossey-Bass, San Francisco, CA, pp. 63-72.

32 Dodd, S. D., and Anderson, A. R. (2007), "Mumpsimus and the mything of the individualistic
33 entrepreneur", *International Small Business Journal*, Vol. 25 No. 4, pp. 341-360.

36 European Commission (2012), *Commission Presents New Rethinking Education Strategy*,
37 available at: http://europa.eu/rapid/press-release_IP-12-1233_en.htm (accessed 02 February
38 2017).

43 European Commission (2016), *EntreComp: The Entrepreneurship Competence Framework*,
44 available at: [https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-](https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/entrecomp-entrepreneurship-competence-framework)
45 [reports/entrecomp-entrepreneurship-competence-framework](https://ec.europa.eu/jrc/en/publication/eur-scientific-and-technical-research-reports/entrecomp-entrepreneurship-competence-framework), (accessed 02 February 2017).

50 Eddleston, K. A., Chrisman, J. J., Steier, L. P. and Chua, J. H. (2010), "Governance and trust
51 in family firms: An introduction", *Entrepreneurship Theory and Practice*, Vol. 34 No. 6, pp.
52 1043–1056.
53
54
55

- 1
2
3 Ek, R. (2010), "Epilogue – Towards an experience ecology of relational emotions", *Culture*
4
5 *Unbound: Journal of Current Cultural Research*, Vol. 2 No. 3, pp. 423–430.
6
7 Ekman, P. (1992), "An argument for basic emotions", *Cognition and Emotion*, Vol. 6 No. 3-
8
9 4, pp.169-200.
10
11 Engel, J. S., Schindehutte, H. M., Neck, R. S., and Rossi, B. (2016), "What I have learned
12
13 about teaching entrepreneurship: perspectives of five master educators", in M. H., Morris,
14
15 and E., Liguori (Eds.), *Annals of Entrepreneurship Education and Pedagogy*, Edward Elgar,
16
17 Cheltenham and Northampton MA, pp. 3 – 25.
18
19 Farny, S., Hannibal, M., Frederiksen, S. H., and Jones, S. (2016), "The CULTure of
20
21 entrepreneurship education", *Entrepreneurship and Regional Development*, Vol. 28 No. 7-8,
22
23 pp. 514-535.
24
25
26
27 Foo, M-D. (2011), "Emotions and entrepreneurial opportunity evaluation", *Entrepreneurship*
28
29 *Theory and Practice*, Vol. 35 No. 2, pp. 375 - 393.
30
31 Franks, D. D. (2006), "The neuroscience of emotions", in J. E. Stets and J. H. Turner (Eds.),
32
33 *Handbook of the Sociology of Emotions*, Springer, New York, NY, pp. 38-62.
34
35
36 Garavan, T. N., and O’Cinneide, B. (1994), "Entrepreneurship education and training
37
38 programmes: A review and evaluation - Part 1", *Journal of European Industrial Training*,
39
40 Vol. 18 No. 8, pp. 3-12.
41
42 Geake, J., and Cooper, P. (2003), "Cognitive neuroscience: Implications for education?"
43
44 *Westminster Studies in Education*, Vol. 26 No. 1, pp. 7-20.
45
46
47 Gibb, A. (2005), *Towards the Entrepreneurial University: Entrepreneurship education as a*
48
49 *lever for change*, Policy paper for the National Council for
50
51 Graduate Entrepreneurship (NCGE), UK.
52
53
54
55
56
57
58
59
60

1
2
3 Gibb, A. (2009), "Meeting the development needs of owner managed small enterprise: a
4 discussion of the centrality of action learning", *Action Learning: Research and Practice*, Vol.
5
6
7 6 No. 3, pp. 209–227.

8
9
10 Goerge, J. M. (2000), "Emotions and leadership: The role of emotional intelligence", *Human*
11
12
13 *Relations*, Vol. 53 No, 8, pp. 1027-1055.

14 Goleman, D. (1995), *Emotional Intelligence*, Bantam Books, New York, NY.

15
16
17
18
19
20
21
22 Gondim, S. M. G., and Mutti, C. (2011), "Affections in learning situations: A study of an
23 entrepreneurship skills development course", *Journal of Workplace Learning*, Vol. 23 No. 3,
24
25
26
27 pp.195-208.

28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
Goswami, U. (2004), "Neuroscience and education", *British Journal of Educational*
Psychology, Vol. 74 No. 1, pp. 1-14.

Green, B. N., Johnson, C. D., and Adams, A. (2006), "Writing narrative literature reviews for
peer-reviewed journals: Secrets of the trade", *Journal of Chiropractic Medicine*, Vol. 5 No. 3,
pp. 101-117.

Gundlach, M. J., and Zivnuska, S. (2010), "An experiential learning approach to teaching
social entrepreneurship, triple bottom line, and sustainability: Modifying and extending
practical organizational behavior education (PROBE)", *American Journal of Business*
Education, Vol. 3 No. 1, pp. 19 – 28.

Hayton, J. C., and Cholakova, M. (2012), "The role of affect in the creation and intentional
pursuit of entrepreneurial ideas", *Entrepreneurship Theory and Practice*, Vol. 36 No. 1, pp.
41–68.

Hareli, S., and Rafaeli, A. (2008), "Emotion cycles: On the social influence of emotion in
organizations", *Research in Organizational Behavior*, Vol. 28, pp. 35-59.

Hjorth, D. (2011), "On provocation, education and entrepreneurship", *Entrepreneurship and*
Regional Development, Vol. 23 No. 1–2, pp. 49–63.

1
2
3 Immordino-Yang, M. H., and Damasio, A. (2007), “We feel, therefore we learn: The
4 relevance of affective and social neuroscience to education”, *Mind, Brain and Education*,
5 Vol. 1 No. 1, pp. 3-10.
6
7

8
9
10 Jaggar, A. M. (1989), “Love and knowledge: Emotions in feminist epistemology”, *Inquiry*,
11 Vol. 32 No. 2, pp. 151-76.
12

13
14 Johnson, M. (2008), *The Meaning of the Body: Aesthetics of Human Understanding*,
15 University of Chicago Press, Chicago, IL and London.
16

17
18 Jones, S. (2010), “Stuck in neutral? HE entrepreneurship and enterprise education (HEee) and
19 gender”, *Assessment, Learning and Teaching Journal*, Vol. 8, pp. 42 – 44.
20

21
22 Jones, S. (2014), “Gendered discourses of entrepreneurship in UK higher education: The
23 fictive entrepreneur and the fictive student”, *International Small Business Journal*, Vol. 32
24 No. 3, pp. 237-258.
25
26

27
28 Jones, S. (2015), “‘You would expect the successful person to be the man’: Gendered
29 symbolic violence in UK HE entrepreneurship education”, *International Journal of Gender
30 and Entrepreneurship*, Vol. 7 No. 3, pp. 303 – 320.
31
32

33
34 Kemper, T. D. (2000), “Social models in the explanation of emotions”, in M. Lewis, and
35 J.M. Havilland-Jones, (Eds.), *Handbook of Emotions*, Guildford Press, New York, NY, pp. 45
36 – 58.
37
38

39
40 Kolb D. A. (1984), *Experiential Learning Experience as a Source of Learning and
41 Development*, Prentice Hall, New Jersey, NY.
42

43
44 Knudson, R. (2007), *Intimate Encounters: Social Capital, Emotional Ecology, and
45 Sustainable Design*, Proceedings of ARCC Spring Research Conference, Eugene, Oregon, 16
46 – 17 April, pp. 237 – 241.
47
48

49
50 Lackeus, M. (2012), *Emotions in entrepreneurial education: A literature review*, Presented at
51 Institute of Small Business and Entrepreneurship (ISBE), Dublin, 7-8 November.
52
53
54
55
56
57
58
59
60

1
2
3 Lawler, E. J., Thye, S. R., and Yoon, J. (2000), "Emotion and group cohesion in productive
4 exchange", *American Journal of Sociology*, Vol. 106 No. 3, pp. 616 – 657.

5
6
7 Lewis, P. (2006), "The quest for invisibility: Female entrepreneurs and the masculine norm of
8 entrepreneurship", *Gender, Work and Organization*, Vol. 13 No. 5, pp. 453 – 469.

9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
McCaughtry, N. (2004), "Emotional dimensions of a teacher's pedagogical content
knowledge: Influences on content, curriculum, and pedagogy", *Journal of Teaching in
Physical Education*, Vol. 23 No. 1, pp. 30 -47.

Maehr, M. L., and Midgley, C. (1996), *Transforming School Cultures to Enhance Student
Motivation and Learning*, Westview. Boulder, CO.

Man, T.W.Y. (2007), "Understanding entrepreneurial learning: A competency approach",
International Journal of Entrepreneurship and Innovation, Vol. 8 No. 3, pp. 189-198.

Man, T.W.Y., and Yu, C.W.M. (2007), "Social interaction and adolescent's learning in
enterprise education: An empirical study", *Education + Training*, Vol. 49 No. 8/9, pp. 620 –
633.

Massis, A. D. (2012), "Family involvement and procedural justice climate among nonfamily
managers: The effects of affect, social identities, trust, and risk of non-reciprocity",
Entrepreneurship Theory and Practice, Vol. 36 No. 6, pp. 1227–1234.

Meyer, D. K., and Turner, J. C. (2002), "Discovering emotion in classroom motivation
research", *Educational Psychologist*, Vol. 37 No. 2, pp. 107-114.

Morse, D.J. (2010), "Dewey on the emotions", *Human Affairs*, Vol. 20 No. 3, pp. 224-231.

Oatley, K., and Johnson-Laird, P. N. (2014), "Cognitive approaches to emotions", *Trends in
Cognitive Sciences*, Vol. 18 No. 3, pp. 134-140.

Pekrun, R. (1992), "The impact of emotions on learning and achievement: Towards a theory
of cognitive/motivational mediators", *Applied Psychology*, Vol. 41 No. 4, pp. 359 – 376.

1
2
3 Pekrun, R. (2006), "The control value theory of achievement emotions: Assumptions,
4 corollaries and implications for educational research and practice", *Educational Psychology*
5 *Review*, Vol. 18 No. 4, pp. 315-341.
6
7

8
9
10 Phan, P. H., Wong, P. K. and Wang, C. K. (2002), "Antecedents to entrepreneurship among
11 university students in Singapore: Beliefs, attitudes and background", *Journal of Enterprising*
12 *Culture*, Vol. 10 No. 2, pp. 151-174.
13
14

15
16
17
18 Pittaway, L. and Cope, J. (2007), "Entrepreneurship education: A systematic review of the
19 evidence", *International Small Business Journal*, Vol. 25 No. 5, pp. 479-510.
20
21

22
23 Pless, N. M., Maak, T. and Stahl, G. (2011), "Developing responsible global leaders through
24 international service-learning Programs: The Ulysses experience", *Academy of Management*
25 *Learning and Education*, Vol. 10 No. 2, pp. 237-260.
26
27

28
29
30 Quality Assurance Agency (2013), *Enterprise and Entrepreneurship Education: Guidance*
31 *for UK Higher Education Providers*, available at:
32 [http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/enterprise-](http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/enterprise-entrepreneurship-guidance.aspx)
33 [entrepreneurship-guidance.aspx](http://www.qaa.ac.uk/Publications/InformationAndGuidance/Pages/enterprise-entrepreneurship-guidance.aspx) (accessed 02 February 2017).
34
35
36

37
38 Ram, M. and Trehan, K. (2010), "Critical action learning, policy learning and small firms: An
39 inquiry", *Management Learning*, Vol. 41 No. 4, pp. 415-428.
40
41

42
43 Ratten, V. (2011), "Sport-based entrepreneurship: towards a new theory of entrepreneurship
44 and sport management", *International Entrepreneurship and Management Journal*, Vol. 7
45 No. 1, pp. 57-69.
46
47

48
49 Reid, A. and Petocz, P. (2004), "Learning domains and the process of creativity", *Australian*
50 *Educational Researcher*, Vol. 31 No. 2, pp. 45-62.
51
52
53
54
55
56
57
58
59
60

1
2
3 Saver, J. L., and Damasio, A. R. (1991), “Preserved access and processing of social
4 knowledge in a patient with acquired sociopathy due to ventromedial frontal damage”,
5 *Neuropsychologia*, Vol. 29 No. 12, pp.1241-1249.
6
7

8
9 Seal, C. R., Naumann, S. E., Scott, A. N. and Royce-Davis, J. (2011), “Social emotional
10 development: a new model of student learning in higher education”, *Research in Higher*
11 *Education Journal*, Vol. 10, pp. 1 – 13.
12
13

14
15 Schon, D. (1991), *The Reflective Practitioner How Professionals Think in Action*, Avebury,
16 London.
17
18

19
20 Shepherd, D. A. (2003), “Learning from business failure: Propositions of grief recovery for
21 the self-employed”, *Academy of Management Review*, Vol. 28 No. 2, pp. 338 – 328.
22
23

24
25 Shepherd, D. A. (2004), “Educating entrepreneurship students about emotion and learning
26 from failure, *Academy of Management Learning and Education*, Vol. 3 No. 3, pp. 274–287.
27
28

29
30 Shinnar, R., Pruett, M. and Toney, B. (2009), “Entrepreneurship education: Attitudes across
31 campus”, *Journal of Education for Business*, Vol. 84 No. 3, pp. 151 – 159.
32
33

34
35 Shrivastava, P. (2010), “Pedagogy of passion for sustainability”, *Academy of Management*
36 *Learning and Education*, Vol. 9 No. 3, pp. 443 – 455.
37
38

39
40 Souitaris, V., Al-Laham, A and Zerbinati, S (2007), “Do entrepreneurship programmes raise
41 entrepreneurial intention of science and engineering students? The effect of learning,
42 inspiration and resources”, *Journal of Business Venturing*, Vol. 22 No. 4, pp. 566–591.
43
44

45
46 Steele, C.M. and Aronson, J. (1995), “Stereotype threat and the intellectual test performance
47 of African Americans”, *Journal of Personality and Social Psychology*, Vol. 69, pp. 797–811.
48
49

50
51 Taylor, J.S. (2010), “Learning with emotion: A powerful and effective pedagogical
52 technique”, *Academic Medicine*, Vol. 85 No. 7, p. 1110.
53
54

55
56 Tennant, M. (1997), *Psychology and Adult Learning*, (2nd Edition), Routledge, London.
57
58
59
60

1
2
3 Weiner, B. (1985). "An attributional theory of achievement motivation and emotion",
4
5 *Psychology Reviews*, Vol. 92 No. 4, pp. 548-573.

7 Welppe, I. M., Spörrle, M., Grichnik, D., Michl, T. and Audretsch, D. B. (2011), *I think It's*
8
9 *Good, but I'm Also Afraid: The Interplay of Opportunity Evaluation and Emotions as*
10
11 *Antecedent of Entrepreneurial Exploitation*, School of Public and Environmental Affairs
12
13 Research Paper No. 2011, Indiana University-Bloomington, available at:
14
15 <http://ssrn.com/abstract=1821104> (accessed 02 February 2017).

16
17
18 Welppe, I. M., Spörrle, M., Grichnik, D., Michl, T. and Audretsch, D. B. (2012), "Emotions
19
20 and opportunities: The interplay of opportunity evaluation, fear, joy, and anger as antecedent
21
22 of entrepreneurial exploitation", *Entrepreneurship Theory and Practice*, Vol. 36 No. 1, pp.
23
24 69–96.

25
26
27 Zampetakis, L. A., Lerakis, M., Kafetsios, K., & Moustakis, V. (2015), "Investigating the
28
29 emotional impact of entrepreneurship programs", *Journal of Business Venturing Insights*,
30
31 Vol. 4, pp. 38-41.

32
33
34 Zeidner, M. (1998) *Test Anxiety: The State of the Art* Plenum, New York, NY.

35
36 Zembylas, M. (2011), "Teaching and teacher emotions: A post-structural perspective", in C.
37
38 Day, and C-K. J. Le, (Eds.), *New Understandings of Teacher's Work: Emotions and*
39
40 *Educational Change*, Springer, London, New York, NY, pp. 31 – 43.

41
42 Zembylas, M. (2013), "Critical pedagogy and emotion: Working through 'troubled
43
44 knowledge' in posttraumatic contexts", *Critical Studies in Education*, Vol. 54 No. 2, pp. 176-
45
46 189.

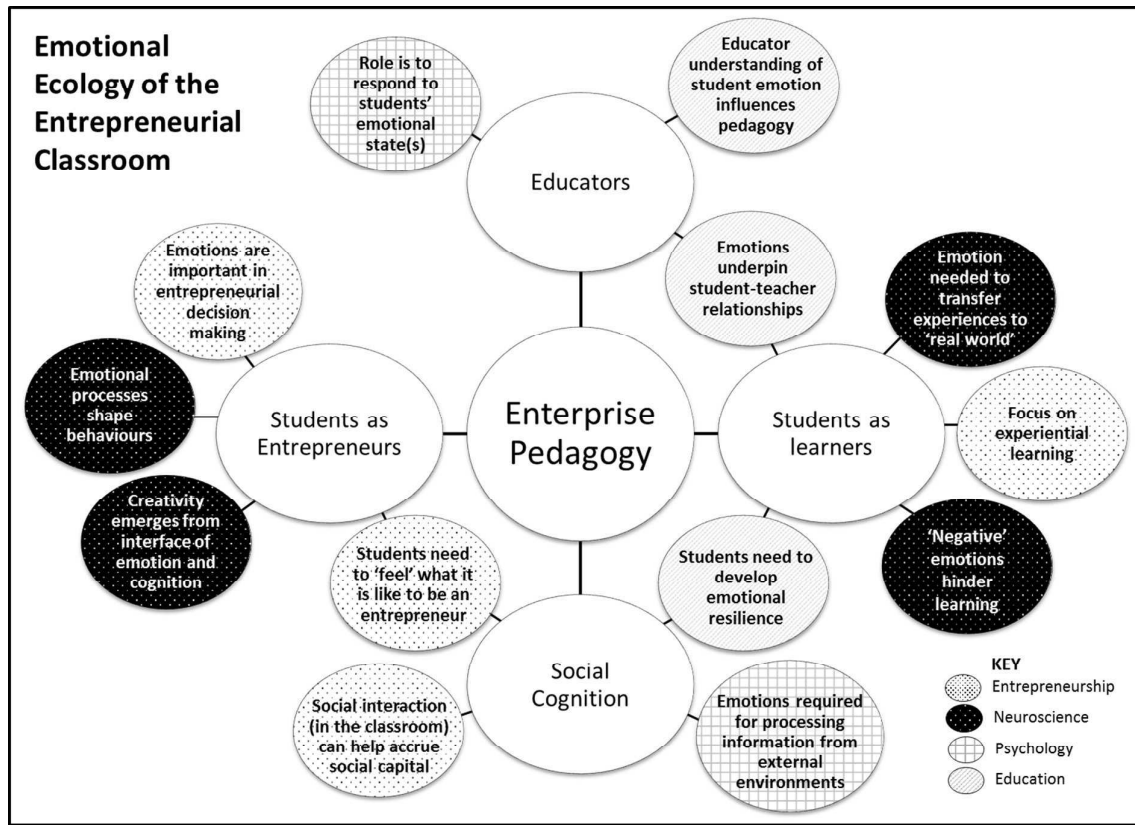


Figure 1: Established emotional tensions linked to entrepreneurship pedagogy design.

Education + Training

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60