



**UNIVERSITY OF  
PORTSMOUTH**

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**Closing the gap between university  
curriculum in Entrepreneurship and  
Entrepreneurial Learning in Networks**

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**An interpretivist constructivist approach**

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“The word education comes from Latin word ‘educere’ which means to instruct someone what to do, which is how it is in the English-speaking world. However, in Italian, the word ‘educazione’ which is also derived from ‘educere’ mean bringing the best out of people, this is what entrepreneurship is about as well” (N-ENTSTU4).

“Business ideas are gemstones you get them uncut and rough and by sharing and getting feedback, you shape them into a diamond” (ENT7) and the “...diversity of people is what burst the innovation, you can’t develop entrepreneurs and entrepreneurship in a setting where all people are the same” (Manager RLE).

## Abstract

Entrepreneurship emerged from the discipline of economics before claiming its place as a discipline of its own, seven decades back. It is now widely recognised as a complex and dynamic process which is influenced by the socio-cultural context of an entrepreneur. At the same time, entrepreneurial learning is acknowledged as an experiential process relying on the social surrounding of an entrepreneur.

There is substantial research on how entrepreneurs learn as well as how to teach entrepreneurship. There is also a general agreement among scholars that the entrepreneurship process includes certain key behaviours, attributes and skills which are amenable to teaching. However, the scholarly works on entrepreneurship education and entrepreneurial learning continue to remain unaligned.

There have been several calls in the literature for developing new pedagogical approaches to entrepreneurship while critiquing the prevalent methods such as developing business plans because of their inflexibilities and counterproductive influence on student learning on entrepreneurship courses in higher education.

Considering the distinct nature of the entrepreneurial process, this qualitative research takes an interpretivist-constructivist stance to explore the possibility of incorporating social network learning into entrepreneurship education within higher education in the United Kingdom in an attempt to align the above two streams of extant literature.

Data in this research comprises of participant observations at coworking spaces followed by semi-structured interviews with entrepreneurs, entrepreneurship educators and students of entrepreneurship education. This triangulatory nature of data collection helped in coagulating the researcher's understanding of the underlying processes, drawing insights from multiple perspectives. Data were subsequently analysed using an adapted approach of the Grounded Theory method.

The main contribution of this research is to present a conceptual framework of entrepreneurship education, which mimics the learning process of entrepreneurs by having a constructivist approach to learning, incorporating a social networks approach in the curriculum. In addition, this research also makes methodological contributions as well as informs the relevant public policy. Finally, this research paves the way for further research on entrepreneurship education using observational data, longitudinal studies and novel methods such as analytical hierarchy process for deeper insights as well as generalisations.

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## List of Abbreviations

<b>CoP</b>	Community of practice
<b>EC</b>	European Commission
<b>EU</b>	European Union
<b>GEM</b>	Global Entrepreneurship Monitor
<b>HE</b>	Higher Education
<b>HEA</b>	Higher Education Academy
<b>HEFCE</b>	Higher Education Funding Council of England
<b>NAO</b>	National Audit Office
<b>ONS</b>	Office for National Statistics
<b>QAA</b>	Quality Assurance Agency for Higher Education
<b>SME</b>	Small and medium-sized enterprises
<b>UK</b>	United Kingdom

## Declaration

This thesis is submitted to the University of Portsmouth for the degree award of Doctor of Philosophy in STRATEGY, ENTERPRISE & INNOVATION.

Whilst registered as a candidate for the above degree, I have not been registered for any other research award. The results and conclusions embodied in this thesis are the work of the named candidate and have not been submitted for any other academic award'

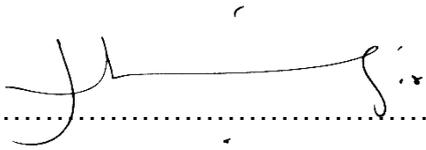
This dissertation is the result of my independent work/investigation, except where otherwise stated. A reference list is appended.

I hereby give consent for my dissertation, if accepted, to be available for photocopying and inter-library loan, and for the title and summary to be available online.

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## Dissemination

### Completed

- Wasim, J., Cunningham, J., Maxwell-Cole, A., Richard Taylor, J. (2018) Nonfamily knowledge during family business succession: a cultural understanding, *International Journal of Entrepreneurial Behavior & Research* (early-cite)
- Wasim, J., (2017). Gap between entrepreneurial learning and entrepreneurship education. Presented at: The Institute for Small Business and Entrepreneurship's Annual Conference: Belfast, Northern Ireland.
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- Wasim, J., (2017). The Role of Gender in Entrepreneurial Social Capital. Presented at: The Institute for Small Business and Entrepreneurship's Annual Conference: Belfast, Northern Ireland.
- Wasim, J., (2016). Mimicking the learning process of entrepreneurs in entrepreneurship education: The significance of social networks. Presented at: Society for Research into Higher Education: Newport, South Wales.

## Planned

- Wasim, J., & Pittaway, L., “Role of the infrastructure of coworking spaces in entrepreneurial learning”. (working paper) Targeting *Entrepreneurship & Regional Development* (09/2019)
- Wasim, J., Vyas, V., & Ishizaka, A., “Landscape of entrepreneurship education in the UK using AHP” Targeting: *International Journal of Entrepreneurial Behavior and Research* (09/2019)

## 1. Introduction

This research explores the domains of entrepreneurial learning and entrepreneurship education to understand the gaps that exist between the two. Several authors agree that entrepreneurship plays a vital role in economic growth (Boh, De-Haan, & Strom, 2016; David & Foray, 2004; Fleming, Woodward, & Golden, 2010; Urbano & Aparicio, 2016). There are three main reasons that make entrepreneurship essential for economic development, which results in the creation of employment. Firstly, entrepreneurs develop new businesses that lead to the growth of productivity and job creation (De Clercq & Honig, 2011; Gartner, 1990; Gibb, 1996; Holcombe, 1998; Porter, 1990; Schumpeter, 1976). Secondly, it helps in the decentralisation of state-owned enterprises, and finally, entrepreneurial activities cause strategic adjustments in the economy bringing small to medium-size enterprises (SMEs) and large corporations together to form economic alliances (Byrne, 2004; Byrne, & Toutain, 2014; Gibb, 1996).

### 1.1. Background

Entrepreneurship as a discipline and its definition has kept evolving over time (Carland & Carland, 2015; Kobia & Sikalieh, 2010). The history of the term entrepreneurship can be traced back to the French classical economist Cantillon who first used the term entrepreneurship in the 1700s, his view on the topic was more of an economist's view, however, the modern definitions that are based on innovation and creativity are linked to the Schumpeterian school of thought (Pittaway, 2012).

Modern-day entrepreneurship has been defined as a process of “human action, comparable to social forces such as democracy and the scientific method, namely, a powerful way of tackling large and abiding problems at the heart of advancing our species” (Sarasvathy & Venkatamaran, 2011, p. 130). Entrepreneurship has also been recognised as something which is chaotic and complex, with no one linear explanation (Neck & Greene, 2011).

Entrepreneurship is not just about starting up a venture; another sister term of entrepreneurship is intrapreneurship or corporate entrepreneurship (Pinchot, 1985). Intrapreneurship is a variant of entrepreneurship in which instead of starting up a business, an entrepreneurial individual uses his or her skills within an existing organisation to start a new initiative. In entrepreneurial organisations, it is supported by the managers who recognise a need for innovation and renewal of products, so they attain or continue to have a sustainable position in an ever-changing volatile market (Kuratko, Hornsby, & Covin, 2014).

Literature shows that entrepreneurship, now, is more than just about new businesses. It has been incorporated and has been immersed in all sectors, including, private, public and third sector. However, the process of entrepreneurship in different sectors can be varied (Morris & Jones, 1999).

To comprehend the concept of entrepreneurship, one needs to understand what makes an entrepreneur. The most common attributes of an entrepreneur are highlighted as the skills of creative problem solving, independent behaviour, being proactive and the ability to solve recognise opportunities (Shaver & Scott, 1992). In the more recent times, the ‘Big Five’ personality

traits have been strongly associated with an entrepreneurial personality (Brandstätter, 2011; Leutner, Ahmetoglu, Akhtar, & Chamorro-Premuzic, 2014; Şahin, Karadağ, & Tuncer, 2019; Zhao & Seibert, 2006). The big five personality traits include; **neuroticism** (distinct variance in adjustment emotional stability), **extraversion** (degree of assertive dominance, energetic, open to meeting new people and groups and enthusiasm), **openness to experience** (intellectual curiousness), **agreeableness** (cooperative and possess interpersonal skills) and **conscientiousness** (level of persistence, meticulousness and motivated to pursue goals) (Leutner et al., 2014; Zhao & Seibert, 2006). For the purpose on this thesis, entrepreneurship is defined as: *a process of continuous innovation in which opportunities are identified and exploited to generate value*. This is not just limited to starting up a venture but can take place within an existing organisation as well. It is the product of the personality traits that are mentioned above and the person that possess those traits is considered an entrepreneur. The theoretical background of entrepreneurship with several definitions is presented in section 2.1 of the literature review.

## 1.2. Entrepreneurship in education

Over the last several decades, entrepreneurship education has received increasing attention because of the governments around the world recognise its value for economic development (O'Connor, 2013). It was therefore only logical that entrepreneurship would enter the educational domain by creating a new field of study now known as entrepreneurship education. Entrepreneurship education is not a very new concept. It dates back to 1947 when Myles Mace developed the first course on entrepreneurship at Harvard

Business School (Katz, 2003) with another one taught by Peter Drucker in 1953 at New York University (Kirby, 2005). Many higher education institutions (HEIs) now provide instruction on entrepreneurship, and over the years, there has been a significant increase in the number of entrepreneurship courses (Chen et al., 2015). Graduates of entrepreneurship courses start new companies or launch corporate ventures at a much higher rate than that of non-entrepreneurship courses. (Daneshjoovash & Hosseini, 2018; Gerba, 2012; Matlay, 2008; McMullan & Gillin, 1998).

Recently, a longitudinal, mixed-method study by Nabi, Walmsley, Liñán, Akhtar & Neame (2018, p. 463) reported some interesting findings. Their research showed that although the students who were involved in entrepreneurship education show a higher degree of entrepreneurial learning and inspiration “the average change in entrepreneurial intentions from the beginning to the end of the year is not significantly different between entrepreneurship education and non-entrepreneurship education participants”.

Although entrepreneurship education is on the rise globally, there are concerns regarding its quality and capability of the courses regarding preparing the student for this complex discipline of education (Gibb, 2002; Gibb, 2005; Neck & Greene, 2011). According to Katz (2008), there is some research on the content of entrepreneurship education. However, the pedagogical understanding in this area still lacks strong insights. The earlier focus of entrepreneurship education was on the development of business plans instead of entrepreneurial learning, which should not have been the case (Ronstadt, 1987). The business plan approach has been criticised because of

its inflexible limitations (Honig, 2004); entrepreneurship education is still widely based on this approach (Carrier, 2007; Nabi, Walmsley, Liñán, Akhtar, & Neame, 2018; Solomon, Duffy, & Tarabishy, 2002). Scholars in the field are therefore calling for more innovative frameworks that can capture the complex components of entrepreneurship in entrepreneurship education (Binks, Starkey, & Mahon, 2006; Gibb & Haskins, 2013; Gibb, 2002; Jones & Iredale, 2010; Nabi et al., 2017; Yu, 2013).

Entrepreneurship education is highlighted as an experiential process (Pittaway & Cope, 2007), which cannot be taught by generic teaching methods and requires new ways of teaching and learning (Dwerryhouse, 2001). Plaschka & Welsch (1990) stated that entrepreneurship education courses are taking place on trial and error where the courses are built to see whether they work or not and are then improved based on the feedback about the negative aspects or deficiencies of the courses. The learning of entrepreneurship requires the alertness to spot an opportunity and act on exploiting it (Ronstadt, 1988; Shane & Venkataraman, 2000) something which is not incorporated in a large majority of courses. Katz (2003) suggests that the growth of entrepreneurship education would take discipline out of business schools.

A report commissioned for the European Commission in which 3000 higher education institutions in the European Union were surveyed to see the integration of entrepreneurship education concluded that at the time of the survey the condition of entrepreneurial learning in the European Union was “worrisome” (NIRAS, 2008, p. 3). Pittaway & Cope (2007a, p. 501) suggests that “within the definition of entrepreneurship education, the focus was principally on higher education rather than on educating entrepreneurs”.

### 1.3. Entrepreneurial education and learning

Entrepreneurship education should be a process of entrepreneurial learning, which a large body of literature suggests, is a process of knowledge exchange as well as decision making based on the prior knowledge and experience of an entrepreneur within a context (Cope, 2011; Morris, Kuratko, & Covin, 2011; Pittaway & Cope, 2007a, 2007b; Pittaway & Thorpe, 2012; Politis, 2005). Cope (2003) conducted a case study research on the individual level to explore how entrepreneurs learn and provided evidence that events that are of *non-routine* nature play a critical role in the learning process of entrepreneurs. Cope (Cope, 2005) later in a literature review suggests that to create an entrepreneurial learning atmosphere the entrepreneur needs to learn from their 'key network agents', i.e. stakeholders. Pittaway & Cope (2007b) suggest that it is very much possible to create a learning environment which can mimic how entrepreneurs learn in real life. This highlights "the social, emotional and experiential nature of entrepreneurial learning and presents new venture planning as an effective method for developing entrepreneurial skills" (Pittaway & Cope, 2007b, p. 230). Politis (2005, p. 416) also highlights about "the role of social relations and the embedding of learning techniques that can develop the adoption of new ideas and technologies and empower innovation in new and small ventures."

Kadushin (2012, p. 3) observes that "social networks have been at the core of human society since we were hunters and gatherers". As Granovetter (1985) outlined, social networks are not a fixed entity but can be utilised if and when a need occurs. He further explained that social interactions play an important role in economic and political change but are not embedded in economic life.

Birley (1985) was the first to look at the entrepreneurial process within a social network. She suggested that networks do not only help to acquire relevant skills and resources to start a venture but also shape the opportunity and to some extent, determines the nature of the business as well. In Birley's (1985, p. 115) point of view, entrepreneurship cannot be fully understood unless one "appreciate(s) the networks in which an entrepreneur is immersed".

The connectedness of social networks can potentially provide benefits, turning the social network into social capital (Putnam, 2015). Burt (1992) suggests that the contacts that successfully bring what was required are known as the social capital of the entrepreneur. In the entrepreneurship literature, social capital has been strongly tied with learning and knowledge sharing (De Clercq, Dimov, & Thongpapanl, 2013; Neergaard & Madsen, 2004) and shared development (McKeever, Anderson, & Jack, 2014). Gibb (1997) emphasises the importance of social capital and social learning in an entrepreneurial context by stating that people do not learn on their own and the social elements should be incorporated in the formal entrepreneurship curriculum.

#### 1.4. Problem statement

The entrepreneurial literature highlights that learning is a social and experiential process. Within entrepreneurship education literature too the importance of social and experiential learning has been identified and highlighted. However, within its teaching and pedagogy in UK universities, these aspects are not fully incorporated. With all its criticism, the business plan approach is still what entrepreneurship education is widely based upon (Carrier, 2007; Nabi, Walmsley, Liñán, Akhtar, & Neame, 2018; Solomon,

Duffy, & Tarabishy, 2002). This conflict between how entrepreneurs actually learn and practise their craft and how entrepreneurship is taught in the universities, not only limits the efficacy of its education, it is even counterproductive to the goals of entrepreneurship. For this reason, it is necessary to move beyond the exclusive use of business planning exercises in entrepreneurship to provide students with a more comprehensive experience which mimics the entrepreneurial learning process of the entrepreneurs.

In the light of the above arguments, this research project aims to *'explore and evaluate the possibility of incorporating social network learning into entrepreneurship education within higher education in the United Kingdom, by focusing on the following questions.*

1. How and what do entrepreneurs learn in social networks?
2. To what extent does the higher education curriculum in entrepreneurship in the United Kingdom deliver a context-specific social network learning?
3. How can social network learning be embedded in formal entrepreneurship education?

### 1.5. Methodology

According to Anderson & Starnawska (2008), positivism has been a dominant approach in entrepreneurship research, the researcher, in this study, takes interpretivist epistemological approach followed by a constructivist ontological stance to view the learning process of entrepreneurs and its incorporation in

the formal education curriculum of entrepreneurship. This is because Anderson & Starnawska (2008) also mention that the positivist research approach has created a “fundamental paradox: researchers often try to analyse a phenomenon that cannot properly be defined. As a result, much entrepreneurship research is fragmentary and focuses narrowly on aspects of entrepreneurship”. In interpretivist research, the researcher attempts to understand the ways in which people create knowledge based on their social context by observing real-life participants using an inductive approach of the research (DeWalt & DeWalt, 2011). Bryman (2007) argues that the nature of research questions should drive the choice of research methods. Given the questions that this research attempts to find answers to, which are of exploratory nature, it is obvious that an interpretivist approach is likely to yield better insights.

A constructivist approach is “an ontological position that asserts that the social phenomena and their meanings are continually being accomplished by social actors” (Bryman, 2016, p. 689). Constructivism is the interpretation of the knowledge of individuals based on their experience, context and social interactions; hence it clearly leans towards an interpretivist approach. By using a constructivist approach, the researcher can have a higher awareness about the participants’ perceptions regarding the phenomenon as these perceptions would reflect the reality and knowledge of the participants with regards to how they come to know the world (Bell & Bryman, 2015).

This being said, it has been established that entrepreneurship and entrepreneurial learning is a social and experiential process (El-Sherbini, Wahaab, & Deyab, 2005; Luke Pittaway & Thorpe, 2012; David Rae, 2017)

related to the entrepreneur's perception where knowledge is constructed individually based on different variables, such as, time, location and context (Anderson, 2000), hence an interpretivist constructivist approach is deemed to be the most logical option for this research.

There were two main methods that were used to collect data for this research, the first part of the primary research involved fieldwork. Observations of entrepreneurs working in a socially networked environment, observations were complemented by informal discussions with the entrepreneurs. This was followed by semi-structured interviews of entrepreneurs, students of entrepreneurship education at two universities and academics that were involved in the teaching entrepreneurship course at 7 UK wide universities. For data analysis, a thematic approach has been employed developed on the principles of Grounded theory methods (this research is not a Grounded Theory, only the data analysis approach has been derived from this method) and data is managed with the help of NVivo 11. All meta-data is anonymised for the publication of the research and follows University of Portsmouth research ethics' guidelines (based on United Kingdom's Research Integrity Office's code of conduct) and European Society for Opinion and Market Research (ESOMAR) Code on Market and Social Research. Appendix B includes an ethics approval letter from the Ethics Committee of Faculty of Business & Law of the University of Portsmouth.

## 1.6. Structure of the thesis

This thesis comprises of 7 chapters, including this one. This chapter provides an introduction and some background of the research and its context. It is further elaborated with detailed discussions in the following chapters. The purpose of this chapter is to provide a rationale for the research and major arguments in the field of entrepreneurship education and entrepreneurial learning. This is followed by an indication of the research design and approaches.

**Chapter 2** provides a detailed review of the literature on entrepreneurship, including the context and history of entrepreneurship, entrepreneurship education, theoretical background and discussion of several learning theories and paradigms, entrepreneurial learning and the role of networks in entrepreneurial learning and education. The chapter begins with a brief history of entrepreneurship as a field of research and how it has evolved over time. In the second part, this chapter investigates three broad learning paradigms; Behaviourism, Cognitivism and Constructivism. Furthermore, chapter 2 investigates the presence of entrepreneurship in the formal education context as well as its comparison with entrepreneurial learning and the role of networks in the entrepreneurial process.

**Chapter 3** highlights the importance and contribution of this research in light of the literature review.

**Chapter 4** provides an insight into the methodological consideration of this research and rationale for using interpretivist-constructivist approach. It provides information on the use and rationale of using qualitative data,

including observations and semi-structured interviews. The research sample consists of observations at 5 coworking spaces, followed by interviews with 7 entrepreneurs, 7 entrepreneurship educators, 5 students who have completed an entrepreneurship education course and 5 students that were about to start an entrepreneurship education course.

For analysis purposes, thematic analysis has been adopted which was derived from the methods of data analysis in a Grounded Theory (Charmaz, 2000).

**Chapter 5** presents the analysis and findings of the study. The themes on which data was analysed were; *source of entrepreneurial learning and perception of it from non-entrepreneur participants, entrepreneurial learning and social networks and perception of it from non-entrepreneur participants, the current state of entrepreneurship education* and finally a *proposed model of entrepreneurship education*. An additional theme on the *concept of entrepreneurship* was added for the student participants to understand their perception of what entrepreneurship is. Overall, the findings suggest some differences in perceptions among the different participating group.

**Chapter 6** discusses the key findings of the research and evaluate them with the current literature in the field to propose a framework for entrepreneurship education based on the social and contextual learning process of entrepreneurs.

**Chapter 7** concludes the overall research project in the light of empirical and secondary data by highlighting the contributions of this research followed by some recommendations for the academics and other stakeholders of

entrepreneurship education in the UK as well as the indication of the future research.

## 2. Literature Review

### 2.1. Introduction

This chapter provides a comprehensive and critical review of the literature on entrepreneurship, learning, entrepreneurship education, networks and the relationship of all these elements with one another.

The first part of the chapter discusses where the field of entrepreneurship began because it is recognised as a chaotic field of study with several definitional standpoints which are evolving continuously over time.

In the second part, predominant learning paradigms are discussed to establish space where the field of entrepreneurship would sit when it would enter the domain of education.

This leads to the third part, which explores the current body of knowledge on entrepreneurial learning and entrepreneurship education to provide a theoretical understanding and interplay of these two subjects.

Last part of this chapter investigates the role of social networks in entrepreneurial learning and entrepreneurship education to provide a rationale for this research by highlighting the gap between the two.

## 2.2. Entrepreneurship – a theoretical background

The definitional standpoint of entrepreneurship is dynamic. As stated above in the introduction, the role of entrepreneurship in economic growth has been recognised by several authors. The discipline of entrepreneurship has evolved over time (Carland & Carland, 2015; Kobia & Sikalieh, 2010), originating as a part in the field economics to becoming a field of education and research on its own. The word Entrepreneurship can be traced back three centuries. The French classical economist Cantillon first used the term from the perspective of an economist view. However, this later changed, and the current school of thought on entrepreneurship is largely based on innovation and creativity (Pittaway, 2012).

In his *Essai Sur la Nature du Commerce en Général*, Cantillon (Cantillon, 1732, p. 55) mentioned three actors of economic systems; financially independent 'landowners', people on fixed income 'hirelings' and entrepreneurs that "set up with a capital to conduct their enterprise, or are undertakers of their own labour without capital, and they may be regarded as living off uncertainty". In Cantillon's (1732) view, entrepreneurs purchase goods at a certain price and then use these to make a product which can be sold at an uncertain price; 'uncertainty' played an important role in Cantillonian view of entrepreneurship.

The British classical school of thought on entrepreneurship was not strong, one of the reasons being the absence of any parallel word in the English language (Chell, Haworth, & Brearley, 1991; Ricketts, 1987). The role of the entrepreneur was neglected in British economic thinking which Barreto (1989)

believed caused the inattention on the topic in the modern-day economic framework.

Just like the British classical school, the neo-classical school of thought also neglected the focus on entrepreneurship (Kirzner, 1980). It is believed that this pushed entrepreneurship out of the economics discipline (Barreto, 1989).

While other economic theorists were avoiding and excluding entrepreneurship from the discipline, Austrian and neo-Austrian thought on economic system considered risk and uncertainty as an important factor of analysis which somewhat reflected back to the Cantillonian view of entrepreneurship (Ricketts, 1987). The previous theories of economic systems were based on ideal conditions. However, what differentiates the neo-Austrian view of economics from the neo-classical was that neo-Austrian theory was based on the real market systems (Knight, 1921). Based on the uncertainty principle of the economic system, Kirzner (1973) defines the entrepreneur as the driving force in the economy who make decisions based on their alertness to an opportunity, which does include a degree of risk and uncertainty.

Although the history of thinking on the role of entrepreneurship in the economic system stretches back 250 years, the modern definitions of entrepreneur and entrepreneurship are due largely to Austrian economist Schumpeter (Mueller & Thomas, 2001; Schumpeter, 1965). What differentiates the work of Schumpeter (1934) from the other economists is that his work does not focus on how entrepreneurship supports the economic system and the markets but how it can create, develop or in some cases destroy (the concept of creative destruction) an existing market (Schumpeter, 1934). This new theory on

entrepreneurship hinges on various manifestations of innovation (Schumpeter, 1963).

Sarasvathy & Venkatamaran (2011) highlight that there is a danger that entrepreneurship can fall into the wrong category if one is to look at it as a sub-discipline of other fields of study, for example, economics. They define entrepreneurship as a process of actions taken in a social context which is influenced by the steps of problem solving and evolution (Sarasvathy & Venkatamaran, 2011). They further elaborated that the complex nature of entrepreneurship lies within multiple disciplines around ways of policy, pedagogy and practice that are not yet discovered.

Recently, entrepreneurship has been recognised as something which is chaotic and complex, with no one linear explanation (Neck & Greene, 2011). One of the reasons for its complexity is the nature of an ever-evolving business world that leads to change in entrepreneurial process (Gibb, 2005; Read, Dew, Sarasvathy, Song, & Wiltbank, 2009; Sarasvathy, 2008).

Sarasvathy & Venkatamaran (2011) explains the entrepreneurial process which keeps evolving and co-created by entrepreneurs and their social interactions. They highlight “that opportunities are often created by the entrepreneurial process itself—in other words, entrepreneurs and their stakeholders often end up co-creating new opportunities that neither they nor those of us in their immediate periphery could or did anticipate” (Sarasvathy & Venkatamaran, 2011, p. 118). Sarasvathy’s theory of effectuation in entrepreneurship is based on the process of dealing with uncertainty.

Effectuation in entrepreneurship recognises the uncertainty and unpredictability of the future, thus eliminating the need to set predefined targets, and focuses on the present contexts, entrepreneurs are operating in (Sarasvathy, 2008).

Shepherd, Douglas, & Fitzsimmons (2008) recognise that having entrepreneurial skills and mindset is not only useful while being an entrepreneur but is also important in managerial positions to deal with the uncertainty and unpredictability of the business environment. This is also in alignment with the findings of Gibb (2005) and Hynes (1996). A study by Gilbert & Eyring (2010) also highlights the uncertainty of an entrepreneurial environment by suggesting that identifying and dealing with uncertainties is the most important and challenging part of any emerging venture.

As mentioned earlier, the term entrepreneurship is not linear in its conceptualisation, but it is a complex non-linear process (Fletcher, 2006; Rae, 2007). This process has been recently named as “entrepreneuring” by Steyaert (2007) and has since gained some popularity as a synonym for the entrepreneurial process (Anderson & Ronteau, 2017; Gaddefors & Anderson, 2018; Johannisson, 2011). For Gaddefors & Anderson (2018, p. 6) “entrepreneuring is ‘protean’ in form, it takes shape from the context.”

The embeddedness of entrepreneurship in various contexts makes it a protean and complex phenomenon. Johannisson, Ramírez-Pasillas, & Karlsson (2002) linked entrepreneurship with irregularities and irrationalities. They argued that the entrepreneurial process exists within multiple social constructs and actors in these social constructs influence the process, both,

individually and collectively. These are complex phenomena (Drakopoulou Dodd & Anderson, 2001) and reflect the context, personality and behaviour of entrepreneurs (Anderson, 2000; Welter & Smallbone, 2011). Anderson (2000) explains entrepreneurship as a dynamic process where an entrepreneur is creating a perception of him/herself in the reflection of the context of their social-economic surrounding. The institutional context forces an entrepreneur in a certain direction and in return, the entrepreneur's actions influence and changes the institution (Welter & Smallbone, 2011).

Anderson & Starnawska (2008, p. 223) blame the “transformative condition” of entrepreneurship as a reason for making it hard to explain it. They further suggest that “when we talk of entrepreneurship, we treat it as a noun, an objective thing; when we talk of entrepreneurs, we treat them as in a state of being – she is an entrepreneur” (Anderson & Starnawska, 2008, p. 223). This separates the entrepreneurs from the context in which they are situated.

Entrepreneurship, thus, is a complex and dynamic process based on uncertainty which is shaped by various social contexts and constructs. In the light of that, entrepreneurship can be “defined in terms of a set of behaviours, attributes and skills that allow individuals and groups to create change and innovation in all aspects of their life” (Gibb, 2005, p. 46). However, explanations of entrepreneurship does not define it uniformly as “there is currently no single agreed theory of entrepreneurship” (Higgins & Galloway, 2014, p. 454) because it is not an outcome, a product or a business but as a process, hence no single definition of entrepreneurship can define the uniqueness and contextual understanding of the process which is entrepreneurship.

Finally, a reason that it is very difficult to define entrepreneurship lies within the word 'entrepreneurship' which is polysemous (Alain Fayolle & Gailly, 2008; Sheriff & Muffatto, 2015). Although there is no one set definition of entrepreneurship and for this research, it is considered that to define entrepreneurship it is important to understand the skill, behaviours, attitudes and attributes of entrepreneurs at all levels within an organisation and the contexts in which they are operating (Gibb, 2005). It is argued that entrepreneurship does not completely rely on the creation of a venture, it can happen within an existing firm (intrapreneurship) or even in the public sector, examples of that are mentioned in the following parts.

#### 2.2.1. Intrapreneurship – Corporate entrepreneurship

Intrapreneurship or corporate entrepreneurship is not a new term either and has been a part of literature for a few decades (Braunerhjelm, Ding, & Thulin, 2018; Carrier, 1994; Hisrich, 1990; Hisrich & Antoncic, 2001; Pinchot, 1985; Piobetta, 1951). Just like the word entrepreneurship, intrapreneurship can be traced back to French where it is believed that Piobetta (1951) was (if not the first) one of the first people to use it. Pinchot (1985) suggests that intrapreneurship or corporate entrepreneurship is the inwards representation of start-up focused entrepreneurship. Ginsberg (1990) explains that there is a view that corporate entrepreneurship is a synonym for entrepreneurship, but there is a view that when a large business tries to do something new it would require a new set of processes. Intrapreneurship has been recognised as the process which ensures the development of innovative products and services which gives an organisation a competitive edge in the market (Hornsby, Kuratko, Holt, & Wales, 2013). It is supported by the managers who recognise

a need for innovation and renewal of products, so they attain or continue to have a sustainable position in an ever-changing volatile market (Kuratko, Hornsby, & Covin, 2014).

Research in the area of intrapreneurship has been growing ever since it was first introduced, Zahra, Jennings & Kuratko (1999) mentioned the growth in research on intrapreneurship over the previous 25 years. This was also observed by Dess, Ireland, Zahra, Floyd, Janney & Lane (2003) and Kuratko (2016). However, Donna (2011, p. 74) suggests that intrapreneurship is in danger of being “relegated to serendipity” if its dimensions and concepts are not established and understood.

#### 2.2.2. Public sector entrepreneurship

There are mixed arguments of entrepreneurship in the public sector. Entrepreneurship in the public sector is mostly a consequence of the external environment (Kearney, Hisrich, & Roche, 2008; Sadler, 2000). Kuratko, Covin, & Morris (2011, p. 128) also highlighted that entrepreneurship is difficult in public sector as the sector is continuously dealing with turbulent factors making it a “dynamic, hostile and complex” environment for entrepreneurship. Sadler (2000) also suggests that the public sector is often notorious for being conservative and bureaucratic which are not the right conditions to operate entrepreneurially. Diefenbach (2011) agreed with the mentioned notions and suggested that there is lack of robust knowledge about the transferability of private sector methodology of conducting businesses into a public sector scenario and entrepreneurship is not a part of the agenda for internal public sector operations. Although this is not the only perspective of entrepreneurship

in the literature, work of Morris & Jones (1999) suggests that entrepreneurship is a universal phenomenon and can be incorporated in any sector, including public, private and third-sector. They further expand on this by suggesting that entrepreneurship involves proactive behaviours with elements of innovation which results in creating value by being resourceful and this is applicable in public sector operations as well. Lu (2016) reinforces this argument by suggesting that the entrepreneurship does exist in the public sector but mostly it is not focused on product or business development. According to him, its emphasis is on the innovative public policies and since the technology is changing the public policy rapidly. It is getting more and more important for public-sector employees and policy stakeholders to be innovative and entrepreneurial.

Strow & Strow (2018, p. 307) suggest that there is a need for government agents to understand the scope of entrepreneurship in the public sector which can be achieved either by dismantling barriers to private-sector entrepreneurs work with public-sector agents or by “increasing productive entrepreneurial activity within the public sector”. Klein, Mahoney, McGahan & Pitelis (2010) suggest that entrepreneurs, both in public and private sectors, have similar behavioural traits. However, there is a difference of tactics between them, and although they recognise the importance of entrepreneurship, they fail to incorporate it in the public sector, sometimes they even build the barriers to prevent entrepreneurial activity in the sector.

### 2.2.3. Entrepreneurial characteristics

Anderson & Jack (2008) and Solomon (2007) suggested that to fully understand the entrepreneurial process, one would require a tremendous level

of knowledge, expertise and skills. To comprehend the concept of entrepreneurship, one needs to understand what makes an entrepreneur.

The most common attributes of an entrepreneur are the skills of creative problem solving, independent behaviour, being proactive and the ability to solve and recognise opportunities (Shaver & Scott, 1992). Olson & Bosserman (1984) highlights three attributes that are important for entrepreneurship, role orientation (to fully understand their expectation on what to accomplish); rational and intuitive ability to think about an idea or problem and finally, the motivation to act on their ideas. They further explain that motivation is what differentiates between potential and actual entrepreneurs.

In the last decade or so, the thinking about these attributes have evolved, Smith, Schallenkamp & Eichholz (2007) suggested that entrepreneurship requires a wide range of skill-set, summing up to 17 in total. They categorised them into three groups; managerial skills, technical skills and entrepreneurial skill. Below is the table for the skills in each category.

*Table 1. Entrepreneurship skills*

Managerial skills	<ol style="list-style-type: none"> <li>1. <b>“Management<sup>3</sup></b> – planning, organizing, supervising, directing, networking</li> <li>2. <b>Marketing/Sales<sup>4</sup></b> – identifying customers, distribution channels, supply chain</li> <li>3. <b>Financial<sup>2</sup></b> – managing financial resources, accounting, budgeting</li> <li>4. Legal – organization form, risk management, privacy and security</li> <li>5. Administrative – people relations, advisory board relations</li> <li>6. Higher-order – learning, problem-solving” (W. L. Smith et al., 2007, p. 181)</li> </ol>
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Technical skills	<ol style="list-style-type: none"> <li>1. “<b>Operational</b><sup>1</sup> – the skills necessary to produce the product or service</li> <li>2. <b>Supplies/Raw Materials</b><sup>9</sup> – the skills to obtain them, as necessary</li> <li>3. Office or Production Space – the skills to match needs and availability</li> <li>4. Equipment/Plant/Technology – the skills to identify and obtain them” (W. L. Smith et al., 2007, p. 182)</li> </ol>
Entrepreneurial skill	<ol style="list-style-type: none"> <li>1. “<b>Business Concept</b><sup>5</sup> – business plan, presentation skills</li> <li>2. <b>Environmental Scanning</b><sup>6</sup> - recognize market gap, exploit a market opportunity</li> <li>3. Advisory Board and Networking – balance independence with seeking assistance” (W. L. Smith et al., 2007, p. 183)</li> </ol>
Personal Maturity Skills	<ol style="list-style-type: none"> <li>1. “Self-Awareness – ability to reflect and be introspective</li> <li>2. <b>Accountability</b><sup>7</sup> – ability to take responsibility for resolving a problem</li> <li>3. Emotional Coping – emotional ability to cope with a problem</li> <li>4. <b>Creativity</b><sup>8</sup> – ability to produce a creative solution to a problem” (W. L. Smith et al., 2007, p. 183)</li> </ol>
<p>Bold skills are the nine most critical skills. The superscript is highlighting their order with <sup>1</sup> being the most important.</p>	

Similarly, Clarke & Holt (2010) also linked entrepreneurship with personal maturity and the need for autonomy and independence. Furthermore, there is a significant emphasis in the literature on the role of networks and connectedness of an entrepreneur in relations to the entrepreneurial process. It is very challenging to perceive or attempt to define entrepreneurship while keeping an entrepreneur in isolation and assuming that entrepreneurship is an act of a single person without analysing his or her social context (Anderson &

Drakopoulou-Dodd, 2007; Birley, 1985; Fletcher, 2006; Hanson & Blake, 2009; Huggins, Izushi, Prokop, & Thompson, 2015; Jack, Moulton, Anderson, & Dodd, 2010; Korsgaard & Anderson, 2011; Lee & Jones, 2008; Rae, 2006; Taylor & Thorpe, 2004; Thornton, Ribeiro-Soriano, & Urbano, 2011).

It is clear from the literature findings that entrepreneurship is a complex, process with strong embeddedness in the social and contextual surrounding of an entrepreneur. This creates a challenging situation to develop pedagogies that are required to be unique and innovative, so they can be used to teach entrepreneurship as a discipline (Jack & Anderson, 2008; Nabi et al., 2016; Solomon, 2007)

### *Reflection, synthesis and gaps*

The history of entrepreneurship goes back three centuries. The term first emerged in the field of economics. Schumpeter (1934) linked entrepreneurship with innovation, and after that entrepreneurship started emerging as a field of its own and is still considered one of the driving forces of an economy (Kirzner, 1973). It is now recognised that entrepreneurship a complex and dynamic process with uncertainty being a big part of the entrepreneurial process. Because of its complex and chaotic nature entrepreneurship does not possess a universal definition. Work of Gibb (2005), associate entrepreneurship with a set of behaviours, attributes and skills. These elements are helpful in the formation of a new venture and can be utilised in different fields of work.

Although the concept of entrepreneurship was somewhat related to business start-ups, now entrepreneurship has evolved to be understood as a creative

process based on certain behaviours and skills which can happen in a start-up context as well as within an existing organisation, both, in public and private sectors.

There seems to be a common consensus that entrepreneurship is a dynamic and complex process which is influenced by the social surrounding of an entrepreneur.

### 2.3. Learning – an overview

Since the beginning of the 21<sup>st</sup> century, there have been major developments and shifts in learning philosophies, which has had an impact on entrepreneurship education and entrepreneurial learning (Kyrö, 2005).

To understand the domain of entrepreneurial learning and its characteristics, it is important to understand the domain of learning first. This strand of the research looks holistically into the paradigms of learning by analysing the key learning theories, their strengths and implications. This approach helps in understanding the nature of entrepreneurial learning and its various elements in the context of higher education. Furthermore, this strand helps in laying the groundwork for identifying that entrepreneurial learning is a socially created experiential process of learning (Funken, Gielnik, & Foo, 2018; Pittaway & Cope, 2007b; Pittaway & Thorpe, 2012; Wang & Chugh, 2014). Finally, this section aligns the general learning theories with entrepreneurial learning to determine the position within the learning paradigms. Constructivism has been identified as a completely different paradigm in comparison to the behaviourist and cognitivist approach (Berger & Luckmann, 2002). Discussion of constructivism here would also set the scene for the philosophical approach of this research.

There is substantial research on learning and educational philosophies. Literature provides insights on the learning process of a learner (Kolb, 1984; Vygotsky, 1978) as well as the educating techniques of the educators (Skinner, 1950; Watson, 1913). According to Honey & Mumford (2006, p. 1), learning happens “when people can demonstrate that they know something

that they did not know before (insights and realisation as well as facts) and/or when they can do something they could not do before (skills)".

### 2.3.1. Learning – a theoretical background

The history of learning is complex and long, involving the diverse approaches of the learning processes (Olson & Hergenhahn, 2012). Because of the nature of learning and its process and understandings, learning literature spans through multiple disciplines, including; biology, psychology, sociology, and education (Bates, 2015). There are several learning theories with new ones regularly introduced in the literature. There are three theories that are the most prominent and act as an umbrella for many other theories (Kyrö, 2005). Theoretically "learning theories are conceptual frameworks that describe how information is absorbed, processed, and retained during learning" (Chaudhary, 2013, p. 81). Learning theories are broadly categorised in three paradigms; behaviourist (learning as a behaviour), cognitive (learning as understanding), and constructivist (learning through social practice) (Bates, 2015; Olson & Hergenhahn, 2012; Thompson, 2009; Tusting, Karin; Barton, 2003). All of these learning paradigms were developed in their own specific contexts with a specific understanding and hypothesis of learning (Jarvis, Holford, & Griffin, 1998; Kyrö, 2005). Behaviourist perspective asserts that learning has to do with a change in behaviour (Pavlov, 1927). A cognitivist paradigm indicates that learning is held to be a process of understanding the world as well as responding to it in an appropriate manner through the process of internalising its principles, concept and facts (Bates, 2015). In a constructivist school of thought, learning happens either as a result of social interaction or is an essential and inseparable aspect of social practice where learners are

responsible for their own learning (Engeström & Middleton, 1998; Lave & Wenger, 1991; Vygotsky, 1978). Despite each paradigm showing its own understanding of learning, they are at the core interconnected, and they have emerged out of each other to compliment the insufficiencies of each other (Olson & Hergenbahn, 2012). Below is an adaption of the comparative learning paradigms originally presented by Bates (2015) and Bíró (2014).

Table 2. Overview and comparison of major learning paradigms

Paradigms	Behaviourist	Cognitivist	Constructivist
<b>Learning</b>	Because of environmental stimuli, the behaviour of the learner changes	Relating new objects with existing knowledge to develop a higher level of reasoning	Construction of knowledge through social context, a higher level of problem-solving and critical analysis
<b>The Learner</b>	Instinct-driven	Conscious	Conscious
<b>Motivation</b>	Extrinsic	Intrinsic	Intrinsic
<b>Knowledge</b>	External	Internal	Internal
<b>Pedagogy</b>	Environment-driven	Cognition of the learner and ad-hoc personal processing	Individual social realities with systematic personal processing
<b>Epistemology</b>	Empiricism	Rationalism	Constructivism
<b>Engagement</b>	Individual	Individual	Individual
<b>Teaching attitude</b>	Active	Active	Reactive
<b>Learner attitude</b>	Reactive	Proactive	Proactive
<b>Examples</b>	Pre-test, repetition and practice	Analogy-based learning frameworks, use of metaphors, concept mapping and absence of irrelevant information	Collaborative learning, contextual application of new knowledge.
<b>Sub-theories of learning</b>	<ul style="list-style-type: none"> <li>• Classical conditioning – Pavlov (1927)</li> <li>• Radical behaviourism – Skinner (1953)</li> <li>• Neo-behaviourism – Bandura, Ross &amp; Ross (1961)</li> </ul>	<ul style="list-style-type: none"> <li>• Social Learning – Bandura (1971)</li> <li>• Gestalt Theory – Wertheimer (1938) and Ehrenfels (1937)</li> <li>• Cognitive Stage Models (1978)</li> </ul>	<ul style="list-style-type: none"> <li>• Social constructivism – Glaserfeld (2002)</li> <li>• Radical constructivism – Freire (1998)</li> <li>• Humanism – Rogers (1961)</li> <li>• Experiential learning – Dewey (1938), Kolb ((1984))</li> </ul>

### 2.3.2. Learning as a behaviour – Behaviourism

The behaviourist learning paradigm emerged from the discipline of psychology and is also known as the classical theory of learning (Lefrançois, 1972). This paradigm of learning investigates the external factors that can influence a change in learner's behaviour (Pavlov, 1927; Bouton, 2009; Lefrançois, 1972). Skinner (1953) further examined the concept of learning linking it to an operant conditioning whereby both environmental contingencies and discriminative stimuli are controlled and manipulated to alter behaviour. Skinner (1953) also expresses this by linking it to how the contingencies shape behaviour as a "sculptor shapes a lump of clay" (Skinner, 1953, p. 91). Recently, Jim (2010) expressed a partial agreement to Pavlov's (1927) definition of learning to be a change in behaviour that is brought about by some form of action or experience. There are three main types of behaviourist theories; methodological behaviourism, psychological behaviourism, and logical behaviourism (Graham, 2015).

According to Watson (1913), methodological behaviourism is a theory of systematic conducting psychological methods. According to this theory, the field of psychology should not be looking at the state of mind, but instead, it should be evaluating the behaviour of living beings, as behaviour cannot be studied by analysing mental state (Logue, 1978).

Psychological behaviourism analyses the behaviour of a living being as a result of external physical stimuli (Pavlov, 1927). Psychological behaviourism is the one that is tied with the behaviourist learning theory. Pavlov (1927) and Skinner (1950) are the most prominent proponents of this type of behaviourism.

Logical behaviourism is the opposite of a methodological approach and states that the mental state and beliefs are the key determinants of behaviour (Graham & Valentine, 2004); hence, it should not be disregarded. Logical behaviourism is also termed as “heterophenomenology” (Dennett, 2005).

As mentioned above, the most relevant behaviourism to learning and more specifically to education is psychological behaviourism. There are two methods of analysing behaviour; operant conditioning (Skinner, 1950) and classical conditioning (Pavlov, 1927). Skinner (1937) developed the operant conditioning which examines the change in behaviour based on the reward and punishment mechanisms.

Classical conditioning, also known as Pavlovian conditioning (Rescorla, 1967), was creating an association of elements with actions, for example, Pavlov (1902) used dogs and introduced certain lights or sounds when they were about to be fed, he noticed that after some time the dog would start salivating as soon as these lights were turned on, even before the food is brought in. This provided a groundwork for Watson’s (1913) work on human behaviour and reflexes.

Bandura (1977) played a noteworthy role in the transitional progress of the elements of behaviourism to cognitivism. He introduced the concepts of observation and imitation as one of the sources that result in learning (Zimmerman & Schunk, 2003). Bandura (1961; 1963) developed an experiment of “Bobo doll” where he examined that the children would express aggressive behaviour as a result of the observation of the aggressive behaviour of the adults. In his later work, Bandura (2001; 1971) suggested that learning is a self-directed and social process.

There were several developments and strands that came out of the behaviourist learning theory. However, the predominant proposition of the theory remained that learning is a change in behaviour, which is influenced by some external stimuli. Behaviourism in its main form refuses to consider the cognitive elements of the learning. Behaviourists see and define the mental processes on the basis of the change in behaviour a learner is exhibiting (Tolman, 1932).

The main limitation of the behaviourist theory in its all forms was the disregard of the individuality of the learning contexts. It is focused on the external stimuli of the behaviour that it does not see that people learn differently, there needs to be a sense of autonomy for the learner (Rogers, 1961) and that different people would respond to the same stimuli in a different way.

### 2.3.3. Learning as an understanding – Cognitivism

The cognitivist theory of learning emerged as a result of a need to develop a paradigm that can understand the complexity and individuality of the human brain and their learning context (Mackintosh, 1997). Cognitivism takes a rational epistemological stance rather than an empiricist approaches of replicating behaviour (Kyrö, 2005). Cognitivists try to understand learning as a process of processing information, and their approach can sometimes seem like comparing a brain with a programme of a computer (Fiske & Taylor, 2016; Searle, 2000). Following a cognitive perspective of learning, Reynolds (2007) explains that the learner is regarded as an advanced information-processing machine with a task to internalise information relating to the environment around them. Learning is held to be a process of understanding the world as well as responding to it in an appropriate manner through the process of

internalising its principles, concepts and facts. Cognitivism takes a rationalist approach and suggests that learning happens as a result of rational reasoning (Bates, 2015). This is done by eliminating the perception, observation and experience as factors of learning (Aune, 1970; Lacey, 1976). There is a large body of literature in education that highlights several learning theories that claim to have originated from or be a part of cognitivism. However, there is no definitive way to categorise them based on the claims (Derry, 1996; Mayer, 1996; Prawat, 1996). One of the widely used models of learning in the cognitive domain is Bloom's Taxonomy, developed in 1956. It provides a step-by-step stage of learning objectives. This was revised by Anderson & Krathwohl (2001) (see Appendix D for Bloom's taxonomy and Anderson & Krathwohl's Taxonomy). Omrod (1999, p. 168) the following 7 core elements of the cognitive paradigm of learning:

1. Some learning processes may be unique to human beings
2. Cognitive processes are the focus of study
3. Objective, systematic observations of people's behaviour should be the focus of scientific inquiry. However, inferences about unobservable mental processes can often be drawn from such behaviour
4. Individuals are actively involved in the learning process
5. Learning involves the formation of mental associations that are not necessarily reflected in behaviour changes
6. Knowledge is organized
7. Learning is a process of relating new information to previously learned information.

There are three major theories that have their roots strongly tied in the cognitivist paradigm. They are; social cognitivist approach or social learning theory of Bandura (1971). It originated from a behaviourist paradigm, as already mentioned above. The Gestalt approach, originated in the Berlin School of experimental psychology to understand perception (Ash, 1998; Asher, 2003; Woldt, 2005). Finally, the cognitive stage development theory (Piaget, 1929).

#### *2.3.3.1. Social cognitivist – social learning theory*

Social cognitivists examine how and what do people learn from each other by using various tools and approaches such as observations, communication and imitation (Ormrod, 1998, 1999). Social learning theory was developed from the behaviourist paradigm of learning by Albert Bandura (1971). In his later work, he further developed the theory of self-efficacy that has widely influenced classroom teaching around the world (Bandura, 1977). He believed that it is important to understand the perceptions of failure and hurdles and how they affect an individual's learning. Bandura's (Bandura, 1977; Bandura, 1971; Bandura & Walters, 1963) model of social learning highlighted that learning is a result of experiences. However, it also happens from just the observation of the social surroundings of the learner. He further suggests that individuals with higher social status and power are more likely to be a source of learning for an observer. This can be a reason for the popularity of this method as educators in a classroom setting are often perceived with higher social status and power than students (Olson & Hergenbahn, 2012). This also works well in the framework of role models. Hence it is advised that the teacher should encourage students into the situations where they can learn from their

perceived role models. According to Bandura (1977), by exposing students to their role models, they can internalise the verbal and non-verbal information coming from the role model and will evaluate it based on their perception of themselves. This is known as the process of self-regulation. Overtime learners would become more aware of themselves by self-regulation, and the learning would continue even without the presence of a social role model (Bandura, 1997; Ormrod, 1999).

Conley & Udrey (2001) suggests that social learning involves higher-order reasoning where individuals care not only about their own direct observations of realisations of something but also about how these around them learn about the same thing. They further stressed that the optimal learning behaviour by a person involves keeping track of long histories of actions and experimental outcomes of everyone with whom that person communicates. The theory of communities of practices has been strongly linked to social learning. For example, Marsick & Watkins (1990) stated that the theory gives an idea of how people interact around common interests and this can be used to make better use of informal and incidental learning through support, structure and incentives for learning. Such is the case in the fields of Medicine, Teaching and Human Resource Management to state the least where communities of practice are prevalent to further enhancing learning as a professional (Di Vincenzo, Hemphala, Magnusson, & Mascia, 2012). The theory of communities of practice is based on two characteristics: first is that human beings are social creatures and second that they learn and pass on knowledge.

### 2.3.3.2. *The Gestalt theory*

Max Wertheimer, in collaboration with Wolfgang Köhler and Kurt Koffka first developed the Gestalt approach at the Berlin School of experimental psychology to understand perception (Ash, 1998; Asher, 2003). The theory first appeared in the literature in 1912 where Wertheimer (1912) tried to create an illusion of a single light in a room by flashing two different lights one by one at a certain frequency (Wertheimer, 1938). The outcome of this experiment was not focused on how people behave differently under certain conditions but instead, how they make sense of the events they experience. The perception of the world as we know it is a result of our experience relying on our senses (Wertheimer, 1938). However, only the information from a learner's sensory data is insufficient, and their brains add additional links to the information which creates a meaningful whole picture or as Wertheimer (1912) called it a "*Gestalt*" (Ash, 1998; Asher, 2003; King & Wertheimer, 2005). According to Gestalt theory, information is completed by people in the quest of holistic understanding of a phenomenon which results in a natural organisation of information to structure a knowledge (King & Wertheimer, 2005). There are several rules on the basis of which this structuring takes place (Wertheimer, 1938). Gestalt theory provides a need-based rationale of understanding in which an individual presents a need to look at a phenomenon in relation to its physical surrounding (Polster & Polster, 2001). Hence, the learning, according to Gestalt theory always happens in and around the existing contextual surrounding of the phenomenon, a learner is trying to learn about. In a classroom setting, a Gestalt educator would provide the learner with a problem in which case they are required to solve the particular problem by rearranging

already provided information or they would seek out for additional relevant information (Olson & Hergenhahn, 2012). The relationship of a teacher and learner in this theory is based on a continuous exchange of knowledge and information to facilitate the structuring of patterns for learners to understand. (King & Wertheimer, 2005; Olson & Hergenhahn, 2012; Ormrod, 1999).

Bruner (1966) highlights the element of curiosity as one of the centre stones of learning, which can be a great motivator for a learner. "Our attention is attracted to something that is unclear, unfinished, or uncertain. We sustain our attention until the matter on hand becomes clear, finished, or certain" (Bruner, 1966, p. 114). Koffka (1922, p. 580) highlights that the learning in early age of a learner is "both motor and sensory" sensorimotor learning in association with consequences of a phenomenon, like avoid doing something from which a learner received a negative result, e.g. if a kid touches a hot object and burn himself, he would avoid repeating it, this approach takes its elements from the cognitive stage development theory as well which is mentioned next. Just like Bandura (1971), Koffka (1922) also believed that learning is a result of the observations of the learner. As a result of these elements, the Gestalt theory had an ongoing relationship with the cognitivist perspectives and the learning theories under its umbrella (Woldt, 2005).

#### *2.3.3.3. Cognitive stage development theory*

After the industrial revolution, several cognitive psychologists made attempts to understand the learning process of people so they can satisfy the need of 20<sup>th</sup>-century classrooms (Collins & Halverson, 2018). Work of Jean Piaget

(1929) suggests learning is a process of adaptation with the context and environment of the learner. This adaptation happens as an adjustment of new knowledge with the existing structures of the cognition. If the new knowledge is too novel to adapt with the existing structure, then an adaptation of the existing structures of the cognition take place to accommodate the new knowledge. This was recognised as the developmental structure of the learner and cognition (Flavell, 1963). Piaget (1929) was the first person to identify the developmental stages and correlated the stages based on the age of a learner. According to Piaget (1929), learning can happen only if the learning material has been adapted to a stage of development of a learner.

The biggest limitation of the work of Piaget (1929) was that his developmental stage model only covered the stages up to the age of 15 of a learner. If there is any further development in the adult life or the length of a stage is outside the set parameters, it could not be represented accurately by this model (Jarvis et al., 1998). Erikson (1959) built his work on Piaget's (1929) stage development model to an eight-stage developmental framework of psychology, which covers the development of learners from early childhood until late adulthood. Only the successful completion of one stage can take a learner to the next stage, similar to a schooling system.

Another limitation of this work was highlighted by Vygotsky (1978), he suggested that Piaget's (1929) developmental stage theory disregards the environment and the interactions of a learner with the world in many ways and is solely focused on the biological age of a learner in relations with their cognitive capacity. However, Vygotsky's (1978) theory of social developments suggests that social interactions are a crucial part of learning, and they are

more important than cognitive conditions. He further suggests that the consciousness and cognitive structure are results of the social behaviours of a learner (Moll, 1992; Vygotsky, 1978). This is believed to be one of the foundational bases of what is now known as the constructivist paradigm of learning in which social and cultural contexts play a vital role (Tudge & Scrimsher, 2003).

#### 2.3.4. Learning as an individual construction – Constructivism

Unlike behaviourism or cognitivism which are predominantly based on positivist philosophies, constructivism looks at the individuality of the learner by suggesting that a learner is independently a constructor of their own reality by continuous development and their experiences (Bates, 2015; Goodman, 2008). Constructivists see learning as an individual construction of knowledge instead of a way of processing information by a learner. Social learning theory of Bandura (1971) and developmental stages of Piaget (1929) are often considered as the cognitive links of constructivism (Mayer, 1999; Tobias & Duffy, 2009). Constructivist researchers of learning claim that social context is closely tied with the learning and the learning is shaped by the culture, society and economic contexts of the learner (Brown, Collins, & Duguid, 1989; Lave & Wenger, 1991). Cultural norms can sometimes be even larger than the “national boundaries” (Wasim, Cunningham, Maxwell-Cole, & Taylor, 2018).

Constructivists paradigm grew exponential, and now there are several theories that claim to be evolved from a constructivist domain. However, some researchers have highlighted the exaggerated use of the term and a presence of vagueness regarding what precisely is the construction of knowledge that underpins the principles of constructivism (Gergen, 1999).

In a constructivist school of thought, learning happens either as a result of social interaction or as an essential and inseparably intimate part of social practice. (Engeström & Middleton, 1998; Lave & Wenger, 1991; Vygotsky, 1978). However, it is unclear that what it is that is being socially constructed (Hacking, 1999) “whether this be time (Fischer, Reuber, Hababou, Johnson, & Lee, 1997), meanings, identities, ‘lived experiences’ (Bruner, 1990; Denzin, 1997) , the self (Gergen, 1999) or social reality (Berger & Luckmann, 1967)” (Fletcher, 2006, p. 426).

According to Kyrö (2005) and Löbler (2006), the constructivist theory can now be widely accepted as a paradigm. However, similar to the previously mentioned paradigms, as the new constructs and theories evolve from constructivism and its various branches, their relationship to the original paradigm gets blurred with a lack of distinguishable basic assumptions and no strong agreement on their classifications (Nelson, 1997; Prawat, 1996). This wide diversity of the theories is because the constructivism itself has emerged from several philosophies such as cognitivism, behaviourism and Dewey’s (1933) pragmatism, amongst others. Von Glasersfeld (2002) mentions that the foundations of constructivism trail back to the pre-Socratic era of philosophers. Furthermore, confusions in constructivism are also a result of a misrepresentation in the term itself, and it has been used interchangeably with *constructionism* (Fletcher, 2006). A fundamental characteristic of a constructivist theory or a sub-construct of it is that the process of the construction of knowledge and learning is based on the individual learner. Following is a discussion of literature on some of the main theories that are within a constructivist paradigm.

#### *2.3.4.1. Radical, Social and Critical Constructivism*

The two main forms of constructivism that are within education literature are radical and social constructivism. Radical constructivism was initiated by Von Glasersfeld (2002). Von Glasersfeld (2002, p. 1) defines it as “the assumption that knowledge, no matter how it is defined, is in the heads of persons, and that the thinking subject has no alternative but to construct what he or she knows on the basis of his or her own experience”. According to radical constructivist theory, learners develop their own cognitive structures, they can observe the environment, but they are “closed” in terms of letting the external social factors forcing their own cognitive structuring and knowledge formation (Maturana & Varela, 1980; Von Glasersfeld, 2002).

Social constructivism was developed by Berger & Luckman (1967) on the basis of bridging work of Vygotsky (1978) and Bruner (1961) on cognitive constructivism. Both social and radical approaches have common characteristics. For example, knowledge construction is a continuous process that involves learning about the world and ourselves. What differentiates them is the understanding of that knowledge (Confrey, 1995). A radical theory suggests that knowledge is tied with the learner and learner is an operationally closed organism (Von Glasersfeld, 2002). Whereas in the social theory of constructivism, the experience of learners and the knowledge they create is tied with their social context. Hence it is socially constructed rather than purely individually (Gergen, 1999). According to Fletcher (2006, p. 426) “social constructivism ... is more concerned with how individuals mentally construct their worlds with categories supplied by the social relationship”.

Closely tied with social constructivism, critical constructivist school of thought argues the role of critical knowledge construction. This is also built on the rules of humanism (Freire, 1998), which is discussed later in the chapter. “Critical constructivists believe that their students can acquire the knowledge necessary to lead productive and satisfying lives” (Goodman, 2008, p. 29). The new concept in this, and what differentiates it from some other branches of constructivism is the role of *awareness* for the learner (Kincheloe, 2005).

Social and critical constructivists argue that learning influences the life of the learner immediately. However, the experience of the world and social contexts of a learner cannot be neglected (Goodman, 2008).

Although, constructivism does not suggest any certain teaching approaches, all its constructs encourage an experiential learning process to be adopted in its pedagogical applications, because at its core it prefers a dialogue between the learners and educators as well as among learners in which each individual is responsible for their own learning (Herman & Gomez, 2009). The role of the educator is to provide scenarios in which experiential learning can take place. According to Von Glasersfeld (2002), a behaviourist approach cannot provide deeper learning because its emphasis hinders the autonomous thinking process of the learners.

#### *2.3.4.2. Humanism*

Humanism sees the learning process as a continuous construction of knowledge by a learner, the element which differentiates it with the other constructs is its approach to incorporate the individual requirements and emotions of a learner with their behaviour (Maslow, 1943). Furthermore, it

recognises that learners are proactive and autonomous individuals (DeCarvalho, 1991). The humanist perspective of constructivism emerged as opposition and in resistance to a strict behaviourist paradigm of learning (Hutterer, 1998). Maslow (1943) and Allport (1950) are known to be the developers of a humanist theory. However, they both originally subscribed to behaviourist thinking (Ormrod, 1999). Several scholars, such as DeCarvalho (1991), Hutterer (1998) and Ormrod (1999) consider humanism to be a paradigm of learning on its own. However, others like Kyrö (2005) and Löbler (2006) recognised the widespread influence of humanism but still consider it a sub-construct of constructivism.

Pedagogical approaches of humanism focus on the autonomy of the learners who have made a choice in deciding their own learning objectives (Perls, Hefferline, & Goodman, 1951). Rogers (1969) suggests that learning is not a difficult process if the learning objectives are built in alignment with individual learners. The humanistic approach sees learning to be “personally meaningful” to the learner (Hira & Hynes, 2017, p. 16). This has also been highlighted as one of the central approaches of Dewey’s (1938) experiential learning, which is discussed in the next part. The role of an educator is of facilitating the learning rather than directing (Rogers, 1969). According to Rogers (1969), learning in which a learner is evaluating its perception can only happen when there are limited external fears. For this to happen, the educator needs to develop an environment of trust and respect by acknowledging not only the intellectual but emotional contributions of a learner. Hayes (2006) argues against this opinion by suggesting that the more you individualise learning, the less educational it would become, and this would pose a great

challenge in a classroom of several learners. Although a decade apart, work of both Bookchin (1995) and Hayes (2006) conclude that educators and educational institutions are lacking confidence in the potential of the learners.

#### *2.3.4.3. Experiential learning*

For Dewey (1938), everyone has a history that plays a part in their learning context. This history is based on relevant and specific experiences and previous knowledge. Dewey (1938) presents a foundation of theory now commonly known as experiential learning.

Kolb (1984) argued that learning is a social process in which knowledge is constructed through the conversion of experience. This theory puts experience at the centre of learning. The experiential learning theory is greatly different from behavioural learning theories that are based on an empirical epistemology and learning that underlie traditional educational methods. Experiential learning is based on previous knowledge, perception, cognition and experience. There are two reasons for the label 'experiential learning'. "Firstly, to tie it clearly with intellectual origins, secondly, to emphasise the central role that experience plays in the learning process. This is what differentiates an experiential learning theory from a rationalist and other cognitive theories" (Kolb, 1984, p. 20).

There are some criticisms attached to Kolb's (1984) work. For example, Miettinen (2000) that Kolb (1984) did not provide a sufficient illumination of Dewey's (1938) concept of experience and reflective thought. The difference in the school of thought of these scholars is that Kolb (1984) focused on experiential learning while Dewey concentrated on experimental thought and

activity. In phonetics terms, they are close but also far apart in theory as well as in epistemology. According to Dewey (1938), reflective thoughts cannot take place without a troubling incident in the routine or in the ways someone does something (Miettinen, 2000). Experience comprises of the interactions that are taking place between learners and the environment they are in, including all the elements that are involved in the conversation and interactions.

Experiential learning, as a concept, characterises the kind of mental reductionism as Kolb (1984) understood it which had been considered a misinterpretation of the anti-dualist conception of experience by Dewey (1938). The confidence in a person's abilities and experience veers off the investigation of social and cultural states of learning which are fundamental to any thoughtful change and learning real-life learning experience from it.

Highlighting the gap in research, although Dewey's (1938) work presents a different perspective of experience and nature, it does not simplify it enough to implement it in the context of an educational institute.

In another literature review conducted by Healey & Jenkins (2000), it commends experiential learning theory for being well-developed, receiving careful analyses and some testing in the educational research community. It is a theory "whose central features are relatively easy to grasp and can be readily applied to an individual session by a teacher or to a degree programme taught by many" (Healey & Jenkins, 2000, p. 193).

Reflection and its role in learning and education have received significant attention by an educational researcher in the past three decades (Calderhead,

1989; Hatton & Smith, 1995; Kolb, 1984; Zeichner, Kenneth, 1987). However, it is argued that the concept of reflection in the context of learning and education has been “ill-defined” (Moon, 2004, p. 113) and “have been used rather loosely to embrace a wide range of concepts and strategies” (Hatton & Smith, 1995, p. 33). For this reason, different studies have conceptualisations of reflection that vary from each other (Kreber, 2004).

Concluding the discussion of behaviourist, cognitivist and constructivist learning, it is possible that people tend to change their behaviour in different settings and when they are around their role models in a social setting, they exhibit mimetic behaviour of their role models (Ramsay, 1993). Learning is also tied to reward, e.g., if an individual follows a process or plan and succeed in it, there will be a high likelihood of that person repeating that plan, which refers to experiential learning.

#### 2.3.5. Adult learning process

As the name indicates, adult learning theories are predominantly focused on the education of adult learners. Tusting & Barton (2003) suggests that adult learning theories emerged around 1970. They are distinguished with the elements of adult learning only and base their assumptions on the model of Piaget (1929) and the work of Vygotsky (1978). Adult learning suggests that adults learners learn differently than children (Jarvis, 1987). Adult learning theories emerged from the constructivist school of thought by suggesting that learners learn autonomously to grow their understanding and the motivation of learning is intrinsic (Knowles, 1984; Tusting & Barton, 2003). Tough (1971) suggests that adult learning is based on the social context of a learner and the autonomy learning is also influenced by the social environment. It also

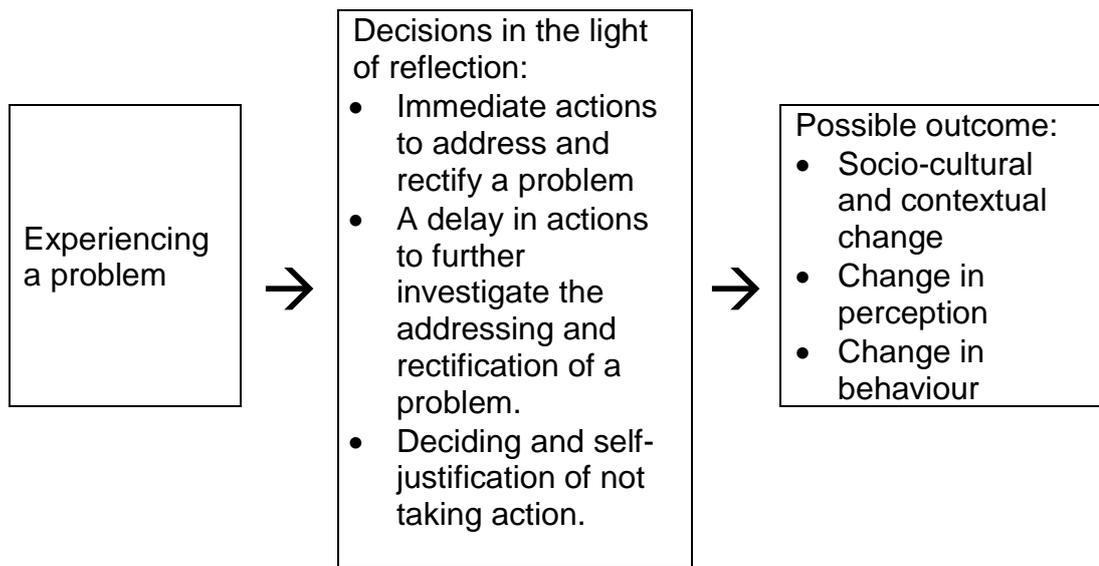
includes elements of reflection to encourage *learning how to learn* (Oakley, Sejnowski, & McConville, 2018; Smith, 1982).

Theory of incidental and informal learning looks into the learning elements in different settings and counts all settings as a learning resource, including inside a classroom and outside it (Coffield, 2000). This also includes constructs from the reflective and experiential learning, discussed above.

Not all scholars agree with the differentiation of adult learning from childhood learning. They argue that learning can be independent of age. However, socio-cultural contexts of the learner determine their understanding of a certain knowledge (Edwards, Hanson, & Raggatt, 1996). “Richer forms of analysis may lie in the specific examination of the characteristics of specific individuals and their contexts with regard to what they are learning, the setting in which they learn and the relationship with these peers and tutors with whom they learn” (Hanson, 1996, p. 99). Furthermore, Hanson (1996) suggests that several approaches should be incorporated to create a viable learning environment in which several personalities of learners are acknowledged and considered in several contexts.

According to Mumford (1995), learning occurs either incrementally or in the form of transformation. Argyris & Schön (1997) present a single and double loop model of learning. In a single loop, the learner learns from their mistakes by modifying their action to avoid future mistakes. This is an incremental process of behaviour adjustment, which is mostly effective in routine problems or issues (Argyris & Schön, 1997). In comparison, double loop learning is a process of self-awareness which allows a learner to investigate the underlying reasons for a problem or an issue. This helps in gaining and developing a

deeper understanding of the problem. The process in double loop learning is transformational in which the learner understands their own knowledge and ways to improve it (Argyris & Schön, 1997; Argyris, 2015; Pittaway & Thorpe, 2012). Transformational learning allows the learner to adjust or change their perspective on things when learning occurs (Mezirow, 1991). This might also include a change in their behaviour, lifestyles, or even their beliefs (Mezirow, 1991). According to Mezirow (1997), transformational learning often happens as a result of a crisis or sum of collective problems. Figure 1 below shows Mezirow's (1997) learning process:



*Figure 1. Transformation learning model of Mezirow's (1997)*

Transformative learning takes its root from the experiential model of Kolb (1984), where the experience of the learner helps in generating a meaning using critical reflection.

Another learning theory called self-regulated learning is presented by Zimmerman and Schunk (1989). In comparison to the Mezirow's (1997) concept of transformational learning, in self-regulated theory, there are three phases that occur before the reflection. They are; forethought, performance and volitional control (Zimmerman & Schunk, 1989, p. 2). Forethought is based on the beliefs that come before the learning to create a context for learning, performance is based on the process in which learning occurs, and volitional control is based on the reaction of the learner as a result of experience. Each phase has properties that can directly influence the learning and the learning process of the learner (Zimmerman & Schunk 1989).

Learning is based on the motivational stimuli of the learner, both intrinsic and extrinsic (Smith, 1982). Intrinsic factors are the internal motivational factors, whereas extrinsic are the external factors, such as reward or obligation. Motivation is also based on the desirability of the learner to do something or change behaviour, the perception of the difficulty of behaviour change and the attitude towards external and social subjective norms that influence the decisions and learning (Krueger, Reilly, & Carsrud, 2000). Learning is not the same for everyone, as each individual learns differently and at a different pace. Sometimes the motivations of individuals do not result in immediate actions and can take their pace to change accordingly

#### 2.3.6. Learning and education

In education, there are two paradigms of learning, one focuses on adult learning (andragogy), and the other focuses on learning of the children (pedagogy) (Tusting & Barton, 2003). Although the term andragogy had existed since 1833 when Alexander Kapp first used it (Loeng, 2017) it is not commonly used in the educational institutions, perhaps because the earlier university models were focused on the young and elite students with higher future perspective (Yoshimoto, Inenaga, & Yamada, 2007). In a pedagogical framework, pupils are often “young and/or immature” hence, the learning is teacher-focused, and the aims are socialisation and knowledge acquisition, rather than a learner-focused with aims of developing knowledge and skills rather than acquiring them. The role of educators is to support learning instead of teaching (Knowles, 1970; Yoshimoto et al., 2007, p. 80).

For Knowles (1984), it is the teaching approach rather than the age of the students that determines the choice between teacher-focused (pedagogy) or

learner-focused (andragogy) approach and is based on the maturity level of the students. However, research evaluating whether to use andragogy or pedagogy in higher education teaching of management and business-related courses lacks robustness (Noor, Harun, & Aris, 2012). Adult learners are more likely to respond based on internal intuition rather than external emphasis. Learning for adults is a voluntary process (Smith, 1982). Adult learners examine their context to see where specific knowledge they have acquired can apply (Brookfield, 2000) This is usually followed by a reflection on the knowledge and its application (Smith, 1982; Tusting & Barton, 2003). In comparison to this, a child learner is relying on the instructor/teacher to guide their learning around a specific topic or subject by somewhat disregarding the limited experience of the learner. Learning in this approach is not voluntary and is motivated by external influence and often rewards (Biggs & Tang, 2011). Brookfield (1994) suggested that andragogy is an ideal state of teaching and learning rather than a realistic one. Hanson (1996) argued that the two paradigms might be developing a false distinction as every learner learns individually regardless of how old they are.

More recently, a third paradigm known as heutagogy has surfaced, particularly in higher education (Canning & Callan, 2010; Stewart Hase, 2009; Stewart Hase & Kenyon, 2007). Heutagogy suggests the role of the instructor as a facilitator rather than supportive or directive (Ashton & Newman, 2006). In this paradigm, the focus of education is to develop capabilities such as the understanding of how to learn instead of a mere transfer of knowledge. This requires a higher level of self-efficacy in learners (Blaschke, 2012). Heutagogical education equips the learner with autonomy and prepares them

for a fast-moving and competitive global employment market (Ashton & Newman, 2006; Hase & Kenyon, 2000).

Although the majority of the learners in higher education are adult learners, the framework of education is based on all three; pedagogy, andragogy and heutagogy paradigms (Chametzky, 2018). However, over the last two decades, there is a fast-growing emphasis on student-led educational frameworks (Boud, Cohen, & Jane, 2014; Rowley, Fook, & Glazzard, 2018).

The aim of this research is not to suggest whether one paradigm is better than the other. However, a possible argument to highlight here is that for the teaching of entrepreneurship and entrepreneurial learning in higher education, an andragogical and heutagogical paradigm would be more appropriate to match with the constructivist nature of entrepreneurial learning where the learner is developing their own meaning of knowledge. A pedagogical transfer of knowledge and theoretical understanding of the subject should be a starting point.

#### 2.3.7. Learning measurements

Learning in itself is a complex process considering its individualistic nature. Educational establishments face a great challenge to evaluate the outcomes of learning. According to Biggs & Tang (2011), educational institutes adopt a sturdy positivist approach of evaluating learning by looking at 'success' of students, often in assessments, as an indication of a change in behaviour or development of a certain set of skills. Recently, an objectivist approach has been employed to evaluate the environment of higher education learning to measure student learning and the contribution of a university in that learning

(McGrath, Guerin, Harte, Frearson, & Manville, 2015). A study commissioned by the Higher Education Academy (HEA) of the UK, the Higher Education Funding Council of England (HEFCE) and The Department for Business, Energy and Industrial Strategy, evaluated the learning of students by conducting pre and post-academic year tests to see the change in performance, skills and knowledge of students as a result of a university course (McGrath et al., 2015).

As a result of that study, qualitative methods of evaluation of learning was proposed in which students can reflect on their learning during an interview or focus group. The concept of a reflective portfolio of learning was also recommended instead of a standardised method or pre and post-course evaluations. However, it was also argued that the small size of qualitative work or the variety of responses from the students could be difficult to analyse, especially when they are provided with freedom of expression choice to highlight their own perceptions (McGrath et al., 2015).

It is difficult to establish the correlation of teaching activities and the associated learning outcomes because of the complex and wide range of aspects involved and influencing the learning process (Boud, Keogh, & Walker, 1985; Jarvis, 1987). Research has shown that the correlation between what students believe they have learnt and what they have actually learnt is hard to evaluate and determine (Denis Charles Phillips & Soltis, 2009).

There is no one perfect approach to measure the learning as a learning process as it is not visible to the external observer and is often not something straightforward to show what someone has learned, how they learn it and where the learning comes from, hence, making it a challenging problem

(Honey & Mumford, 2006). Phillips & Soltis (2009) explains that it is also possible that the learner might not even realise the learning until the application of that learning occurs and sometimes even not then either because transferability of learning is influenced by several factors including the context and the teaching quality. This is recognised in this research; thus there is no attempt to measure the learning in this research but to evaluate the teachings of entrepreneurship based on the qualitative attribution highlighted by several groups involved in entrepreneurship education and entrepreneurial learning.

#### *Reflection, synthesis and gaps*

There are three main paradigms of learning that have been highlighted in the literature; behaviourism, cognitivism and constructivism. Behaviourism looks at learning as a process that influences a change in the behaviour of a learner, somewhat disregarding the individuality of a learner. Although the concept of learning in behaviourism has been evolving since the 1950s, with some consideration given to the individual elements, at the core of this paradigm, it still intends to control the learning behaviour and looks at the observable elements of learning. It was argued that behaviourism is a laboratory-controlled approach to learning which fails to capture several unobservable learning elements (Rogers, 1961).

Cognitivism, on the other hand, looks at the understanding of a learner. However, there are some boundaries to it and different learning theories under this paradigm can be substantially varied. Some of the common approaches in sub-constructs of the cognitive paradigm are that the focus of the learning should be on the *understanding* of a learner and might not influence any

behaviour change. Secondly, the level of complexity in the teaching should be aligned with the level of cognitive growth of a learner. Thirdly, the learning happens as a result of new knowledge processed based on the existing cognitive structures of a learner. In cognitivism, learning is constructed by a learner distinctly, based on the new and already existing knowledge.

Some elements of cognitivism, such as the work Vygotsky (1978) have created a foundation for the constructivist paradigm of learning. Constructivism believes that learner is autonomously responsible for their own learning and the reality is a construct based on the individual perception which is influenced by the social context of the learner. Constructivism has been criticised and called “powerful folktale about the origins of human knowledge” (Phillips, 2000, p. 1) because of its view of reality. However, Gergen (1999) defends constructivism by suggesting that it is not that constructivists disregard the reality it is merely that reality is influenced by the culture of the learner. The knowledge of language and visual perception of the learner are also a part of how a learner constructs reality and learning.

Adult learning theories are derived from the aforementioned learning paradigms. They are either incremental, where learning happens as a result of a development of already possessed information or transformative, where a learner adjusts or change their perception about the already possess information, behaviour or lifestyle.

Learning in education is divided mainly into two categories; andragogy or pedagogy. Andragogy looks at adult learning, whereas pedagogy looks at the learning of children. Although, learners in higher education are mostly adults, the learning approaches are not entirely andragogic.

Learning in education also requires some sort of assessment measures, it is recognised in the research that there is a gap between what student learn and what they believe they have learnt (Denis Charles Phillips & Soltis, 2009). Furthermore, the literature suggests that there is a lack of qualitative approaches which would be perfect for measuring learning.

## 2.4. Entrepreneurship in Education

Entrepreneurship education is not a new concept. It dates back to 1947 when Myles Mace developed the first course on entrepreneurship at Harvard Business School (Katz, 2003) followed by one taught by Peter Drucker in 1953 in New York University (Kirby, 2005). Since then, the number of entrepreneurship courses globally has increased exponentially (Charney & Libecap, 2000; Fretschner & Weber, 2013; Kuratko, 2005; Solomon, 2007). By 1991, entrepreneurship education had already spread widely and was still spreading. However, the concepts of entrepreneurship education continued to lack a strong foundation (Robinson & Haynes, 1991).

Entrepreneurship in education is often associated with 'Entrepreneurship Education' and 'Enterprise Education', and the terms are confusing and overlapping (Jones & Iredale, 2010). They both have two distinct educational practices and aims (QAA, 2012). It is therefore important to have a clear understanding and a working definition before starting a research project in any of these areas. There is a gap in the mainstream academic and policy literature lacking clarity in the definitions of Enterprise Education, Entrepreneurship Education and the difference between them. For example, the European Commission has two definitions of Entrepreneurship Education: "Entrepreneurship Education seeks to provide students with the knowledge, skills and motivation to encourage entrepreneurial success" (Europa.eu, 2006)." "Entrepreneurship education is about enabling young people to develop the mindset, skills and knowledge to generate creative ideas, and the entrepreneurial initiative to turn these ideas into action" (Europa.eu, 2016). One of the European Commission's definitions of Entrepreneurship Education

aligns with the UK government's definition, while others reflect the UK government's definition for Enterprise Education.

The reason for clearly differentiating the definitions here is to understand the confusions between the term and the designating their respective places followed by taking a stance for this research.

Quality Assurance Agency for Higher Education (QAA) defines entrepreneurship education as "equipping students with the additional attributes, knowledge, and capabilities required to apply these abilities in the context of setting up a new venture or business" (NAO, 2013, p. 15). This has been regarded as the sector definition by policymakers. The academic literature has a similar understanding about the topic, for example, Henry et al., (2005) and Jones & Iredale (2010) explain that entrepreneurship education is the process of teaching students the procedure of business start-up and new venture creation. Katz (2003) presents a model of entrepreneurship education, which involves 'courses focused on wealth creation' and 'courses focused on the creation of small businesses'. There is a recent shift in the definition from the QAA, the new definition of entrepreneurship education defines it as the "application of enterprise behaviours, attributes and competencies into the creation of cultural, social or economic value. This can, but does not exclusively, lead to venture creation" (QAA, 2018, p. 7). This makes entrepreneurship education not possible without enterprise education.

Several definitions of **enterprise education** can be found as well, both in academic and policy literature. In the policy literature, the Quality Assurance Agency for Higher Education of the United Kingdom (QAA) 2018 defines Enterprise Education as "the generation and application of ideas, which are

set within practical situations during a project or undertaking. This is a generic concept that can be applied across all areas of education and professional life” (QAA, 2018, p. 7). The Department of Education UK has its own definition which is very much similar to QAA’s definition; it suggests that Enterprise Education consists of three fields: enterprise capabilities, “(Enterprise capability is the ability to be innovative, to be creative, to take risks and to manage them, to have a can-do attitude and the drive to make ideas happen) supported by better financial capability (the ability to manage one’s own finances) and economic and business understanding (ability to understand the business context and make informed choices between alternative uses of scarce resources)” (DoE, 2013). In comparison, the Department of Business Innovation and Skills UK explains “Enterprise Education is the application of creative ideas and innovations to practical situations”. It involves creating a mindset and the necessary skills to respond to opportunities and can be applied to all disciplines of education.

In academic literature, Huddleson & Stanley (2011) also presented a similar definition to that of QAA’s definition of Enterprise Education. Gibb (1993) mentioned that Enterprise Education should have entrepreneurship as a starting point and Hytti & O’Gorman (2004) present a three-step objective-based guide of creating an enterprise education model:

1. Develop an understanding of entrepreneurship and its role in 'modern economic society'.
2. Developing an atmosphere where learners are responsible for their own learning.
3. Learning about entrepreneurship 'by learning how to start a business'.

The researcher here argues that enterprise education is about a set of skills that are required to set up a venture, which is the aim of entrepreneurship education according to some definition. Entrepreneurship education cannot be fulfilled without the skills gathered from enterprise education. To avoid getting trapped into the definitional war between entrepreneurship education and enterprise education, the researcher has used entrepreneurship education as an umbrella term to cover both; entrepreneurship and enterprise education.

#### 2.4.1. Entrepreneurship education

In recent years, entrepreneurship education has received growing attention because of the government policies recognising its value for economic development (O'Connor, 2013).

Many higher education institutions are looking into entrepreneurship, and over the years there has been substantial growth in the number of entrepreneurship courses (Kuratko, 1995). Graduates of entrepreneurship courses start new companies or launch corporate ventures at a much higher rate than that of non-entrepreneurship courses. (McMullan & Gillin, 1998). Entrepreneurship education becomes incredibly important considering the high scale at which the economic and technological circumstances are changing and a large number of businesses are moving towards globalisation (Neck & Greene, 2011). Kuratko (2005, p. 577) also highlight that entrepreneurship is the “the most potent economic force the world has ever experienced” and suggests that the increase in entrepreneurship education courses is a result of “entrepreneurial revolution”, especially the rise of the number of SMEs.

According to the chronological study of Katz (2003) on entrepreneurship education, in America, the academic field of entrepreneurship education has reached maturity with some future challenges such as shortage of academics to execute the growing need of entrepreneurship courses. He further concluded that the growth of entrepreneurship education would take the discipline out of the business schools and will also out of America into different countries. According to Klandt (2004), there is a rise in the number of institutions in German-speaking Europe to develop entrepreneurship as a discipline in education. They also called for an approach of entrepreneurship education which is interdisciplinary. A report commissioned for the European Commission in which 3000 higher education institutions in the European Union were surveyed to see the integration of entrepreneurship education concluded that, at the time of the survey the condition of entrepreneurial learning in the European Union was “worrisome” (NIRAS, 2008, p. 3). According to their report, over half of the students studying at a higher education institution in the European Union did not have access to entrepreneurship education and it remains limited to the students and staff in business schools or multidisciplinary institutions that have a business school incorporated in them (NIRAS, 2008).

Though entrepreneurship education is on the rise globally, there are concerns regarding its quality and capability of the courses in preparing the students for this complex discipline of education (Gibb, 2002; Gibb, 2005; Neck & Greene, 2011). According to Katz (2008), there is some research on the contents of entrepreneurship education. However, the pedagogical understanding in this area still lacks strong insights. The earlier focus of entrepreneurship education

was on the development of business plans instead of entrepreneurial learning, which should not be the case (Ronstadt, 1987), although, the business plan approach has been criticised because of its inflexible limitations (Honig, 2004), entrepreneurship education is still widely based on this approach (Carrier, 2007; Nabi, Walmsley, Liñán, Akhtar, & Neame, 2018; Solomon, Duffy, & Tarabishy, 2002). In an extensive systematic literature review on the impact on entrepreneurship education Nabi et al., (2017) suggested that courses focused on business plan writing have a negative influence on entrepreneurial behaviours. Although the business planning approach is still the widespread model for teaching entrepreneurship, there is research that indicates the cases where a shift from the traditional methodology can be observed and a move towards case studies of entrepreneurs and guest entrepreneur speakers is coming into practice as well as knowledge sharing approaches (Piperopoulos & Dimov, 2015; Solomon, 2007). Several researchers in the field are still calling for more innovative frameworks that can capture the complex components of entrepreneurship in entrepreneurship education (Binks, Starkey, & Mahon, 2006; Gibb & Haskins, 2013; Gibb, 2002; Jones & Iredale, 2010; Nabi et al., 2017; Yu, 2013).

Plaschka & Welsch (1990) stated that entrepreneurship education courses are a taking place on a trial and error basis by gathering feedback about the negative aspects or deficiencies of the courses. They suggested that instead of this approach, entrepreneurship education courses should be based on experiential pedagogies. Experiential pedagogies can help students develop their entrepreneurial intention and learning.

Recently, a longitudinal, mixed-method study by Nabi, Walmsley, Liñán, Akhtar, & Neame (2018, p. 463) report some interesting findings. Their research shows that the students who were involved in entrepreneurship education show a higher degree of entrepreneurial learning and inspiration. However, “the average change in entrepreneurial intentions from the beginning to the end of the year is not significantly different between entrepreneurship education and non-entrepreneurship education participants”. Results of their qualitative findings presented an even more surprising element, entrepreneurship education in participants with stronger intention, enhanced their entrepreneurial learning experience. However, with participants that had lower intentions to begin with, “entrepreneurial intent decreases because of the development of a more realistic and practical perspective on entrepreneurship” (Nabi et al., 2018, p. 463). This study also concurs with the results of Oosterbeek, Van Praag, & Ijsselstein (2010) that suggested where there is a low intention, entrepreneurship education purely act as developmental, proves to highlight the challenges and complexities of starting up a business.

Rasmussen & Sørheim (2006) suggested that entrepreneurship education should be established on an action learning model. Blenker, Dreisler, Faergeman & Kjeldsen (2006) also suggested the entrepreneurship education should involve educating for entrepreneurship rather than education about entrepreneurship.

Nabi & Liñán (2013) highlighted yet another perspective on the students' entrepreneurial intentions, they have suggested that the possibility of a

venture failure invokes fear in students which can lead to students avoiding entrepreneurship after an entrepreneurship education course.

It is now widely recognised that in order to make a positive contribution to the economy, greater attention needs to be paid towards entrepreneurship teaching and learning. However, as the above discussion shows entrepreneurship education is an experiential process (Pittaway & Cope, 2007) which cannot be taught by generic teaching methods and requires new ways of teaching and learning (Dwerryhouse, 2001). The learning of entrepreneurship requires the alertness to spot an opportunity and act on exploiting it (Ronstadt, 1988; Shane & Venkataraman, 2000). This cannot be done using traditional teaching and learning practices at every opportunity have a unique requirement to be exploited. Further, the entrepreneurial learning process does not stop there. It also requires the acquisition of the ability to overcome the hurdles that come with starting up a venture in a new industry and/or market. As in most cases, it has never been done before, the newness of the idea brings in a diverse set of challenges (Shepherd, Douglas, & Shanley, 2000). To teach entrepreneurship, it is important to highlight and address the challenges and shortcomings of entrepreneurship in the context of teaching and learning.

#### 2.4.2. Challenges in Entrepreneurship education

Hannon (2005, p. 305) notes “the role of the entrepreneurial educator in Higher Education is conceptually and pedagogically challenging”. Entrepreneurship education is a complex phenomenon as entrepreneurship itself. If assuming the entrepreneurship is “recognized as enacting a future” (Anderson, 2005, p. 592) then teaching of entrepreneurship require skills that students can learn

to predict or create that future. This is even bigger of a challenge if work of Gibb (2005) is followed that suggests the uncertainty and complexity of the future where he demands entrepreneurial behaviour to be incorporated at all levels. In addition to that there is also a push from the Governments as well to incorporate an entrepreneurial culture within the educational curriculum and in a wider business context (Europa.eu, 2016; Nabi et al., 2018; Walport, 2016).

Although the discipline of entrepreneurship education has been around for over half a century, the issue whether entrepreneurship can be taught at all continues to be raised (Fiet, 2001; Henry et al., 2005; Ronstadt, 1987). The common consensus on this now is that it is possible to teach entrepreneurship. However, because of its uniqueness and complexity, it would be hard to do so (Kuratko, 2005). This is consistent with the views of Gibb (2002) and Pittaway & Cope (2007a) among others.

The challenges to and for entrepreneurship education are more than just a challenge for one academic discipline. Entrepreneurship education is “a science of business management to the necessarily imprecise notions of creativity” (Jack & Anderson, 2008, p. 263). Kirby (2006) suggests that it is difficult for universities to be entrepreneurial because it is not something which they have traditionally done.

Entrepreneurship cannot be taught like other subjects in which a certain skill or behaviour is taught to be replicated, like science, technology, engineering and mathematics (STEM) subjects (Chorev & Anderson, 2006) because at the core of entrepreneurship it is the uniqueness of the context and an innovative idea for an opportunity. The complexity of entrepreneurship needs more than mere knowledge transfer, it requires the transfer, building and development of

skills, attributes, behaviours and mindset, and all of it needs to be created in a social context to mimic the learning of entrepreneurs.

Skills such as critical thinking, problem-solving, creativity, communication and innovation are important for entrepreneurship and need to be incorporated in entrepreneurship education (Boyles, 2012). However, these skills are not easy to impart and assess. Traditional assessment methods do not allow the evaluation of entrepreneurial skills and learning as they are inflexible and provide a limited room for exploration of undefined elements which are a big part of entrepreneurship education (Tosey, 2002). Skills can be seen as a practice which, according to Wenger (2000), participants develop over time. As suggested by Harlen (2007) and Anderson (2005) in the light of the need to develop such skills, it is argued here that because of the complexity involved in entrepreneurship the assessment of this discipline would require some rethinking and development of novel assessment methods.

There is some argument in the literature that entrepreneurship education can benefit by self-assessment and peer-assessment techniques, as these methods are effective in measuring and supporting the development of knowledge at individual and group level within students (Lee, Chan, & Van Aalst, 2006).

Challenges in entrepreneurship education are inseparable from the entrepreneurial learning which is widely argued as a social and experiential process (Fletcher, 2006b; Gibb, 2002; Jack, Dodd, & Anderson, 2004; Löbler, 2006; Rae, 2006; Wang & Chugh, 2014).

### 2.4.3. Entrepreneurial learning- A theoretical background

Entrepreneurial learning is a process of knowledge exchange as well as decision making based on the prior knowledge and experience of an entrepreneur within a context (Cope, 2011; Morris, Kuratko, & Covin, 2011; Pittaway & Cope, 2007a, 2007b; Pittaway & Thorpe, 2012; Politis, 2005).

The argument presented in this section supports the claim that entrepreneurial learning is closely tied to social learning and experiential learning. These are the theories, that will be the focus of the research.

Entrepreneurial learning is still a new topic and there is a debate about whether it is the same as the learning process of small business owners or something totally different. This debate started in the 1990s and several authors contributed to it, such as Jason Cope, Luke Pittaway and Alan Gibb. Gibb (1997) elaborated that the knowledge of how SME owners learn is very limited. Cope & Watts (2000) agreed with Gibb (1997) by explaining that there is a very limited understanding of how entrepreneurs learn and the discipline of entrepreneurship does not possess a relevant conceptual framework of entrepreneurial learning. They presented the first conceptual framework of entrepreneurial learning which was later illustrated by Pittaway & Thorpe (2012, p. 844)(see Appendix E). Critical incidents (crisis) change the perception and awareness of an entrepreneur, which are the key to stimulate an entrepreneur for doing something. This also expedites the process of learning about the context as well as developing self-awareness. Hence, it is often considered to be vital moments within the process of change. This was also supported by Boussouara & Deakins (1999), Danny (2017), Minniti &

Bygrave (2001), Morris et al., (2011), Politis (2005), Pittaway & Cope (2007b), Cope (2011) and Pittaway & Thorpe (2012).

Cope & Watts (2000, p. 116) attempt to address the questions – “how can entrepreneurial support programmes help to smoothen the transitional process of growth and help an entrepreneur to move through different stages of business life-cycle, more specifically, what sorts of assistance can be provided to overcome the critical incidents by learning from their social networks.”

Cope (2003) conducted a case study to explore how entrepreneurs learn and provided evidence that *non-routine* events play a critical role in the learning process of entrepreneurs. This research was used to base the second stage of Cope’s (2003) conceptual framework of entrepreneurial learning (see Appendix E). His findings also suggested that *network interactions* among entrepreneurs within their social surrounding can be a stimulant of ‘reflection and learning’ for entrepreneurs. The role of the social dimension in entrepreneurial learning was also emphasised by Cope (Cope, 2005) later in a literature review suggesting that to create an entrepreneurial learning atmosphere the entrepreneur needs to learn from their ‘key network agents’ i.e. stakeholders.

Pittaway & Cope (2007b) conducted qualitative research based on student reflections at both individual and group levels. They found that entrepreneurial learning environment results when students have the freedom and responsibility of taking actions, decision making and actually do something. This results in students learning from their experience rather than being taught what to do. In simulating the social dimension of entrepreneurial learning,

creating a work context in which students learn from one another and themselves is very significant. This study suggests that it is very much possible to create a learning environment which can mimic how entrepreneurs learn in real life. This highlights “the social, emotional and experiential nature of entrepreneurial learning” which helps in being an effective method for developing entrepreneurial skills (Pittaway & Cope, 2007b, p. 230). Action learning can also provide an opportunity for students to learn from peers. This was also highlighted by Politis (2005, p. 415). Her literature review focussed at the individual level revealed that “the role of experience is highlighted as central as it provides entrepreneurs with the possibility to improve their ability to discover and exploit entrepreneurial opportunities and to learn how to overcome traditional obstacles when organising and managing new ventures”. A research gap identified by Politis (2005, p. 416) highlights “the role of social relations and the embedding of learning techniques that can develop the adoption of new ideas and technologies and empower innovation in new and small ventures.”

In a systematic literature review carried out by Pittaway & Cope (2007a, p. 501) at the organisational level, it was found that “within the definition of entrepreneurship education, the focus was principally on higher education rather than on educating entrepreneurs”. Their findings support that entrepreneurship education has had an impact on student inclination and intention towards starting up a venture. This study “illustrated the role of institutional strategies, infrastructure, people and relationships,” as the key components that can influence the levels of ‘success’ when developing a framework of entrepreneurship education. There are concerns for

policymakers too. It was suggested that the evidence which policymakers use to design policies are not substantial and the research that they use to base their understanding on is often conducted in isolation from other key streams of learning i.e. management learning, higher education policy, graduate employment and labour market. Highlighting the research gaps, Pittaway & Cope (2007a, p. 501) suggest that “entrepreneurial learning research so far has focused on applying existing theories in the entrepreneurial context” whereas entrepreneurial learning is a relatively new field and requires a new theoretical framework based on empirical research.

Cope (2011) found that entrepreneurs are a part of a complex social network and they use these networks to get advice, support as well as assistance. He also highlights that understanding about the relationships of entrepreneurs is a key to understand features of entrepreneurial learning and further research is required to appreciate the social dimension of entrepreneurs.

Work of Byrne & Toutain (2014) revealed that the operational definition of enterprise and entrepreneurship vary considerably between higher education institutions (as discussed in the previous sections). Research in the area of entrepreneurship education lacks legitimacy and sufficient theorising. Classifications of entrepreneurship education and training do exist, but they are obsolete and do not form as a result of conceptual and empirical research. Entrepreneurship education programmes should be based on a clear conception of entrepreneurship. Education in entrepreneurship should enhance an individual’s cognitive ability to recognise and assess entrepreneurial opportunities. It should also affect their cultural attitudes and behavioural dispositions. Educators should accumulate knowledge about the

psychological attributes, the background and the socio-contextual elements of the students.

Byrne & Toutain (2014) elaborates that there is no research focusing on ontological and epistemological issues in entrepreneurship education. The idea that individuals should engage in the subjective perception of opportunity does not seem to have found its way into entrepreneurship education research despite its strong implication for the learning process. Researchers need to collaborate with educators and policymakers to identify the most useful research issues; educators need to strongly interact with learners to improve the course design and policymakers need to collaborate with researchers and educators to understand the extent of each stakeholder's needs.

Politis, Winborg, Dahlstrand, & Dahlstrand (2012) propose that student entrepreneurs in higher education have a distinct method for thinking in connection to their procurement and utilisation of resources and assets when contrasted with entrepreneurs starting firms independent of an educational establishment. These findings confirm that a context plays a big role in shaping behaviours in such a way that when people are working in a similar environment and context, they lose their individuality and adopt each other's behaviours. Students who have been on an entrepreneurship course or have been involved in a business incubator behave and exhibit a certain pattern of understanding regarding the acquisition and deployment of resources while starting up a venture. This also suggests that students who have been involved in entrepreneurial activities while being at a university are more likely to come up with innovative solutions rather than having a traditional need of financially incentive future. In this regard, entrepreneurship programmes develop

networking as well as creative and 'thinking outside the box' skills. However, the biggest limitation of Politis et al.'s (2012) research was that the data comprises the participants from Sweden only. There is a possibility that entrepreneurial behaviour may be different in other countries, thus limiting the generalisability of their research to a geographically wider entrepreneurial context.

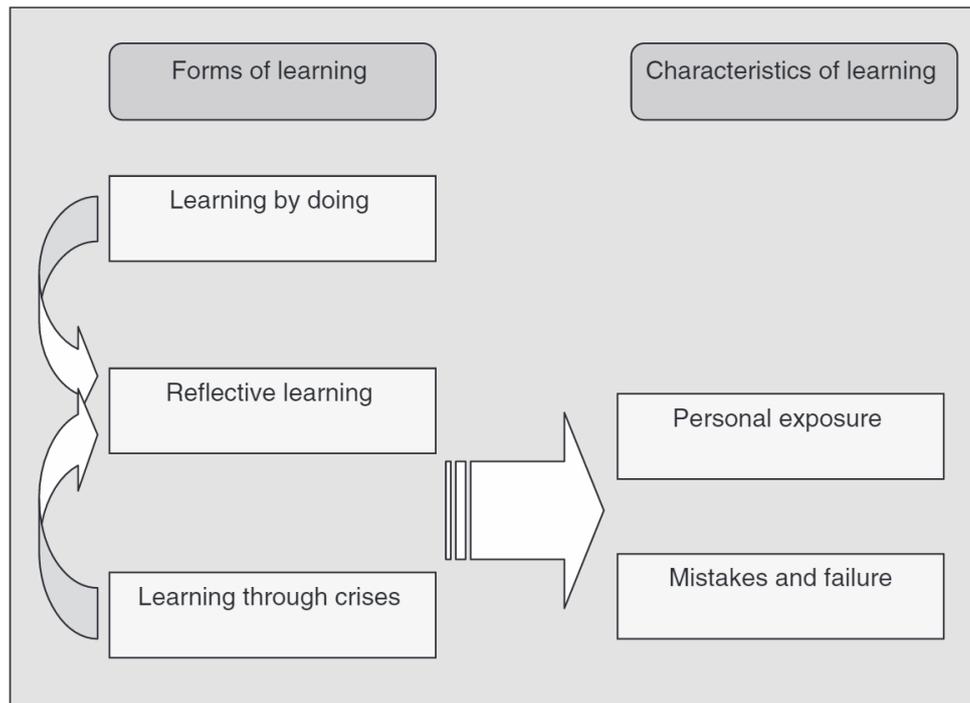
### *Cope's framework of entrepreneurial learning*

Taking the work of Jason Cope forward, Pittaway & Thorpe (2012) developed a conceptual framework based on two of Jason Cope's conceptual frameworks of entrepreneurial learning. "Cope's work, while not a theory, is a useful conceptual framework that contributes to the understanding of entrepreneurial learning. It draws on a range of concepts relating to learning that together offer real insight into how entrepreneurs may learn" (Pittaway & Thorpe, 2012, p. 856). Pittaway & Thorpe (2012, p. 856) further suggested that researchers can use Cope's proposed conceptual framework to further "explore how entrepreneurship education can be more effectively developed". This can help the educator to develop programmes which are suitable for entrepreneurs. Moreover, their framework provides indicates the influence of social reality in entrepreneurial learning, which provides a foundation for this research.

### *Cope's 1<sup>st</sup> framework*

Huber (1991) influenced Cope's first framework (Figure 2 below) of learning which provided an insight into the forms of learning and the characteristics it possesses to reflect elements of entrepreneurial learning (Cope & Watts, 2000). It was recognised in Cope's work that change in cognitive function does

not always lead to a change in behaviour. However, reflective learning and cognitive change can happen simultaneously, where a person would reflect on their experience and as a result of that reflection there would be a change cognitive function. Although the framework itself was not of entrepreneurial learning specifically, it resulted in several observations made for entrepreneurial learning (Pittaway & Thorpe, 2012) because of a similar process. For example, entrepreneurs develop their ideas which is a continuous process of 'learning by doing' and this would have an effect on their consciousness over time (Marsick & Watkins, 1990). Another element of their framework was the aspect of 'learning through crisis' or critical incidents. According to Cope & Watts (2000), critical incidents can occur over prolong period of time and they can have a significant impact on the emotions and perceptions of an entrepreneur. This was helpful for researchers in the field and is still used as a base framework for further research. However, this provides little support for the educators to develop courses as it was based on reflective learning as a result of learning by doing and learning through a crisis. Both elements of this framework are rather difficult to mimic in a classroom setting and are not explicitly for entrepreneurs.



*Figure 2. Cope's 1st conceptual framework of learning. Source: Cope & Watts (2000), illustrated by Pittaway & Thrope (2012)*

### Cope's 2<sup>nd</sup> framework

Cope's second framework (Figure 3 below) was a development of the first one and added some more value and sophistication (Cope, 2003). However, it did not resolve the concern of the first one. This second framework distinguish learning by doing aspects with critical incidents by adding situated learning into the process which gave the subject area a new direction. Cope's (2003) work here reinforce the experiential learning elements as a central point for entrepreneurial learning. In this framework as well, the importance of the critical incidents, his work highlights that these events play a much larger part in the learning process of an entrepreneur than routine experiences. Cope builds on his previous work and present arguments on the "role that 'personal exposure', emotional exposure, financial exposure and social risk play in

entrepreneurial learning” (Pittaway & Thorpe, 2012, p. 845). According to Cope (2003), when a business is not doing well, it would have an impact on the personal and financial situations of an entrepreneur. Similarly if an entrepreneur is facing immense personal problems it would also have an impact on his venture (Pittaway & Thorpe, 2012). In this second framework, there is also mention of a higher level of learning, which happens when an entrepreneur goes through specific intermittent events. While highlighting lower and higher levels of learning, Cope (2003, 435) suggests that “learning levels are often presented in discrete, dichotomous terms, it is important to remember that they are actually parts of a continuum”. According to Cope (2003), differentiating forms of learning is difficult because of the richness of learning experiences during intermittent events, they both result in the learning happening at organisational as well as personal levels. Although it is a more developed version of the framework with several new insights, its elements that are making the framework more complex resulting in it to be applicable in certain cases of learning experiences rather than a holistic framework for entrepreneurial learning.

Situated learning aspects in entrepreneurial learning has been highlighted by other scholars in the field as well. Pittaway & Cope (2007b) and Pittaway, Gazzard, Shore & Williamson (2015) encouraged entrepreneurship educators to develop teaching which incorporates situated learning.

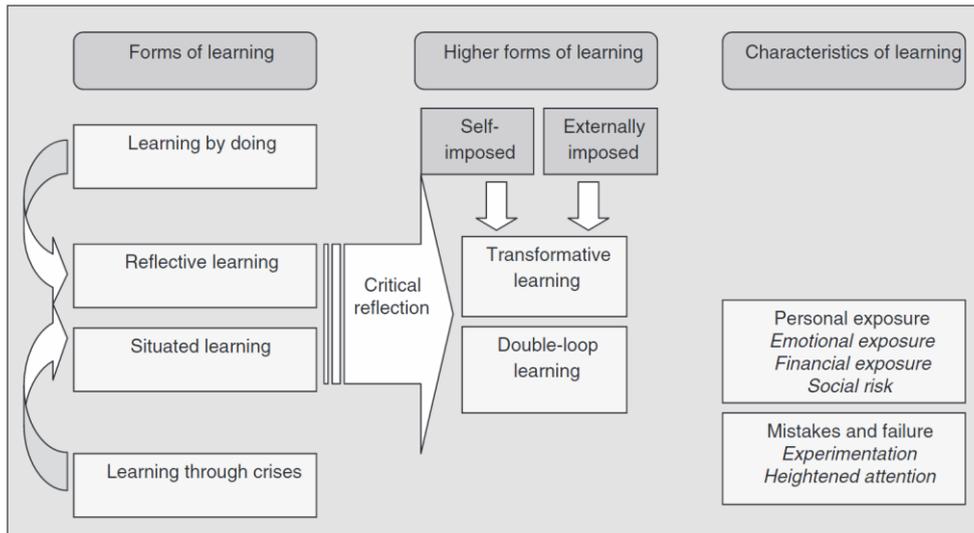


Figure 3. Cope's 2nd conceptual framework of learning Source: Cope (2003), illustrated by Pittaway & Thorpe (2012).

### Cope's 3<sup>rd</sup> framework

Using the Cope's (2005) work, Pittaway & Thorpe (2012) illustrated a very comprehensive conceptual framework (Figure 4 below) of entrepreneurial learning as a tribute to Cope. Where on the one hand this framework adds on all the possible learning approaches and scenarios, it makes the work as much complicated to understand. This framework is based on the previous two frameworks mentioned above but adds factors such as pre and post-start-up learning, stock of experiences, levels of reflection, additional forms and characteristics of learning and learning tasks.

Cope (2005) reinforce the importance of emotional situations in the learning process. There is also an addition of the generative learning which is in two forms; proactive and reactive learning. According to Cope (2005) this happens when entrepreneurs change their future actions as a result of a reflection on their actions.

The most crucial aspects of Cope's 3<sup>rd</sup> framework for this thesis is his acknowledgement of the role of the social and contextual element, which were not robustly discussed before. Cope (2005, p. 388) agrees with Fox (1997) that learning is "located within certain situations and contexts" and with Burgoyne, (1995) and Pavlica, Holman, & Thorpe (1998) that "learning is an intrinsically social process". Furthermore, his research suggests that social relations and contexts can result in several types of conflicts which can then lead to a higher level of entrepreneurial learning. Pittaway & Thorpe (2012) mention that the contexts are dynamic for entrepreneurs, hence, it is difficult to look at entrepreneurial learning from a contextual point of view.

The interpretation of this framework and using it to develop the field of entrepreneurial learning poses a challenge due to the lack of uniformity in the research streams that it includes, as researchers can choose elements of the model related to their work and leaving the rest. It is very difficult if not impossible to apply the whole framework on myriad entrepreneurial learning scenarios. Furthermore, all these frameworks are only focused on entrepreneurial learning and have no provision for the teaching of entrepreneurship. This thesis builds on these arguments by developing of a more simplified version of an entrepreneurial learning framework which can help, both, teaching and research of entrepreneurship and understanding of how entrepreneurs learn to address entrepreneurship education.

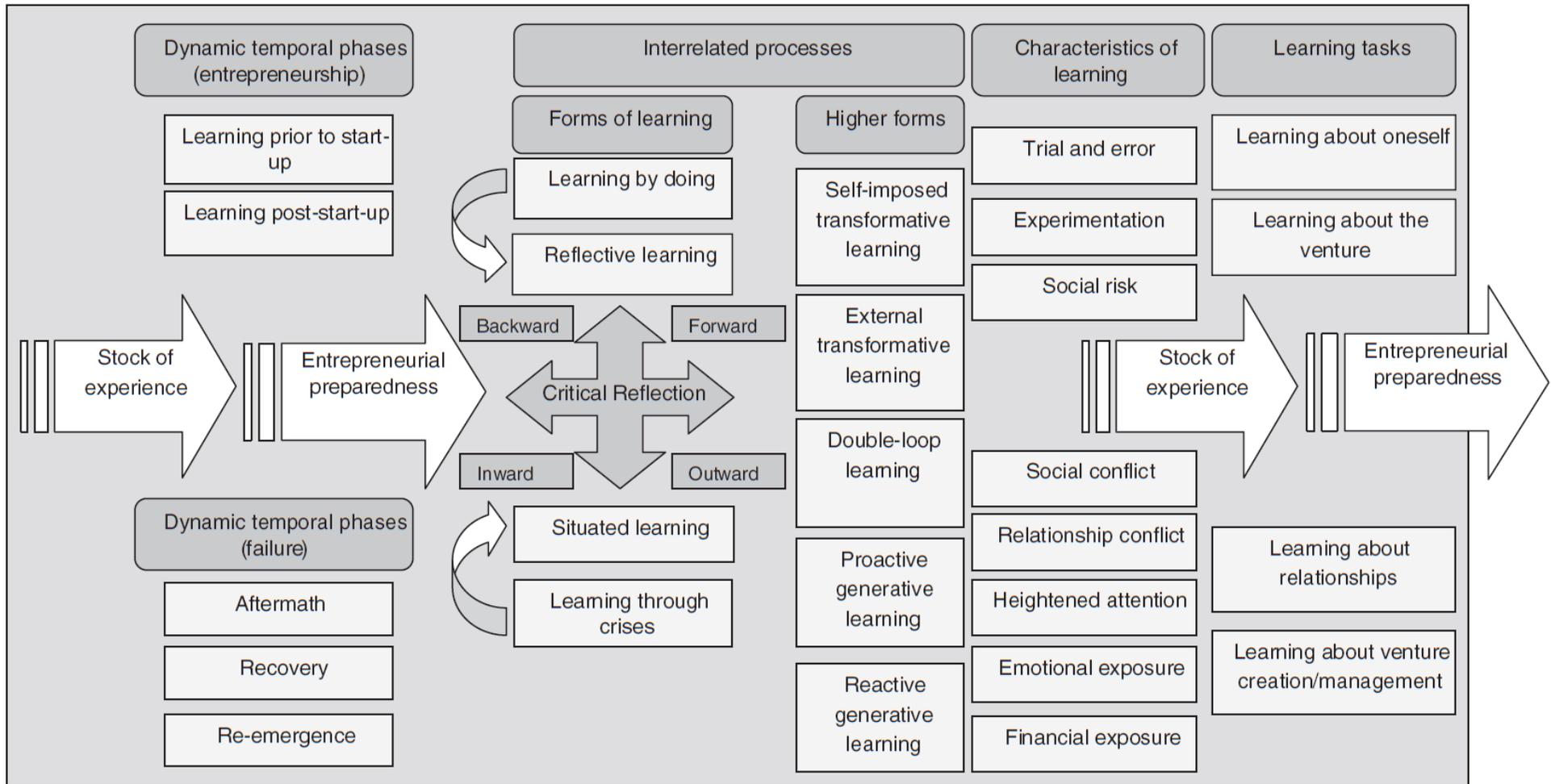


Figure 4. Cope's 3rd conceptual framework of entrepreneurial learning. Source: Pittaway and Thorpe (2012)

### *Reflection, synthesis and gaps*

Entrepreneurship in education is not a new concept. The first entrepreneurial course appeared in 1947. Enterprise education (skill-based) or entrepreneurship education (start-up focused) are often the terms associated with it. However, they sometimes create confusion for the purpose of this research the term entrepreneurship education is used to cover, both, enterprise and entrepreneurship education.

A European Union commissioned report suggests that the level of entrepreneurial learning in entrepreneurship education 'worrisome' indicating that entrepreneurship education does not reflect entrepreneurial learning. An aim for this thesis is to make an attempt of aligning both.

Entrepreneurship education is on the rise everywhere in the world. However, the quality of it has been questioned by several authors (Gibb, 2002; Gibb, 2005; Neck & Greene, 2011), regarding entrepreneurship education preparing students for the complexities of entrepreneurship.

Traditionally, entrepreneurship education involved the development of a business plan, this approach has been criticised in the literature because of the inflexible elements (Honig, 2004). However, it is still the most used approach in entrepreneurship education (Carrier, 2007; Nabi, Walmsley, Liñán, Akhtar, & Neame, 2018; Solomon, Duffy, & Tarabishy, 2002). To an extent, this approach is having a negative impact on the development of entrepreneurial behaviours among students (Nabi et al., 2017).

As previously mentioned, entrepreneurship is a complex and dynamic process which results in the emergence of several challenges for entrepreneurship

education. Work of Chorev & Anderson (2006) highlights that teaching of entrepreneurship is different from other subject and require innovative methods of teaching.

It is argued that entrepreneurship education needs to reflect entrepreneurial learning. Cope & Watts (2000) developed the first conceptual framework for entrepreneurial learning. Since then there has been a considerable amount of research on the topic to evaluate the learning process of entrepreneurs.

Social dimension plays an important role in entrepreneurial learning, entrepreneurs use these networks to learn and gather resources as well as they rely on them for support. Pittaway & Thorpe's (2012) conceptual framework of entrepreneurial learning, which is based on Cope & Watts' (2000) work also ties the social elements with entrepreneurial learning.

There has been a clear indication in the literature to further develop approaches in entrepreneurship education that are based on entrepreneurial learning as well as frameworks that incorporate and capture social contexts in the entrepreneurial process for the students.

## 2.5. Networks

The word network is defined as “a group of unspecified relationships among entities of which nature itself is undetermined” (Callon, 1993, p. 263). Networks in a social context are divided mainly into two main types; ego-centric, socio-centric.

"In the social network parlance, the person we are interested in is referred to as the 'ego' and the people referred to by the 'ego' as his affiliate, advisor, friend, or relative, are known as 'alters'." (Chung, Hossain, & Davis, 2005, p. 3)

“Ego-centric networks are these that are connected with a single node or individual” (Kadushin, 2012, p. 17). For example, people sending emails using certain service e.g. Gmail, so in this case, Gmail is the node that is connecting two or more people and acting as a gatekeeper and is an 'ego' whereas other people involved in the networks are known as 'alters'. The egocentric network can involve two or more people but everyone in that network has to be connected through one single node.

A socio-centric network “focuses on 'closed' networks implying that the boundaries of a whole network are a priori defined” and every agent/node of that network are linked to one another (Chung et al., 2005, p. 3). An example of such a network can be organisational networks rather than networks of individual agents (Johannisson, 1998).

Actor-network theory, however, involves all actors in a network living and non-living, whereas, this research will look into human participants in the networks

and their learning (Latour, 1987) which can be influenced by other non-human actors.

### 2.5.1. Actor-network theory

The actor-network theory emerged from the discipline of sociology to understand how, both, social and material (non-living) elements together play a role in the development of knowledge (Rydin, 2013). Fox (2005) suggests that actor-network theory helps in the context of higher education learning because it not only examines the human dependences but also examines things like technology. Law (1992, p. 381) suggests that society is not comprised of only people and the word “social isn’t simply human”. An actor-network “is simultaneously an actor whose activity is networking heterogeneous elements and a network that is able to redefine and transform what it is made of” (Callon, 1987, p. 93). According to Law (1992), actor-network theory helps to look at society, machines and organisations, all generated in a pattern of diverse material that is more than just human beings.

An actor-network is something that is formed by the process of translation, which means converting the social and technical elements into the actors of a network (Law, 1992). The translation process has also been acknowledged in the learning process within the higher education domain (Fox, 2005). This provides a foundation for using actor-network theory to address the challenges of teaching and learning within entrepreneurship education. The translation process is not focused on the reason of networks existence but instead how the infrastructure has been designed within an actor-network (Law, 1992). Callon & Latour (1981, p. 279) suggest that “by translation we understand all the negotiations, intrigues, calculations, acts of persuasion and violence

thanks to which an actor or force takes, or causes to be conferred to itself, authority to speak or act on behalf of another actor or force.”

Callon (1986) presents a process of translation which happens between the actors based on four steps; problematization, interessement, enrolment and ally mobilisation.

1. Problematization

In this step, a problem is acknowledged or recognised, at which point, the primary actor of the network defines the interests of other members of the network whose interests are in alignment with their own.

2. Interessement

In this stage, all the actors with similar interest show their willingness to participate. This is followed by the role assignment which locks the actors in their assigned roles.

3. Enrolment

In this stage, the role of a primary actor is fully aligned with the roles of the interested actors. Law (1996) suggests that the actors and their nodes in a network are not something that last and maintains themselves automatically, this requires constant effort by the actors in a network.

4. Ally mobilisation

In this final stage, the primary actor mobilises the passive actors of the network to work towards the problem.

Role of social networks has been long recognised in the learning, more specifically in the entrepreneurial learning domain Cope (Cope, 2005; Luke

Pittaway & Thorpe, 2012). However, it is often neglected in formal entrepreneurship education.

### 2.5.2. Social networks

“Social networks have been at the core of human society since we were hunters and gatherers” (Kadushin, 2012, p. 3). Social networks and public interaction has been highlighted as the potential driver of social and financial growth because of “powerful effects on health, happiness, educational success, economic success, public safety, and especially child welfare” (Putnam, 2015, p. 207)

As Granovetter (1985) outlined, social networks are not a fixed entity but can be utilised if and when a need occurs. He further explained that social interactions play an important role in economic and political change.

It was pointed out that studying the network form of governance can provide insight into a firm’s growth (Larson, 1992). However, in the work of Adams (1967) it is summarised that the utility of a theory of social network attraction or primary relationships may be extended in several directions. Firstly, conditions and indicators require further examination. There is the need to specify the conditions for the growth of positive concern beyond Berkowitz & Daniels’ (1964) notion of ‘past help’. Childhood companionship, gratitude for the help, sharing in the same life crises, family name and experience: these and other factors have been identified to be instrumental possibly in developing feelings of positive concern in interpersonal relations.

A second extension relates to the introduction of sex, social class, and other variables resulting in possible differences in social relationship components. A

third extension of the empirical exploration of consensus, positive concern, and attraction as indices of primariness would be cross-cultural. A fourth extension of the theory of attraction in the social network would be other substantive areas where it could increase understanding of a certain phenomenon. An example would be the study of immigrant assimilation into a new and dominant society.

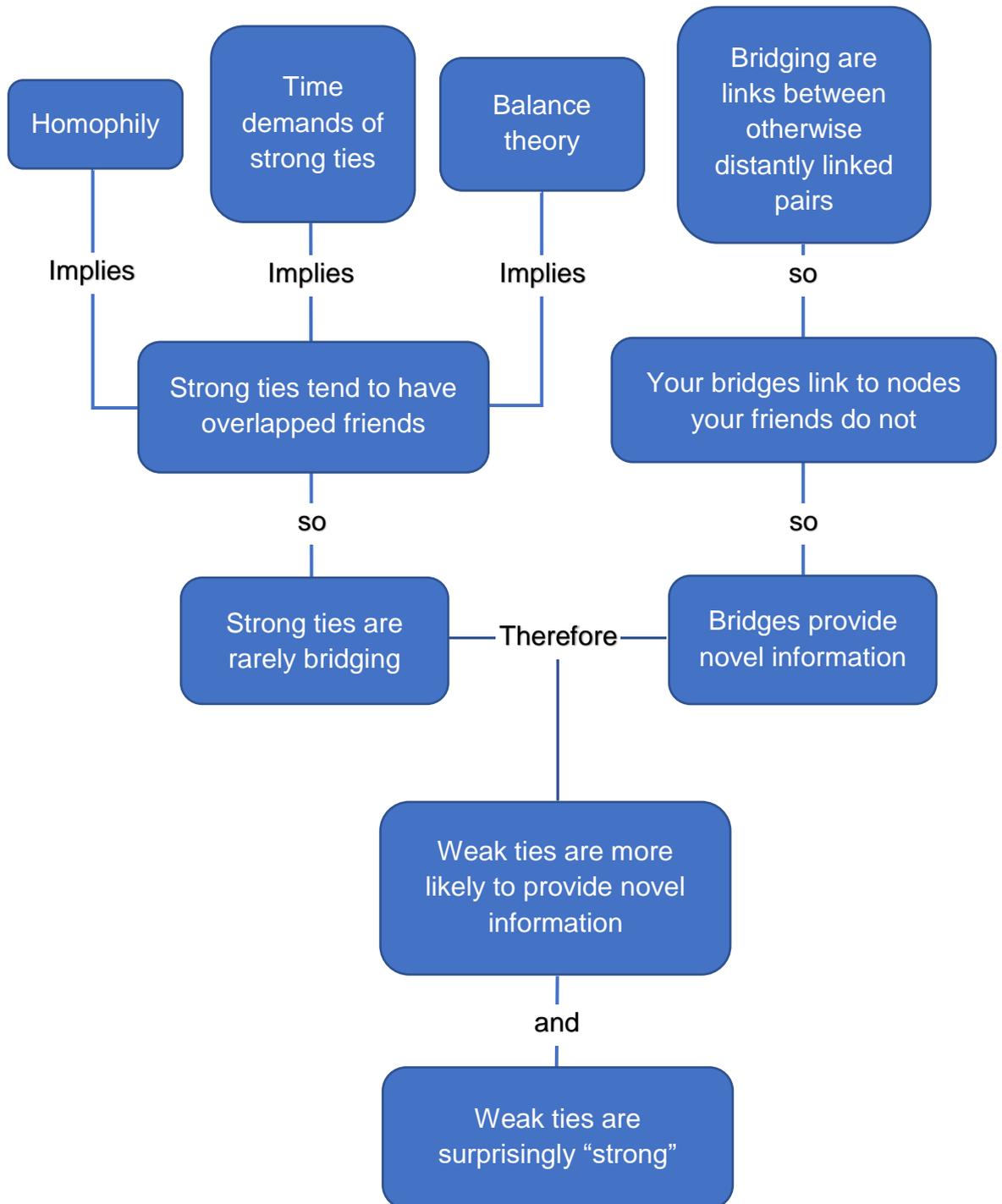
Regarding the areas of development, categories and components of social relations must be brought together. The concern component as a positive attribute should be incorporated into interaction theory along with consensus and liking if such theory is to comprehend social network involvement.

### 2.5.3. Structural holes and bridges in social capital

Burt (1992) used the term structural hole to highlight the separation between contacts that are non-redundant. "It is the relationship of non-redundancy between two contacts, the holes act as a buffer, like an insulator in an electric circuit. As a result, the hole between them the contacts provide network benefits that are in some degree additive rather than overlapping" (Burt, 1992, p. 18). Burt (2004, pp. 357, 354) further explains that "people whose networks bridge the structural holes between groups have earlier access to a broader diversity of information and have experience in translating information across group" and this helps them in "detecting and developing rewarding opportunities". Di Vincenzo et al., (2012) partially supports the argument of Burt (1992) by suggesting that although structural hole can be beneficial for learning and flow information and resources but too many "structural holes could be detrimental to learning in certain cases" (Di Vincenzo et al., 2012, p. 586).

Ties among network nodes play an important role in the flow of information and bridging the gaps between structural holes. Granovetter (1973) suggested that individuals are homophilous and they tend to have stronger ties with people that are similar to themselves. (Lazarsfeld & Merton, 1954; McPherson, Smith-Lovin, & Cook, 2001). Explaining the network ties and bridging the weak ties and giving an example of job opportunity, Granovetter (1973) elaborates that if people often hear about jobs through acquaintances rather than close friends, this is because 'strong ties are unlikely to be the source of novel information.' "A bridging tie is a tie that links a person to people who are not connected to their other friends" (Borgatti & Lopez-Kidwell, 2011, p. 41). Borgatti & Lopez-Kidwell (2011) elaborate that the main difference between Burt's (1992) structural hole and Granovetter's (1973) bridging the weak ties is merely the use of different wording. The figure below shows the model of Granovetter (1973) strength of strong and weak ties theory which suggests that because of the homophilous nature, more extended time with the tied nodes, and the balance of relationship involved, people that have strongly tied among them are usually friends. Hence, there is seldom a need for having a bridge between them. Because of the homophily and other elements, both people in such network often have similar characteristics and connections with other people in the networks. However, when there is not a strong tie between two people in a network, the qualities and commonalities start to get blurry, in such situations when people with weak ties act as a bridge between another connection the support through such linkage can be more of a novel nature.

Figure 5. The strength of weak ties theory



Granovetter's (1973) strength of weak ties theory, presented in Borgatti, and Lopez-Kidwell (2011, p. 41)

#### 2.5.4. Social networks and entrepreneurship

The role of the networks in an entrepreneurial process was examined by Birley (1985). According to her, networks of entrepreneurs are not only helpful in gathering required resources and skills but can also shape the nature of an opportunity on which a business is based on including its industry. Furthermore, if entrepreneurs are only using their family and business contacts, they are more likely to recreate a venture similar to their previous employment(s). While stressing the importance of entrepreneurial networks, Birley (1985) claimed that entrepreneurship could not be fully understood without an examination of the network context of an entrepreneur.

It is clear from the literature that networks play a crucial role in entrepreneurial development. Nijkamp (2003) recognises that successful entrepreneurship requires networks and networking. Hanson & Blake (2009, p. 136) further mention that “authors do not override points regarding the significance of networks and agree that networks can be important to entrepreneurship”. This argument has also been reiterated by Cooper, Folta, & Woo (1995) and Hansen (1995) who observe that the entrepreneurs get support from their network of contacts to generate resources in terms of labour, finance and skills when required.

A social network of entrepreneurs often starts from their family, which they approach for help and support (Rosenblatt, De Mik, Anderson, & Johnson, 1985). Greve & Salaff (2003) find that social relations play an important role in the process of starting a firm. It was also suggested that entrepreneurs need to build social networks. Their research indicates that cultural differences do not play a major role in networking. However, cultural backgrounds can

influence the learning opportunities available to entrepreneurs (Wasim et al., 2018).

There are some interesting differences between males and females in the way they use their family as their social network while establishing a firm (Wasim, 2017). No gender differences were found while looking at the size of the entrepreneur's social network or how they developed and maintained networks.

Johannisson (1998, p. 310) suggests that at the start of a new venture, "knowledge-based entrepreneurs are more concerned with networking than traditional entrepreneurs" but over time the networking difference between them declines. The relationship of entrepreneurs with others can provide the resources to start a business or overcome a problem. Taylor & Thorpe (2004, p. 210) also agree with Johannisson's findings stating "there is evidence of a social dimension to entrepreneur decision-making, which appears to be significant. This supports earlier studies that highlight the importance of personal networks and networking". This is also in alignment with the finding of Dakhli & DeClercq (2004).

According to Nohria & Gulati (1994), networking helps an entrepreneur in perceiving an opportunity, navigating their way around it, accept certain things and even develop an environment with the help of other people in the network. This notion is also supported by the work of Jack, Dodd, & Anderson (2008). Social structure plays an important role in the decision-making process of an entrepreneur as well (Hansen, 1995; Larson & Starr, 1993; Reynolds, 1991). In addition to that, networks can also help an entrepreneur in reaching, accessing and developing ideas and perspectives which they have not been

exposed to and would have not been if a network did not exist (Kreiser, 2011; Stam & Elfring, 2008; Walter, Auer, & Ritter, 2006).

#### 2.5.5. Communities of practice

A community of practice is something when different people join together to address a common problem. It is a collective and collaborative learning process (Etienne Wenger, 2000). In a community of practice, the members of the network intensively interact with each to share knowledge (Ardichvili, 2008; Târnavăanu, 2012; Etienne Wenger, 1999). In an ideal community of practice, the members of the network are keen on developing a deeper knowledge of the relevant subject (Wenger, McDermott, & Snyder, 2002). Ardichvili (2008) explained that a community of practice social network could be a face-to-face interactive network where all members are at the same location or it can be through online and virtual technology-based that uses social media and online discussions.

In either case, a community of practice can develop the skills and expertise of the members (Bain, Lancaster, & Zundans, 2009). Wenger (2002) suggests that a community of practice is effective when the repository of the resources is shared with all the members. The common goal of the community is also shared with all members in the network community and roles and actions are defined (Pyrko, Dörfler, & Eden, 2017). This framework represents the shared believes and values of the work as well as the member of a networked community (Bain et al., 2009). In education, one goal of a community of practice is to create, develop and update curriculums as knowledge is being acquired. This works better in cross-faculty work as sometimes a variety of

skills and expertise can develop a superior curriculum than if it is built by one faculty (Morris & Hiebert, 2011).

The concept of a virtual community of practice was first highlighted by Lave & Wenger (1991). It was proposed as “an activity system about which participants share understandings concerning what they are doing and what that means in their lives and for their community” (Ardichvili, 2008, p. 542). The virtual community of practices have since then supported at all levels of knowledge monument systems to support knowledge sharing, co-creation and the skills and practices involved (Alali & Salim, 2013).

In an educational context, communities of practice should encourage educators to evaluate what they do and how do they do it. The hurdle is that the “typical working life of a university teacher does not lend itself to this” (Laurillard et al., 2013, p. 3)

The primary limitation of a community of practice is that it requires intense participation and interaction among the members of the network (Wenger, 2006), which sometimes is a challenging process because of the individual contexts involved.

#### 2.5.6. Social capital

The connectedness of social networks can potentially provide benefits, turning the social network into social capital (Putnam, 2015). Burt (1992) suggests that the contacts that successfully bring what was required are known as the social capital of the entrepreneur. In academic research Bourdieu (1986) is often associated with social capital. According to him “social capital is the sum of the resources, actual or virtual, that accrue to an individual or group by virtue

of possessing a durable network of more or less institutionalized relationships of mutual acquaintance and recognition" (Bourdieu & Wacquant, 1992, p. 119). For Coleman (1988), social capital is the outcome in the form of an advantage which is produced by a social structure. Gabby & Leanders (1999) highlights social capital as the set of tangible or virtual resource facilitating the attainment of actors' goals. Networks create social capital (collective resources from one's social network), which is an essential part of an entrepreneurial process (Nahapiet & Ghoshal, 1998; Greve & Salaff, 2003; Gedajlovic, et al., 2013; Light & Dana 2013; Estrin, et al, 2013). Burt (2001) suggests that although there is some vagueness in the general usability of the term, social capital, there is a general agreement in the literature that social capital is a 'metaphor' which represents the capital and advantage gained by particular individual or groups which provides them with a competitive advantage over others.

Social capital is becoming a significant part of the core concepts in the fields of business and sociology (Burt, 2000). In business research, the term social capital has been very strongly embedded. (Brüderl & Preisendörfer, 1998; Gedajlovic, Honig, Moore, Payne, & Wright, 2013; George, Parida, Lahti, & Wincent, 2016; Stam & Elfring, 2008). In entrepreneurship literature, social capital has been strongly tied with learning and knowledge sharing (De Clercq et al., 2013; Neergaard & Madsen, 2004), shared development (McKeever et al., 2014), access to resources (Bauernschuster, Falck, & Heblich, 2010), trust (Shi, Shepherd, & Schmidts, 2015), innovation (Tan, Zhang, & Wang, 2015) opportunities recognition (Cao, Simsek, & Jansen, 2015), tangible and non-tangible support including learning, emotional, financial, equipment and

referencing to other potential people that can support (Lee & Jones, 2008). As there is a notion of trust, it is also important not to disregard the potential risks of trust, for example, Coleman (1988) suggests that one of the most important contributions of social capital is knowledge and information that is accumulated through the network. However, an inaccurate or incomplete information from the social capital can be a threat instead of a contribution and this might not even be deliberate attempt of deceive. Baker (1984) highlights that when information travels between different participants of a network, the quality of that information deteriorates as it passes through.

Gibb (1997) emphasises the importance of social capital and social learning in entrepreneurship education by stating that people do not learn on their own and the social elements should be incorporated in the formal entrepreneurship education curriculum.

This was not the only time this emphasis was put on the education of entrepreneurship, Pittaway & Cope (2007b) and Pittaway, Gazzard, Shore & Williamson (2015) strongly encouraged the educator involved in entrepreneurship teaching to develop an environment for socially situated learning. It is important because as an enabler of opportunities, social capital can help future entrepreneurs to build a wider “community capital” (McKeever et al., 2014, p. 471).

## 2.6. Learning in coworking spaces

In the field of entrepreneurial learning in a networked setting, coworking spaces provide unique insight. Concept of coworking in entrepreneurship is a relatively new concept with limited research. Coworking places are more than just physical spaces and are based on the philosophy of “working-alone-together” (Waters-Lynch, Potts, Butcher, Dodson, & Hurley, 2016, p. 3). At a coworking space, participants work independently on their business and ideas while being in a networked environment. The physical environment has been associated with creativity by several authors (e.g., Amabile, 1996; Csíkszentmihályi, 1996). Which means that it is a community of practice where people work on their distinctive ventures, but their journeys are similar, and they can support (and seek support from) one another. There is a growing interest from scholars and practitioners to know more about the *know-how* of coworking spaces (Spinuzzi, 2012a). Capdevila (2015, p. 3) defines coworking as “localised spaces where independent professionals work-sharing resources are open to share their knowledge with the rest of the community”. The first official coworking space ‘Spiral Muse’ opened in San Francisco in 2005 (Spinuzzi, 2012b). Since then, coworking spaces have been emerging all over the world. They are being used by the entrepreneurs, mobile and knowledge workers (Waters-Lynch et al., 2016). Such spaces provide a testing ground to see how early-stage entrepreneurs learn from one another, especially in the early stages of their entrepreneurial journeys.

## 2.7. Summary of the literature

Entrepreneurship is not a new concept; the term was first originated in the field of economics in the 1700s. The modern-day definitions of entrepreneurship are linked to Schumpeter (1934), who although was an economist, strongly tied entrepreneurship with innovation and provided a foundation for entrepreneurship to be an independent field.

Entrepreneurship has been highlighted as a complex process and the lack of a uniform definition of the term has not done the field of entrepreneurship any favours either. Neck & Greene (2011) suggest that entrepreneurship is chaotic and complex without a linear explanation. Several scholars have blamed the ever-changing business world leading to an ever-changing entrepreneurial process for the complexity of entrepreneurship (Gibb, 2005; Read, Dew, Sarasvathy, Song, & Wiltbank, 2009; Sarasvathy, 2008). Sarasvathy & Venkatamaran (2011) defined entrepreneurship as a process of problem-solving and dealing with uncertainty, which takes place in the social context of an entrepreneur.

The importance of the context in any entrepreneurial process has been recognised by many other scholars as well (Anderson, 2000; Gaddefors & Anderson, 2018; Welter & Smallbone, 2011), with the social context being one of the most prominent factors (Drakopoulou Dodd & Anderson, 2001).

The lack of one definition, the complexity of the process and ever-evolving nature of the entrepreneurial process makes it very hard to teach. Though the discipline of entrepreneurship education is some seven decades old, till recently the debates regarding the issue of whether entrepreneurship can be

taught were raised. There is now a common agreement among scholars researching entrepreneurship education that it can be taught but the process would not be straightforward.

As entrepreneurship is a social and contextual process so is the learning of the entrepreneurs, so much so that there is evidence in the literature that suggests entrepreneurship cannot be fully understood without understanding the networks of the entrepreneurs. However, the teaching of entrepreneurship education is mainly based on methods developing business plans and this approach has been widely criticised in the literature (Carrier, 2007; Honig, 2004; Nabi, et al., 2018; Solomon, Duffy, & Tarabishy, 2002).

There is a large body of research focused on entrepreneurial learning since the development of the first conceptual framework of entrepreneurial learning by Cope & Watts (2000). Since then the role of social networks in the entrepreneurial learning process has been highlighted several times (Byrne & Toutain, 2014; Cope, 2005, 2011; Pittaway & Cope, 2007b; Pittaway & Thorpe 2012; Politis, 2005). However, there is a gap between what the scholarly research tells us on how entrepreneurs learn their craft in real life and how entrepreneurship students learn how to practice this craft in the universities and they do not align with each other. A constructivist paradigm of learning is what resonates the most with the entrepreneurial learning process.

Furthermore, social networks and the interactions that take place within these networks have been recognised as the drivers of financial and social growth with positive effects on the wellbeing of the individual. Burt (1992) and Granovetter (1973) have looked at the role of network ties in generating social capital within as well as without an entrepreneurial process.

### *Reflection, synthesis and gaps*

It is important to discuss the presence of social network in the literature before trying to develop a study with the possibility of incorporating social networks in the education framework.

Social networks have been at the core of humanity since the beginning. Among other things, they have been a constructor of knowledge, contributor to the economy and influential to the happiness of people. In entrepreneurship, research on social networks was started with the seminal work of Birley (1985) looking at the role of networks in the entrepreneurial process. They are not just a part entrepreneurial process but literature at points have suggested that the concepts of entrepreneurship cannot be fully captured without examining the networks of the entrepreneurs.

The concept of the communities of practice has also been associated with knowledge sharing in networks. A community of practice is a network that comes together by having a common goal shared by the participants in that network. They are a strong type of network, more of a community, in which knowledge sharing is stronger because of the commonalities. However, it requires intensive participation among member which can be challenging at times.

Several authors, such as McKeever et al., (2014), Pittaway, Gazzard, Shore & Williamson (2015) supported the idea of incorporating social network or social elements in the teaching of entrepreneurship. However, there is a gap in the literature on how this can be done and to what extent.

When social networks come together and support the participants they become the social capital. Entrepreneurs rely on their social capital a lot. Sometimes there are gaps between the participants in a network, Granovetter (1973) and Burt (1992) looked at these gaps and proposed that they can be bridged by using some participants in that network as a link between them.

## 2.8. Research statement

Entrepreneurship has been around for centuries. However, it has been some seven decades since entrepreneurship emerged as a discipline on its own. Research in entrepreneurship continues to grow since, with no sign of slowing down (Kuratko, 2016).

Entrepreneurship has been widely recognised as a complex process which requires innovative and unique methods of teaching (Jack & Anderson, 2008; Nabi et al., 2016; Solomon, 2007).

Literature suggests that social networks play a crucial role in the entrepreneurial process and entrepreneurship cannot be separated from the social context, nor its process can be holistically studied without it (Anderson & Drakopoulou-Dodd, 2007; Birley, 1985; Fletcher, 2006; Hanson & Blake, 2009; Huggins, Izushi, Prokop, & Thompson, 2015; Jack, Moulton, Anderson, & Dodd, 2010; Korsgaard & Anderson, 2011; Lee & Jones, 2008; Rae, 2006; Taylor & Thorpe, 2004; Thornton, Ribeiro-Soriano, & Urbano, 2011).

Literature also suggests that entrepreneurial learning is a socially constructed experiential process (Funken, Gielnik, & Foo, 2018; Pittaway & Cope, 2007b; Pittaway & Thorpe, 2012; Wang & Chugh, 2014) and it is argued that entrepreneurship education should not be treated completely independent - from entrepreneurial learning.

Furthermore, the teaching of entrepreneurship in universities is still widely based on the approach of having exercises focused on the development of business plans (Carrier, 2007; Nabi, Walmsley, Liñán, Akhtar, & Neame, 2018; Solomon, Duffy, & Tarabishy, 2002), even when this approach has been

criticised for its inflexibility (Honig, 2004) and for being completely different from true entrepreneurial learning. More so as it is considered to be counterproductive as it has a negative impact on the development of entrepreneurial behaviours (Nabi et al., 2017). There is an obvious disconnect between how entrepreneurs learn entrepreneurship in real life and how students learn entrepreneurship in universities.

It is argued that entrepreneurship education requires more than just a transfer of rote knowledge, and that it should be based on entrepreneurial learning, skills development, behaviours and mindsets fostering entrepreneurial process which, in view of the findings of entrepreneurial learning literature, cannot be done without the incorporation of social networks.

This empirical research aims to fill this gap by discussing these elements with entrepreneurs, entrepreneurship educators and students and based on the synthesis of these discussions, proposing a framework for entrepreneurship education which mimics the entrepreneurial learning process. This research is based on one gap (lack of incorporation of social networks in entrepreneurship education), one synthesis (aligning entrepreneurial learning with entrepreneurship education) and results in two outcomes listed below.

The key contribution of this research is to propose an approach that will draw and validate insights from entrepreneurial learning about social networks to enrich entrepreneurship education with a view to enhancing its quality in higher education institutions of the United Kingdom. Secondly, it will contribute to the entrepreneurial learning literature to provide insight into how entrepreneurs learn within social networks as well as how these networks evolve over time.

The current model of entrepreneurship education is based on classroom learning and does not imitate true entrepreneurial learning where an entrepreneur learns informally by acting within their social networks. This study attempts to align, entrepreneurial learning with entrepreneurship education to facilitate the embedding of the role of social networks in entrepreneurship education that is currently missing by responding to the following research questions.

1. How and what do entrepreneurs learn in social networks?
2. To what extent does the higher education curriculum in entrepreneurship in the United Kingdom deliver a context-specific social network learning?
3. How can social network learning be embedded in formal entrepreneurship education?

### 3. Research methodology

This study attempts to explore the wherewithal to incorporating, in the university entrepreneurship education, the ways the entrepreneurs learn in networks, an aspect that has been neglected by entrepreneurship educators so far, a qualitative exploratory inquiry is the most appropriate (Bryman, 2007). To explore less understood phenomena and to establish a stronger grasp of the context, direct contact with people involved in the particular issue is the most effective way while being in that environment (Jankovic, 2000). The approach adopted in this research is thus an interpretivist-constructivist approach.

As indicated earlier in this thesis, the extant literature highlights that entrepreneurial learning is an experiential, social, contextual and innovative process. Constructivism in entrepreneurial learning seems to be the key construct where entrepreneurs learn from the context and their social surroundings as it dictates that knowledge is created by people through their living experiences of the world (Bereiter, 1994).

This chapter outlines the research methodology deployed to achieve the aim of evaluating the possibility of incorporating social network learning into entrepreneurship education within higher education in the United Kingdom.

The chapter starts with discussing the reasoning behind the methodological choices of the research, particularly that of using a social constructivist lens to investigate the phenomena as opposed to other philosophical choices.

After this, it builds and presents an argument for choosing qualitative data collection methods, including the observations and semi-structured interviews.

This is followed by an outline of the methods used for designing the observations at 5 coworking spaces in the UK. For this part of the research project, the researcher takes an ethnographic approach to gather data using participant observations of the environment. According to Neergard & Ulhøi (Neergard & Ulhøi, 2007), “ethnographic field research involves the study of real-life situations. Researchers, therefore, observe people in the settings in which they live in order to collect data in a systematic manner but without being imposed on the participants externally.” In the first part of the research, the emergence of networks, their operations and how entrepreneurs learn in networks is observed. The second part of the research focuses on the views of the entrepreneurs, entrepreneurship educators and entrepreneurship students to understand their perspectives of learning in social networks and possible development of the social network-based learning environment in entrepreneurship education in the British universities. An interview guide for the semi-structured interviews with 7 entrepreneurs, 7 entrepreneurship educators, 5 students that have completed an entrepreneurship education course and 5 students that are about to start it was developed based on the findings of observational part of the research. According to Nabi et al., (2017), the reason for contrasting findings in the literature on entrepreneurship education is potentially due to the lack of controlled groups, cross-cultural participants and gender-balanced groups in the sample. By adding multiple gender-balanced groups and students who have completed and who are about to start an entrepreneurship education course, there is an attempt made to address some of these limitations.

A further reason for choosing this specific method is because it can provide a better understanding of the phenomena by being in the network while researching and letting the participants present their ideas rather than just completing questionnaires, as several concepts involved in the research lack strong literature bridge between them.

In the final part of the methodology chapter, data analysis methods, including thematic analysis derived from the Grounded Theory and use of and rationale for NVivo are explained.

Table 6 below gives an outline of the major research paradigms.

Table 3. Major research paradigms

Research Paradigm	Ontology The concept of reality (what is it?)	Epistemology The search for reality (how to know about it?)	Approach (what is the approach to knowing about it?)	Strategy (how to discover it?)
Positivism	There is one reality • Objective	Reality is measurable. The focus should be on the validity and reliability of the tools required to measure it • Positivism • Post-positivism	Deductive	Quantitative • Experiments • Surveys
Interpretivism	There are multiple realities. Reality is socially and contextually constructed by an individual or groups • Subjective • Constructive	As there is no one truth, hence reality requires interpretation. • Interpretivism • Critical inquiry • Phenomenology	Inductive	Qualitative • Ethnography • Action research • Grounded theory • Phenomenological research • Case studies etc
Pragmatism	Reality is dynamic which can be interpreted based on the context in unpredictable situations • Objective • Subjective	Any method that solves the problem. • Deweyan pragmatism • Research through design	• Inductive • Deductive	Mixed methods • Combination of the above

<b>Research Paradigms</b>	<b>Methodological choices (what are the tools that can be used to discover it?)</b>	<b>The goal of the research</b>	<b>Results</b>	<b>Researcher's role</b>
<b>Positivism</b>	Structured, usually quantitative: <ul style="list-style-type: none"> <li>• Questionnaires</li> <li>• Interviews</li> <li>• Statistical analysis</li> <li>• Lab research</li> </ul>	<ul style="list-style-type: none"> <li>• Descriptive</li> <li>• Testing</li> <li>• Generalisation</li> <li>• Strong prediction</li> </ul>	<ul style="list-style-type: none"> <li>• Laws</li> <li>• Absolute</li> <li>• The actual representation of the world</li> </ul>	<ul style="list-style-type: none"> <li>• Rigid separation</li> </ul>
<b>Interpretivism</b>	Usually qualitative and semi or unstructured <ul style="list-style-type: none"> <li>• Interviews</li> <li>• Participant observations</li> <li>• Non-participant observations</li> <li>• Life history</li> <li>• Narrative</li> <li>• Archival research etc</li> </ul>	<ul style="list-style-type: none"> <li>• Exploratory</li> <li>• Understanding</li> <li>• Weak prediction</li> </ul>	<ul style="list-style-type: none"> <li>• Meaningful</li> <li>• Relative</li> <li>• Contextual</li> </ul>	<ul style="list-style-type: none"> <li>• Interactive</li> <li>• Cooperative</li> <li>• Participative</li> </ul>
<b>Pragmatism</b>	Combination of the above and more, such as: <ul style="list-style-type: none"> <li>• Data mining</li> <li>• Prototyping</li> <li>• Usability testing</li> <li>• Expert reviews</li> </ul>	Combination of both the above	<ul style="list-style-type: none"> <li>• Normative</li> <li>• Combination of both the above</li> </ul>	Goal-oriented <ul style="list-style-type: none"> <li>• Could be separative</li> <li>• Could be participative</li> </ul>

Adapted from Bryman (2016), Creswell (1994), Crotty (1998), Easterby-Smith, Thorpe, Jackson, & Jaspersen (2018) and Williams (2013)

### 3.1. Research paradigm

Before starting any research, it is important to identify the lens through which the world (data) will be seen and analysed (Silverman, 2013). The most common research paradigms in the social science; to see, understand and analyse the data are positivism and interpretivism which sit on two extremes, with realism being in the middle (Grix, 2010).

#### Ontological stance

Ontological perspectives are the “claims and assumptions that are made about the nature of social reality, claims about what exists, what it looks like, what units make it up and how these units interact with each other. In short, ontological assumptions are concerned with what we believe constitutes social reality” (Blaikie, 2009, p. 8). There different ontological stances through which people perceive the world such as objectivism, subjectivism, and constructivism (Bell & Bryman, 2015).

The objectivist approach suggests that the social entities live without being dependent on the social actors, creating a distance between the people and the social context (Ramoglou & Zyglidopoulos, 2015)

The subjectivist approach suggests that the meaning of the reality is forced by the subject on the object involved in the research. Subjects in a subjectivist approach create the meaning of reality. However, it is reliant on the perception and the actions of the social surrounding (Ramoglou & Tsang, 2015). Subjectivism is often connected with the sub-constructs such as; social constructionism. In social constructionism, the reality is created by society and then observed by the participants (Gray, 2014).

In comparison to that, a constructivist approach is “an ontological position that asserts the social phenomena and their meanings are continually being accomplished by social actors” (Bryman, 2016, p. 689). In a constructivist approach, knowledge is created by the individual and groups based on their social and contextual perceptions of the world around them (McKinley, 2015). In a constructivist approach, research focuses on what people are learning and feeling, hence, a researcher using this approach attempts to understand the experiences of individuals instead of looking for the causation of the behaviours or natural phenomenon that might explain that behaviours (Easterby-Smith et al., 2018).

Constructivism, as mentioned above, is the interpretation of the knowledge of individuals based on their experience, context and social interactions hence it leans more towards an interpretivist approach. By using a constructivist approach researchers can have a higher awareness about the participants’ perceptions about the phenomenon as this phenomenon would reflect the reality and knowledge of the participants with regards to how they come to know the world (Bell & Bryman, 2015).

In comparison to that, a constructivist approach does not say that there is only one reality. In this approach, the reality is based on the social process and the question that this approach is based on is, “how something is” rather than a “what something is” of a more positivist ontological choice (Fletcher, 2006). The data collection method in a constructivist philosophical approach is usually qualitative (Creswell, 1994).

This study focuses on how social networks can be incorporated into the university entrepreneurship education curriculum to mimic the learning

process of entrepreneurs. For this reason, the study attempts to understand how entrepreneurs learn from their network and how this aspect of their learning can be taught. For this reason, the research has been undertaken using a constructivist lens as it predominantly tries to understand the “how” entrepreneurs learn and “how” social networks can enrich entrepreneurship education (Bell & Bryman, 2015; Silverman, 2013). Furthermore, because of the chaotic, multiple and ever-changing meaning of the word “entrepreneurship” and its landscape (Anderson, 2000; Neck & Greene, 2011), it is almost impossible to understand it by using a positivist epistemology, which needs well-defined constructs and measures. In spite of this, unfortunately, positivism has been a dominant approach in entrepreneurship research as highlighted by Anderson & Starnawska (A. R. Anderson & Starnawska, 2008). However, this research approach has created a “fundamental paradox: researchers often try to analyse a phenomenon that cannot properly be defined. As a result, much entrepreneurship research is fragmentary and focuses narrowly on aspects of entrepreneurship”. The epistemological and ontological choices of this research have been made to avoid this.

This being said, it has been established that entrepreneurship and entrepreneurial learning is a social and experiential process (El-Sherbini et al., 2005; Luke Pittaway & Thorpe, 2012; Rae, 2017) related to the entrepreneur’s perception where knowledge is constructed individually on the basis of different variables, such as, time, location and context (Anderson, 2000). Following this perception of entrepreneurial learning, it can be said that a constructivist paradigm is what entrepreneurial learning itself is based on.

Hence, using this paradigm to evaluate how entrepreneurship education can benefit from social network learning is the most suitable research strategy available.

In a constructivist approach, knowledge and social realities are intertwined and they are constructed together while relying on each other (Kukla, 2000). Furthermore, it accepts that reality is neither completely subjective nor completely objective, it is socially constructed (Berger & Luckmann, 1966), therefore it should be interpreted by drawing information from the actors involved. To gain an insight into the learning process of the entrepreneurs and evaluating how to incorporate it in education, the researcher must analyse the backgrounds of social interactions with the mentioned participant groups. This can only be done using qualitative and narrative methods (Silverman, 2013). For this reason, a qualitative method of research was selected to address the research questions. Therefore, the data that has been gathered and constructed mutually by the researcher and the participants based on the responses, context and social surroundings of the participants at the time of the observation and interview, provides the best analysis and interpretation (Byrne, 2004; Mark Easterby-Smith, Thorpe, Lowe, & Jackson, 2008; Silverman, 2013) which was verified by the participants prior to its addition in this thesis. In addition to that, mutual construction is a strength and weakness of the constructivist methodologies simultaneously. Strengths because knowledge is constructed mutually and weakness because the interpretation is based on multiple factors (Kukla, 2000; Silverman, 2013) which are sometimes hard to separate.

Constructivism acknowledges the gap created by the influence of the researcher's values, behaviour and personality on the participant and the data. This is where a more positivist approach has its merit of being distant and objective from and about the participants (Berger & Luckmann, 2002; Blumer, 1969; Gergen, 1999). An objective view of positivism was counter-argued by Kitzinger (2004), who mentioned that a great number of things said by people, even in a fully positivist method of research, have biases based on their experience and lives, some deliberate and some unintentional, and there are discrepancies in facts. He (2004, p. 128) further mentioned that constructivism "disputes the possibility of uncovering 'facts', 'realities' or 'truths' behind the talk, and treats as inappropriate any attempt to vet what people say for its 'accuracy', 'reliability', or 'validity'". Hence the results generated through constructivism are not objective evidence. However, they are regarded as socially created realities in the given time and space (Bada & Olusegun, 2015; Bereiter, 1994; Hammersley, 2002; Kukla, 2000). Furthermore, constructivism acknowledges the existence of multiple truths and realities in the given context, time, and space.

### Epistemological stance

Epistemology looks at what is considered as an acceptable knowledge in the field by understanding the meaning of knowing something (Mark Easterby-Smith et al., 2008). The epistemological stance of research is driven by its aim and nature.

A positivist approach demands objectivity by the researcher (Furlong & Marsh, 2010). In this stance, the data is collected to see an observable phenomenon with an aim to find the causality and regularities to present a 'law-like

generalisation' (Weber, 2004). Researchers adopting a positivist approach believe in the possibility of generating a hypothesis to be tested by direct observing of a phenomenon. This is done by employing a deductive approach to research (Aliyu, Bello, Kasim, & Martin, 2014). Due to a probabilistic rather than a deterministic nature of social phenomena instead of positivism, post-positivism is invariably adhered to in social science research (Creswell, 1994). Post-positivism critiques and amends traditional positivism (Bergman, 2016) by accepting that the researcher's background and knowledge can have an influence on the data gathered rather than research having a completely objective stance of positivism (Robson, 2002).

A positivist philosophical approach looks at the world excluding the metaphysical phenomenon and explicitly looks at observable and measurable elements of the data (Aliyu et al., 2014). It assumes that all data, including factual or belief-based data, provide access to evidence about the world. This is how the reality of an entity is perceived followed by an examination and developments are stimulated to make the reality more accurate or get a better understanding of how the things are (Silverman, 2013). Positivist philosophy is based on questions starting from "what is" to test a hypothesis and there is only one reality in a positivist approach (Putnam, 2006).

In contrast to a positivist approach, interpretivism is "an epistemological position that requires the social scientist to grasp the subjective meaning of social action" (Bryman, 2016, p. 692). An interpretivist approach suggests that people in a social setting create a perception and act on that which then creates reality and it can be interpreted based on that individual observer (Weber, 2004). In this approach, researchers attempt to understand the

research problem in its natural form and context and interpret their observations based on the social meaning and their understanding (Djamba & Neuman, 2002).

In an interpretivist research, the researcher attempts to understand the ways in which people create knowledge based on their social context by observing real-life participants using an inductive approach of the research (DeWalt & DeWalt, 2011). Interpretivism is sometimes also referred to as a phenomenological approach (Titchen & Dawn, 2005).

Realism, on the other hand, intersects with positivism and interpretivism both at the same time by using casual explanation, which is a positivist stance and employing an understanding of the relationship, which is an interpretivist stance (Maxwell, 2010). Researchers using realism try to explain social reality instead of just understanding it. Rather than starting with an inductive approach of taking the data to the theory or deductive approach of taking the theory to the data, a realist approach employs an abductive approach of moving to and fro between the data and the theory simultaneously (Suddaby, 2006). It is “a neat pattern but a messy interaction between the conceptual and empirical world” (Bechhofer, 1974, p. 73).

In this research, an interpretivist epistemology has been adopted because of the nature of the research aim, objectives and research questions. Further information on the ontological approach is highlighted in the next section.

### 3.2. Research design

As mentioned above, this research adopts a constructivist approach while using exploratory and comparative approach using qualitative methods of data

collection to evaluate the possibility of incorporating social network learning into entrepreneurship education. For this reason, this study focuses on the learning of the entrepreneurs and compares it with the provision of entrepreneurship education in universities from educators' and a learners' point of view. For the purpose, this research takes on an inductive approach (Holland, Holyoak, Nisbett, & Thagard, 1986). As described by Feenay (2007), this approach helps in deriving the theoretical understanding of the topic (entrepreneurial learning) based on the social construction of the knowledge hence it helps in generalising the data to a degree.

Constructivist approach dictates that individuals construct the knowledge. However it relies on the social and cultural context simultaneously (Gergen, 1999). This paradigm provides the following two suggestions for entrepreneurial learning in entrepreneurship education.

1. Entrepreneurial learning of the entrepreneurs must be investigated
2. Considerations must be given to the social context

To achieve this, firstly, the perception of the learning of entrepreneurs is examined to understand the learning process of the entrepreneurs by gathering data directly from the entrepreneurs through observations, informal discussions and interviews.

Secondly, as constructivism suggests that people create knowledge within their social surrounding they are in, in this research, the context of learning within the social networks is considered. For this reason, interviews with entrepreneurship educators and students have been conducted. The reasoning for using this approach is to evaluate the learning process of

entrepreneurs and students from multiple perspectives within an entrepreneurial learning context.

### 3.3. Sampling

The sample population for the primary research was selected by using purposive sampling method. “Purposive sampling enables you to use your judgement to select cases that will best enable you to answer your research questions and to meeting your objectives” (Saunders, Lewis, & Thornhill, 2009, p. 237). Gatekeepers were involved in the recruitment process at each of the organisations.

Given the nature of the study and the consideration towards fulfilling the aim of the research, purposive sampling approaches were adopted for all phases of the research including participant observations and interviews apart from student participant requirement, which was done using snowball sampling through the entrepreneurship educators.

Purposive sampling is described as a method in which the researcher already knows something about the participants, for example; their line of work, experiences, background and/or context (Easterby-Smith, 2008). In this technique, the researcher understands the requirement for the sampling and then approach the potential participants to evaluate the eligibility criteria for the research (Easterby-Smith et al., 2018).

Snowball sampling is approaching someone who meets the eligibility criteria of the research and asking them to introduce the researcher to the participants who might also be eligible under the same research criteria (Easterby-Smith et al., 2008).

Sample	Rationale
<b>Observations at coworking space</b>	<ul style="list-style-type: none"> <li>• Understanding how entrepreneurs; communicate and learn in a networked environment by observing first-hand information</li> </ul>
<b>Entrepreneurs</b>	<ul style="list-style-type: none"> <li>• Learn about entrepreneurial learning from entrepreneurs</li> </ul>
<b>Entrepreneurship educators</b>	<ul style="list-style-type: none"> <li>• Understanding the perception of entrepreneurial learning from an educator's point of view.</li> <li>• Understanding how entrepreneurship is currently taught and how it should be taught.</li> </ul>
<b>Entrepreneurship students</b>	<ul style="list-style-type: none"> <li>• Understanding the perception of entrepreneurship from a student's point of view</li> <li>• Understanding the perception of entrepreneurial learning from a student's point of view.</li> <li>• Understand how students accumulate learning</li> </ul>

*Table 4 Research sample and its rationale*

### Coworking spaces

To understand the context and nature of entrepreneurial learning and practices in a networked setting, the first part of the empirical research included participant observations at 5 UK based coworking spaces. The objective of this activity was to understand the entrepreneurial learning process from the first-hand experience. All the information collected in that period helped to contextualise the research and provided a stronger and robust foundation for the second stage (semi-structured interviews) of the work. Spending time at different coworking spaces was considered to evaluate

how different physical and geographical location (although in the same country) can have an effect on the entrepreneurial learning process within a networked setting which coworking space is. All venues are uniquely coded based on their location and/or names. The table below shows the participating coworking spaces.

In total, 16 coworking spaces were contacted using an online search. For initial contact, coworking spaces were selected based on their diversity of locations, industries they were focused on, a gender-balanced population at the coworking spaces and the number of entrepreneurs using the spaces. Ten out of 16 were interested in the research. However, considering the ethical guidelines for observational research, only five coworking spaces were feasible to conduct research.

*Table 5. Participating in coworking spaces*

COWORKING SPACE	LOCATION AND ATTRIBUTES
<b>RLE</b>	Based in London: Location comprised of different layouts of working space for the entrepreneurs, such as; <ul style="list-style-type: none"> <li>• A formal office layout coworking space with or without table partitions.</li> <li>• Area of their space in the reflection of a “loft” with wooden benches and blankets</li> <li>• Private offices</li> </ul>
<b>GSE</b>	Based in London: Location comprised of different office setting for the entrepreneurs, such as; <ul style="list-style-type: none"> <li>• A café themed coworking space</li> <li>• A small group working space</li> <li>• Private offices</li> <li>• Large conference rooms with high tech equipment and dedicated internet</li> </ul>
<b>INS</b>	Based in Portsmouth: Location was a part of an educational institution comprised of different office setting for both the student and external entrepreneurs, such as; <ul style="list-style-type: none"> <li>• Student entrepreneur space</li> <li>• External entrepreneur space</li> <li>• A small group working space</li> </ul>

	<ul style="list-style-type: none"> <li>• Private offices</li> </ul>
<b>DSL</b>	<p>Based in Leeds: An older studio converted into a coworking space.</p> <ul style="list-style-type: none"> <li>• Open coworking space for entrepreneurs</li> <li>• Private cubicles</li> <li>• Regular music events to encourage interaction and develop an open atmosphere</li> </ul>
<b>HKL</b>	<p>Based in London: A part of multiple coworking spaces in the UK and Europe designed on the same layout.</p> <ul style="list-style-type: none"> <li>• Open coworking space for entrepreneurs</li> <li>• Meeting rooms</li> <li>• Private offices</li> <li>• Large conference rooms with high tech equipment and dedicated internet</li> </ul>

Although locations were carefully chosen to have a balance of gender, it was observed that most of the coworking spaces were male dominant with an average male to female ratio was three to ten. At one location [GSL] there were a relatively larger number of female entrepreneurs that signed up for the membership of the coworking space, but the number of actual female users always remained lower than that of their male counterparts and never exceeded the ratio of four to ten at any time. This gender imbalance also influenced the networking conditions available to entrepreneurs, as is described subsequently in this thesis.

## Entrepreneurs

To understand the learning taking place in an entrepreneurial process, entrepreneurs were recruited using gatekeepers to understand their entrepreneurial processes. This helped in highlighting not only what learning activities take place in an entrepreneurial network but also highlighted as to how networks evolve over time. Based on the observations at coworking

spaces, it was noticed that most of the entrepreneurs at coworking spaces were novices, and their ventures were at a start-up stage. The rationale for entrepreneur population selection included measures to make sure the population includes people that are from three stages; in the early stage entrepreneurs (with venture age of 1 to 3 years), established business (with venture age of 3 to 5 years), and experienced entrepreneurship (with venture age of 5 or more years). This was to see how their networks emerged over time as well as how they have evolved as entrepreneurs.

Entrepreneurs were selected through chamber of commerce Hampshire and existing contacts from the business development team of the Portsmouth University

*Table 6. Entrepreneur participants*

PARTICIPANTS	BACKGROUND
<b>ENT1 (PILOT)</b>	Entrepreneur turned academic who worked with the global organisations as an employee and also as an external consultant, because of his vast experience in the field of entrepreneurship and later in entrepreneurship and strategy teaching he was a very appropriate candidate for the pilot study. He is on the board of directors for several multinational companies. Findings from ENT1 are attached only as an example. They are not used in this research
<b>ENT2</b>	Started in 2012 ENT2, owns a party holiday company. The idea initially formed when ENT2 and his business partner was on holiday and realised the price difference between getting a package deal from a holiday provider and getting it by directly contacting individual resorts

	<p>was significant. Provides a perspective from both, student and an entrepreneurs' viewpoint. There are 5 people working in the company apart from ENT2</p>
<b>ENT3</b>	<p>He runs an organisational development consulting company since 2016. His company provides support for organisational and leadership development, team development, executive coaching and psychometric systems. He is the only full-time employee, there are 3 other people who work for him on a project by project bases.</p>
<b>ENT4</b>	<p>Since 2009, he runs a company that specialises in manufacturing hovercrafts and also conducts parallel activities using the same skill-sets in the marine industry. Business is in operation for 37 years and is primarily exporting its products to governments in 42 countries. There are 54 employees in the company excluding contractors and self-employed agents in different countries.</p>
<b>ENT5</b>	<p>She started as a dress designer for women and later on moved into lingerie design. She started her business four years ago (2014) while she was a student. Provides a perspective from both, student and an entrepreneurs' viewpoint.</p> <p>Currently ENT5 has 3 people working in the company including her partner who works part-time.</p>
<b>ENT6</b>	<p>He used to work in the banking sector. After the financial crisis of 2008, ENT6 decided to leave the banking sector. A small part of his previous work involved arranging events for the bank and after working in the non-profit sector for the following few years, he used his experience and passion for music and arranging events to set up his own venture. Currently, there are 7 people working in the company.</p>

**ENT7**

She runs two companies, a media consulting firm (started 2012) and a bedding company which specialises in personalised beddings (started 2015). She started these companies, 3 and 4 years ago, respectively. Currently, there are 3 people in the consulting firm and 5 people in the bedding company excluding the external contractors.

Ideas of both the companies came while she had an initial discussion of her thoughts with her friends.

All entrepreneurs involved in the research were at different stages of their businesses and were in a wide range of age and experience brackets. An attempt was made to balance the sample between male and female entrepreneurs. However, because of the lower overall number of accessible female entrepreneurs, it was not fully achieved. However, according to a Global Entrepreneurship Monitor (GEM) report, the ratio of 2 to 4 reflects the true female-male incidence of entrepreneurship in the UK (Hart, Bonner, Levie, & Heery, 2017).

#### Entrepreneurship educators

Entrepreneurship educators were selected from 7 different universities in the UK to get a wider understanding of the domain of entrepreneurship education in the higher education system. Each educator was at a senior lecturer position at a UK university. The National Centre for Entrepreneurship in Education's (NCEE) list of entrepreneurial universities was used to select the sample universities. A sample of 10 universities was identified, of which 7 institutions were short-listed based on the ethical constraints and requirements of the chosen institutions.

PARTICIPANTS BACKGROUND

<b>ENTED1</b>	He has been teaching entrepreneurship in the UK higher education for over 8 years, his own doctoral study was in entrepreneurship as well from a UK university.
<b>ENTED2</b>	She was a journalist with a PhD in project management in the digital age, 11 years ago she started teaching in higher education and six years ago she turned towards entrepreneurship teaching
<b>ENTED3</b>	He worked as a human resource and employment law consultant for 14 years followed by a 12 years career of teaching in four different UK higher education institutions.
<b>ENTED4</b>	He worked in the art industry before moving into entrepreneurship teaching. He has been teaching entrepreneurship for 5 years to business and art school students at a UK higher education institution.
<b>ENTED5</b>	He had a background in helping develop business skills for SMEs. Although teaching in the higher education for 20 years ENTED5 got involved in entrepreneurship teaching some 8 years ago.
<b>ENTED6</b>	She has been teaching entrepreneurship in the UK higher education since around 2007, prior to that she was working with a small company.
<b>ENTED7</b>	He has a doctorate in entrepreneurship and started as a research fellow in entrepreneurship in 2011 before starting the entrepreneurship teaching as a lecturer five years ago

*Table 7. Entrepreneurship educator participants*

Entrepreneurship students

As mentioned above, student participants were recruited through snowball sampling. Easterby-Smith et al., (2018) explains that snowball sampling can be helpful where individuals are a part of an organisation or network and their

identities are confidential or it is not possible to recruit them directly for regulatory and/or ethical reasons. The table below shows the participants and their instructions as well as which entrepreneurship educator recruited them. All participants were honours year undergraduate students at the time they were interviewed.

	STUDENTS COMPLETED AN ENTREPRENEURSHIP COURSE	STUDENTS ABOUT TO START AN ENTREPRENEURSHIP COURSE	
<b>PARTICIPANT</b>	<b>Institution and recruiter</b>	<b>Participant</b>	<b>Institution and recruiter</b>
<b>ENTSTU1</b>	LDN - ENTED2	N-ENTSTU1	LDN - ENTED2
<b>ENTSTU2</b>	LDN - ENTED2	N-ENTSTU2	LDN - ENTED2
<b>ENTSTU3</b>	LDN - ENTED2	N-ENTSTU3	LDN - ENTED2
<b>ENTSTU4</b>	KNT - ENTED3	N-ENTSTU4	KNT - ENTED3
<b>ENTSTU5</b>	KNT - ENTED3	N-ENTSTU5	KNT - ENTED3

*Table 8. Entrepreneurship student participants*

The number of student participants could have been larger. However, because of the ethical concerns of the sponsoring and participating organisation regarding interviewing students and the time constraint involved in gaining individual ethics approval resulted in a smaller number. However, the interviews conducted with the students were in-depth and some replication was observed after the first few interviews, giving an indication that more interview, although might have been useful. As it may not provide any more

insight into the phenomena then it already has reached the point of data saturation. Data saturation is considered to be achieved when “no new information or themes are observed in the data” (Guest, Bunce, & Johnson, 2005, p. 59).

### 3.4. Data collection

There were two main methods that were used to collect data for this research. The first part of the primary research involved fieldwork observations of entrepreneurs working in a socially networked environment. These observations were complemented by an informal discussion with the entrepreneurs. This was followed by the second part of the research where semi-structured interviews of entrepreneurs, students of entrepreneurship education at two universities and academics that were involved in the teaching entrepreneurship courses at 7 UK universities were conducted. According to McDonald, Gan, Fraser, Oke, & Anderson (2015) research in entrepreneurship has been dominated by quantitative methodologies which are not suitable in many cases, especially, when the discipline has been repeatedly highlighted as a complex social and contextual phenomenon. They also suggested that because of the dominance of quantitative research in entrepreneurship, the focus remained on the confirmatory questions that can be answered with quantitative methods, hence leaving significant exploratory research untapped.

Participant observation, used in this research, is credited to provide vital insights into an organisation or a phenomenon. In addition to that, according to Bøllingtoft & Uihøi (2005, p. 277), who conducted a similar study to analyse

networking at an incubator in Demark, participant observation “is the least noticeably intrusive of all research techniques, while the lack of predetermined categories makes the observer free to alter any problems and questions which crop up”. This flexibility of the participant observation provides an opportunity to discover elements which might not be possible using any other method. There are limitations to any method of research, and in this case, observations can sometimes be an unreliable source of information. There is a way to overcome that limitation by observing the situation systematically and repeatedly (Alder & Alder, 1987). This was attempted in this research. In addition to that, the informal discussions also helped in clarifying the facts observed during the time spent at the coworking spaces. Furthermore, there have been several calls available in the literature to conduct research in entrepreneurship which is based on observational and ethnographic methods of data collection (Dana & Dana, 2005; De Bruin, Brush, & Welter, 2007; Mcdonald et al., 2015).

In total, 16 coworking spaces were contacted out of which 10 agreed to participate in the research. The 5 that were chosen were based on the variety of the entrepreneurs and their businesses that were occupying the space at the time of the research. It was also considered to have an opportunity to observe a balanced ratio of male and female entrepreneurs at the locations. However, it was not achieved in all cases as explained above.

To immerse into the context, the researcher remained at these coworking spaces for 2 weeks each between February 2017 and July 2017. During this period, the researcher had informal discussions with a total of 41 individuals who were using these coworking spaces on a regular basis.

Davies (2007, p. 152) suggested that “interviewing provides the possibility of reaching conclusions specific to the sample and the detailed analysis can enable complex interpretations of each individual’s perspectives in their particular context”. Hence interviewing participants in a constructivist approach is considered the best practice. Furthermore, this research needed to explore how entrepreneurs learn through their interactions with individuals in their networks, which can be effectively achieved with the use of interviews. Semi-structured interviews were chosen to be the mode of data collection from all groups apart from the group involved in participant observation, where informal interviews and field notes were the instruments of data collection.

Semi-structured interviews facilitate exploratory research which was the nature of this research. In addition to achieving the research aims and objectives, semi-structured interviews allow the research to come across unexpected revelations that might occur during an interview (Miles, Huberman, & Saldaña, 2013; Neergaard & Ulhøi, 2007). Although there was a list of questions and allocated time for each interview, the researcher allowed the participants to express freely and provided the flexibility of discussing the issues in depth within the context of this research. In addition to that, each participant received a brief report of the interview afterwards to validate the interpretations of the researcher.

Three interview schedules were created with the questions of the semi-structured interview to ensure that the participant answered all the questions that would help achieve the research objectives and would provide further insights into the phenomena of entrepreneurial learning within a social network

setting. This also helped in managing the data and in comparing the results among different groups of participants.

The research, its contribution and the nature of their involvement was highlighted to all the participants before each interview. There was some difficulty in arranging the interview appointments because of the individual schedule and locations. However, all of the planned interviews materialised eventually. As discussed in the previous section, snowball sampling was employed to recruit entrepreneurship education students, this was discussed with the entrepreneurship educators after the interviews.

Davies (2007) highlights that the personal attributes of the research can have an influence on the participants and their responses. He further suggested that it is a possibility that participants have not been in a similar situation before and might feel uncomfortable. Every effort, therefore, was made to minimise if not completely eliminate the risk of such a situation. The attempt was, therefore, made to make the interviewees comfortable by starting with an informal casual chat before the serious interviewing commenced. Research participants were also informed that their participation is completely voluntary, and they can withdraw from the research with or without giving any reason to the researcher. It was made sure that each research participants have been - made aware that their identity will be kept confidential and any information that might lead to revealing their identity or affiliation with any organisation will be completely anonymised.

In addition to that, it was also well-thought-out that all interviews must take “place in a setting that was reasonably comfortable and familiar to the interviewee” (Davies, 2007, p. 154). Most interviews took place at the offices

of the participants, with the exception of a few interviews of the entrepreneurs that took place at a venue suggested by them. Student interviews took place at their universities before and after their classes to make sure they did not have to travel and spend extra time to give interviews.

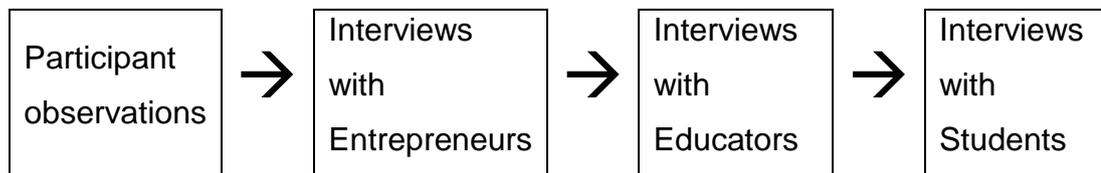
### 3.5. Stages of data collection

The figure below shows the steps in empirical data collection. Participant observation was the first step of data collection. This allowed the researcher to understand how entrepreneurs learn in a networked setting by getting the first-hand information on the process. Participant observation also helped in developing interview guides and selecting a sample of entrepreneurs for the next stage of the research.

The second stage involved semi-structured interviews with entrepreneurs. This was to supplement and augment the findings of the first stage, clarifying doubts rose as well as to further the understanding of how entrepreneurs learn, the role of their network in their learning, and how it evolves. Furthermore, this gave an opportunity to learn how entrepreneurs believe entrepreneurship should be taught and what should be its constituent elements.

The third stage involved interviews with entrepreneurship educators. The objective was to understand their perspective of entrepreneurial learning and teaching. This helped to identify the diversity of perception between entrepreneurs and entrepreneurship educators on issues relevant to this research. Interviews with educators also helped to understand the diversity in entrepreneurship education across UK higher education institutions.

The final part of the empirical data collection involved interviews with entrepreneurship students to understand their perceptions of and expectation from their courses and how they believe they it can help them for their future careers.



*Figure 6. Stages of data collection*

This multi-stage linear data collection facilitated the gradual building of a comprehensive understanding of the phenomena under scrutiny i.e. entrepreneurial learning and entrepreneurship education enriched by the inputs, provided from their own unique vantage points, from a multitude of actors involved with the process in 3 different roles and allowing the researcher to visualise a more complete picture and draw appropriate conclusions.

### 3.6. Data management, confidentiality and ethics

Observational data was recorded in the form of field notes. However, informal interviews were mostly recorded either on digital Dictaphone or smartphone. Some informal interviews were recorded using notes and a report was written on the interview which was then shared with the participants to verify the information. This was done because during the observations, sometimes a conversation would start instantaneously with participants without any access to the recording devices.

All semi-structured interviews were recorded on a digital Dictaphone. It was made sure that transcription of the interview happened as soon as possible after the interview, as the researcher then wrote a short report on the interview to get the interpretations of the researcher verified by the participants. A sample of an interview report is attached in Appendix G.

All the data, including observational data, was electronically managed analysed using NVivo 11. NVivo 11 allows the user to import audio and text files from a range of formats. Codes were developed on both audio and text files which enabled the organisation and analysis of large and complex data. NVivo 11 also allows keeping all the data in a single file so a cross-group analysis can be performed conveniently.

“Ethical concerns are greatest where research involves human participants irrespective of research methods” (Saunders, et al., 2007, p.209). Conditionality of the data is the prime component of the research as in some cases participants of the research might not be comfortable in revealing their identities, For this specific reason, any information that could potentially reveal the identity of any participant was kept optional to include and participants were told that they had the right to refuse to provide such information or make a request of not publishing it. Participants were also told that they had the right to withdraw from the research at any time. All meta-data has been anonymised for the publication of the research and follows University of Portsmouth research ethics’ guidelines (based on United Kingdom’s Research Integrity Office’s code of conduct) and European Society for Opinion and Market Research (ESOMAR) Code on Market and Social Research.

### 3.7. Data quality and methods analysis

Semi-structured interviews lack a strict layout, which can sometimes lead to reservations about reliability. In qualitative research, the reliability of the research is based on whether another research can generate similar finding by using same methods and techniques (Silverman, 2007). Easterby-Smith, Thorpe, & Jackson, (2015, p. 103) suggests that measures evaluate a research methodology “include terms such as ‘validity’, ‘reliability’ and ‘generalizability’”. However, they also highlight that these terms can mean differently in different research projects. To avoid data circularity, or ‘double-dipping’ organisations that were involved in participant observations were not used for selecting entrepreneurs for semi-structured interviews.

There is often a risk of error in the qualitative data or its interpretation. To minimise the error in data collected from semi-structured interviews, it was transformed into transcripts that were then analysed using a variation of thematic analysis based on the Grounded Theory. A Grounded Theory method, in general, is in alignment with constructivist ontology, as the creator of the Grounded Theory, Glaser & Strauss, (1967, p. 279) highlighted that they do not believe “pre-existing reality out there. To think otherwise is to take a positivistic position that . . . we reject . . . Our position is that the truth is enacted”. Charmaz (2000, p. 524) develops a constructivist grounded theory method and suggests that data does not “provide a window on reality ... The ‘discovered’ reality arises from the interactive process and its temporal, cultural, and structural contexts”. A constructivist approach to a Grounded Theory method of analysis has been recognised as a prevalent choice especially in the discipline of education (Mills & Francis, 2006).

The purpose of data analysis in social research is to use the data to build theories of social reality. The Grounded Theory, in general, is inductive in nature which moves from general information to a specific knowledge (Glaser & Strauss, 1967). In data analysis, the Grounded Theory suggests a series of coding steps that can be used to generate assumptions from qualitative data. These steps include open coding, axial coding and selective coding (Corbin & Strauss, 1990). Quoting Dewey (1933), Strauss & Corbin (1998, p. 74) highlighted “asking questions” and “making comparing” between the data as an essential part of theory development which should be applied at all levels of analysis. For this reason, cross-sectional research of different stakeholders in entrepreneurship learning and education is uniquely beneficial. Therefore, the process of data analysis in qualitative exploratory research is not objective but a dynamic progression where a researcher engages with the data to form constructive viewpoints (Gergen, 1999).

Data analysis was undertaken in a three-step process:

1. The first step in data analysis of semi-structured interview, field notes and other data sources is to create transcripts and reports.
2. In the second step, the data was coded using open, axial, and selective coding.
3. In the final step, results were then generated to cover the overall view on entrepreneurial learning, entrepreneurship education and entrepreneurial learning in social networks.

This approach is in line with the interpretivist epistemology and constructivist ontological stance (Mojtahed, Nunes, Martins, & Peng, 2014). As mentioned

above, data was imported in NVivo for coding. However, for the initial interview, the coding was done manually before doing it in NVivo to evaluate the quality of the analysis. NVivo is known for facilitating the analysis in a Grounded Theory approach (Hutchison, Johnston, & Breckon, 2010). NVivo is capable of organising data into categories and sub-categories as well as creating links between them using various types data including, voice, video and text (Richards, 2005). Initially, the data were analysed without any relation to the literature, following a thematic analysis derived from the Grounded Theory method. Reason for doing that was to minimise the data being influenced by the literature. Interview recordings were heard by the researcher at least twice before any analysis was attempted. This helped the researcher getting familiarised with the data. Recordings with richer data were used to highlight relevant major categories on the recordings in NVivo to revisit again at later stages. This process was repeated in each group of participants to make sure none of the relevant themes is missing. The coded data were evaluated several times after the process to ensure that it was ready and organised. Figure 7 below shows an exemplar of the thematic coding tree from the observational part of the research. Please see Appendix G for the detailed coding trees for all empirical data groups.

Major Categories	Sub-categories	Properties
Entrepreneurial networks	Formation of the networks	Self- selection
		Allocation
		By chance
	Type of support within networks	Personal
		Professional - Directly venture related
		Professional - In-directly venture related
		Professional - Non-venture related
	Network dynamic	Evolution of networks
		Gender differences within networks
		Work and personal networks
		Personal network with little or no work dynamics
		Work only networks
	Learning	Venture related learning
In-Directly related at the given time		
Directly related for a future time		
In-Directly related for a future time		
Personal learning		Hobbies
		Relationships
		Unrelated learning

Figure 7. An exemplar of the coding tree

### 3.7.1. Open coding

Open coding is an “analytical process through which concepts are identified and their properties and dimensions are discovered in data” (Strauss & Corbin, 1998, p. 101). After transcribing the data, major and sub-categories were identified for each group of participants. Major categories for each group are mentioned below.

#### 3.7.1.1. *Observational data from coworking spaces*

##### i. Entrepreneurial networks

To understand how a network emerges, what type support entrepreneurs get from the networks and how different people act in a network.

##### ii. Learning

To understand the learning activities taking place within entrepreneurial networks.

#### *3.7.1.2. Entrepreneurs*

i. Source of entrepreneurial learning

To understand how entrepreneurs, learn about things that are beneficial to their business.

ii. Entrepreneurial learning and social networks

To understand the extent of entrepreneurial learning happens in networks, how these networks emerge and how entrepreneurs determine which learning is useful and credible for them.

iii. Proposed model of entrepreneurship education

To gather the views of entrepreneurs on how entrepreneurship should be taught.

#### *3.7.1.3. Entrepreneurship educators*

i. Teaching of entrepreneurship

To understand the current state of entrepreneurship education in different higher education institutions.

ii. Source of entrepreneurial learning

To understand the entrepreneurship educators' point of view on how entrepreneurs, learn about things that are beneficial to their business.

iii. Entrepreneurial learning and social networks

To understand the entrepreneurship educators' point of view on the extent of entrepreneurial learning happens in networks, how these

networks emerge and how entrepreneurs determine which learning is useful and credible for them.

iv. Proposed model of entrepreneurship education

To gather the views of entrepreneurship educators on how entrepreneurship should be taught.

3.7.1.4. *Entrepreneurship students*

i. Concept of entrepreneurship

To understand the perception of entrepreneurship according to students who decided to study entrepreneurship.

ii. Perception of the source of entrepreneurial learning

To understand the students' point of view on how entrepreneurs, learn about things that are beneficial to their business.

iii. Perception of entrepreneurial learning and social networks

To understand the students' point of view on the extent of entrepreneurial learning happens in networks, how these networks emerge and how entrepreneurs determine which learning is useful and credible for them.

iv. Proposed model of entrepreneurship education

To gather the views of students on how entrepreneurship should be taught.

3.7.2. *Axial coding*

The second step of coding in data analysis was axial coding. Axial coding is a process of “relating categories to subcategories along the lines of their properties and dimensions” they are “termed ‘axial’ because coding occurs

around the axis of a category, linking categories at the level of properties and dimensions” (Strauss & Corbin, 1998, p. 123).

### 3.7.3. Selective coding

This is the last step of coding in which the integration of categories takes place as well as the refinement of emerging theoretical themes to form a central category (Glaser & Strauss, 1967). This stage also involves the definitive moment after which no new relationships or properties can be added into the analysis process (Strauss & Corbin, 1998). The central categories emerge through all the main categories by cross-connecting the sub-categories with their properties.

Following this process, the next step was to write-up and present the findings. The interpretation of the data was dealt with extreme caution. For this reason, reports of the interviews were sent back to the participants to ensure there were no errors. In addition to that, it was also important to see that the researcher did not miss any key elements or experiences of the participants. The findings are presented in the next chapter.

### 3.8. Summary and limitations of the research methodology

This research adopts an interpretivist epistemology within a constructivist ontological position to look at the reality of entrepreneurship education and entrepreneurial learning.

It has been noted in the literature that positivism has been the predominant paradigm of entrepreneurship research. However, to align the literature of entrepreneurship education and entrepreneurial learning the role of social networks in the importance of context needs to be examined which would not be possible to do with a positivistic approach. Further, the positivist research seeks causal inference whereas the interpretivists quest is for meaning and making sense. Therefore, for understanding how entrepreneurs learn in the social networks and how this understanding can be productively used to enrich entrepreneurship education an interpretive approach is an obvious choice.

The research is divided into two main data collection methods; participant observations (to understand entrepreneurial learning by being in a networked entrepreneurial setting) and semi-structured interviews with entrepreneurs, entrepreneurship educators and students of entrepreneurship. Data has been analysed using a variation of thematic analysis based on the analysis method of The Grounded Theory.

A major limitation of the chosen methodology is that the research does not capture the social and cultural influences that might be imposed on the participants which can have an impact on their learning and the way they have developed their social network. Secondly, the research is limited in terms of its scope and the duration and number of participants for the interviews.

Following a constructivist approach and considering the fundamentals of entrepreneurial learning which is a spontaneous and sometimes an unconscious process where participants might not be aware of the learning when it happens (Pittaway & Thrope, 2012; Wang & Chugh, 2014), some elements of the learning process that might have an effect on the entrepreneur's perception may not have been identified by the participant hence they are unknown to the research. For this reason, the data gathered in this research cannot provide a complete and holistic insight into entrepreneurial learning. However, it aims to provide an insight into how networks and context in entrepreneurial learning can enhance entrepreneurship education.

The research follows the research student's guidelines of the University of Portsmouth's ethics policy and has been scrutinised by the ethics committee of the university.

## 4. Findings and Analysis

Qualitative findings have been allocated as per their thematic codes. Three main themes relevant here are the networks in entrepreneurship, entrepreneurship education and entrepreneurial learning.

### 4.1. Entrepreneurial learning at coworking spaces

As stated above, the first part of the research was conducted at coworking spaces to understand how entrepreneurs act in a networked setting.

The objectives of this activity were to understand the entrepreneurial learning process from the first-hand experience. All the information collected in that period helped to contextualise the research and provided, I believe, a stronger and robust foundation for the second stage (semi-structured interviews) of the work.

Following are the detailed findings of the ethnographic participant information with excerpts from the discussions with the entrepreneurs that were using the space at the time of the research. Findings have been allocated in three overarching themes of networks in entrepreneurship, entrepreneurship education and entrepreneurial learning followed by appropriate sub-themes

#### Networks in entrepreneurship

##### *Learning at coworking spaces*

Learning that was happening in the networked setting of the coworking spaces was of both, tacit and explicit nature. Entrepreneurs were open to sharing things and ideas as they would find or come up with. The flow of communication was observed to be significantly different depending on the

layout of the space. Three out of five coworking spaces that were a part of this research had carefully designed the layout in the hope that it would maximise the creative and innovative ambience.

One space, in particular, designed one area of their space in the reflection of a “loft” with wooden benches and blankets. It was observed that in that layout friendlier and informal conversations were taking place that could potentially lead to ideas and co-ventures. One of the entrepreneurs using that space mentioned: *“I met my business partner here when we both joined the space, we were working on completely different business ideas, and then we started having a conversation from which our current business developed”* (RLE3). A number of people were using the space because they believed it was making them more productive and they were learning new things every day.

On another instance, in a more formal setting of the space, on the person asked a taxation related question without referring to anyone and two people offered to help, one of them offered to show it in a step-by-step manner for better understanding.

During the time at a London based coworking space, the researcher had a discussion with an entrepreneur who was running a company with very significant turnover and had a central London office. The entrepreneur mentioned that he spends one day a week at the coworking space to develop new ideas. He mentioned; *“I come here to get out of the day-to-day managerial work of my company to be in the environment from where I started. I meet new people here who are as passionate about their ideas as I was when I first started. I sit in the cafeteria and start discussing my ideas with people sitting next to me, and everyone is very open ... you need a space to think out loud*

*and people that are not related to the idea to get a unique perspective on it"* (GSE5).

While talking to people at INS coworking space, which is owned and managed by a university and have one floor completely dedicated to students free of charge, it was highlighted that many of the students who now run their businesses never thought that it would be possible to reach the levels they were at without the support and encouragement of the fellow coworking space users. One of the student entrepreneurs mentioned; *"I had an idea of the business, and when I came here it was more of, to see how it goes type of plan, now I am working with some of the lead designers in the country and arranging shows abroad. Everything I learned about the business was from other people here"* (INS2).

One respondent mentioned; *"I used to work from home and occasionally from Starbucks, then I was introduced to this place by a friend and it really helped me develop my thoughts and business because you see others working very hard and that motivates you to do more as well"* (DSL1).

While talking about the private offices, another respondent mentioned that *"...it severs the actual purpose of the coworking space because you can work from anywhere these days but when you come here is because you want to be around like-minded people and learn from each other and their journeys and this builds the trust..."* (DSL2).

A large of number of people that researcher had discussions with, mentioned that although they interact with several people including those that are using formal office setup spaces and independent offices, they learn and interact

most with people that are in the same shared areas in part with the informal layout of the spaces.

Although the majority of the peoples who were using the coworking spaces favoured the open layout, including the people that were in private offices, it was highlighted by users of the private offices and the management of the coworking spaces that it is necessary to have both types of layout. An open layout encourages more collaboration and learning, but at the same time once a company starts growing with some staff it would need its private space. Being inside the same building offers the entrepreneurs an opportunity to get benefited from both.

Findings of the observational research and discussions with the entrepreneurs clearly highlighted that the greatest advantage of using such spaces is to build and nurture a like-minded community. This notion was reinforced by several members of coworking spaces, GSE2 mentioned that he comes to the coworking space “to be around other like-minded, interesting and helpful people, who would not judge an idea just because it has not been done before”.

Even in the spaces with a formal office layout and private offices, there is always an opportunity to interact and collaborate in the breakout areas and the cafeterias. In addition to that, one coworking space was arranging weekly sports activities for its members to bring them closer and to break the ice. The cafeterias at all the spaces involved in this research were found to be the venues for collaborative discussions.

One of the common themes of learning that emerged from all the coworking spaces was the social context of it. It was highlighted by both, the management of the coworking spaces and their users. The manager at GSE suggested that *"this space provides a venue for entrepreneurs to work alongside people of similar mentality... if you don't know something, you ask the person sitting next to you, we also run training seminars focused on the nascent entrepreneurs"*. She further highlighted that *"entrepreneurship requires innovation, you simply cannot be innovative in your own silos, for innovation to happen, you need a community that supports it."*

In the contrast of that, only one individual using the space highlighted that if the people are from similar industry and background then they will have more relevant topics to talk about which can lead to spontaneous learning events.

GSE7 was making a transition from being a banker for two decades to starting up her own business. According to her *"I joined the space to have a sense of a working environment but since I have been here, it made me aware of how little I knew about the realities of a business start-up. In the beginning, I used to just watch other people having random chats and network. I used to think they might know each other, until one day, when someone came to me and asked me about an app they were building. I realised that how useful it was for them to get fresh eyes on stuff. After that I decided to put myself out more, now I see how people talk and sell themselves or learn to do that just by communicating."*

Two out of five spaces the researcher visited had a policy of minimum membership duration. Their rationale for doing so was to build a relationship with their members as well to enhance the continuous learning process. In

their opinion, the longer the entrepreneurs would stay at one location, the stronger the network they would build. Newcomers can have a completely new mindset and it takes them some time to adjust or abandon the idea of using the coworking space. To accommodate this notion, both spaces offered a trial period for their members before committing to a longer membership. GSL also recognised the advantage of that. However, because their space comprises of largely hot desks with very high demand, they decided not to enforce such tying policy. They actually kept the membership open-ended and completely free for hot desk users.

In addition to formal and informal discussions leading to learning activities at the coworking spaces, all the spaces organise seminars and workshops to enhance the skills and overall development of their participants. Depending on the size and resources at the disposal of a specific space, the events ranged from local entrepreneurs sharing their stories to the leading experts in a field helping the nascent entrepreneurs with their intellectual struggles.

Researcher spent only two weeks at each space because of which it was hard to fully immerse in the environment and learn things at the same level as others, but it was observed during the discussion with the participants that the longer a person was at the space the more interactions he or she was having with others, hence resulting in more spontaneous learning occurrences.

#### *Support and entrepreneurial community of practice*

It was highlighted by the research that one of the main benefits of working in such an environment is having a community of practice where likeminded people can work, grow and support each other. HKL8 said that "everyone

working here is working on their own projects but at the same time this connectedness with each other provides more intellectual support and opportunities that are not possible in any other way" HKL9 further mentioned that twice he moved out of the coworking space to an independent office, but he moved back because of the level of progress he was having at the coworking space was not the same.

The members were from various industries but in most of the coworking spaces, it was dominated by the tech-entrepreneurs, for whom websites and mobile application development were the most prominent activities. These spaces were giving the tech-entrepreneurs collaborative platforms to learn and work together with other people in the similar industry as well as were providing them with the clients from the arts and creative industries which was the second major field for the entrepreneurs. Arts and creative entrepreneurs were using intellectual support from the tech-entrepreneurs and vice versa.

The above two constituting the majority does not mean that there was a lack of other types of entrepreneurs using the space. The diversity in the background and the nature of ventures entrepreneurs were working on was bringing in a unique ambience to the place. This provided a prospect of unanticipated interactions between the participants. The diversity pre-empted the development of a mono-cultural setup where every individual had the same type of knowledge and experience. This idea was reinforced by both the management and the users of the coworking space. Manager of RLE mentioned that "*...diversity of people is what burst the innovation, you can't develop entrepreneurs and entrepreneurship in a setting where all people are the same*". This idea was reinforced by a member who mentioned that; "*the*

*future is based on intellectual diversity, if something can be done by a thousand people, a machine can do that as well. Innovation happens when I (tech-entrepreneur) talk to a person starting a cleaning company or a security company” (RLE4).*

Not just internally, all the coworking spaces had strong ties with the local entrepreneurial and business community as well as with local universities to support and promote entrepreneurial activities. Apart from one space involved in the research, all four other spaces regularly hosted events and exhibitions at their locations to enhance the opportunities and develop a stronger network in the community.

A common theme that emerged from the members of all the coworking spaces was that they liked the freedom they had as well as being around people who understood them. Manager of HKL mentioned that their coworking space tries to cater to the needs of all types of people. They facilitate an environment of working together and building connections. At the same time, they provided an opportunity to enjoy the independence of their working style.

Knowledge sharing was highlighted as the key benefit of using coworking space by almost all the people that had interactions with the researcher. One entrepreneur mentioned that *“coworking in itself is an atmosphere of shared consumption and exchange of experiences, knowledge and trust” (DSL5).*

Manager of GSL mentioned that they had allocated offices in the same building which brings in significant revenue for the company as well as enough to run the day to day operations of the coworking space. She further explained that they provide a space in the city centre for aspiring entrepreneurs; *“we want*

*them [entrepreneurs using coworking space] to capitalise their full potential without worrying about the bills”,* in addition to that she mentioned that they learn from the entrepreneurs as much as entrepreneurs learn from them and their peers.

All the coworking spaces visited had breakout spaces for their residents, all had more formal office spaces and the coworking hot desk user. This increased the interactions between more established companies and entrepreneurs that are at a very early stage. This further promoted the collaboration and opportunities that would not be possible otherwise.

#### *Gender aspect*

It was observed that gender played a role in a way the communication and knowledge exchange was happening. Some of the members were working on the same venture hence they had a stronger bond. After spending some time with the entrepreneurs and having discussions with them, it was observed that, outside the workplace, men and women were spending more time with peers from their own gender groups than spending time collectively, with some small exceptions. It was highlighted by several of the female entrepreneurs that they hesitate to ask for help because they fear if rejected, they will feel embarrassed, hence limiting their attempts to ask for help compared to that of the male entrepreneurs. Discussion with participants also highlighted the similar trend, female participants felt more comfortable discussing things with other females as compared to male participants whose interaction was based on the proximity, i.e., whoever was sitting close to them.



## 4.2. Entrepreneurial learning and education from entrepreneurs

Before starting interviews for this research, the researcher provided information to the interviewees on background and summary of the research explaining the purpose of the research, the meaning of social network and type of people focused in this research who are in the network. It was clarified that the focus of this research is on understanding how entrepreneurs gain knowledge from people that are in their network but are not obliged to provide that information or support i.e. people whose job is to advise.

### Source of entrepreneurial learning

**ENT2** was a student at the university studying business and did not receive any formal entrepreneurship education or training apart from things that were partially merged in his business degree at the university.

While discussing his sources of knowledge, ENT2 mentioned that university education equipped him with the business acumen and some skills of generating funding but not more than that. In his journey, he believes that his education, experience and networks played an equal role and none of them can be treated with any less significance than the others.

*“While our friends booked from holiday provider, we booked our holiday directly and ended up spending £150 less” (ENT2)*

As a result of that experience, ENT2 and his partner decided to contact major partying resorts in Europe to find out why and on which events people are most likely to go.

*“We went to all the main partying resorts to find out what people are spending on, for example; boat parties, beach parties, full moon parties, and found these are really top events so we thought why we don’t create an events package that then we can bundle on with ours holidays to make sure when someone is booking a holiday through us is guaranteed to give the best experience possible” (ENT2).*

When ENT2 and his business partner first attempted to start the business in 2012 formally, their website did not look very good. The event companies were not inclined to work with them because of their inadequate web presence. So, for ENT2, entrepreneurial learning was a process of trial and error.

In relation to the sources of learning; **ENT3** considers his experience the most important source of his learning, followed by the books and education and then from people he surrounds himself with. He mentioned that if he needs advice and there is no one whom he can ask, most of the time he tries to find the relevant information online. While working in the industry and in his own business, he learnt a significant number of things and got various ideas from his clients.

The source of learning beneficial to **ENT4’s** business is derived from his experience of serving in the armed forces. This has also developed his leadership approach and the way he deals with the problems.

*“In your early days of the army, you really try to extract every bit of information you possibly can before making an informed decision, and knowing that it is time-limited, as you grow and upgrade your depth of experience you develop an intuitive and become faster in that decision-making.” ENT4*

ENT4's, current, most important sources of information and learning beneficial to his business are from discussing things with his clients, people already in the similar industry and publications that are focused on the marine businesses.

When ENT4 left the army, he started the civilian life from scratch but knew that he had to learn things quickly, so he started reaching out to all the data and information he could have possibly gathered from all the available sources in and outside the industry. He highlighted that experience dealing with uncertainty in his past career helped him develop his skills to learn new things quickly. A large extent of that learning came as a result of his network interactions.

While answering about the uncertainty, approaching something he has not encountered before and not knowing something about anything in his business; ENT4 mentioned that in such a situation he would try to find a way by analysing the situation from a basic level after which if he still does not understand it, he will try to find someone who might have encountered something similar in same or in a different context.

Education background of **ENT5** played a significant role in the development of her business. She wanted to be in the fashion industry and that was the reason she chose her specific degree programme. While studying, she went on placement with a major fashion designer and that proved to have a vital impact on her business start-up and its development. During her placement, she was involved in the procurement and later in sales as well and she developed her network in the industry from there. She is still working with several people she met during her placement including her mentor, who was her boss at that time.

In addition to that, her network and learning by doing are the biggest sources of her entrepreneurial learning.

**ENT6** did not receive any formal entrepreneurship education or training. However, he pursued mentorship in and around his industry and learnt significantly from the people that are/were in his network. In addition to that, he learnt things as they happened. His network expands internationally, and he receives support and learning from his network regularly.

*“When we were about to start the photo-booths, I was a bit sceptical about it, I ended up having lunch with someone who runs a company in the States, very similar to ours but on a different level in terms of success ... we talked a lot about photo-booths and he convinced me that it was the right step to take. Now it’s the biggest side of our business.” ENT6*

With regard to the source of learning and knowledge related to his business, ENT6 mentioned that in his previous job he did several pieces of training on sales and he brought in that into his new business. He further mentioned that “every single interaction with the customer is a learning experience”. According to him, his interactions with people around him and customers is what shaped his current thinking. He rated his experience, interaction with others both through online social media and face to face and the training he had in sales as his three major sources of knowledge and he values all of them equally.

ENT6 mentioned that it was a bit scary for him when he let go of the safety net of his full-time job, especially, as he was in a very competitive industry. He decided to give something different to gain a competitive edge in the business.

*“After nine months it was obvious that I couldn’t work full-time heading communications and fundraising for the charity and also do this DJ thing. It was a bit scary at the start as in this sector, it is very, very competitive and an awful lot of bad representation of entertainment business is out there”. ENT6.*

**ENT7** studied business at the university. However, she did not receive any formal entrepreneurship education or training. In relation to the current source of knowledge, ENT7 believe that she learnt most from her experience doing things and discussing them with others. If she does not know whom to approach when she needs to know about something, she will try to search the answer online. A very limited amount of her knowledge about the business came from books.

*“... I would come up with a ridiculous business idea and after discussing it with everyone I would have a more refined version of it. Business ideas are gemstones you get them uncut and rough and by sharing and getting feedback, you shape them into a diamond.” ENT7*

ENT7 believes that her business is a product of her network and most of her learning about the business came from her close friends and parents. Her first business failed because she was an introvert and was not reaching out to people.

## Entrepreneurial learning in social networks

The key people for **ENT2** to get support, ideas and knowledge are his partner, ENT2MT and his father. ENT2 mentioned that he discusses things with his partner every day and shares ideas about day to day running of the business and discusses things with ENT2MT on average every week to get guidance. He also discusses things with his father almost every week to bounce off his ideas.

The reason ENT2 approaches these three people the most is that his business partner involved in the business has experience of running and maintaining things. He discusses things with ENT2MT because ENT2MT is an industry expert and has knowledge and experience of starting a business from scratch and becoming a market leader. His dad does not have experience in the specific industry but can help sharpen the ideas by providing an outsider's perspective.

ENT2 started attending travel exhibitions to strengthen his network and met a representative from an airline company. They tried to negotiate the rates but found out that this airline does not offer discounted rates. However, the representative suggested that her partner might be able to help. Her partner, ENT2MT runs an airport transfer company and could provide a significant amount of knowledge and guidance that proved to be very beneficial and became the mentor of ENT2 and his partner.

*"We got very lucky with that but at the end of the day you make your own luck, if we would not have been attending networking events, we would have not been able to find a key person."* ENT2

This would have been not so easy for ENT2 if he had not been able to find someone with experience and knowledge of the industry to guide him to be a part of their network. At this moment, ENT2 still considers ENT2MT as the key part of his network and contacts him whenever he needs any advice.

With regards to approaching people for advice that might not be liked by the ENT2, he said: *“It depends on the reason why I don’t like them, if it is something mutual then I will not approach them as they might try to sabotage me, but if it’s some personal dislike and they are very good in business then I might listen to them and would give it a thought”*. In future ENT2 would like to make a connection with people that have more experience and can fulfil some of the knowledge gaps ENT2 may have in his own company.

**ENT3** mentioned that although networking is important, it is also very important to carefully choose people in your networks as well as select the networking events you attend.

*“I find some of the networking events of very poor quality, a lot of people would just meet up and have coffee and talk about things but it’s not really business-related, and it should be because that is the purpose it.” ENT3*

With regards to learning from the network, ENT3 learnt several key things from the people around him, as a sum he learnt about the things he should not do by observing others. ENT3 also enhanced his network capabilities by introducing his contacts to his clients and vice versa.

*“From my network, I have learnt somethings not to do from the mistakes that other people have made, and I learnt that from my own observations ... but I have also learnt from people who have shared with me, successes and*

*mistakes ... I have also learnt about opportunities to promote my business”*

ENT3.

ENT3 learnt from his clients a lot as well. Clients have referred him to other people which helped him grow his network and business. He considers his wife and two close friends, ENT3F1 and ENT3F2, as a part of his immediate network of people he would go to if he needs advice. For ENT3, his wife is the first person he discusses everything., On average, they talk about his business twice a week, with ENT3F1 he discusses his business almost every week whereas with ENT3F2 he discusses it once a month. ENT3 discusses his business-related issues with his wife because she works in a similar industry and is very honest with her opinions. ENT3F1 presents a unique perspective to a problem based on his own experience, values and background.

ENT3's network evolved over time since he first started, apart from his wife being the key member of the network from the beginning. In the start, ENT3F1 used to ask ENT3 for support and advice and was still learning about his own business. ENT3 asks things from ENT3F2 because he believes that she is very innovative, appreciative and is always looking for the best in everything.

*“In my network ... I think I have helped other people learn quite a lot, and I feel like I have done a lot more perhaps than I have learnt from others. When I started, I didn't ask anyone for advice, I was quite alone, by choice, I wanted to make this business start-up to be my baby, my project. I didn't want to be seen to need help or advice. But now I am much more open about it.”* ENT3

ENT3 trusts the advice of people in his network because of the values people in his network possess, their reliability and the fact that they have never let him

down. They do not provide him information because they are obliged to and most of the time the knowledge, they provide to ENT3 has no return benefits to them, but they still help wherever they can.

With regards to taking advice from someone ENT3 does not like, he mentioned that he may take some advice from that person but will evaluate the advice carefully before working on it. According to him it also depends on the reason why he did not like the person.

*“I may take a little bit (advice) of it, but it would have to be a bit that makes senses, financially or from a SWOT analysis that if I don’t do this, I would miss an opportunity, but I may find it quite difficult to take advice from someone I didn’t like.” ENT3*

People whom **ENT4** discussed his business the most, kept evolving over time. In the early days, it was his friends from the army who had left the army and were working in the industry at that time., He had a huge amount of trust in these friends and therefore he knew that they would give honest advice rather than something that he would like to hear.

*“If they thought my suggestion or what I was discussing was mad they would tell me it’s mad.” ENT4*

These people were not the same since he first started, and his network evolved over time. He mentioned that his evolution of network happens on a three-year cycle and it is associated with the cycle of business development and its change as well. ENT4 trusts the advice of these people because he has developed both a personal as well as a working relationship within his network and considers it be very important because this eliminates the thought

that another person is giving advice because of a business agenda in the background.

*“When you have coupled the business relation with the personal, only then you know that you are getting the full truth without any padding or ulterior motive.” ENT4*

ENT4’s network evolved as his working environment changed over time. He mentioned that he derived very few contacts through purely social interactions with people. He clarified that it is good to discuss your business and ideas with the people you socialise with, but it is better when advice is coming from someone who understands the business.

*“If you approach in a right way, people get quite flattered by being asked them for advice, so even if it’s quite a distant element of your network, then if you couch it well then you liable to have a really productive conversation”. ENT4*

ENT4 brought in some of the additional people in the company who he knew possess similar mindset and experience to his own, so he will not feel isolated with the people already in the business.

*“Network of people was extremely important when I came here, as we were moving the business to a new location, upscaling it and process [formalise] things that have been informal in the past ... I had to benchmark my thoughts with my friends that had greater experience in the industry than myself”. ENT4*

In addition to that, he has a few friends that he met in his early days in civilian life after the military services and acted as his mentors in the industry. Three people ENT4 discusses his business the most are; a headhunter, whose focus is on business development and two directors who used to work for his

business but have now moved on. They were also a part of the team he brought into the business. They filled the gaps that ENT4 had in his experience about the business and its operations. All three of them had specialist knowledge that complemented his own knowledge and they were “all-rounders” in their approach to business.

ENT4 said that he would not hesitate to take advice from someone he does not like. However, he would corroborate that information with additional data before committing any actionable judgements. He further mentioned that it also depends on the reason why he does not like that individual and there is a chance that they might provide vital advice in the context.

Although ENT4 is not a part of any formal network, he uses his second degree of network quite regularly where he approaches people through a gatekeeper, in most cases through his children, friends, colleagues and clients.

Initially, ENT5 used to discuss her work with her mother (ENT5F1) the most who works for a business consultancy and she helped ENT5 in developing her network and if in case she was not able to help her, she always found someone to whom she can refer ENT5. More recently, ENT5 started involving her boyfriend (ENT5M1) more into the work discussion but still, she relies on her mother and her mother’s network the most. After ENT5F1 and ENT5M1 she discusses her work with her best friend ENT5F2. She discusses things with ENT5M1 almost every day and with ENT5F1 and ENT5F2 once a week, on average. In addition to that, she also remains in constant communication with her mentor (ENT5M2) whom she met while on her placement.

If she is unaware of a certain aspect of her business, ENT5 tries to find a solution online and then she discusses it with ENT5M2 and then with ENT5F1. In most of the cases, she gets an answer from them without looking any further. In case she cannot find a solution from them then she discusses it with ENT5M1 and ENT5F2.

*“At the start, I was very isolated and protective of my ideas. There was no threat of anyone stealing my ideas but at the same time I wasn’t getting anywhere either ... after a year of trying and not making any significant success I started seeking mentorships and only then I realised that I can’t be in business while staying in my own bubble.” ENT5*

These three people stayed in her network since she started her business. However, ENT5’s second degree of the network keeps evolving on a yearly basis. Initially, she was developing relations with people that can help her with the start-up process whereas now she is more in touch with people that can help her with the management and development of the business.

Reason for approaching these people in specific is that she trusts their advice and so far, the things that they have suggested have always been beneficial to ENT5’s business. Apart from that, ENT5F1’s background in business development is also an important reason for ENT5 to discuss her work with her. With regards to ENT5M1 and ENT5F2, she discusses ideas with them because they offer a unique perspective to things and this mostly helps her further sharpen her thoughts.

*“I am more determined to develop contacts with people that can help me to grow my business, but this is not much different from the start-up process,*

*every day there is a new challenge that, in most cases, is what I had not faced before.” ENT5*

With relation to taking advice from someone she does not like, ENT5 mentioned that it depends on the reason for not liking that person. It is unlikely for her to take the advice if the un-liking is based on professional reasons. However, if it is because of personal reasons she will consider the advice with caution.

*“If I don’t like the person because I think they are a lousy businessman, I would be reluctant to take advice from them but if I don’t like them as a person, I might consider taking their advice, in either case, I will listen to what they have to say.” ENT5*

ENT5 is not a part of any formal network but she attends various networking events in and around the fashion industry. This has helped her significantly in strengthening her social network from where she gets social and technical support. Her network also helps in affordable procurement of materials for her products.

*“It’s not just the things I learn from my network but also the resources that I gather ... I used to buy fabric at a very high rate because of that I was selling it at higher prices with lower margins. Now I am buying it cheaper and still making more from it.” ENT5*

**ENT6** is a part of several communities of practices. He attends some of the networking events on a very regular basis with a particular one every week where people from various industries come together to share their experiences

and ideas. With regard to his main source of current knowledge, ENT6 mentioned networking events and tradeshows as the most important one.

Although ENT6 attends several network events regularly and is a member of various networking partnership, the first person he discusses his business the most is his wife followed by a serial entrepreneur (ENT6M1). Finally, the person (ENT6M2) he learnt most from and discussed his work as well to get advice is one of the leading DJs in the industry who is a 'one-man-band' rather than a firm. He also heads to social media network to get certain advice as well. His wife and ENT6M1 remained the same in his network but apart from them his network evolved over time and people kept changing to reflect better his business needs. He discusses things with his wife every day, with ENT6M1 every few weeks and with ENT6M2 on an ad hoc basis.

In the beginning, ENT6 was reluctant to share his ideas with others but over time he has become more open. He realised that the more people he networked with, the more he got benefited from it. While thinking about it and comparing the benefits with the cost of sharing ideas, the benefits he received were enormous.

ENT6 chooses to ask people for advice and takes on board their input based on how much he values them and what value and quality they can bring to the business. He has asked certain people for advice in the past but will not ask them again as the contribution they put in was not what he was looking for or was not useful to his business.

When asked, whether ENT6 would take advice from someone he does not like, he replied yes:

*“Over the years I have worked with some people I really didn’t like, yet they came up with some of the best advice that I could have had, and sometimes I didn’t like the advice at that time because I didn’t like them... it’s like I might not like a certain type of car but it would still take me from A to B and I think it’s the same with the advice people give as well.” ENT6*

ENT6 further mentioned that in the first instance he could feel disregarding the advice coming from someone he does not like. However, he would internalise and reflect on it later and there is a possibility that it might affect his future decisions.

ENT7 is a member of several communities of services including the Chamber of Commerce and she attends the networking events regularly. However, ENT7 tries to develop her network and to include the leading people that are in the same industry not w only to learn from them but also to get instrumental support.

According to her, three people she approaches the most to discuss her business are her boyfriend (ENT7M1), one of her close friends (ENT7F1) and her boyfriend’s sister (ENT7F2). Reason for approaching these people is the level of trust she has with them and she can discuss all opportunities and ideas without being “judged”.

*“I talk to them because I know they will not make fun of my ideas, well they may do it at the beginning but then they will listen to me with all the attention. I can throw craziest ideas at them, and I have, and they will give me an honest opinion. Believe me, I come up with the ideas that might sound absolutely*

*ridiculous at first, especially till the point other person can actually see where I am going with it". ENT7*

ENT7 talk to ENT7M1 and ENT7F1 on an almost daily basis and discusses things with (ENT7F2) at least every week. With time, she believes that their advice has become better. ENT7 mentioned that it is not a learning process for her only but for her network as well.

*"Over time I can see how the value of the information coming from all three of them has increased significantly, now that we understand each other at a different level it feels like we are 4 interconnected brains." ENT7*

ENT7 mentioned that ENT7F1 was always the closest from her to get any support or advice, ENT7 met ENT7M1 through work and in her opinion, it was only natural to discuss things about the business. ENT7F2 moved to the city only a year ago and since then she got more involved with ENT7's work discussion circle.

ENT7 was very strong on not taking advice from someone she did not like, and she mentioned that if she does not like someone it is based on the values that, that person holds and taking advice from someone with different values than her own was unacceptable to her.

*"I would rather make a loss than taking help or advice from someone I don't like". ENT7*

With regards to network evolving, she mentioned that she had the same people in her network since the early days of her professional life, apart from ENT7F2. Before that, she would heavily rely on learning and taking knowledge-based support form ENT7F1 and her mother but because of work

and relocation, she gradually lessened the interaction she had with her mother and now it is mostly personal apart from occasional comments.

*“If I need something, I try to see who might know that or know someone who would know about it and then I invite them for coffee and lunch. You would never understand the worth of buying people a coffee or lunch until you start doing it, it does magic, usually” ENT7.*

## Proposed elements of entrepreneurship education

**ENT2** advised that the theoretical understanding is important to the students but also recommended that a higher-level entrepreneurship education course should include brainstorming activities, industry and self-employment experience as well as the availability of the space where students from different disciplines can interact and work on idea generation activities.

While discussing the framework of Entrepreneurship Education, **ENT3** mentioned that it can be done in a way that students can work with others in an action learning environment where different students can bring in different skills and knowledge, and to strengthen their interest in the project they must have ownership of it and tutors and university should play a role of an organiser and facilitator. Students should work on projects and understand that failure is a possibility in real life and they must build resilience against failure to succeed in the long-term. They should be: *“open-minded about how you network and who you have in your network and to see that you are always networking if you are at the gym and the guy you are sitting next to, and you don’t know what his job is and who is; find out. Get comfortable in connecting with strangers.” ENT3*

Furthermore, ENT3 mentioned that universities should be teaching about resilience, both business and personal, to the students as well as about personal strengths. He further mentioned that universities need to equip students with techniques not only to network with others but also to teach them how to build networks and communities of practices around their areas of

interests. Students also need to be taught about work-life balance to avoid “burnouts”.

According to **ENT4**, universities should prepare entrepreneurship students to expect, understand and manage uncertainty. He mentioned that in most cases, things do not go as you expect them to go. It is vital to recognise the importance of uncertainty. Educational establishments still have no apparent focus on it.

ENT4 also highlighted that uncertainty and failure are interconnected topics and where it is vital to teach one, the other should also not be ignored. Developing one’s skills to manage uncertainty involves the development of resilience in the face of failure in that person as well, as uncertainty also entails the risk of failure.

Suggesting the model in which this can be done ENT4 said that there is a need for courses with activities similar to role-playing. It has to be carefully designed to challenge the students by presenting various scenarios in which they are required to break down a problem and look at it at from different perspectives. Sometimes looking at a problem as a whole does not show a way to rectify the error. However, looking at it after breaking it down, it is possible to manage parts of it, if not all of it.

ENT4 also suggested that there is a need for an educational framework of entrepreneurship education where students from different disciplines and backgrounds can come together to work on various projects based on their experience, skills and background. This would not only help them develop a

new way of thinking about a venture but would also present them with a “real world” scenario of problem-solving and idea development.

While suggesting a model of entrepreneurship education, **ENT5** suggested that universities should teach students to be more open with their ideas. Sharing ideas not only helps them develop them but also provides them with a vast range of possibilities. In addition to that, students should not be afraid to fail.

*“I know you might not want to tell that to a student who is full of ideas, but it is very unlikely that they’d succeed in their first launch, it sounds negative but it’s true. All my friends that are or were involved in starting up faced plenty of problems or complete shutdown of their ideas.” ENT5*

ENT5 further suggested that there should be an opportunity for non-entrepreneurship students to take entrepreneurship courses as there might be several students who may not know that they can actually commercialise their ideas or if they want to start a business how they might do it.

Proposing a model of teaching, ENT5 advised that universities should provide a platform where students can create a prototype as a part of their course and try to sell under the supervision of their lecturers. Students should be encouraged to share their ideas and be informed that they will have to trust people to a degree if they want to succeed.

Based on his experience, **ENT6’s** thinks that universities should teach about resilience to the students and how they can learn from failure rather than being afraid of it, as failure is merely a part of the process. He further mentioned that

we live in our own silos. However, to be successful students should realise that they need to put themselves out there.

*“One of the most successful entrepreneurs of our time are the people that are not afraid of standing up and fail, failure should not be seen as something that is bad. If you don’t start out trying you won’t be getting anywhere.” ENT6*

ENT6 also mentioned that networking is the key to the learning process and students must start practising it from a very early stage. ENT6 learnt some of the most important lessons about his business only by interacting with the customers.

*“If you want to be the best in your business get out there, see what the best people in the industry are doing, talk to them, learn from them and go to the conferences ... there is nothing that can replace the value of a face-to-face conversation, you can send an online message, but it will not be the same as meeting someone in person”. ENT6*

While suggesting a model of entrepreneurship education for higher education institutions, **ENT7** mentioned that universities should teach people about developing a relationship with the core values of the business.

*“If you see any successful business, no matter how big it becomes it always has the same core values it had when it first started.” ENT7*

In ENT7’s opinion, sticking to the core values is what develops a loyal customer base and if a company keeps its values shifting to make someone happy, it would never be able to make everyone happy.

*“Universities need to teach people how to think small, there is a lot of emphasis on thinking bigger and achieving bigger, but it is not realistically plausible for*

*everyone to set up a company that would become a phenomenon. A large number of businesses that students would start and develop would be SMEs.”*

*ENT7*

Finally, it was suggested by ENT7 that students need to learn how to resource their ideas and often they do not realise how many people their parents, lecturers or friends might be acquainted with and they should learn to exploit that resource. They should not be afraid of sharing their ideas with others and asking for help.

### 4.3. Entrepreneurial learning and education from entrepreneurship educators

Entrepreneurship educators in this research are the lecturers currently teaching of entrepreneurship in higher education. Their responses include the academic perception of how entrepreneurs learn and how entrepreneurship can be taught.

#### The current state of entrepreneurship education

According to ENTED1, most of the entrepreneurship taught at his institution takes a practical approach to it. In the previous years they did have modules based on theoretical approaches of entrepreneurship, but they were not well received and stopped existing. Currently, the main aim of entrepreneurship teaching is to focus on building an idea and reflect on the process. The teaching of entrepreneurship to the students include case studies, brainstorming activities and formation of the business plan.

The aim of entrepreneurship education in ENTED1's opinion should be focused on two sides, practical side which includes; building an idea, finding sources of funding and building your network, as well as the theory history and importance of entrepreneurship., He further elaborated that everyone who learns about entrepreneurship does not necessarily open a business, so it is important to see whether or where these skills can be transferred into different scenarios.

ENTED1 mentioned that to achieve the aims of entrepreneurship education it is important that a course or module is designed in a way that it is a step-by-step process for the students where they can relate to each step.

ENTED1 further mentioned that for years entrepreneurship teaching has been focused on the individual idea who is an entrepreneur and that individual has been portrayed as a hero. He further elaborated that, this phenomenon is easier to explain to the students and is also easier for the students to comprehend and all the courses are designed around the individual phenomena and it is harder for organisations to redesign them, especially when students are happy with the content. According to ENTED1, institutional pressure is also one of the key aspects that are hindering the evolution of entrepreneurship education. He also mentioned that focusing on contexted and social network-based entrepreneurship teaching model, although it can have significant benefits but, can be very challenging to develop and assess.

**ENTED2** explained that entrepreneurship teaching in her institution takes a “hybrid” approach which includes a mixture of entrepreneurship practice, entrepreneurship theory, finance and leadership elements. The aim of entrepreneurship teaching at her university is to develop the entrepreneurs that are equipped with the knowledge to start, develop, manage and lead a business.

According to ENTED2, the aim of entrepreneurship should be to provide students with tools to be contextually aware of their situation and that can happen in a context of opening and growing a business as well as while working for a company. According to her, students should be taught to understand the different types of resources they have and what can they do with these resources.

*“We need to incorporate the effectuation as the core aim of entrepreneurship education, and let students go away and find the situations where they can*

*use these techniques, if they do it in an entrepreneurial context, fantastic if they don't then they can use it in a different area". ENTED2*

To achieve that aim, ENTED2 mentioned that higher education institutions need to first evaluate their own resource database and then show that to the students, so they can realise what the potential resources they have around them are.

**ENTED3** suggested that at his institution, entrepreneurship is taught in a step-by-step process in which students start with understanding the entrepreneurial mindset and then leading to spotting an opportunity and its exploitation. In the final year, the student learns more about managing an SME and how bootstrapping helps entrepreneurs.

While discussing the tools for teaching entrepreneurship, ENTED3 said that tools are only limited by the imagination of the tutor. Currently, they are using; brainstorming techniques by mapping the items around followed enhancing their usability, role-playing, team working, business model and value proposition canvas and interaction with alumni entrepreneur network.

According to ENTED3 aims of entrepreneurship education should be to prepare students to deal with challenging market situations and spotting and exploiting opportunities that can lead to the formation of a venture. At ENTED3's institution, they are trying to achieve these aims by providing students with scenarios in which the start-up process of a business can be mimicked.

*“You can’t teach entrepreneurship, what we do is give students the experience of entrepreneurship and give them a sort of theoretical framework in which to understand entrepreneurship.”* **ENTED4**

ENTED4 explained that at his institute, they use multiple methods for teaching entrepreneurship, some are closer to ‘lean start-up model’, consisting customer discovery followed by prototyping and validating the prototypes by the potential customer and then eventually presenting at a trade fair which is open to the public. However, generally, they use more traditional methods that consist of students coming up with an idea and then writing a business plan on it. At ENTED4’s institution, they used to use a software-based business simulation system. However, he said that because of the nature of the software and errors, they had stopped using it.

While talking about the tools available to teach entrepreneurship at a higher education level, ENTED4 said; *“I don’t actually know, because my background was from the world of design, I came up with my own methodology which I used to do ... I have never been hugely engaged with the pedagogical developments in the entrepreneurship teaching”*.

At **ENTED5’s** institute, the first module they teach helps students to recognise the ideas and opportunities within an organisation as well as for a start-up, then they look at developing a business plan after that they analyse innovation in an existing organisation. This is to ensure that people who are looking to start-up business are getting relevant information but also, students that will work within the organisation will understand how their skills can enhance their respective jobs.

*“Entrepreneurship is topic of research but not a subject of teaching on its own, entrepreneurship is about everything that’s done in a business school”*  
ENTED5.

ENTED5 mentioned that a few years ago the business school’s emphasis was on teaching entrepreneurship theory to explain what entrepreneurship and its role, although it might be interesting for some students. However, according to him; it will not prepare them for starting up a business or acquire transferable skills which they would need for their future employment. Now at ENTED5’s institute, they have broken the process down into a series of steps

*“The theoretical aspects were helping people to get the degrees but not necessarily educating people to the steps to become an entrepreneur, now we have series of modules in place that would take people through that journey”*  
ENTED5.

According to ENTED5 entrepreneurship has traditionally sat in the business schools but they are now trying to involve students from across the university to be entrepreneurial and innovative, for that reason, they have a course module which they are rolling out to other schools in the coming year. At ENTED5’s university, they have eleven schools and five of them have adopted this module. However, others are showing little interest at the moment.

At **ENTED6’s** institution, entrepreneurship is taught currently in two ways, formal courses in the business school and engagement across the university to support entrepreneurial activity. Furthermore, they are trying to merge entrepreneurship into the science modules.

ENTED6 mentioned that they use an incubator, online resources, in-class activities and their 'imagination' to teach entrepreneurship at her institution.

*"if we come up with an entrepreneurial idea that is fanatic, we can come up with a way to teach it that is interesting in the classroom but it's not much formalised beyond that"* ENTED6

While mentioning the aims of the entrepreneurship teaching, ENTED6 mentioned that there are two thoughts on that, one is to benefit the students, benefit the university and second that it is in line with the government policy. These benefits are focused on enhancing student's capability of generating and developing ideas that can be used in a variety of contexts. Some of these ideas can turn into a start-up but also there would be similar skills that students would need in their future employment in addition to that, ENTED6 mentioned that some students might decide not to pursue entrepreneurship after going through entrepreneurship education.

*"If they learn to come up with ideas or learn that they are not ready to do that now, that, not to me, is a bad outcome. They could learn that in ten years' time having sought to have an extraordinary amount of borrowed money"* ENTED6

ENTED6 further mentioned that although there is a lot of entrepreneurial activities happening in the other schools but there is a resistance from the other departments to incorporate entrepreneurship into their curriculum as they do not think it something that is relevant to them, especially, when there is no complaining about their current curriculum or expression of interest from their existing students.

Discussing the ownership of entrepreneurship education, ENTED6 said that entrepreneurship education is predominantly owned by the business schools. However, a lot of student ideas come from other areas. Giving an example of health care students, ENTED6 mentioned that quite often these students go and start their private practices which can be classified as small business and acts of entrepreneurship as they have spotted an opportunity and filling a market gap. However, these individuals, mostly, do not classify themselves as entrepreneurs.

At **ENTED7's** university, entrepreneurship has been traditionally taught by asking students to come up with business ideas followed by a presentation or writing of a business plan. However more recently, they started working to developing a module that would look at real business problems and students would be required to solve the problem using creative and entrepreneurial methods. This would be a leading module that would come after students have already worked on coming up with a start-up idea and wrote a business plan on it.

ENTED7 mentioned that there are several tools that are available in entrepreneurship teaching, there is a large body of research on the topic. However, it takes a lot of time before that research reaches feeds into the teaching material.

*“There is solid research on the entrepreneurs’ intention of starting up, their perception, opportunity, resource management of a venture, but there is very little of it in the actual teaching of entrepreneurship” ENTED7*

ENTED7 said that the aim of the entrepreneurship education is “emancipation”, which to him means making people realise what resources they have and how can they develop something new from it that would be giving them a feeling of ownership., This can be through a start-up or while working for a company.

*“I think it is very important to consider that not everyone who learns about entrepreneurship necessarily has to be or become an entrepreneur, so we do need to reflect more on what do we mean by entrepreneurship”* ENTED7.

While discussing achieving these aims of entrepreneurship, ENTED7 said that it is important to redefine the word entrepreneurship. At the moment in students’ mind entrepreneurship is solely about starting up a business, and a lot of them might not be interested in that. He further elaborated that to teach about entrepreneurship it is vital to make students see that there is more to word entrepreneurship than what it seems This can be done by giving them examples of intrapreneurship.

## Perception of the source of entrepreneurial learning

According to ENTED1 entrepreneurs learn from a range of sources based on the context they are in which includes their professional and personal network, the experience of start-up related activities and prior employment.

**ENTED2** mentioned that entrepreneurs learn from a range of sources including their network, education, books and whatever they are doing.

*“Entrepreneurial learning or learning, in general, is a process of reflection, once you start reflecting, you start learning and if you look at all these big and successful entrepreneurs, they have a journey on which they have reflected at each step to get where they are now. That is why their biographies are so interesting to read” ENTED2.*

**ENTED3** mentioned that the biggest sources of knowledge for entrepreneurs are the experience they have. They learn from the information they have obtained while being in a similar situation in the past. It was also highlighted that it is very difficult to provide students with identical knowledge as they might not have been in a professional environment before.

*“Entrepreneurial learning is an experiential process and entrepreneurs learn from their mistakes and successes. If you look at the most famous entrepreneurs, they always challenged the traditional way of doing things ... there are aspects of entrepreneurship that can't be taught by any means. You have to experience it to learn about it” ENTED3*

ENTED3 highlighted that education background of the entrepreneurs play an important role and can sometimes be a determinant factor in the success of their business. He further explained that this is more common for people who

are at the start of their careers than those that are further down the line. However, ENTED3 mentioned that it is challenging to replicate that situation in a classroom because according to him, students generally have a limited experience of professional life.

*“if you are in your 20s the most time you spent is in education hence the source of the majority of your knowledge would be books and academic other activities you have performed. However, if you are older, then you would have more vast knowledge”* ENTED3

Discussing the source of knowledge entrepreneurs have, **ENTED4** mentioned that you acquire knowledge by either working in the industry or otherwise it is a self-developed knowledge of learning by doing.

He further mentioned that to understand entrepreneurial learning one must understand entrepreneurship and *“entrepreneurship is the word that people like to use but what they really mean is encouraging people to make huge amounts of money and as we know that is a very small part of entrepreneurship and entrepreneurship theory.”* ENTED4

According to **ENT5**, entrepreneurs learn by doing and most of their knowledge comes from their experience, education and curiosity.

Talking about the importance of entrepreneurs' network and their learning, **ENTED5** said: *“I don't know I am not 100% sure there is much research on that”*.

According to **ENTED6**, entrepreneurs learn from a range of sources including; online, taught courses, their educational background and the social networks they have. However, some of the best ideas come from when two or more

contexts intertwined. There can be a student studying for something and use that knowledge in combination with something different, e.g. their family business.

While talking about the source of knowledge of entrepreneurs **ENTED7** highlighted that the source of knowledge for the entrepreneurs is their “life”. According to ENTED7 entrepreneurs learn from all the previous information they have acquired in their life to make decisions for their day-to-day life. He further explained that if a person with more technical and analytical knowledge becomes an entrepreneur, he would have much higher chances of success than if someone who has more knowledge about the formation and running of a business.

*“More successful entrepreneurs are usually not the people that acquired qualifications in entrepreneurship, but they are the ones that have technical knowledge and education ... if you combine entrepreneurship education with the technical background of the students, it can produce the most beneficial results” ENTED7.*

ENTED7 mentioned that everyone, including students and entrepreneurs, learns and acquires knowledge from the same sources and in some cases, the knowledge that they are extracting is the same as well. However, *“what you do with the information and how you utilise is what differentiates you, **knowledge without a context is just some random data** this is where the theory meets the practice” ENTED7.*

## Perception of entrepreneurial learning in social networks

According to **ENED1** networks play a key role in the entrepreneurial process. He further said that a business could not be formed without the network of the entrepreneur., Networks help them in every step of the business.

*“Entrepreneurial networks play the main role, I don’t see another way. How do people get the business off the ground in the first place; primarily they speak to their family as they often get capital from their family and also available workforce and it builds from there.” ENTED1*

ENTED1 mentioned that it is vital to emphasise not only on the role of the entrepreneurial network but also the contextual importance in entrepreneurship.

**ENTED2** suggested that in her opinion, a venture cannot exist without the network of the entrepreneur. She gave an interesting perspective on entrepreneurial networks, mentioning that sometimes you are so angry at the context and people around you that that anger becomes the driving force behind starting a venture. In this case, the network is not being supportive. However, it is the network that has caused the birth of a venture by creating the right/persuasive context.

*“I don’t think it is possible to start a business without networks.” ENTED2*

**ENTED3** mentioned that the context and social networks of entrepreneurs are the key elements of their learning. He further suggested that in the early stages of the business, it is more important to have a strong network than it is at later stages. According to him, in the beginning, no one would know about one’s business and they would not have any credibility but as the business would

grow, they can approach more people without having a to worry about whether they would be trusted or not.

*“Social network creates the context that then creates the venture, a venture would have not existed without it”*. ENTED3

While discussing the entrepreneurial networks, **ENTED4** mentioned that when he was running the business, some 10 years ago, it was important, and he would attend networking events but then he would find the same people over and over again. With regards to the friends and family, ENTED4 said that in his experience he did not get any valuable advice from his family but nonetheless, they can be helpful in empathising if nothing else.

**ENTED6** said that it is important to recognise the network support in entrepreneurial learning. Students and entrepreneurs come from a wide range of backgrounds. It can include the people coming from a sports team or people that have a spare family property which they can use for a business. Emphasising on the importance of social and contextual elements, ENTED6 said that it is vital to understand and appreciate the social, contextual and experiential learning in its literal form rather than a ‘research paper definition’ which can be hard to understand for some people.

While discussing the role of social networks and context in entrepreneurship education, **ENTED6** said that the context starts from the idea itself which heavily dependent on the social networks and activities entrepreneurs are involved in as well as the prior knowledge they have. In the second step, the context involves the execution of the idea ranging from the evaluation of the practicality to the development of it as a business.

*“Context it is enormously important in both generating an idea and its execution to form a business”* ENTED6

For **ENTED7** the role of social networks in entrepreneurial learning is based on individual entrepreneurs. He mentioned that everyone learns things differently and some entrepreneurs might learn from their networks. However, others might learn from the Internet or a book.

## Proposed elements of entrepreneurship education

Highlighting the gap between entrepreneurship teaching and entrepreneurship research, ENTED1 mentioned that there are elements that have been uncovered from the entrepreneurship research. However, they are not being utilised in entrepreneurship teaching. Examples and case studies that are being used in entrepreneurship teaching are somewhat unrealistic and it is hard for students to relate to these examples.

It was highlighted by ENTED1 that often the background, previous experiences and knowledge of students are not fully captured and utilised in the teaching of entrepreneurship in higher education. He further mentioned that to teach entrepreneurship it is important to tap into the previous experiences of the students, so they can reflect and see whether they are already using their networks without even realising, *“it will help them rationalising what they are doing”* to enrich their understanding of entrepreneurship and learning.

*“If we can give students the ability to tap into this big resource bases (experience of past, contextual awareness and awareness of their network) that they have already got in them then that is better than having them define their value proposition.” ENTED1*

While suggesting the tools that can be used to teach entrepreneurship in the higher education, ENTED1 mentioned that all the tools that we already have, such as business model canvas, role-playing activities and case study analysis, are important but they are somewhat uniform tools which result in students developing a similar type of mindset. This can hinder the creativity

and unique perspectives different students can bring forward, so it is important to give students some guiding tools but ask them to develop or modify these tools based on their own understanding, experiences and network they are in.

*“All the tools that we have, force students into a specific type of entrepreneurship, and the whole point of social and contextual focus is that there is no particular type of entrepreneurship. Entrepreneurship should be incorporated into every single thing we teach.” ENTED1*

According to ENTED1, entrepreneurship teaching should start from the practical exercises before moving into theoretical. It was further mentioned that once skill-based exercises have been completed then the theory can be introduced, and facilitators/educators should indicate it to students how their actions have reflected the theoretical realms so in future they can make these connections themselves.

*“Students need to know the building blocks first before they can understand why do we do all these individual things. People understand skills more quickly, theory takes time to reflect, that’s the order in which things should happen” ENTED1*

According to ENTED1, social and contextual aspects of entrepreneurship can only be captured if the range of examples used in a classroom is broadened. Giving examples of very famous entrepreneurs is not practical because these entrepreneurs are a very specific type of entrepreneurs and it is very hard for the students to relate to them.

*“if you want to capture the contextual aspect look at how entrepreneurship helps communities develop in Africa, you are not gonna see them (African*

*social enterprise) on the stock exchange but they are just as important or even more important.” ENTED1*

ENTED1 suggested that the research in entrepreneurship has already covered areas of contextual and social importance in the entrepreneurial process. However, there is a significant gap between the entrepreneurship research and entrepreneurship teaching.

ENTED1 further explained that entrepreneurship happening in East Asia is completely different from the entrepreneurship happening in the UK and there is a need to contextualise it in the education curriculum of entrepreneurship teaching.

According to ENTED1, to achieve the aims of entrepreneurship education, it should be incorporated within all the courses a higher education institution is providing, courses with a higher level of potential commercialisation opportunity should have entrepreneurship as a core part of the course for others it should be elective.

**ENTED2** highlighted that, it is also important for the universities to be clear about the aims of entrepreneurship teaching and at times there is a need to evaluate and re-evaluate these aims, it is important to focus on the reason for teaching entrepreneurship. Universities need to *“separate the skills-based approach with a theoretical understanding of entrepreneurship”* (ENTED2) but they also need to show how the theory comes into practice in different scenarios.

ENTED2 mentioned that incorporating the social and contextual elements into entrepreneurship teaching can be very beneficial and will help in mimicking

the real-life entrepreneurial learning environment. However, it is a challenging task when the assessment is a big part of the formal education system and social and contextual elements of entrepreneurship are very not something that can be taught and learnt and then reproduce in an exam or business plan. Furthermore, ENTED2 highlighted that it is important to understand, that there are case studies on the life stories of famous entrepreneurs. However, there should not be a great emphasis on using them in the teaching as sometimes is it hard for the students to differentiate between learning from their stories and following their stories, everyone has their own individual context with a unique story.

While talking about the incorporation of entrepreneurship into the other courses and modules, ENTED2 said that; *“my first response would be yes. However, I don’t think I am the right person to answer that as I have never done that”*.

While suggesting how entrepreneurship should be taught, **ENTED3** said that entrepreneurship should be taught by both academics and entrepreneurs. Academics should teach the theory of entrepreneurship then work with the practitioner who can then describe how a certain theory explains certain scenarios in their entrepreneurial journey.

*“we (universities) need to couple the skills-based approach with the impact of entrepreneurship to show the theory and practice working together side-by-side”* ENTED3.

ENTED3 said that networks should be incorporated in the teaching by encouraging more teamwork, and within the teams, they should first list all the

skills they can think of which they possess followed by all the people that can help them with a business start-up. This would put them in the mindset of not just network recognition and appreciation but also other resources they have or can gain.

According to ENTED3 incorporating context and network in a classroom setting is not a very difficult task. However, the evaluation of it by an assessment is more challenging. He further mentioned that this type of learning outcome could be assessed by a reflective assessment.

ENTED3 mentioned that entrepreneurship should be taught to all student across different disciplines and considering the rise in flexible working hours and people working remotely it would be useful for students to use all entrepreneurial skills they have whether they are starting up a business or working for one.

ENTED3 further mentioned that in most cases, graduate employment would require a certain degree of leadership in the role students would undertake in future. If they are trained in entrepreneurial skills, they can transfer these skills to identify risk and manage resources accordingly.

According to **ENTED4**, entrepreneurship should be taught practically., It is important for the business and/or management students to know how to write a business plan. However, it is not necessary for people that would go and start their own businesses in the future. He further mentioned that although there should be a practical approach to teach entrepreneurship, the theoretical frameworks of entrepreneurship should not be neglected.

Talking about the role of social, contextual and experiential learning in entrepreneurial learning, ENTED4 said that their role is immensely important. However, it has been overlooked in entrepreneurship education. ENTED4 mentioned that it is harder for theoreticians to emphasise on social, contextual and experiential learning in entrepreneurial learning. To incorporate these concepts into the teaching of entrepreneurship education, ENTED4 highlighted that it could be easier in case of the students that have network support available to them but would be harder for the ones that do not have entrepreneurs in the friends and family.

Giving an example of accounting students ENTED4 further mentioned that some student groups are hardworking and less creative whereas others are more creative but less hardworking.

Highlighting the cross-disciplinary approach of entrepreneurship teaching, ENTED4 said: *“That certainly is the fashion at the moment to make everything entrepreneurial, these terms are coming around with people not really knowing what they mean”*. However, it can be tough to sell to the other school because *“people are quite precious about the courses they run”*

Talking about the resilience in entrepreneurship education, ENTED4 said that resilience comes later in life. Appreciating the importance of resilience for the entrepreneurs, ENTED4 said that, at the university stage, we should only encourage students to come with ideas, resilience would come with experience. ENTED4 also mentioned that some student groups are more resilient than the others, e.g. students in the school of law or art school are used of getting their work criticised and tormented which, over time, builds the resilience.

Suggesting a model of entrepreneurship education, **ENTED5** mentioned that universities need to break down the barrier., He mentioned that it should not be a case that if someone is studying engineering, they should only study the principals of that subject. Understanding markets and needs for the market is important for all students regardless of if they are studying entrepreneurship or not.

*“Entrepreneurship should be a compulsory part of the degree programme for as many people as possible at the university, it has to be a staged approach and would be a mistake to cramped it up in one module. Just writing a business plan does not make you an entrepreneur”* ENTED5.

ENTED5 mentioned that there are certain people in different schools who would be reluctant to incorporate entrepreneurship into their courses because their course has good feedback and students are happy, so they do not want to change it. There is a barrier by success, in the thinking that if something is not broken it does not need improvement. He also mentioned that often student feedback is perceived as a measure of success for a course and should not be the case.

*“If you look at the government’s industrial strategy, it’s all about innovation and creativity, but have we done enough in our students to build that skill set in from an early, I don’t think we have, and we need to do much more”* ENTED5.

ENTED5 highlighted that it is important to understand the social network of the students as they might not be comfortable to act entrepreneurially if they think that the topic is not acceptable or popular among their peers. ENTED5 also mentioned that from students’ point of view, a social network could help in

developing their context which will they help them be more entrepreneurial. He further said that it is important that the university should support the development of entrepreneurial networks within the university where people from different backgrounds can come together in a like-minded place to develop their ideas.

*“Bringing people together will get some form of synergies developing, I think it is a useful idea that students can have a network with other students that can support them”* ENTED5.

While talking about incorporating the experiential nature of entrepreneurial learning in entrepreneurship education, ENTED5 mentioned that it could be unfair to certain students, as some of them might be coming to the university predetermined to be entrepreneurs, their parents might have their own businesses or have worked in their family businesses. Such students would have a more favourable context to be entrepreneurs. He further suggested that universities should start with the assumption that students do not have any prior experience.

*“Entrepreneurship should be incorporated in other modules, it’s too big of a challenge to do in one or two modules ... we should identify where what has been taught that is relevant to an entrepreneur, so students are told that this is an entrepreneurial piece of learning”* ENTED5.

ENTED5 also mentioned that it is vital for the entrepreneurs to understand their context, as well as a context, must allow them to act accordingly. In a university setting, the context can be re-enacted to a certain degree by mimicking the real-life scenarios where students are not only required to think

and write about a certain business opportunity but also, needed to create actual products/services to go through the steps entrepreneurs take.

Proposing a model for entrepreneurship education it should have elements of resilience in it, **ENTED6** said that it would be beneficial to all students not just the entrepreneurship ones, but it would be difficult to teach it. According to ENTED6, some of the resilience is the life experience, which universities can tap into, but everyone's experience would be quite unique, and it would not work with a uniform approach.

*"In many ways, I think it would be beneficial to all students, entrepreneurship or not. It would benefit hugely to all students in any field, as a degree of resilience would be required there. How you teach it is a whole different question and I don't know if I know the answer" ENTED6.*

ENTED6 further mentioned that although it would be very difficult to incorporate resilience itself into the curriculum but there is a possibility that enterprise education can teach some basic planning, managing and tracking systems that can help students identify a potential crisis ahead of time before it occurs which can then give them time to be prepared for it.

*"We have added mindfulness in the portfolio of things available for the students, but what we don't really have is any sort of evaluation of how effective it is or not" ENTED6.*

ENTED6 mentioned that social network and social learning could be incorporated into the curriculum. However, it would be difficult to assess. She said that one way to assess is by doing interviews or other assessments with students to reflect on the credibility of their ideas in which they highlight all the

sources they have employed to come up with the idea and this would include their experiences, support from social networks and the context they are in as well as the context they are basing their idea on.

Suggesting a model of entrepreneurship education, **ENTED7** suggested that entrepreneurship should be a mixture of theory and its application. However, it should not be just taught how it can apply., There should be an emphasis on making the student experience it themselves. He further mentioned that during the process, the students need to take their ideas out and test them., They might fail in the process, but this would teach them reflection and resilience.

ENTED7 mentioned that there is a QAA definition of entrepreneurship education. However, it does not cover all aspects of entrepreneurship education According to him, there is no need to differentiate between enterprise education and entrepreneurship education. The skills students would learn on enterprise education are the same they would need to start-up a business.

*“QAA’s definition is only a part of the picture. Not everyone will be an entrepreneur, we will have people that will be policymakers, work in local governments, for them we have to educate them what is the impact of entrepreneurship education” ENTED7*

ENTED7 mentioned that it is important to incorporate entrepreneurship into other modules across the university, especially into the more technical courses. According to him, a student in STEM and arts subjects are at the university with a vision. However, most of the business students are there

because they did not know what to study and this reflects into their approach to entrepreneurial modules as well.

*“We need to tell students why it is important for them to learn all this [entrepreneurial skills], they sometimes don’t see that it is not just about starting up a business. So, emphasis should be on enterprising skills and situational awareness rather than just on start-ups” ENTED7.*

#### 4.4. Entrepreneurial learning and education from entrepreneurship students

Findings, in this case, are based on 5 interviews from the students who have recently completed an entrepreneurship education course at a bachelor's level in a UK university.

##### Concept of entrepreneurship

**ENTSTU1** believes that entrepreneurship is finding new ways to deal with everyday situations. She considers herself entrepreneurial. However, not in a business start-up way. Although she had a few start-up ideas, she mentioned that she never went through them because of the fear of failure and fear of judgement from others.

Highlighting the importance of context in the entrepreneurial process, ENTSTU1 said that there are certain things that are important in context. For example, network and market you are in. However, there are other things that are getting less important over time because of the information and communication technology, such as location and experience. She also mentioned that self-perception of the entrepreneur is quite important as well, meaning what they think about themselves and how courageous they feel they are. Other things like age and gender might be important in some parts of the world but are not as important in the UK.

**ENTSTU2** explained that entrepreneurship is a process of creativity and starting up something, that something can be a venture, development of a new product or starting a process of improving something.

*“For me, entrepreneurship is to be creative and make things and maybe start a business but not just starting up a business” ENTSTU2.*

ENTSTU2 considers himself entrepreneurial because he thinks that he is always analysing things and trying to find problems which he can then solve.

According to **ENTSTU3**, entrepreneurship is having the courage to do your own things and following your passion. It also includes leadership and sense of responsibility, not only towards yourself but also towards all the stakeholders and people who are working for you, if you have people working for you.

ENTSTU3 said that for her, entrepreneurship is a set of skills, but it also has a lot to do with a business because you learn to structure things on your own and expect the best outcome, and just like in a business, you learn to survive.

*“I believe myself to be entrepreneurial in a way that you are able to decide about what you are working for and choosing a job in which you are happy and also being able to learn things that I want and having different perspectives and having broad overview of what you can learn and what you can work for” ENTSTU3.*

ENTSTU3 highlighted that a few years ago things like access (to resources, supply chain and networks) was very important in entrepreneurship. However, now it is not as important because of the technological advancement and outsourcing options available to most entrepreneurs. She also mentioned that sometimes it is the image of a city, for example, London or Berlin that gives an entrepreneurial vibe and people prefer moving there to start their venture. ENTSTU3 said that age of the entrepreneur is getting more important,

because there are perceptions around it, for example, if someone over the age 60 start something there is a perception that, that entrepreneur might not be as creative and innovate compare to someone who is younger. However, someone older might have experience but nowadays it is relatively easy to find experience externally.

For **ENTSTU4**, entrepreneurship is a process of creating something that has a certain outcome, according to him, this outcome can be financial, a purpose or development of some tangible or intangible value. ENTSTU4 considers himself entrepreneurial because he believes he is always looking for new projects on which he can work on and find an opportunity to be involved with.

*“I don't think entrepreneurship is just about starting a business, entrepreneurship is about taking actions”* ENTSTU4.

For **ENTSTU5**, entrepreneurship is a skill to act based on one's understanding of the environment and resources. It also involves a person to be flexible and adaptable to the environment. However, they must also be situationally aware of knowing how much they should adapt without losing their core values. In addition to that, according to ENTSTU5, entrepreneurship also requires looking out to your contacts to see who can help you at what time.

*“Entrepreneurship is the ability to take your resources and your feedbacks and combine them in the best way possible in order to respond to the external environment. Entrepreneurship is linked to creativity and innovation”* ENTSTU5.

ENTSTU5 considers her entrepreneurial learning in the sense of possessing these skills that are required to be an entrepreneur. According to her, she can

identify people that have skill sets that can be beneficial to her and can bring together to achieve something.

*“When we talk about entrepreneurship which is based on creativity, it has roots in so many different things and real-life problems that it is not your age, sex or education level that can be an indicator of your success, you can be as entrepreneurial learning, because you will be operating in your direct environment”* ENTSTU5.

For ENTSTU5, the age, gender, location and experience of an entrepreneur are not as important as the access to information and communication technology., For her, technology is the key contextual element even when the business is not a technology-based business.

*“Entrepreneurs don’t need to be a guru to start their own company.”* ENTSTU3.

#### Perception of the source of entrepreneurial learning

**ENTSTU1** said that if she needs to learn about something the first place, she will go to is the Internet, this is followed by her asking about that information from the people around her who might possibly be aware of what she is looking for.

According to ENTSTU1, if entrepreneurs need to learn about something, they would try to conduct their market research by reading about and around their idea. They can do that by using online resources as well as they would learn from their peers.

*“I think entrepreneurs would do their market research, go online and use their network”* ENTSTU1

According to **ENTSTU2**, entrepreneurs learn from the Internet and their social network. He also mentioned that if he needs to learn about something his first choice would be the Internet as well followed by asking someone who might be able to help him or direct him to someone how can then assist him in his query.

**ENTSTU3** said that if she is required to learn about something could her first point of search would be the Internet followed by asking friends and family about the information to see if they can help her. According to her, entrepreneurs' biggest source of knowledge would be their networks and the contacts they have in addition to that they might also rely on the books and case studies of other entrepreneurs.

**ENTSTU4** said that if he wants to know about something his first choice would be the Internet, once he has done his initial search then he will reach out to the potential people that can help him in that particular scenario.

*"I would try not to make it general, I try to ask a very specific question to a very specific person. People are the best solution to all sorts of problems, you just have to find the right people"* ENTSTU4.

ENTSTU4 mentioned that according to him, entrepreneurs learn by doing things and by observing what others have done in a similar scenario. Good entrepreneurs try to learn from other peoples' mistake more than their own. In addition to that, according to ENTSTU4, entrepreneurs spend a lot of time reading about the context and their things that are related to their venture.

If **ENTSTU5** wants to know about anything, her first point of reach would be the Internet and then if she cannot find an answer or needs further clarification,

she would then use her network. According to ENTSTU5, entrepreneurs learn from their own experience and the experience of other people that are in their networks.

#### Perception of entrepreneurial learning in social networks

While talking about the networks, **ENTSTU1** said that they are vital for coming up with ideas as you learn from other people's experience a lot.

*"You learn from other people as much as you allow yourself to learn, there is no limit to it"* ENTSTU1.

**ENTSTU2** highlighted that entrepreneurial networks are very important because they can provide support to an entrepreneur in the formation of an idea and helps them transform that idea into a product. However, he further mentioned that at one side where social media is helping us reach an exponential amount of people globally, on the other side younger people are losing the skill to make a real-life connection, which is more important for an entrepreneurial process than an online network.

*"People are unlearning the social elements because of social media"*  
ENTSTU2

According to **ENTSTU3**, social networks differentiate between successful and unsuccessful entrepreneurs. The better your network is the more and better chances as well as resources you would acquire.

*"Having the right contacts is your point of uniqueness and gives you a competitive advantage when there are fields of thousands of other people lining up to start a business, and your network makes stand out from the crowd"* ENTSTU3.

According to ENTSTU3, you cannot learn about the business and entrepreneurship without having people around you that can tell you about. She further said that it is unlikely for an entrepreneur to learn about the context and the market without asking people about it.

*“When you are an entrepreneur and you are about to start a business, I think networks are the fundamental of it, because without having contacts to right people and the network you can’t really start a business.”* ENTSTU3.

**ENTSTU4** highlighted that having a perspective on things is very important in entrepreneurial learning. He mentioned that by travelling to different areas, people see new things from their perspective and sometimes find opportunities that native people of that area might not see.

*“Through networks, you can learn from the people that have probably done something similar and learn what was actually happening, so you can learn both sides, the good side and the bad side”* ENTSTU4.

According to ENTSTU4 network is very important in entrepreneurial learning and an entrepreneurial process, he mentioned that it helps entrepreneurs to learn from others and evaluate their point of view, this can help in both cases, whether one agrees with someone’s point of view or not.

*“I am a Dutch guy with an Indian mum came to the UK, I got a different point of view on certain things which could be adopted here but also the other way around as well ... I have so many international friends who all have a different view of the world, adding all these people together creates sort of a messy mix which for me can help create things and ideas”* ENTSTU4.

**ENTSTU5** mentioned that networks help people to solve problems that they cannot solve on their own. Networks also combine the resources to deliver complementary solutions. She further elaborated that through networks, entrepreneurs can access other people's skills and their networks.

*"You never know what doors the next person can open for you"* ENTSTU5.

#### Proposed elements of entrepreneurship education

According to ENTSTU1, students need to be entrepreneurial and show creativity even from primary school levels because they would need all these skills in their future.

*"I think entrepreneurship should be incorporated in the education from the primary school level, it is about the creativity of the students and they need to be unique and creative at all levels of life, it is important to have entrepreneurship at the university level, but I think starting it early in life is better"* ENTSTU1

ENTSTU1 mentioned that networks could be incorporated in higher education by using case studies, guest speakers and role-playing. She mentioned that it is important to make students realise that they should not be afraid to lose. Giving a personal example of herself, she said that if students run an enterprise as a part of the course and learn by going through an entrepreneurial process, they can learn how to be courageous to start something and learn how to cope with failure. She further mentioned that universities should put the students into deliberate difficult positions to build their resilience as this is something that is somewhat missing from the student experience.

While mentioning how entrepreneurship education should look like, **ENTSTU2** mentioned that it needs to have elements where the students can understand the ways to protect their ideas or inventions, they need to learn to be contextually aware of their surroundings and what resources or problems there are around them.

*“Somehow if you can teach students to see the things that are around them and analyse the room or city or country, they can come up with so many ideas that might be a solution to a problem” ENTSTU2.*

ENTSTU2 further mentioned that some of it could be taught by case studies and real-time role-playing exercises in the rooms to be contextually aware. He also highlighted that an approach to teaching entrepreneurship should be a mixture of theory and practice.

While discussing the concept of resilience in entrepreneurship teaching, ENTSTU2 said that role-playing exercises and practical approaches to entrepreneurship could help students to learn from a trial and error type of process.

*“By doing it this way (trial and error) they (students) can see that it is not that it always works the way they want it to work, things can go wrong, as they do in real life” ENTSTU2.*

**ENTSTU3** mentioned that it is very important to expose all students to entrepreneurship at some level, as she never thought about starting up a business until she had a module in which they had to come up with new business ideas. She mentioned that it should be a mixture of theory and practice with examples of case studies and guest entrepreneur speakers that

can tell their stories. She also mentioned that it is important to teach students about what types of external formal networks are available to the people.

ENTSTU3 mentioned that universities should invite speakers that students can relate to, to talk about entrepreneurship. This can be the alumni of the same institution and local entrepreneurs and SME owners, so students can relate to these entrepreneurs and can see people that have common things with them. She also mentioned that entrepreneurship should be taught by people that are very passionate about the subject, so they can make it more interesting. In addition to that, according to ENTSTU3, universities should also look into building the courage of students, so they can have an opinion of themselves and things around them. If they cannot have an opinion, it would be very difficult for them to be courageous enough to work towards something that can lead to an entrepreneurial opportunity.

According to **ENTSTU4**, entrepreneurship is important in education but not in general not on its own., It should be incorporated into other creative modules, giving an example, operations management. ENTSTU4 said that, currently, operations management is based entirely on a theoretical understanding of that subject only. However, in this case, the entrepreneurial process can be incorporated into the efficiency process with examples of how it is effective in an SME setting. He further mentioned that purely entrepreneurial modules should be elective, where students that are creative and want to develop these skills can choose to be involved in the entrepreneurship-related subjects. ENTSTU4 also mentioned that it is important to develop networks. However, universities should also try to teach students how to develop an effective network.

*“Not everyone in your network is always an asset, you have a lot of people that would take a lot more than what they would give you back.”*

ENTSTU4.

According to ENTSTU4, entrepreneurship should be taught by encouraging certain topics of networking and creativity in a setting where individuals are allocated together so they can learn from each other. In addition to that, the development of student societies on entrepreneurship can also be helpful in developing an entrepreneurial mindset and skills. He further mentioned that it is also important to use case studies of entrepreneurs, and not just the success stories but there should be an emphasis on the failures as well. ENTSTU4 suggested that students should be taught the failures of the more successful and global entrepreneurs, so they can see that these are not immune to failure, this way students can relate more to them.

*“Failure is not a failure. it is a learning curve”* ENTSTU4

For **ENTSTU5** entrepreneurship is very important in the education system. She mentioned that entrepreneurship should not be kept only to the business students because, in every field of work, people would be faced with the work where their skills and resources are not enough to do something. At that point, being entrepreneurial will help these people to reach out to their contacts that can then help them or further direct them to someone who can help them.

*“Entrepreneurship is very important, and not only in the business field but other fields as well, in any field, you would need to think on your feet about how to make things happen”* ENTSTU5.

According to ENTSTU5, entrepreneurship should be taught, both, on its own as a separate module and should also be incorporated in the other modules. On its own, entrepreneurship modules can focus on the importance of entrepreneurship and its potential and with incorporating it in the other modules, to show how certain problems of that subject can be solved by applying entrepreneurial methods.

ENTSTU5 further mentioned that there should be some networking events with guidelines to students on how to approach people and initiate a conversation.

*“There should be certain initiative, not just left to students, but more of an assisted networking where staff can be there to help the students”* ENTSTU5.

Suggesting a framework for entrepreneurship education, ENTSTU5 suggested, to start with; students should be allocated into the groups where they can first evaluate all their skills and list all the relevant people, they know that can help them with starting up a business and then share it with each other. This should be based on a real-life problem-based scenario, according to her, the scenario can either be given by the tutor or actually be a something that students have to come up with based on their combined resources.

*“The modules we had, we had pre-selected companies to choose from, so we knew that they are somehow going to fit with the module but if the students were given the opportunity to select the companies themselves that might involve a poor choice of selection but that would an additional challenge for them to apply these entrepreneurial skills and find the opportunity”* ENTSTU5.

ENTSTU5 mentioned that to teach entrepreneurship, there is also a need for changing the perception about failure. Failure should be portrayed as an early warning system to “pivot” your business. This would help students to see failure as something that is not negative but a “nudge” to move them in the right direction.

#### 4.5. Entrepreneurial learning and education from upcoming entrepreneurship students

Findings, in this case, are based on 5 interviews from the students who about to start an entrepreneurship education course at a bachelor's level in a UK university.

##### Concept of entrepreneurship

According to **N-ENTSTU1** entrepreneurship is about starting up a business, mainly from a very small scale and then growing it to a larger enterprise. He does not consider himself entrepreneurial. However, he believes that everyone has some entrepreneurial skills in them of buying and selling things and dealing with people.

*“In entrepreneurship, it is your luck, you have to be at the right place at the right time, and the more people you know the opportunity you would have to be there at that time”* N-ENTSTU1.

N-ENTSTU1 further mentioned that the age of the entrepreneur could also play an important role, and it is believed that someone who is younger is perceived as more innovative and adaptable to the change and needs of the market compared to someone who is older than a certain age. However, age sometimes brings in experience in the field that is also very important.

*“If you are starting from scratch, sometimes experience is not as important because if you are younger you can learn fast.”* N-ENTSTU1

According to **N-ENTSTU2** entrepreneurship is about starting up a small business. She does not consider herself entrepreneurial because she never had an idea to start up a business.

If N-ENTSTU2 wants to start a business, she will approach someone younger rather than someone older, because according to her, young people are more up-to-date with all the latest trends and in an ever-changing market, younger people are more adaptable.

*“Experience is something that not everyone needs to have”* N-ENTSTU2

According to **N-ENTSTU3** entrepreneurship is the ability of a person or a group to produce a large organisation, business or success by building over time with their hard work.

N-ENTSTU3 considers himself entrepreneurial, because according to him, although he has not started up a business, he is constantly analysing himself and the businesses he has worked for, in the pursuit of betterment.

For N-ENTSTU3 location is important but access to the technology is more important than the geographical location. N-ENTSTU3 highlighted that context can play a role to help the entrepreneurs but if entrepreneurs have determination, they can overcome the context.

*“I don't think there is anything that is stopping anyone just because of the context, I think it is what people use to make excuses for not doing something”*  
N-ENTSTU3.

For **N-ENTSTU4**, entrepreneurship is creating things and solving problems. It also includes putting yourself on the spot and reaching for new opportunities. N-ENTSTU4 considers herself entrepreneurial because she is always keen to come up with solutions to the problems.

In addition to that N-ENTSTU4 also mentioned that there are certain things in the context, for example, networks and access to technology that are

paramount in comparison to other things like age, gender and location which because of the technology are not as important anymore. She also mentioned that most of the time the determination of an entrepreneur to do something is much more important than the context.

According to N-**ENTSTU5**, entrepreneurship is a skill of making money She further explained that it could also be finding a solution to a problem and capitalising from it. She considers herself entrepreneurial because according to her, she understands how to make decisions by analysing a scenario to find the most cost-effective solution for a problem.

*"I know a lot of people who would say that they are entrepreneurial, but they have never earned a single pound in their life from any business at all"* N-ENTSTU5

## Perception of the source of entrepreneurial learning

If **N-ENTSTU1** wants to learn about something his first approach is the Internet and use of mobile digital assistants followed by reaching out to someone that might have knowledge and experience in that certain area. In addition to that, he would also use books and other printed resources on the topic to find relevant answers. He also mentioned that networking is very important in any business or education equally. According to him, the bigger and the better network you have the more you can learn from the people. In N-ENTSTU1's opinion, entrepreneurs learn in a similar way.

*"With the assistants like OK Google, you don't even have to type, you just give a voice command and you get an answer. I use the Internet for general knowledge and day to day questions and if I can't find an answer then I will turn to somebody that would have experience in the field"* N-ENTSTU1.

If **N-ENTSTU2** wants to learn about something she would try to find it online, and if she fails to do so, she would try to find the answers from a library and published work, after exhausting her options with that, if she is still unable to find an answer then she would contact her friends and family.

N-ENTSTU2 suggested that entrepreneurs probably use the same range of sources to do their research about a particular problem. She further mentioned that to start anything, often you start with your friends. This can help entrepreneurs shape their ideas and to a degree determine their target market.

*"You have to be very careful not to hurt anyone's feelings, especially with the gender and race-related things so the context is the key, and you can discuss all that with your friends"* N-ENTSTU2.

If **N-ENTSTU3** has to learn about something his first action would be to look for an answer online and try to find some videos on YouTube that can help him with the question. Secondly, he would try to find the answer in the books. According to N-ENTSTU3, entrepreneurs would try to research the topic (using all sources including the Internet, networks, and books) they need to learn about and at the core of entrepreneurship is the derive to “dig deeper” to find the answers.

If **N-ENTSTU4** wants to learn about something, she would try to learn about it from the Internet. If she needs further clarification of on the topic, she would reach out to someone she knows who she believes would have a good understanding about the topic she is trying to learn about. N-ENTSTU4 believes that entrepreneurs learn by trying and doing. However, she also thinks that entrepreneurs would use the Internet as the first point of information gathering.

For **N-ENTSTU5**, if she needs to learn about something, she would try to find the answer online and if she cannot find the answer online then she would reach out to someone who can help her in the situation. Finally, she would try to find a book on the topic that might contain content to help her.

According to N-ENTSTU5, entrepreneurs learn from the case studies of other similar ventures as theirs and try to get help from their mentors and networks, if they need to learn or acquire knowledge about their business. In addition to that, they might take some academic courses that can help them broaden their understanding of the things they are trying to figure out.

## Perception of entrepreneurial learning in social networks

**N-ENTSTU3** explained that although networks can help in the enhancement learning process by working with other people and learning from their experiences, networks are not as important anymore because of digital technology. However, N-ENTSTU3 mentioned that if *“you are living in the Silicon Valley and all your friends are software engineers and you have a business idea of an App, you will have more opportunity”* than if you are living in another part of the world.

According to **N-ENTSTU4** networks play a vital role in the learning process of anyone, not just the entrepreneurs. For her, if she approaches someone and they do not respond to her positively or do not respond at all, this is a learning moment for her to evaluate whether she can change the way she approached that person.

*“With networking and interaction with others, we are always learning something, sometimes without even realising”* N-ENTSTU4.

## Proposed elements of entrepreneurship education

According to **N-ENTSTU1**, entrepreneurship is not as important in education as other subjects and it is better to incorporate it with other degree courses rather than having standalone courses of entrepreneurship. He further mentioned that in certain qualifications like MBAs and some courses in the business school, it is important to have modules on entrepreneurship to help people understand “*how to build networks and secure business*”.

Suggesting a framework of entrepreneurship education, N-ENTSTU1 suggested that students should be taught to learn from other people’s experiences and in that situation, case studies and networks can be a good help for them. According to N-ENTSTU1, the students should also be taught how to approach businesses and individuals and how to negotiate.

N-ENTSTU1 also suggested that “*probably failing people deliberately in the modules*” can help them learn how to move forward and reflect on their mistakes. When asked if providing students with case studies or roleplaying activities can help to get the similar results of resilience, N-ENTSTU1 said that it can, to a degree. However, until unless the failure is real, learning from it might not come.

With the support available to SMEs nowadays, **N-ENTSTU2** believes that it is important to have elements of entrepreneurial skills in education. According to her, at university-level entrepreneurship should be taught separately. However, it should be incorporated in all subjects at pre-university levels. She further mentioned that networks are very important in education because from the networks, you can get an idea of where to invest your efforts and how to

do certain things. Networks can also help develop knowledge about a different subject from different people which would provide students with a different perspective.

While suggesting a framework for entrepreneurship education, N-ENTSTU2 mentioned that she would start with the meaning of entrepreneurship followed by the context which influences entrepreneurial activities. After providing the foundations of all these points, N-ENTSTU2 suggested that entrepreneurship education should tell people how to be more socially aware and understand who are the people that are around them. She further suggested that it is important to teach about failure and that failure is a learning curve. However, according to her, not everyone would fully comprehend that.

*“You can only explain that failure happens, I don’t know how many times I was told that, and it doesn’t help. You can give examples of failures but then at the end, it is up to the people to perceive it in that way or not”* N-ENTSTU2.

For **N-ENTSTU3** entrepreneurship should be incorporated in the education, as according to him the education system is generally based on the idea of following instructions from someone rather than being creative and thinking for yourself or starting up something for yourself.

N-ENTSTU3 suggested that entrepreneurship education must involve students starting up a business or a project that can mimic as a real-life business scenario. In N-ENTSTU3’s opinion, this can also help the students in securing a job because this would provide them with a story to tell their potential employers.

*“I would love to challenge and say you have to start your own business ... someone might love the technology class and have clothing interest and now you want to start your own business, so you can earn money, how you going to do that (using these two areas). That would be a great exercise and I wish every student would have to do that” N-ENTSTU3.*

**N-ENTSTU4** believes that entrepreneurship is very important in education. Explaining the roots of the word, N-ENTSTU4 mentioned that when the education system was first developed it was for the purpose of the upbringing of people and bringing the best out of them and encourage them to seek new possibilities.

*“The word education comes from the Latin word ‘educere’ which means to instruct someone what to do, which is how it is in the English-speaking world. However, in Italian, the word ‘educazione’ which is also derived from ‘educere’ means bringing the best out of people, this is what entrepreneurship is about as well” N-ENTSTU4.*

N-ENTSTU4 suggested that entrepreneurship should be incorporated into different subjects because on its own it would lack the context, but merged with other subjects, background and expertise of different people then it can be very beneficial to the learning.

Another example N-ENTSTU4 gave was meaning of the word succeed, she mentioned that in the Italian translation of the word succeed is ‘succedere’ which mean to make something happen, and this is more of a process-based rather than result based.

According to N-ENTSTU4, entrepreneurship should be taught in groups with assignments that are practical in nature where students are required to create a product or a business and then try to sell it. This would give them an idea of how things work outside the university.

N-ENTSTU4 suggested that there are also character traits like how a person (student) deals with failure. According to her, it is important to teach students resilience, but this something comes with practice.

*“If we ask them to cold call 50 peoples each week, they would be more resilient by the end of the month, resilience is like a muscle, the more you fail the more resilient you become”* N-ENTSTU4.

**N-ENTSTU5** believes that it is important for all students to have some entrepreneurship education at some point in their academic career, so people can make the most efficient and holistic decisions rather than making narrow decisions that can have an impact on a lot of other things. According to N-ENTSTU5, entrepreneurship should be taught, both, on its own and incorporated with other subjects. She further mentioned that people working together can enhance the learning process.

*“A lot of things you learn are not in the textbooks, you learn the principles, but the actual implementation of the principles is in the heads of people and networks are like an experience database”* N-ENTSTU5.

N-ENTSTU5 suggested that for entrepreneurship, it should be 20% coursework based on an entrepreneurial problem, 20% case study analysis of entrepreneurial scenarios and rest should be a practical aspect where students should start a develop a business as a part of their course.

N-ENTSTU5 also highlighted that networks can help people become more risk-averse. While working in the networks on similar problems students can develop an entrepreneurial mindset. She further mentioned that this can also help students to encourage and be encouraged by their peers.

*“It would be vital if you can teach students where to find the right type of people for their network, where to find these people, how to maintain and cultivate these networks and how to best use them”* N-ENTSTU5.

N-ENTSTU5 also mentioned that there should be teamwork-based resilience incorporated into entrepreneurship education, because according to her, being resilient as a person is not enough to survive in a business world.

*“Resilience isn’t just about being resilient on your own, it is about being able to drag the right people you need through with you, you can’t leave a man behind.”* N-ENTSTU5.

## Reflection and synthesis

### Learning in an entrepreneurial coworking space

Several users of the coworking spaces collaborated and learned from each other's experiences, skills and field of businesses. This can be because people working at the coworking space came from a diverse background with their own ventures and ideas, supporting the findings of Granvotter (1985) on the strengths of the weak ties in a network, as mentioned in the literature chapter. Another reason for the atmosphere of a collaborative initiative at the coworking space can be attributed to the atmosphere developed by the organisers of such spaces.

Several participants at coworking spaces highlighted the importance of trust within a network, although they were not asked any trust-related questions. Furthermore, all the participants mentioned how important it was for them to be a member of a community and to have a sense of belonging. This would strengthen their network bonds.

The diversity network has been highlighted as a major positive element; prior experience and knowledge of the people in entrepreneurs' network give them a competitive advantage. As mentioned by Kolb (1984), the starting point of any learning event is the previous experience and existing knowledge. This can then intertwine with new information and results in fresh learning.

There was also an observation that gender plays a role in the way people network and build relationships. However, this was not the focus of the research, and there is a recommendation that future researchers should explore the importance of gender in a networked setting.

Coworking spaces can be of tremendous benefits for the society as it can not only help individuals that have a business idea to thrive but can also encourage the people that might be introverts or lack the confidence to realise their full potential while starting their venture in a collaborative setup.

#### Source of entrepreneurial learning

Most entrepreneurs had some people in their network that they would communicate most with for personal or professional reasons. Table 10 below highlights what is considered to be the source of entrepreneurial learning for each of the participants involved in the interview stage of the research. Numbers are assigned to show importance, 1 being the highest. Where there are bullet points, the participant indicated all sources equally important. There is some disparity between the groups. Entrepreneurs choose social networks unanimously, as a source of learning, which was also seen in the majority of the student participants. However, most of the entrepreneurship educators did not highlight social networks as an important source of learning.

Table 9. Source of entrepreneurial learning

Source of entrepreneurial learning	ENT2	ENTED1	ENTSTU1	N-ENT STU1	
	<ul style="list-style-type: none"> <li>• Education</li> <li>• Social networks</li> <li>• Experience</li> </ul>		<ol style="list-style-type: none"> <li>1. Social networks</li> <li>2. Experience</li> <li>3. Education/books</li> </ol>	<ol style="list-style-type: none"> <li>1. Online search</li> <li>2. Social networks</li> </ol>	<ol style="list-style-type: none"> <li>1. Online search</li> <li>2. Social networks</li> </ol>
	ENT3	ENTED2	ENTSTU2	N-ENT STU2	
	<ol style="list-style-type: none"> <li>1. Experience</li> <li>2. Education/ books</li> <li>• Social networks</li> </ol>		<ol style="list-style-type: none"> <li>1. Social networks</li> <li>2. Education</li> <li>3. Learning by doing</li> </ol>	<ol style="list-style-type: none"> <li>1. Online search</li> <li>2. Social networks</li> </ol>	<ol style="list-style-type: none"> <li>1. Online search</li> <li>2. Books</li> <li>3. Social networks</li> </ol>
	ENT4	ENTED3	ENTSTU3	N-ENT STU3	
<ul style="list-style-type: none"> <li>• Social networks</li> <li>3. Experience</li> </ul>		<ol style="list-style-type: none"> <li>1. Experience</li> <li>2. Education</li> </ol>	<ol style="list-style-type: none"> <li>1. Social networks</li> <li>2. Books</li> </ol>	<ol style="list-style-type: none"> <li>1. Online search</li> <li>2. Social networks</li> <li>3. Books</li> </ol>	
ENT5	ENTED4	ENTSTU4	N-ENT STU4		
<ol style="list-style-type: none"> <li>1. Online search</li> <li>• Social networks</li> </ol>		<ol style="list-style-type: none"> <li>1. Experience</li> <li>2. Learning by doing</li> </ol>	<ol style="list-style-type: none"> <li>1. Experience</li> <li>2. Observations</li> <li>3. Books</li> </ol>	<ol style="list-style-type: none"> <li>1. Online search</li> <li>2. Experience</li> <li>3. Social networks</li> </ol>	

**Source of entrepreneurial learning**

<b>ENT6</b>	<ul style="list-style-type: none"> <li>1. Experience</li> <li>2. Social networks</li> </ul>	<b>ENTED5</b>	<ul style="list-style-type: none"> <li>1. Experience</li> <li>2. Education</li> <li>3. Curiosity</li> </ul>	<b>ENTSTU5</b>	<ul style="list-style-type: none"> <li>1. Experience</li> <li>2. Social networks</li> </ul>	<b>N-ENT STU5</b>	<ul style="list-style-type: none"> <li>1. Observation</li> <li>2. Social networks (Mentors)</li> </ul>
<b>ENT7</b>	<ul style="list-style-type: none"> <li>1. Experience</li> <li>2. Social networks</li> <li>2. Online search</li> </ul>	<b>ENTED6</b>	<ul style="list-style-type: none"> <li>1. Online search</li> <li>2. Education</li> <li>3. Social networks</li> </ul>				
		<b>ENT-ED7</b>	<ul style="list-style-type: none"> <li>Experience</li> </ul>				

Comparative source of learning identified with within groups.

## Entrepreneurial learning in social networks

Entrepreneurs have a wide range of a network that they tap into when they require any information, or they have to learn about something that can be beneficial to their business. Findings suggest that trust in networks plays a crucial role, while entrepreneurial learning takes place. ENT7 suggested that she test ideas by discussing them with their friends and family, which indicates the trust factor.

Findings also suggest that nascent entrepreneurs are less likely to take advice from someone they do not like compared to the entrepreneurs that are more experienced.

Multiple interviewed entrepreneurs mentioned that they are open to taking advice from people. However, they evaluate the advice based on their own experience and knowledge, and in some cases, they verify certain information coming from people that may have reason to give the wrong advice or have less of credibility. Experience in entrepreneurship also has an important influence on the way entrepreneurs share their ideas with other people. In addition to the experience, context and resilience have also been linked with entrepreneurial learning in networks.

## Proposed elements of entrepreneurship education

All participating groups that were involved in the research acknowledged the importance of social networks and their contribution towards the learning of entrepreneurs and in the entrepreneurial process, some more than others. However, the current literature, as well as the primary data collected, does not show the presence of social networks and their use in formal entrepreneurship

education. This is a vital gap between entrepreneurship education and entrepreneurial learning.

As Table 11 below shows, social networks and resilience were two of the main elements that were highlighted from the data while indicating proposed elements of entrepreneurship education. Similar to the source of entrepreneurial learning, a disparity between different groups of participants on what should be included in entrepreneurship education can be seen.

Table 10. Key propositions for entrepreneurship education

<b>Entrepreneurship education should include</b>	<b>ENT2</b>	<ul style="list-style-type: none"> <li>• Theory</li> <li>• Cross-disciplinary entrepreneurial teams to have brainstorming activities, industry and self-employment experience</li> </ul>	<b>ENTED1</b>	<ul style="list-style-type: none"> <li>• Previous experience</li> <li>• Role-playing</li> <li>• Case studies</li> <li>• Network</li> <li>• Practice then theory</li> <li>• Cross-disciplinary teams</li> </ul>	<b>ENTSTU1</b>	<ul style="list-style-type: none"> <li>• Networks</li> <li>• Guest entrepreneurs</li> </ul>	<b>N-ENTSTU1</b>	<ul style="list-style-type: none"> <li>• Resilience</li> <li>• Learning from other people's experience.</li> <li>• Negotiation skills</li> <li>• Networking skills</li> </ul>
	<b>ENT3</b>	<ul style="list-style-type: none"> <li>• Network building and sustainment.</li> <li>• Personal and business resilience.</li> </ul>	<b>ENTED2</b>	<ul style="list-style-type: none"> <li>• Social elements</li> <li>• Contextual elements</li> <li>• Cross-disciplinary teams</li> </ul>	<b>ENTSTU2</b>	<ul style="list-style-type: none"> <li>• Intellectual property</li> <li>• Case studies</li> <li>• Role-playing</li> <li>• Resilience</li> <li>• Practical approaches to entrepreneurship</li> </ul>	<b>N-ENTSTU2</b>	<ul style="list-style-type: none"> <li>• Context</li> <li>• Resilience</li> <li>• Social awareness and networking skills</li> </ul>
	<b>ENT4</b>	<ul style="list-style-type: none"> <li>• Expectation, understanding and management of uncertainty.</li> <li>• Cross-disciplinary teams.</li> <li>• Skills on breaking down problems.</li> </ul>	<b>ENTED3</b>	<ul style="list-style-type: none"> <li>• Cross-disciplinary teams</li> <li>• The teaching of theory by academics</li> <li>• The teaching of practice by entrepreneurs</li> </ul>	<b>ENTSTU3</b>	<ul style="list-style-type: none"> <li>• Guest speakers</li> <li>• Confidence and courage-building</li> <li>• Effective networking</li> </ul>	<b>N-ENTSTU3</b>	<ul style="list-style-type: none"> <li>• Prototyping a business</li> </ul>

**Entrepreneurship education should include**

<p><b>ENT5</b></p> <ul style="list-style-type: none"> <li>• Openness to share ideas</li> <li>• Resilience</li> <li>• Cross-disciplinary teams</li> <li>• Prototyping</li> </ul>	<p><b>ENTED4</b></p> <ul style="list-style-type: none"> <li>• Theory</li> <li>• Practice</li> </ul>	<p><b>ENTSTU4</b></p> <ul style="list-style-type: none"> <li>• Networking</li> <li>• Creativity</li> <li>• Failure case studies, in addition to success.</li> </ul>	<p><b>N-ENTSTU4</b></p> <ul style="list-style-type: none"> <li>• Context</li> <li>• Cross disciplinary teams</li> <li>• Resilience</li> </ul>
<p><b>ENT6</b></p> <ul style="list-style-type: none"> <li>• Networking</li> <li>• Resilience</li> <li>• Confidence building</li> </ul>	<p><b>ENTED5</b></p> <ul style="list-style-type: none"> <li>• Cross-disciplinary teams</li> </ul>	<p><b>ENTSTU5</b></p> <ul style="list-style-type: none"> <li>• Networking and networking events</li> <li>• Skill evaluation</li> <li>• Network evaluation</li> <li>• Change in perception of failure</li> </ul>	<p><b>N-ENTSTU5</b></p> <ul style="list-style-type: none"> <li>• Case study</li> <li>• Problem-solving</li> <li>• Practical approach</li> <li>• Networking</li> <li>• Resilience – individual and team-based.</li> </ul>
<p><b>ENT7</b></p> <ul style="list-style-type: none"> <li>• Developing core business values</li> <li>• Network and network resource analysis</li> </ul>	<p><b>ENTED6</b></p> <ul style="list-style-type: none"> <li>• Cross-disciplinary teams</li> <li>• Resilience</li> </ul>		
	<p><b>ENTED7</b></p> <ul style="list-style-type: none"> <li>• Application of theory</li> <li>• Prototyping</li> <li>• Cross-disciplinary teams and modules.</li> </ul>		

## Summary of the findings

This chapter presents the descriptive findings from entrepreneurs, entrepreneur educators and entrepreneurship students. It provides an overview of how learning occurs for the entrepreneurs, their source of knowledge and their opinion on how entrepreneurship education should be.

The data suggests that the social network of the entrepreneurs and their experience is the main source of knowledge for them which was also the perception of the entrepreneurship education students regarding the source of knowledge for the entrepreneurs. However, the entrepreneurship educators perception was that the source of entrepreneurial knowledge was the experience. The social network was mentioned by some educators, but it was regarded as highly as other elements.

Entrepreneurs have a strong inner circle of people from whom they seek to support and guidance regarding their businesses. They rely on these people for several reasons. Their networks keep evolving as they move from various steps in their entrepreneurial journeys. There was a difference between nascent entrepreneurs and more experienced ones in relations to the openness of sharing ideas. More experienced entrepreneurs seemed to be more open to sharing.

Regarding the approach to teaching entrepreneurship in a higher education context, entrepreneurs suggested that entrepreneurship education should have elements on how to build and develop social networks, working in cross-disciplinary teams and elements of resilience among other things. Most of the entrepreneurship educators also highlighted the importance of cross-

disciplinary teamwork. Development of social network and exercises to be more resilient were highlighted by both student groups as well.

## 5. Discussion

This chapter brings together various strands of analysis of the results presented in the findings chapter and establishes their link with the research questions and the extant literature. The discussion is based on evaluating the framework of entrepreneurship education in light of the process of entrepreneurial learning using a constructivist approach.

The aim of this research project is to *evaluate the possibility of incorporating social network learning into entrepreneurship education within higher education in the United Kingdom.*

This research has been conducted using participant observations at coworking spaces to assess the first-hand experience of how entrepreneurs learn in a networked setting. This was followed by semi-structured interviews with entrepreneurs, entrepreneurship educators, students that have completed an undergraduate entrepreneurship course and finally a group of students who were about to start an entrepreneurship course at the undergraduate level. In this chapter, first, the study conducted at the coworking spaces to analyse the network and communication between the participants is discussed, this is followed by a cross-group discussion of the semi-structured interviews. These multiple data sources of this research and their analysis collectively provide a unique opportunity to evaluate the emerging scenarios and give a holistic view of the aims, teaching, learning and assessments of entrepreneurship education in the higher education system of the UK.

Key themes that are discussed in this chapter are;

1. Source of entrepreneurial knowledge

2. The context of learning and resilience
3. Entrepreneurial learning in entrepreneurial networks

Bringing together the empirical findings of this research, the Figure 8 below presents a proposed framework for entrepreneurship education in which true entrepreneurial learning is embedded.

As mentioned in the literature chapter, entrepreneurial learning research is predominantly based on the conceptual frameworks of Cope & Watts (2000), Cope (2003) and Cope (2005) and takes the work of Cope forward, (Pittaway & Thorpe 2012).

These frameworks provide valuable insights into the entrepreneurial learning. However, frameworks in Cope & Watts (2000), Cope (2003) are related to learning and general and are not entrepreneurial learning specific and Cope (2005a) is too complicated and its interpretation poses a challenge due to the lack of uniformity in the incorporated research streams.

Another big challenge in informing entrepreneurship education by the insights in entrepreneurial learning literature is the lack of overlap among them. This lack of congruence is highlighted in the literature review chapter. The key issue is that entrepreneurship education research does not investigate entrepreneurial learning or its elements and vice versa.

The following figure brings together entrepreneurial learning and entrepreneurship education by crystallising the combine perspectives of key stakeholders to present a holistic model which practitioners, researchers and policymakers can use.

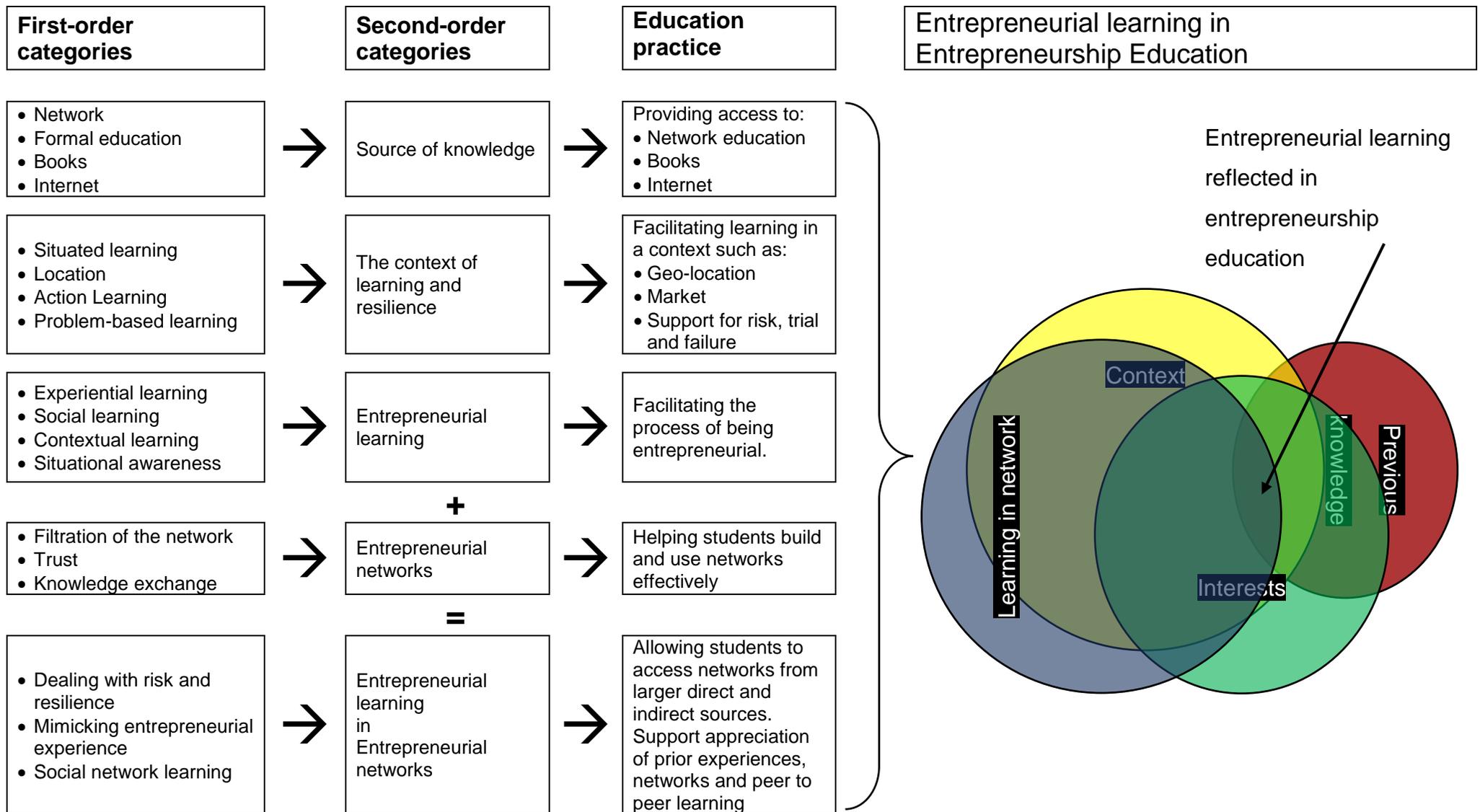


Figure 8. The proposed conceptual framework of entrepreneurship education

## 5.1. Source of entrepreneurial knowledge

Entrepreneurial learning is a complex process, and every entrepreneur learns things differently. However, all the entrepreneurs who participated in this research mentioned that social networks played a big part in their learning and acquiring information that benefitted their ventures. This was also highlighted clearly in the literature (Carswell & Rae, 2001; Lee & Jones, 2008; Lee & Williams, 2007; Rae, 2006; Taylor & Thorpe, 2004). Most entrepreneurs had some people in their network that they would communicate with the most for personal or professional reasons.

Three out of seven entrepreneurs mentioned that their source of learning included their education, which is a small number in comparison. All entrepreneurs that were involved in the research; none of them had any formal entrepreneurship education in their life. This raises a question on the importance of entrepreneurship education. However, the sample here is too small to generalise. If most entrepreneurs are starting and running businesses without having any entrepreneurship education, then a question of whether there is a need for entrepreneurship education arises. Furthermore, there is research that indicates that entrepreneurs with more education and experience grow the ventures more than the entrepreneurs that have experience of start-up but not educational background (Jo & Lee, 1996) and if the current entrepreneurship education curriculum is focused on just the mechanics of the start-up process rather than true entrepreneurial learning then it can be argued that although people coming out of that education would start more ventures, as already highlighted by the literature (Daneshjoovash & Hosseini, 2018; Gerba, 2012; Matlay, 2008; McMullan & Gillin, 1998), but the venture growth and development would not be as rapid or rewarding.

Even if students are not planning on starting a business, it can be argued that in their future employment, the skills that are a part of entrepreneurial learning, such as using experience or social networks to evaluate the best possible scenario can be crucially beneficial for career development. There is significant evidence that the firms are now more interested in people with entrepreneurial traits to take the initiative to support the development (personal and organisational) and to deal effectively with the uncertainty and unpredictable changes in the business world (Gibb, 2005; Shepherd et al., 2008; Stevenson, Jarillo, & Wiley, 1990).

In contrast to views of the entrepreneurs, 3 out of 7 entrepreneurship educators identified the importance of the social network in entrepreneurial learning. Majority of them, (5 out of 7) indicated that entrepreneurs learn from their experience. Both of these aspects; that entrepreneurial learning is socially constructed (Carswell & Rae, 2001; Lee & Jones, 2008; Lee & Williams, 2007; Rae, 2006; Taylor & Thorpe, 2004) and entrepreneurial learning is an experiential process (Clarysse & Moray, 2004; Cope, 2003, 2005; García-Cabrera & García-Soto, 2009; Huovinen & Tihula, 2008; Pittaway & Cope, 2007; Pittaway & Thorpe, 2012) are widely reported in the literature.

It was also interesting to see the perception of experience by some entrepreneurship educators. For example, ENTED5 mentioned that universities should not emphasise the previous experience of the students because it can be unfair to certain students, as some of them might be coming to the university predetermined to be entrepreneurs because of their prior involvement entrepreneurial activities. The concept of experiential learning here was associated with entrepreneurial experience, i.e. experience of start-up related activities, rather than the general experience of the students which can then be used in an entrepreneurial context. The experience and

interests of students prior to joining a university is somewhat disregarded by entrepreneurship educators.

Another interesting finding on the source of entrepreneurial learning was the role of online search engines. This finding emerged predominantly from the student data, along with 2 entrepreneurs and an entrepreneurship educator, it was interesting to see this element which has not been recognised in the literature on entrepreneurial learning before. It is assumed that one of the reasons why it was not mentioned by the first two groups (entrepreneurs and entrepreneurship educators) could be because students were asked what their primary source of knowledge and learning is before being asked about entrepreneur's source of learning.

Finally, there is a clear contribution of social networks and prior experience in entrepreneurial learning, which is recognised to an extent by all groups that were interviewed. The findings from entrepreneurship educators on the current model of entrepreneurship education do not reflect the presence of either of these two crucial elements. Taking insights from constructivism (Bates, 2015), and looking at social networks from a holistic, i.e. the formal and informal perspectives, it can be argued that in most cases "*social network creates the context that then creates the venture, a venture would have not existed without it*" ENTED3.

## 5.2. The context of learning and resilience

Another argument which surfaced mostly from the entrepreneurship educators and student groups was the role of context in entrepreneurial learning and process. There were many comments with merit that suggested that entrepreneurship and entrepreneurial learning cannot be fully understood without understanding the context in which an entrepreneur is operating. The literature on entrepreneurship also supports the importance of context in the entrepreneurial process (Autio, Kenney, Mustar, Siegel, & Wright, 2014).

This argument was built around the themes of social networks, and ENTED6 said that it is vital to understand and appreciate the social, contextual and experiential learning in its literal form rather than a 'research paper definition' which can be hard to understand for some people. ENTED3 and ENTEDU6 linked the context with social networks and mentioned that ideas are based on the context and context relies on social networks.

Looking at it from a constructivist point of view, social surrounding is what creates the learning (Brown et al., 1989; Lave & Wenger, 1991) and as a result of that, the opportunities emerge for entrepreneurs as their capacity to recognise opportunities increase with their learning. That being said, it is important also to understand the subjective nature of learning, as mentioned by ENTED7 as well, that if there are two individuals (entrepreneurs) with similar resources and knowledge, in a similar type of social and contextual setting, it is quite possible that they might learn different things from their networks, including learning nothing at all. Another participant mentioned that if they approach someone to learn about something and they do not get a response from that person, this is a learning event in itself as that can help them work in the way they approach people (N-ENTSTU4).

As suggested by Granovetter (1985), social networks are not something constant, and they keep evolving. In an entrepreneurial setting, it is based on the experience, context and the nature of learning an entrepreneur is seeking.

Incorporation of resilience in entrepreneurial learning was also suggested by several participants. Role of resilience in entrepreneurship has been highlighted by a large body of literature (Ayala & Manzano, 2014; Korber & McNaughton, 2018; Williams & Vorley, 2014), and there is some literature on student resilience (Jowkar, Kojuri, Kohoulat, & Hayat, 2014; Meiklejohn et al., 2012; Wosnitza, Peixoto, Beltman, & Mansfield, 2018), yet, there is no research in incorporating resilience in the curriculum of entrepreneurship teaching. Nabi et al., (2018) suggest that there is a need to explore the possibility of inculcating in students that risk and failure should be perceived as a positive experience of learning rather than a negative experience of failure.

Resilience can be incorporated in the curriculum as it was done by Cefai et al. (2015), who developed a curriculum of the resilience of social inclusion and justice by using storytelling methods. This experimental study showed a change in the behaviour of the students after the course. As the sample for this research was early year school students, it would need adaptation before it can be incorporated in a higher education setting.

Learning from failure a proven way to be resilient (Cloete & Ballard, 2012; Cope, 2011; Corner, Singh, & Pavlovich, 2017; Korber & McNaughton, 2018; Sosna, Trevinyo-Rodríguez, & Velamuri, 2010). If there are activities during a module of entrepreneurship education in which students are working in a combined network-oriented activity with a chance of multiple failures, it can help them develop a resilient mindset. From the findings of this research amongst the unconventional ideas of teaching resilience, some were more plausible like prototyping, launching a product or

even cold calling people than others such as deliberately failing students in assessments to develop resilience.

It also emerged from the analysis of data that resilience should not only be focused on personal resilience, but there should also be exercises on, professional, individual and team resilience..

Table 11 below shows the emerging propositions on context and resilience coming from the empirical data of this research.

Emerging proposition	Research perspective	Theoretical construct	Selected quotes / supporting comment	Source
Context relies on social networks	Context and Social network of entrepreneurship	Social constructionism	<i>The social network creates a context that helps push an individual to start a venture. A venture wouldn't exist without it.</i>	ENTED3
University courses should have a more entrepreneurial emphasis in a small and medium-size enterprise context	Context and perspective of entrepreneurship education.	Social identity in entrepreneurship education	<i>Universities need to teach people how to think small, there is a lot of emphasis on thinking bigger and achieving bigger.</i>	ENT7
There is a need for explicit outcome identification of entrepreneurship education for students	Context and perspective of entrepreneurship education.	Perspectives of entrepreneurship education	<i>We need to tell students why it is important for them to learn all this [entrepreneurial skills], they sometimes don't see that it is not just about starting up a business.</i>	ENTED7
Rather than teaching about business start-ups, entrepreneurship education should focus on the skills of entrepreneurs	Context and perspective of entrepreneurship education.	Entrepreneurship education and enterprise education	<i>Emphasis (of entrepreneurship education) should be on enterprising skills and situational awareness rather than just on start-ups</i>	ENTED7
Resilience is important in all aspects of life; hence it should be a part of all curriculum	Resilience	Resilience in education	<i>In many ways, I think it (entrepreneurship in education) would be beneficial to all students, entrepreneurship or not. It would benefit hugely to all students in any field, as a degree of resilience would be required there</i>	ENTED6
Entrepreneurship education should contain prototyping to build resilience	Resilience	Resilience in entrepreneurship education	<i>By doing it this way (trial and error) they (students) can see that it is not that it always works the way they want it to work, things can go wrong, as they do in real life</i>	ENTSTU2

Table 11. Emerging propositions on context and resilience

### 5.3. Entrepreneurial learning in entrepreneurial networks

Several users of the coworking spaces collaborated and learned from one another's experiences, skills and field of businesses. Findings of this study contradict the finding of McAdam & McAdam (2006) where they conducted a longitudinal study at a university-based business incubator. Their study highlighted several negative aspects such as; rivalry, lack of support and empathy while working in a networked setting. This could be because people working at the coworking spaces observed in this research came from a diverse background with their own ventures and ideas which mitigated the sense of rivalry. According to Shane (2000), the education of an entrepreneur and their personal events are also a part of their knowledge. McAdam & McAdam's (2006) work was focused on high-tech business incubators, where people joining the incubator were coming from a similar educational background. Another reason for the atmosphere of a collaborative initiate at the coworking space can be attributed to the atmosphere developed by the organisers of such spaces. Bøllingtoft & Ulhøi (2005) did a similar study at a business incubator in Denmark using theoretical constructs of social capital and the data collection method similar to this research [ethnographic observations]. They highlighted the importance of networking values for new ventures. They further stated that each participant has its own perception of networking, and they network on a different level. This is consistent with the findings of this research.

Results indicate that entrepreneurs have a wide range of a network that they tap into when they require any information, or they have to learn about something that can be beneficial to their business. Trust in networks plays a crucial role, while entrepreneurial learning takes place. Although the findings of Bøllingtoft & Ulhøi (2005) were based

on 6-month ethnographic research at a business incubator, unlike this research, it lacked diversity because of the sample being only one location. They acknowledged the methodological limitations of their work and suggested that the examination of social network-related entrepreneurial activity should be through a multimethod approach.

Several participants in this research, both at the coworking spaces and interviewed groups, highlighted trust though they were not asked any trust-related questions. This brings it in alignment with the Chell & Baines's (2000) work where they mentioned that trust is the centre point of any network, and it acts as a 'glue'. All the participants mentioned how important it was for them to be a member of a community and to have a sense of belonging.

The diversity in a network has been highlighted as a major positive element; prior experience and knowledge of the people in entrepreneurs' network give them a competitive advantage. The more diverse network is the more knowledge and experience would come to an entrepreneur through from that network. As mentioned by Kolb (1984), the starting point of any learning event is the previous experience and existing knowledge. This can then intertwine with new information and results in fresh learning.

For this reason, family and friends are probably the first point of entrepreneurial learning in social networks. ENTED1 mentioned that entrepreneurs often use family support to start a business, and this support comes in terms of finances as well as knowledge and learning. ENTED4 mentioned that he did not receive any support or learning from his family. However, his family did play an empathising role whenever he required it. This is in alignment with the literature, which suggests that the entrepreneurs' network often starts from their families (Rosenblatt et al., 1985).

It was observed that nascent entrepreneurs are less likely to take advice from someone they do not like compared to what the more experienced entrepreneurs will do. In addition to that, ENT5 mentioned that taking advice or not depends on the reason he does not like someone. He mentioned that if he does not like someone as a person but does not have any problem with their business acumen, he would be more inclined to take their advice rather than of someone he does not like because of their professional values., This was also concurred by ENT2. Furthermore, multiple interviewed entrepreneurs mentioned that they are open to taking advice from people however they evaluate the advice based on their own experience and knowledge, and in some cases, they verify certain information coming from people that may have reason to give the wrong advice or have less of general credibility.

Entrepreneurial experience also has an important influence on the way entrepreneurs share their ideas with other people. ENT6 mentioned that in the beginning, he was reluctant to share his ideas with others, but over time he became more open. He realised that the more people he networked with, the more he benefited from it. While thinking about it and comparing the benefits with the cost of sharing ideas, the benefits he received significantly outweighed the costs.

Although some entrepreneurs might feel that by not sharing their ideas with other people, they are protecting themselves from a potential theft of their ideas, its downside can be much higher than the risk of theft. As mentioned by ENT7, *“business ideas are gemstones you get them uncut and rough, and by sharing and getting feedback, you shape them into a diamond.” ENT7.*

Similarly, ENTSTU4, while talking about the ideas from the social network, mentioned that meeting new people provide a new perspective on various issues, especially, if you are at a new location or you are at your native location, and someone new comes

in from outside that area. In this case, they bring in a distinct perspective on things which might not be possible otherwise. Work of Cope (2003a) also highlights that social surrounding of entrepreneurs help them reflect on their actions. This can lead to sharpening of their 'idea networking' technique, which builds on principles to develop ideas for learning that can lead to more innovative ideas.

ENT7 mentioned that she tests her ideas by discussing them with their friends and family. Examples like that support the argument to back up the claim of the importance of diversity of perspectives in entrepreneurial learning. Gemmell, Boland, & Kolb (2011) also concluded the same, suggesting that entrepreneurs use their networks to test, develop and validate their ideas.

ENT3 and ENT4 mentioned that their social network kept evolving over time as they moved ahead in their business lives. The evolution of the members of an entrepreneurial social network has been recognised in the literature as well, and it is highlighted that networks develop, change, evolve as a venture progresses through different stages (Jack *et al.*, 2010). ENT2's business is only a few years old, and although he is attending the networking events and developing his network from other sources, the key people in this network are still the same as when he started. This was similar for ENT7 who has the same first point of contact people in her network. However, the involvement of these people has changed over time. ENT5 mentioned that her first degree of the social network remained the same. However, the network leads she is getting from her social network keeps evolving. Hence, her second degree of network has kept changing and developing over time. This can reflect at 'idea networking' which follows a networking technique that is used for learning to build innovate ideas (Giustina, Vecchio, Giovanni, & Passiante, 2017).

While appreciating the strengths of social networks in entrepreneurial learning, it is also argued here that there are no limits on the reach of networks. For example, there are several things that entrepreneurs can learn from their networks. For instance, ENT3 mentioned that he also learnt from the mistakes of other people in his network and adjusted his strategy in a way that he can avoid such mistakes by not doing certain things. Learning from your social network does not have any boundaries and learning can be as comprehensive as you allow it to be. However, entrepreneurs need to make a judgement call on how much information they should retain while keeping it in the context to preserve the most valuable elements, rather than gain irrelevant information; this was also mentioned by ENTSTU1. It is argued here that some learning which might not be relevant at a given point, can be useful in the future. Furthermore, it is hard to create a limit on social networks, especially while looking at the second and third degrees of networks. Granovetter (1983; 1973) mentioned the strength of weak ties in a network and elaborated that second degree of a network, although loosely connected to a person, can sometimes be more beneficial than the strong ties in a social network.

On a final note, where a participant went as far as saying social networks can define a successful and an unsuccessful entrepreneur (ENTSTU3) and other that social networks can help to solve the problems that otherwise could not have been solved (ENTSTU5), there was also a presence of a counter-argument, especially from the student group, stating that social networks used to be more important in the past and are getting lesser important because of the rise in information and communication technology and very easy access to the Internet (N-ENTSTU3). However, even in that case, it was recognised that if an entrepreneur is surrounded by people that have access to information and resources which can be beneficial to their venture, these

entrepreneurs would potentially succeed quicker. On the topic of the role of technology in networks, it is also worth mentioning that one participant highlighted the damage caused by the social media (not social network) by changing the mindsets in a way that young entrepreneurs are becoming less and less aware of developing an actual social network and cultivating learning from it.

Table 12 below shows the emerging propositions on learning and social networks coming from the empirical data of this research.

<b>Emerging proposition</b>	<b>Research perspective</b>	<b>Theoretical construct</b>	<b>Selected quotes / supporting comment</b>	<b>Source</b>
Trust in social entrepreneurial networks can have a positive influence by the strength of personal ties in addition to professional	Social networks ties	Strengths of network ties	<i>When you have coupled the business relation with the personal, only then you know that you are getting the full truth without any padding or ulterior motive</i>	ENT4
People feel pride in helping other people	Social networks	Network support	<i>If you approach in the right way, people get quite flattered by being asked them for advice</i>	ENT4
Social networks help in learning from other people's mistakes	Learning in social networks	Social learning	<i>From my network, I have learnt somethings not to do from the mistakes that other people have made.</i>	ENT3
Experienced entrepreneurs are more open to sharing their ideas than nascent entrepreneurs	Role of social networks in entrepreneurial learning and opportunity	Social networks and opportunity exploitation	<i>At the start, I was very isolated and protective of my ideas. There was no threat of anyone stealing my ideas but at the same time I wasn't getting anywhere either</i>	ENT5
Social networks help entrepreneurs develop and shape their ideas	Social networks in entrepreneurial learning	Entrepreneurial learning	<i>Business ideas are gemstones you get them uncut and rough and by sharing and getting feedback, you shape them into a diamond.</i>	ENT7

Table 12. Emerging propositions on learning and social networks

#### 5.4. Entrepreneurial learning in entrepreneurship education

The conceptual framework presented at the beginning of this chapter shows key elements of entrepreneurship education that reflect various aspects of entrepreneurial learning. Context, previous knowledge of the students before joining the course, their interest in entrepreneurship and networks are a part of its vital components.

All participating groups, that were involved in the research, some more than others, acknowledged the importance of social networks and their contribution to the learning of entrepreneurs and in the entrepreneurial process. However, the extant literature, as well as the primary data collected, does not show the presence of social networks and their use in formal entrepreneurship education. This is a vital gap between entrepreneurship education and entrepreneurial learning. The research shows the importance of all these factors that were highlighted above in and their role in the entrepreneurial learning process. However, the teaching of entrepreneurship does not fully reflect these elements. It is acknowledged here, which is also backed up by literature, that “there is no one best way of teaching entrepreneurship” (Huq, Gilbert, Huq, & Gilbert, 2017, p. 166).

Social networks and resilience were two of the main ingredients that were highlighted from the data while indicating proposed elements of entrepreneurship education. Data suggests an emphasis on the use of networks. ENT3 mentioned that students should learn how to communicate with new people. As stated by ENTSTU2 to address the decline in social skills

of current students and future entrepreneurs, it is important to have social networks included in the curriculum to reinforce these skills not only in entrepreneurship education but perhaps in most of the other disciplines. Learning in networks while creating a context in which students can engage in the trial and error-based activities can also build resilience in them as well.

It can be argued that in most entrepreneurship-related modules, there is usually a teamwork component involved, but it can be seen from the previous research that students often do not fully engage with their team and participate in team-work only for assessment purposes (Pfaff & Huddleston, 2003; Wilson, Ho, & Brookes, 2018). This hinders the learning process taking place within the teams. It is argued that entrepreneurship cannot be fully understood until the network from which an entrepreneur emerges (Birley, 1985). The team-work activities, therefore, do not fully meet the requirements of an entrepreneurial network as the actors in the team are not immersed in the process. Furthermore, as mentioned in the literature, students experience of learning can be enhanced by having an open and constructive atmosphere among students (Garner, 2006) where they learn collectively.

There is an obvious need to develop a curriculum in a way that students are aware of the value of social network learning and know-how to learn within these networks. Only then they can appreciate the context of their social environment and can truly benefit from it. Case studies activities and storytelling around the domain of social network learning can also help to develop a context and make students see the value of social networks followed by some roleplaying exercises where they can practise these techniques and learning activities. Role-playing activities in teaching was also suggested by

ENTED1 and ENTSTU2. This can further enhance activities based on a constructivist approach (Reynolds, 2007) and incidental learning (Marsick & Watkins, 1990) within their social networks, but there must be an element of reflection involved where students can actually look back at the learning activity and analyse it for themselves within their contexts.

For the entrepreneurship educator and practitioners, incorporating context, social networks, interests and previous knowledge all in one curriculum is not an easy task. As mentioned before in the findings chapter, incorporating context and network in a classroom setting is possible. However, its evaluation by an assessment task is challenging. This is also applicable in the case of the prior knowledge and interests of the student. Entrepreneurship educators need to be entrepreneurial to teach it effectively. There is an indication of this in the literature as well which suggests that “the practice and development of entrepreneurial behaviours are arguably ... a core competence for entrepreneurship educators” (Gibb, 2011, p. 149). One of the limitations of this research is that it does not investigate the level of entrepreneurialism in educators. Future research should consider the importance of being an entrepreneur to teach entrepreneurship. However, as mentioned in the literature chapter, for this research, entrepreneurship does not mean only the start-up and venture creation process. It can be argued here that by incorporating the findings of this research in an entrepreneurship curriculum, the entrepreneurial learning process can be mimicked in entrepreneurship education without the educator being an entrepreneur.

## 6. Conclusion

This chapter concludes this research, reflects upon the significant phases of the research and findings. The chapter also provides an overview of contributions to knowledge by this research and proposes a conceptual framework for entrepreneurship education in the light of the findings of this research in combination with the insights from the existing body of knowledge. Furthermore, it suggests some future directions for the field of entrepreneurship education research to get a better and more holistic view of the phenomena involved.

One of the aims of this research was to *‘evaluate the possibility of incorporating social network learning into entrepreneurship education within higher education in the United Kingdom’*. A comprehensive literature review on entrepreneurship, learning, entrepreneurial learning, entrepreneurship education and the role of networks in learning and entrepreneurship is provided earlier in Chapter 2. A strong conclusion of this literature is that the entrepreneurial process depends on the socio-contextual surroundings of the entrepreneur and the process of entrepreneurial learning is of social and experiential nature.

Although being around for over three centuries, the concept of entrepreneurship emerged as a discipline on its own and its vital link with innovation was highlighted in the 20<sup>th</sup> century. Before that entrepreneurship was a part of the field of economics.

Even after decades of academic research on the topics and sub-topics of entrepreneurship, the discipline lacks a uniform definition. Entrepreneurship

has been referred to as a chaotic and complex process with no one holistic definition (Neck & Greene, 2011) and some authors (Gibb, 2005; Read, Dew, Sarasvathy, Song, & Wiltbank, 2009; Sarasvathy, 2008) have attributed this to the dynamic nature of the business world.

It is observed from the previous research that there are certain elements of the definition of entrepreneurship that are commonly agreed. For Sarasvathy & Venkatamaran (2011), entrepreneurship is dependent on the social context of the entrepreneurs and in this process, they try to solve the problems while dealing with the uncertainties of the business market. The element of uncertainty has been in entrepreneurship since the very beginning of term's emergence, but the addition of innovation and connection of entrepreneurship with the social and contextual surround of the entrepreneur is relatively recent. However, it has received enhanced emphasis over the years by several authors (Anderson, 2000; Drakopoulou Dodd & Anderson, 2001; Gaddefors & Anderson, 2018; Welter & Smallbone, 2011).

Once entrepreneurship emerged as a discipline on its own the issue whether entrepreneurship can be taught at all surfaced. Now it is widely accepted that entrepreneurship is a process and like any process, there are certain elements involved in it and certain skills needed and that process. By fulfilling these skills, it is possible to teach entrepreneurship.

Over the years there has been significant research on entrepreneurship education and entrepreneurial learning. However, the research on these two strands does not align with each other at all levels. The earlier focus of entrepreneurship education was to teach students how to develop business plans (Ronstadt, 1987). Although this approach has been criticised in the

literature because of its lack of flexibility and other limitations (Honig, 2004), so much so that it can arguably have a negative impact on entrepreneurial behaviours (Nabi et al., 2017), it is still the predominant approach of teaching entrepreneurship (Carrier, 2007; Nabi, Walmsley, Liñán, Akhtar, & Neame, 2018; Solomon, Duffy, & Tarabishy, 2002). For these reasons, there have been calls by scholars in the field of entrepreneurship education to develop more innovative programmes which can capture the true nature of entrepreneurial learning.

It is not that the research in entrepreneurship education does not suggest any indication for better course development. For instance, there has been suggestion of developing entrepreneurship education with an action learning model (Rasmussen & Sørheim, 2006) or embedding a practical element where students should be prepared for becoming entrepreneurs rather than getting educated about entrepreneurship (Blenker et al., 2006). However, incorporation of the social and contextual elements of entrepreneurship in formal education framework is not fully covered in the literature.

Like entrepreneurship itself, entrepreneurial learning has been considered a social, contextual and experiential process of decision making (Cope, 2011; Morris, Kuratko, & Covin, 2011; Pittaway & Cope, 2007a, 2007b; Pittaway & Thorpe, 2012; Politis, 2005). This ties down the concept of entrepreneurial learning with the learning paradigms of experiential and social learning. However, a great challenge is encountered when something that is a social and experiential process is tried to be taught by using more traditional methods of teaching and assessments that are based on the cognitive model of learning.

It is astonishing to see that although the literature has recognised entrepreneurship and entrepreneurship education as an experiential, social and contextual process which requires exploration through a qualitative 'sense-making' research but the predominant philosophy of entrepreneurial research has traditionally been set in the positivist paradigm (McDonald et al., 2015).

This research uses an exploratory, interpretivist-constructivist approach to look at the process of entrepreneurial learning to address the concerns in entrepreneurship education. While doing so, it has been observed that people are most helpful when someone asks them for support and entrepreneurs generally rely on their social networks to satisfy their intellectual and venture needs. It also helps them in making the right decisions, if not directly then by observing other people's mistakes.

There has been a slight difference observed in the way experienced entrepreneurs use their networks in comparison to the nascent ones. Experienced entrepreneurs are open to sharing their ideas within their networks whereas the nascent entrepreneurs are somewhat protective of their ideas and try to keep them to themselves. Experienced entrepreneurs see the sharing of ideas as an opportunity to gather a unique perspective on things which helps them shape their ideas further. The social network also helps in forming the context in which entrepreneurs operate or will operate, and that context is the main determinant of how a venture would take place.

There is a difference in perception of entrepreneurs and the entrepreneurship educators, regarding the way entrepreneurs learn as well as how

entrepreneurship should be taught. There were some elements that also highlighted the difference in the understanding of experiential learning.

In experiential learning, people learn about new things based on the knowledge they already possess. However, from the entrepreneurship educator group, it was taken as an experience of an individual in a similar field. The prior experience of the students, in general, was somewhat neglected, for example, as mentioned by ENTED3, *“if you are in your 20s the most time you spent is in education hence the source of the majority of your knowledge would be books and academic other activities you have performed. However, if you are older, then you would have more vast knowledge”*. Experiential learning has also been confused with ‘learning by doing’.

Entrepreneurs highlighted that entrepreneurship education should have elements on the theoretical aspects of entrepreneurship, learning from the network especially in a cross-disciplinary team and some exercise on resilience building. These were similar to the issues highlighted by the entrepreneurship educator and student groups. However, they had surprisingly less emphasis on the theoretical and contextual aspects. Furthermore, the priority order of similar suggestions from educators’ and students’ group was in a different than that of the entrepreneurs.

Another interesting thing highlighted by this research was about the perception of the word entrepreneurship for students. Students that have been on an entrepreneurship course mostly thought about entrepreneurship more than just starting up a business and their perception of the concept was mainly based on solving problems and enterprising skills. However, students that were about to start an entrepreneurship course tied the term relatively more

with the business and financial gains. Which raises the concern about motivations behind students choosing courses focused entrepreneurship.

The proposed model of entrepreneurship education should be robustly influenced by the research in entrepreneurial learning in its true sense. From the literature on entrepreneurial learning and the findings of this research, developing an entrepreneurship education course using constructivist approaches of learning seems most appropriate. It is, at the same time, recognised that doing this would not be an easy task and there are elements, both, of practical organisational nature that can act as roadblocks to develop such courses.

Embedding entrepreneurship teaching in other subject areas and making students from different fields of education work together, would provide them with a context and an opportunity to work in a cross-disciplinary situation. This can be a big leap forward in entrepreneurship education. However, it is also recognised that this type of incorporation would be very hard.

The author in this research has introduced the concept of “barrier by success”. As mentioned earlier in the thesis, if something is not broken and students are happy with the process by giving good feedback, it is hard to convince an educational establishment to make changes in that course. This stops the development of such courses.

### 6.1. Contribution to knowledge

As mentioned, earlier, this study is based on one gap, one synthesis and has two outcomes. The literature on entrepreneurship research since Birley (1985) strongly emphasises the importance of networks in the entrepreneurial

process. However, it lacks a robust understanding of how networks emerge and how entrepreneurs learn in their networks.

Furthermore, the importance of networks and prior experience has been widely discussed in the literature on entrepreneurial learning, but these elements do not reflect in formal entrepreneurship education courses.

#### 6.1.1. Contribution to the entrepreneurship education literature

Entrepreneurship education literature is predominantly focused on the impact of entrepreneurship courses. This impact is being evaluated based on the entrepreneurial intentions and career development of the students (Nabi et al., 2018). There is a lack of robust literature on entrepreneurship education aligning the discipline with entrepreneurial learning. This research contributes to the literature of entrepreneurship education by doing so through the following suggestions.

Entrepreneurial learning is a social and experiential process, which is established in the literature as well. However, a challenge can emerge when an attempt of replication happens in a higher education context. Students might not have entrepreneurial and/or professional experience that would facilitate certain learning aspects of entrepreneurship. However, they would have general experience and observation of events that could be beneficial in an entrepreneurial learning context. It is highly improbable to develop a course of education that can be catered and targeted to each student's distinct experience.

This makes it difficult to create an experiential learning environment for the students. A way out of this would be to develop entrepreneurship education

courses in which students are confronted by novel content of knowledge and students can create meaning out of it in a socially constructive manner while being in an entrepreneurial context with other students. Social interactions among students should result in the critical evaluation of new information accumulated based on their existing independent knowledge. If this social network of students is a cross-disciplinary one, where there are students from multiple backgrounds and areas of specialities working together, it can be argued the value of sum of experiences and expertise in such network, from an entrepreneurial learning perspective would be much higher than if such a network is comprised of students from one discipline only.

In this case, constructivism is not only helping students to develop the meaning of certain concepts, but it is also acting as a substitute for the experiential learning aspects of entrepreneurial learning by tapping into the experiences of multiple actors in a network.

As suggested by some participants in this research, the theoretical aspects of entrepreneurship education should not be neglected. However, it is suggested, where possible, to have exercises such as role-playing and prototyping which can enhance the learning by doing aspects of developing and testing of ideas, as a measure to show the theory in practice. This is in alignment with the literature, which too reports that prototyping and role-playing enhance the trial, error and reflection activities and are influential in developing resilience (Cloete & Ballard, 2012; Cope, 2011; Corner et al., 2017; Korber & McNaughton, 2018; Sosna et al., 2010).

By incorporating theory and its application (through practical exercises), students would have a chance to encounter real-life problems including

dealing with failure. These failures would be in a controlled environment and students would not have any significant and long-term impact from that.

It is expected that this would help students in building skills like constructive-collaborative learning within networks, developing competencies, problem-solving, dealing with failure and building resilience.

As indicated in the literature, there is no best way of teaching entrepreneurship; the proposed model highlighted here is not claimed to be the best approach either. However, it is expected to align the teaching of entrepreneurship closer to the literature on entrepreneurial learning than what is currently prevalent.

#### 6.1.2. Methodological contribution

One of the key contributions of this research is in the methodological choices for this study. Literature indicates a dominance of positivist and quantitative methodology in entrepreneurship research (McDonald et al., 2015). There is a lack of studies in entrepreneurship that have adopted non-traditional methods of data collection such as; action research, participant observation and other approaches derived from the ethnographic methods. The call for more research on these lines is often made (Dana & Dana, 2005; De Bruin et al., 2007; McDonald et al., 2015). This research begins with gathering data by using participant observations at coworking spaces to understand the nature of events as they happen in a networked entrepreneurial context including the formation of such networks.

Furthermore, this study triangulates the results by taking in consideration perceptions of all the stakeholders involved in entrepreneurship education,

namely; entrepreneurs, entrepreneurship educators and entrepreneurship students. This provides this study with greater internal validity, as each stakeholder in this process possesses a unique perspective. Entrepreneurs know how they learn about entrepreneurship; educators know they can teach a subject and students can provide input on their experience of learning in an educational institution.

### 6.1.3. Policy contribution

This research generates insights on entrepreneurship education that can help the Quality Assurance Agency for Higher Education of the UK develop new relevant guidelines. It is argued here on the basis on the surveyed literature and findings of this research that entrepreneurship is not about starting up a business only but is a sum of skills, behaviours and attributes that entrepreneurs need. These skills are not only useful in setting up a new venture but also help in the growth and sustainability of existing businesses.

On the basis of that, firstly, it is advised that, although The Quality Assurance Agency for Higher Education updated the definition of entrepreneurship education (QAA, 2018), it should not be trapped in the definitional quarrel between enterprise education and entrepreneurship education. It should take forward entrepreneurship education as a whole. Starting up a business would require enterprising skills regardless. These skills can be used on a broader scale with or without the creation of a new venture. Having two separate definitions would result in having a divide and confusion among educators and policymaker.

There is an ever-growing demand in the courses on entrepreneurship globally, which, according to the recent literature, continues unabated. Policy intervention can help the institutions involved in entrepreneurship teaching to employ some of the innovative methods suggested above to provide students with an opportunity to learn entrepreneurship as the entrepreneurs do.

There are several policy implications in entrepreneurship education. One of the findings of this research highlights the incorporation of entrepreneurship into other disciplines as well. However, it is a challenge for individual educators to do so and there is a call for policy intervention to create an entrepreneurship enabling environment (EEUK, 2019) which is reinforced by this research. This would help in building sustainable entrepreneurship education growth in the UK higher education institutions.

Policy guidance documents, such as QAA (2018), are predominantly focused on the institutions that already have entrepreneurship programmes, there is very little push and support available for institutions that are not yet bought into the importance of entrepreneurship education. Hence, the policy documents should be more inclusive, and they should be disseminated in a way that they reach even the non-entrepreneurial higher education institutions.

As discussed in the literature section before, the evidence which policymakers use to design policies are not substantial and the research that they use to base their understanding on is often conducted in isolation from other key streams of learning, i.e. management learning, higher education policy, graduate employment and labour market (Pittaway & Cope, 2007a). Policymakers need to collaborate with entrepreneurs, entrepreneurship researchers and educators to design policies, because entrepreneurship is a

complex process, and as shown in this research, an attempt to understand the complexity and incorporation of the subject into education domain it requires a holistic view and approach on the topic.

#### 6.1.4. Practical contribution

There are significant implications of this research for the educators, practitioners and entrepreneurship education researchers. For the educators and practitioners, this research provides a framework which can be applied to any entrepreneurial module. The purpose of entrepreneurship education is to build the entrepreneurial competencies of students. The framework presented in this research gives a foundation on which modules can be built as well as it provides the educators with enough flexibility to show their individual aptitudes towards the field. It guides them to incorporate elements without dictating *how* they should do it.

For educators, there are two parts of the framework, one looks at the specific knowledge students already possess, and their interests and the second part is focused on how learning networks and contexts can be developed. Admittedly, both these parts are not easy, especially if dealing with a large number of students in a class. For this reason, to achieve optimal entrepreneurial conditions in a classroom setting, educators need to have class sizes that are not very large but also not so small that a beneficial networked learning environment cannot be created. There is a need for further research to explore the optimal size of classrooms for entrepreneurial learning to take place effectively.

It is also recognised in the research that several elements of entrepreneurial learning are very difficult to replicate in a classroom setting. Educators are advised to look more innovative teaching techniques which provide a near-real-life entrepreneurial context for the students. Assessment of such activities would be a challenge for the educators, there is a need further research to look at new and innovative methods of assessment which can capture the social and contextual elements as well as test the resilience of the students.

Role-playing activities and prototyping product ideas can also provide students with scenarios that are similar to what entrepreneurs' face in their day to day life. The skills and actions that are required for delivering entrepreneurship education can be used in other fields of studies as well, where continuous learning is required in which students need to develop new ideas and new products based on the information, they have at a given time. Such exercises would also help students to build resilience. Developing a new product and prototyping would require significant trial and error. Furthermore, it was indicated in the findings that there is a need for developing a mechanism that would change the perception of failure for the students and they should see it as a learning process rather than something very negative.

There is also a need for more cross-disciplinary classrooms where business students can work in a network of arts and STEM students. Considering the contextual and social nature of entrepreneurial learning, such networks where students are from a wide background would help to develop a more meaningful and effective learning environment where distinctive skills and knowledge can exchange to form new learning. This was also discussed in the *Entrepreneurship Education* section of the literature review that there is a need

for taking discipline of entrepreneurship out of business schools and later reinforced by the empirical findings to have more cross-disciplinary approach to entrepreneurship education.

For researchers in the field, it is argued in this research that entrepreneurship education should not be researched explicitly, without considering entrepreneurial learning. This research also provides a foundation for further practitioner-led research for the enrichment of entrepreneurship education.

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## 6.2. Limitations and future research recommendation

Research is a process of finding things. However, every finding, invariably leads to the emergence of a new set of questions which require further research, making research a continual quest.

As with any qualitative research, the major limitation of this research is the size of the data. This is an exploratory research to understand entrepreneurial learning from entrepreneurs and proposing elements that can enhance entrepreneurship education. This research has tested to evaluate and confirm whether these elements would enhance the student's entrepreneurial capabilities. Experimental research with a controlled group of students on prevalent entrepreneurship education and one on a course based on the findings of this research is expected to provide this confirmation

Entrepreneurship is a very context-dependent process. It has been observed from the results that entrepreneurship that exists in the UK might not be the same as it exists in another part of the world. The same is likely to be the case of entrepreneurship education in the higher education system of different countries. Future research in the area of entrepreneurial learning and entrepreneurship education could be advanced by looking at the way entrepreneurs learn in different countries.

In addition to that, a longitudinal case study on the impact of the proposed model of entrepreneurship education can significantly enrich the literature on the subject.

In addition to the methodological limitations, it is argued that entrepreneurship education would be significantly benefited if courses are designed by

collaborating with entrepreneurs. However, the individual entrepreneur's involvement on a course would not be suitable, as this would increase the problems of too much tailoring of the course, as every entrepreneur has a unique experience. Further research on entrepreneurship education can look into taking the recommendations from a larger cohort of entrepreneurs to provide a bridge between entrepreneurs and entrepreneurship educators.

Despite these limitations, this research provides a step forward in the field, and because of its exploratory nature, it provides an avenue to develop future research which would contribute to the subject.

In conjunction with extant literature and the findings of this research, it is also recommended that there is a strong need in entrepreneurship research to break the norms of the traditional interview and survey-based methodologies that are currently dominating the subject and engage with new and innovative methods to understand the phenomena of entrepreneurship.

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## Appendices

### Appendix A – List of Definitions

- **Enterprise Education:** “The process of equipping students (or graduates) with an enhanced capacity to generate ideas and the skills to commercialise the ideas.” (Huddleson and Stanley, 2011; QAA, 2012).
- **Entrepreneurship Education:** The process of teaching students the procedure of new venture creation. (Katz, 2003; Henry, et al., 2005; Jones and Iredale, 2010; and QAA, 2012). For the purpose of this thesis, entrepreneurship education is taken as a sum of both enterprise and entrepreneurship education.
- **Entrepreneur:** “An individual who exploits market opportunity through technical and/or organizational innovation” (Schumpeter, 1965)
- **Entrepreneurial Eco-System for Higher Education:** Environment effecting entrepreneurship. Eco-System enables the individual, enterprise and the society to combine effectively to create an environment in the higher education that nourishes entrepreneurial processes. (Derived from Nambisan and Baron, 2013)
- **Entrepreneurial Networks:** “The sum of total of relationships in which an entrepreneur participates and which, at least some of the time, are utilised to further his or her business.” (Mole and Ram, p.75, 2012).
- **Entrepreneurship:** (Research would be focused on opportunity-based entrepreneurship) It is the process of identifying an opportunity, a gap in the market and exploiting it innovatively to generate value. (Derived from Schumpeter, 1965)
- **Entrepreneurial Learning:** Entrepreneurial learning 'is an experiential process, it is based on “entrepreneur’s career experience, the

transformation process, and entrepreneurial knowledge in terms of effectiveness in recognizing and acting on entrepreneurial opportunities and coping with the liabilities of newness.” (Sarasvathy, 2001; Minniti and Bygrave, 2001; Cope, 2005; Politis, 2005)

- **Innovation:** “The doing of new things or the doing of things that are already being done in a new way.” (Schumpeter, 1947)
- **Learning:** “Learning can be viewed as a responsive, rhetorical and argumentative process that has its origins in relationships with others.” (Cope, 2005).
- **Multidiscipline:** Where two or more disciplines work together on a common problem and then split apart after the problem is solved. (Derived from, Borrego and Newswander, 2008)
- **Networks:** An interactive relationship among individuals, groups and organisations to pursue a common problem. (Derived from Mole and Ram, p.75, 2012)
- **Social Capital:** "Sum of actual and potential resources available through one's network relationship." (Nahapiet and Ghoshal, 1998; Greve and Salaff, 2003; Gedajlovic, et al., 2013; Light and Dana 2013; Estrin, et al, 2013)

## Appendix B – Declaration of the ethical conduct of the research

### FORM UPR16 Research Ethics Review Checklist



**Please include this completed form as an appendix to your thesis (see the Postgraduate Research Student Handbook for more information)**

<b>Postgraduate Research Student (PGRS) Information</b>		<b>Student ID:</b>	714476
<b>PGRS Name:</b>	Jahangir Wasim		
<b>Department:</b>	SEI - PBS	<b>First Supervisor:</b>	Dr Vijay Vyas
<b>Start Date:</b> <small>(or progression date for Prof Doc students)</small>	01/02/2015		
<b>Study Mode and Route:</b>	Part-time <input checked="" type="checkbox"/>	MPhil <input type="checkbox"/>	MD <input type="checkbox"/>
	Full-time <input type="checkbox"/>	PhD <input checked="" type="checkbox"/>	Professional Doctorate <input type="checkbox"/>

<b>Title of Thesis:</b>	Closing the gap between university curriculum on Entrepreneurship Education and Entrepreneurial Learning in Networks
<b>Thesis Word Count:</b> <small>(excluding ancillary data)</small>	65,627

If you are unsure about any of the following, please contact the local representative on your Faculty Ethics Committee for advice. Please note that it is your responsibility to follow the University's Ethics Policy and any relevant University, academic or professional guidelines in the conduct of your study

Although the Ethics Committee may have given your study a favourable opinion, the final responsibility for the ethical conduct of this work lies with the researcher(s).

**UKRIO Finished Research Checklist:**  
(If you would like to know more about the checklist, please see your Faculty or Departmental Ethics Committee rep or see the online version of the full checklist at: <http://www.ukrio.org/what-we-do/code-of-practice-for-research/>)

a) Have all of your research and findings been reported accurately, honestly and within a reasonable time frame?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
b) Have all contributions to knowledge been acknowledged?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
c) Have you complied with all agreements relating to intellectual property, publication and authorship?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
d) Has your research data been retained in a secure and accessible form and will it remain so for the required duration?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>
e) Does your research comply with all legal, ethical, and contractual requirements?	YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>

**Candidate Statement:**

I have considered the ethical dimensions of the above named research project, and have successfully obtained the necessary ethical approval(s)

<b>Ethical review number(s) from Faculty Ethics Committee (or from NRES/SCREC):</b>	E414
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If you have *not* submitted your work for ethical review, and/or you have answered 'No' to one or more of questions a) to e), please explain below why this is so:

--

<b>Signed (PGRS):</b> 	<b>Date:</b> 30/03/2019
---------------------------	-------------------------

Appendix C – Ethics approval



Portsmouth Business School  
University of Portsmouth  
Richmond Building  
Portland Street  
Portsmouth  
United Kingdom  
PO1 3DE

T: +44 (0)23 9284 8484  
W: www.port.ac.uk/pbs

11 August 2017

Jahangir Wasim  
Portsmouth Business School

Dear Jahangir

<b>Study Title:</b>	<b>Closing the gap between university curriculum on Entrepreneurship Learning and Learning in Entrepreneurial Networks.</b>
<b>Ethics Committee reference:</b>	<b>E414 (amendment)</b>

Thank you for submitting your documents for ethical review. The Ethics Committee was content to grant a favourable ethical opinion of the above research on the basis described in the application form, protocol and supporting documentation, revised in the light of any conditions set, subject to the general conditions set out in the attached document, and with the following stipulations:

The favourable opinion of the EC does not grant permission or approval to undertake the research. Management permission or approval must be obtained from any host organisation, including University of Portsmouth, prior to the start of the study.

## Summary of any ethical considerations:

### Documents reviewed

The documents reviewed by Daniel Bedford [LCM] + PBS Ethics Committee

<i>Document</i>	<i>Version</i>	<i>Date</i>
Application for Ethical Review	1	31 May 2017
Consent form	1	31 May 2017
Information Sheet (individual)	1	31 May 2017
Information Sheet (Organisation)	1	31 May 2017
Invitation Letter	1	31 May 2017
Invitation for Survey	1	31 May 2017
Ethics amendment form	1	31 May 2017
Entrepreneurship Education	1	31 May 2017
Entrepreneurship Education – UK – Google Forms	1	8 August 2017
Ethics amendment form	2	8 August 2017
Application for Ethical Review	2	8 August 2017
Consent form	2	8 August 2017
Information Sheet (individual)	2	8 August 2017
Information Sheet (Organisation)	2	8 August 2017
Invitation Letter	2	8 August 2017
Invitation for Survey	2	8 August 2017

### Statement of compliance

The Committee is constituted in accordance with the Governance Arrangements set out by the University of Portsmouth.

### After ethical review

### Reporting and other requirements

The attached document acts as a reminder that research should be conducted with integrity and gives detailed guidance on reporting requirements for studies with a favourable opinion, including:

- Notifying substantial amendments
- Notification of serious breaches of the protocol
- Progress reports
- Notifying the end of the study

### Feedback

You are invited to give your view of the service that you have received from the Faculty Ethics Committee. If you wish to make your views known please contact the administrator, Christopher Martin.

**Please quote this number on all correspondence: E414**

Yours sincerely and wishing you every success in your research



**Chair**

Email:

Enclosures: "After ethical review – guidance for researchers"

Copy to: Dr Zoe Dann

## Appendix D – Bloom’s Taxonomy of Cognitive Domain

Table 13. Comparison of Bloom's Taxonomy 1956 and Anderson & Krathwohl's Taxonomy 2001

<b>Bloom’s Taxonomy 1956</b>	<b>Anderson and Krathwohl’s Taxonomy 2001</b>																		
<p>1 <u>Knowledge:</u>            “Remembering or retrieving previously learned material. Examples of verbs that relate to this function are:”</p> <table border="0"> <tr> <td>“know</td> <td>“define</td> <td>“record</td> </tr> <tr> <td>identify</td> <td>recall</td> <td>name</td> </tr> <tr> <td>relate</td> <td>memorize</td> <td>recognize</td> </tr> <tr> <td>List”</td> <td>repeat”</td> <td>acquire”</td> </tr> </table>	“know	“define	“record	identify	recall	name	relate	memorize	recognize	List”	repeat”	acquire”	<p><u>Remembering:</u>            “Recognizing or recalling knowledge from memory. Remembering is when memory is used to produce or retrieve definitions, facts, or lists, or to recite previously learned information.”</p>						
“know	“define	“record																	
identify	recall	name																	
relate	memorize	recognize																	
List”	repeat”	acquire”																	
<p>2 <u>Comprehension:</u>            “The ability to grasp or construct meaning from material. Examples of verbs that relate to this function are:”</p> <table border="0"> <tr> <td>“restate</td> <td>“identify</td> <td>“illustrate</td> </tr> <tr> <td>locate</td> <td>discuss</td> <td>interpret</td> </tr> <tr> <td>report</td> <td>describe</td> <td>draw</td> </tr> <tr> <td>recognize</td> <td>discuss</td> <td>represent</td> </tr> <tr> <td>explain</td> <td>review</td> <td>differentiate</td> </tr> <tr> <td>express”</td> <td>infer”</td> <td>conclude”</td> </tr> </table>	“restate	“identify	“illustrate	locate	discuss	interpret	report	describe	draw	recognize	discuss	represent	explain	review	differentiate	express”	infer”	conclude”	<p><u>Understanding:</u>            “Constructing meaning from different types of functions be they written or graphic messages or activities like interpreting, exemplifying, classifying, summarizing, inferring, comparing, or explaining.”</p>
“restate	“identify	“illustrate																	
locate	discuss	interpret																	
report	describe	draw																	
recognize	discuss	represent																	
explain	review	differentiate																	
express”	infer”	conclude”																	
<p>3 <u>Application:</u>            “The ability to use learned material, or to implement material in new and concrete situations. Examples of verbs that relate to this function are:”</p> <table border="0"> <tr> <td>“apply</td> <td>“organize</td> <td>“practice</td> </tr> <tr> <td>relate</td> <td>employ</td> <td>calculate</td> </tr> <tr> <td>develop</td> <td>restructure</td> <td>show</td> </tr> <tr> <td>translate</td> <td>interpret</td> <td>exhibit</td> </tr> <tr> <td>use</td> <td>demonstrate</td> <td>dramatize”</td> </tr> <tr> <td>operate”</td> <td>illustrate”</td> <td></td> </tr> </table>	“apply	“organize	“practice	relate	employ	calculate	develop	restructure	show	translate	interpret	exhibit	use	demonstrate	dramatize”	operate”	illustrate”		<p><u>Applying:</u>            “Carrying out or using a procedure through executing or implementing. <i>Applying</i> relates to or refers to situations where learned material is used through products like models, presentations, interviews or simulations.”</p>
“apply	“organize	“practice																	
relate	employ	calculate																	
develop	restructure	show																	
translate	interpret	exhibit																	
use	demonstrate	dramatize”																	
operate”	illustrate”																		
<p>4 <u>Analysis:</u></p>	<p><u>Analysing:</u></p>																		

“The ability to break down or distinguish the parts of material into its components so that its organizational structure may be better understood. Examples of verbs that relate to this function are:”

“analyse compare probe inquire examine contrast categorize ”	“differentiate contrast investigate detect survey classify deduce”	“Experiment scrutinize discover inspect dissect discriminate separate”
---	--	--

“Breaking materials or concepts into parts, determining how the parts relate to one another or how they interrelate, or how the parts relate to an overall structure or purpose. Mental actions included in this function are *differentiating, organizing, and attributing*, as well as *being able to distinguish between* the components or parts. When one is analysing, he/she can illustrate this mental function by creating spreadsheets, surveys, charts, or diagrams, or graphic representations.”

**Bloom’s Taxonomy 1956**

**Anderson and Krathwohl’s Taxonomy 2001**

5 Synthesis:

“The ability to put parts together to form a coherent or unique new whole. Examples of verbs that relate to this function are:”

“compose produce design assemble create prepare predict modify tell”	“plan invent formulate collect set up generalize document combine relate”	“propose develop arrange construct organize originate derive write propose”
--	--	---

Evaluating:

“Making judgments based on criteria and standards through checking and critiquing. Critiques, recommendations, and reports are some of the products that can be created to demonstrate the processes of evaluation. In the newer taxonomy, *evaluating* comes before creating as it is often a necessary part of the precursory behaviour before one creates something.”

6 Evaluation:

“The ability to judge, checks, and even critique the value of material for a given purpose. Examples of verbs that relate to this function are:”

“judge assess compare evaluate conclude	“argue decide choose rate select estimate”	“validate consider appraise value
---	---	--

Creating:

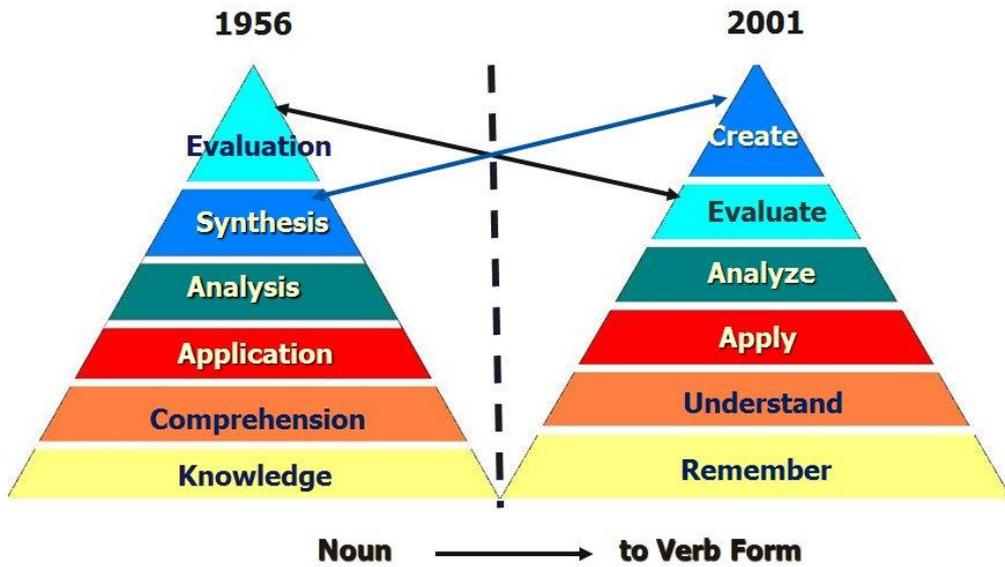
“Putting elements together to form a coherent or functional whole; reorganizing elements into a new pattern or structure through generating, planning, or producing. Creating requires users to put parts together in a new way or synthesize parts into something new and different creating a new form or product.

measure  
deduce”

criticize  
infer”

This process is the most difficult  
mental function in the new  
taxonomy.”

(Source: Wilson, 2013)



(Source: Wilson, 2013)

Figure 9. Bloom vs. Anderson and Krathwohl's Taxonomy

## Appendix E – Sample of an interview report

ENT 1.

Researcher provided a background and summary of the research explaining the purpose of the research, meaning of social network and type of people focused in this research who are in the network. It was reinforced in the background that research is focused on gaining knowledge from people that are in one's network but are not obliged to provide that information or support i.e. people whose job is to advise.

ENT1 said that “my wife and my children and they are my best friends. almost 70% of the entrepreneur I have known the old would say the same thing.

ENT1 mentioned that he would discuss all his ideas with friends and family and while working with a multinational technology company he would encourage all his colleagues to test their ideas on their children as they would have better understanding of innovative technology and can provide input that would not be generated by only brainstorming among themselves.

ENT1 mentioned that his social network played a crucial part in his learning, discussing ideas with people outside work can have a significant impact on the business “*because these guys are not contaminated by the work we do and as a result when your socialising with them and you ask them questions, they will say some idea which immediately would look like stupid but then actually you think about it seriously and you think WOW this has much more potential than anything we have been thinking about at work and it gives you are very different way of looking at things*”. He further mentioned that “*if I would say*

*that impact, if you measure the impact as opposed to the number of ideas then it's almost 50/50 from people that have nothing to do with the business.”*

Interview provided an insight how things develop over the time and so do the network, ENT1 highlighted that now if he is required any help, for example if its legal, he would call his daughter or a friend who is a solicitor. However, back when he started, as an entrepreneur, things were different but at that time his first point of discussion for an idea or a problem was his family and then friends. He mentioned that, outside his family, he always had 5 to 7 people with highest credibility and trust to approach wherever he required any help. However, these people kept changing ever 5 to 10 years.

It was also mentioned that, whilst he would discuss an idea with people having stronger network ties with him, he would not get an advice from them unless they are the expert in the area. *“If you want an advice you want somebody who is in your network who is in that profession and they don't have to be the loved ones it can be people you hate”*. He mentioned that he has a triangle of trust, credibility and competency when it comes to getting advice from the other people in his network

In addition to reaching friends and family for discussion and seeking advice, ENT1 is also a member of several communities of practices such as; Institute of Marketing, Institute of Mechanical Engineers, Engineering Council and Royal Society of Arts. He mentioned that the relationship with these professional bodies are not as tied but they are acquaintances. *“I have acquaintances is in these organisations. and if I can't find my acquaintance, I just ask to talk to somebody who knows them and I would ask them the question and I found that extremely useful”*. In addition to that, ENT1

mentioned that some of the most useful ideas he had, came from reading things and looking at research via these people.

When asked to list the most important source of learning, ENT1 mentioned that he learnt things from his parents, family and other people around him as well as by reading books, going on courses and by actually doing things and learning from the experience. He said that he would not priorities one over other as they all were equally important to him.

When asked how universities should be teaching entrepreneurship, ENT1 mentioned that universities should not exclude the theoretical side of entrepreneurship but in addition to that they should include more practical aspects by developing an entrepreneurial lab where students can work together on ideas and can test them, this would reinforce the use of social networks as well as would strengthen the concept of learning from failure which is a key aspect of entrepreneurial process.

## Appendix F – Interview guide

### Interview guide for entrepreneurs

1. As an entrepreneur do you think you have learnt anything useful in running your business from people in your network.
2. Who would be the first person you would contact if you need any advice, for example legal, financial, management, recruitment or any other related to your business (to see the trust and understanding about their network they have)?
3. Can you name three people whom you approach most when you need an advice?
4. Are they the same as they were since the time you first started?
5. Why do you approach these specific people and not someone else? Could it be because they are expert on the topic, or you value their opinion more than anybody else's?
6. How often you approach them for advice?
7. Why do you trust their advice?
8. Would you take advice from someone you don't like?
9. How did your network evolve over time?
10. Whatever knowledge you have that has proved to be of use to you as an entrepreneur where did you get it. What were the sources?
11. If you want to do something in/about your business and you are unaware that how to do it, and you do not know whom to ask what you would do.
12. Are you a part of a network of people whom you regularly meet, [friends, family, co-workers] do you think you have learnt anything beneficial to

your business while you were interacting with them? (What really happened, how did you go about it)

13. What is the most important current source of knowledge you have? E.g. attending conferences, tradeshows, reading books, online search, observing things around you or discussions with other people?

14. If you need to know something about running your business, how would you know it? (Google, friends, co-workers, books etc.)

15. Based on your experience, what are the things universities should be teaching to entrepreneurship students to enable them to successfully start and run their businesses

16. What are your thoughts about the concept of developing entrepreneurial labs as a part of entrepreneurship units? (explain the concept to the participant)

## Interview guide for entrepreneurship educators

1. How entrepreneurship is taught at your institution?
2. What are the possible tools available for teaching entrepreneurship at a higher education institution?
3. What are the aims of entrepreneurship teaching in your opinion?
4. How can you achieve these aims?
5. What are the sources of knowledge entrepreneurs have?
6. How important is the context in entrepreneurial learning?
7. What role does social networks play in gathering entrepreneurial learning and intellectual development?
8. How do you define the role of social, contextual and experiential learning in entrepreneurial learning?
9. How can you incorporate the social, contextual and experiential nature of entrepreneurial learning in the entrepreneurship teaching, if possible, at all?
10. In your view, how social networks and social learning can be incorporated in entrepreneurship education?
11. How entrepreneurship should be taught in your opinion?
12. Should entrepreneurship be incorporated in other modules/courses?

## Interview guide for entrepreneurship students

To the best of your knowledge

1. What is entrepreneurship?
2. Do you consider yourself entrepreneurial? If yes, why? If no, why not?
3. What is your biggest source of knowledge? If you want to know about something/anything, how would you learn about it.
4. How do entrepreneurs learn about anything that can be beneficial to their venture, what are their source of knowledge, according to you?
5. Is entrepreneurship important in education?
6. Should entrepreneurship be taught on its own or incorporated in other modules?
7. What is the role of networks in entrepreneurial learning? (how much do you learn from other people)
8. How networks can enhance entrepreneurship teaching
9. How important is the context in entrepreneurship? (context = your friends, network, location, age, experience). Please answer about as many contexts as possible.
10. How entrepreneurship should be taught, according to you?
11. How resilience can be incorporated in the entrepreneurship education?

## Appendix G – Coding tress

### Observations

Major Categories	Sub-categories	Properties
Entrepreneurial networks	Formation of the networks	Self- selection
		Allocation
		By chance
	Type of support within networks	Personal
		Professional - Directly venture related
		Professional - In-directly venture related
		Professional - Non-venture related
	Network dynamic	Evolution of networks
		Gender differences within networks
		Work and personal networks
		Personal network with little or no work dynamics
		Work only networks
Learning	Venture related learning	Directly related at the given time
		In-Directly related at the given time
		Directly related for a future time
		In-Directly related for a future time
	Personal learning	Hobbies
		Relationships
		Unrelated learning

## Entrepreneurs

Major Categories	Sub-categories	Properties	
Source of learning	Prior knowledge	Experience	
		Network	
		Education	
	New knowledge	Learning by doing	
		Formal education	
		Internet	
		Books and Magazines	
Learning and Networks	Venture related learning	Directly related at the given time	
		In-Directly related at the given time	
		Directly related for a future time	
		In-Directly related for a future time	
	Personal learning	Hobbies	
		Relationships	
		Unrelated to the venture learning	
	Formation of the networks	Self- selection	
		Allocation	
		By chance	
	Type of support within networks	Personal	
		Professional - Directly venture related	
		Professional - In-directly venture related	
			Professional - Non-venture related
	Network dynamic		Evolution of networks
			Gender differences within networks
Work and personal networks			
Personal network with little or no work dynamics			
Work only networks			
Entrepreneurship Education	Proposed elements of entrepreneurship education	Practical elements of entrepreneurship	
		Theoretical elements of entrepreneurship	
		Other elements that are in-directly related	
	Limitations		Previous experience
			Contextual boundaries
			Individual attributes
			Individual expectations

## Entrepreneurship Educators

Major Categories	Sub-categories	Properties
Current teaching model	Theoretical	Concepts in entrepreneurship
		Case studies
		Role playing
		Theoretical - others
	Practical	Learning by doing
		Contextual learning
		Experiential learning
		Social learning
	Practical other	
Source of learning	Prior knowledge	Experience
		Network
		Education
	New knowledge	Learning by doing
		Formal education
		Internet
		Books and Magazines
Learning and Networks	Venture related learning	Directly related at the given time
		In-Directly related at the given time
		Directly related for a future time
		In-Directly related for a future time
	Personal learning	Hobbies
		Relationships
		Unrelated to the venture learning
	Formation of the networks	Self- selection
		Allocation
		By chance
	Type of support within networks	Personal
		Professional - Directly venture related
		Professional - In-directly venture related
		Professional - Non-venture related
	Network dynamic	Evolution of networks
		Gender differences within networks
		Work and personal networks
		Personal network with little or no work dynamics
		Work only networks
Entrepreneurs hip Education	Proposed elements of entrepreneurship education	Practical elements of entrepreneurship
		Theoretical elements of entrepreneurship
		Other elements that are in-directly related
	Limitations	Previous experience
		Contextual boundaries
		Individual attributes
		Individual expectations

## Entrepreneurship Students

Major Categories	Sub-categories	Properties
Concept of entrepreneurs hip	Background	Knowledge and information
		Experience
		Education
	Attributes	Responsibility
		Understanding of the context
		Other attributes
	Expectations	Autonomy
		Making a change
		Other expectations
Source of learning	Prior knowledge	Experience
		Network
		Education
	New knowledge	Learning by doing
		Formal education
		Internet
		Books and Magazines
Learning and Networks	Venture related learning	Directly related at the given time
		In-Directly related at the given time
		Directly related for a future time
		In-Directly related for a future time
	Personal learning	Hobbies
		Relationships
		Unrelated to the venture learning
	Formation of the networks	Self- selection
		Allocation
		By chance
	Type of support within networks	Personal
		Professional - Directly venture related
		Professional - In-directly venture related
		Professional - Non-venture related
	Network dynamic	Evolution of networks
		Gender differences within networks
		Work and personal networks
		Personal network with little or no work dynamics
		Work only networks
	Entrepreneurs hip Education	Proposed elements of entrepreneurship education
Theoretical elements of entrepreneurship		
Other elements that are in-directly related		
Limitations		Previous experience
		Contextual boundaries
		Individual attributes
		Individual expectations

## Appendix H – Pilot findings

When asked to list the most important source of learning, ENT1 mentioned that he learnt things from his parents, family and other people around him as well as by reading books, going on courses and by actually doing things and learning from the experience. He said that he would not assign relative values to one over others as they all were equally important to him.

ENT1 mentioned that his social network played a crucial part in his learning. Discussing ideas with people outside work can have a significant impact on the business *“because these guys are not contaminated by the work we do and as a result when you are socialising with them and you ask them questions, they will say some idea which immediately would look like stupid but then actually you think about it seriously and you think WOW this has much more potential than anything we have been thinking about at work and it gives you a very different way of looking at things”*. He further mentioned that *“if I would say that impact, if you measure the impact as opposed to the number of ideas then it's almost 50/50 from people that have nothing to do with the business.”*

ENT1 mentioned that he would discuss all his ideas with friends and family and while working with a multinational technology company he would encourage all his colleagues to test their ideas on their children as they would have a better understanding of innovative technology and can provide input that would not be generated by only brainstorming among themselves. ENT1 said that *“my wife and my children ... are my best friends. Almost 70% of the entrepreneur I have known they all would say the same thing”*.

In addition to reaching out to friends and family for discussion and seeking advice, ENT1 is also a member of several communities of practices such as; Institute of Marketing, Institute of Mechanical Engineers, Engineering Council and Royal Society of Arts. He mentioned that his relationship with individuals in these professional bodies are not as tied but they are acquaintances. *“I have acquaintances in these organisations and if I can't find my acquaintance, I just ask to talk to somebody who knows them, and I would ask them the question and I found that extremely useful”*. In addition to that, ENT1 mentioned that some of the most useful ideas he had, came from looking at sources that were provided by people that are part of these communities of practices.

ENT1 mentioned that, whilst he would discuss an idea with people having stronger network ties with him, he would not get a piece of advice from them unless they are the experts in the area. He mentioned that he judged people on the basis of a triangle of trust, credibility and competency when it comes to getting advice from the other people in his network.

*“If you want advice you want somebody who is in your network who is in that profession and they don't have to be the loved ones. It can be people you hate”*  
ENT1.

Interview with ENT1 provided an insight on how things develop over time and so do the network. ENT1 highlighted that now if he requires any help, for example, if it is legal, he would call his daughter or a friend who is a solicitor. However, back when he started, as an entrepreneur, things were different. At that time his first point of contact for discussion for an idea or a problem was his family and then friends. He mentioned that, outside his family, he always had 5 to 7 people with the highest credibility and trust to approach wherever

he required any help. However, these people kept changing every 5 to 10 years.

When asked how universities should be teaching entrepreneurship, **ENT1** mentioned that universities should not exclude the theoretical side of entrepreneurship but in addition to that they should include more practical aspects such as providing an entrepreneurial lab where students can work together on ideas and can test them. This would reinforce the use of social networks as well as would strengthen the concept of learning from failure which is a key aspect of the entrepreneurial process.