ADVANCING TEACHING AND LEARNING IN RELATION TO UNIVERSITY-BASED ENTREPRENEURSHIP EDUCATION: A THEORETICAL, MODEL BUILDING APPROACH

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Entrepreneurship education is an increasingly popular disciplinary area at universities. Usually offered within schools of business management, growth over the last 30 years has been phenomenal. The rationale for offering courses in Entrepreneurship has often been stated as (a) to raise awareness of entrepreneurship as a career option, (b) to motivate students to consider a venturing career, and (c) to provide students with the knowledge and skills to venture. These three aims can be summarized as teaching “about” entrepreneurship and also the “how to” of entrepreneurship. This paper marks the first step in a broad-based review of entrepreneurship education in terms of learning objectives, learning process and learning outcomes. Theoretical model development, drawing on cognitive psychology, educational psychology and a range of motivational theories provides a starting point in understanding the teaching and learning process in relation to entrepreneurship. This paper examines aspects of educational and cognitive psychology from a purely theoretical stance. This information is then utilized in the development of a model (Table 2) specifically aimed at enhancing the teaching and learning process. This model will be of use in a variety of educational and disciplinary areas, as well as a range of educational settings.

Keywords: Educational Psychology, Cognitive Psychology, Entrepreneurship Education.

INTRODUCTION

Entrepreneurship education is an increasingly popular disciplinary area at universities. Usually offered within schools of business management, growth over the last 30 years has been phenomenal. In the early 1980s an average university offered one introductory course in entrepreneurship, but as of 2011, many universities are offering a cluster of courses that make up minors and majors at the undergraduate and graduate level (Menzies & Gasse, 1999; Menzies, 2004, 2009; Solomon & Fernald, 1991; Vesper, 1985, 1993; Vesper & McMullan, 1988; Vesper & Gartner, 1997, 1999). The rationale for offering courses in Entrepreneurship has often been stated as (a) to raise awareness of entrepreneurship as a career option, (b) to motivate students to consider a venturing career, and (c) to provide students with the knowledge and skills to venture. These three aims can be summarized as teaching “about” entrepreneurship and also the “how to” of entrepreneurship.

There is an extensive literature in the entrepreneurship field, published in the many entrepreneurship journals, with the greatest incidence since the year 2000. Furthermore, the increasing membership in the Entrepreneurship Division of the Academy of Management,
denotes the disciplinary area as one of the most popular within the Academy. However, despite the prolific research and the increasing number of scholars and instructors/educators in this area, there has only been a piecemeal attempt so far to examine the rationale, substance, process, content, pedagogy and outcomes of Entrepreneurship Education. It is timely to examine these issues, given the popularity of this disciplinary area, not just at universities, but also at colleges and schools.

This paper marks the first step in a broad-based review of entrepreneurship education in terms of learning objectives, learning process and learning outcomes. Theoretical model development, drawing on cognitive psychology, educational psychology and a range of motivational theories provides a starting point in understanding the teaching and learning process in relation to entrepreneurship. The aim of this paper is to examine aspects of educational and cognitive psychology from a purely theoretical stance. This background will then be utilized in the development of a model specifically aimed at enhancing the teaching and learning process. This model development may be of use in a variety of educational and disciplinary areas, as well as a range of educational settings. However, the principal purpose of this work is to shed light on the teaching and learning process within entrepreneurship education. Subsequent stages of this research stream will build on this theoretical foundation and incorporate the current research on teaching and learning within the published field of entrepreneurship.

LITERATURE REVIEW

Learning in the Education Domain

According to Santrock et al. (2010) “learning is a relatively permanent change in behavior [and attitudes] that occurs through experience … not everything we know is learned through experience … we inherit some capacities (p. 214). For example, the nature versus nurture debate (Buss, 2008; Shiraev & Levy, 2007) focuses on the genetic and naturally occurring development of the individual versus the role of environment and experience. There is great interest in how people learn and there is an immense literature on the topic. The following discussion in relation to understanding the teaching and learning influences and process is largely based on the schema of Santrock et al. (2010) and Brown et al. (2010).

Educational Psychology and Approaches to Learning and Influences on Learning

The domain of educational psychology can be traced to some pioneering psychologists, for example, William James (1890) and John Dewey (1933). Both are recognized for applying psychology in a practical way. James was a proponent of teaching at a level beyond the student knowledge and experience, to stretch the student. Dewey’s contributions to education are numerous, but he is best known for advocating action based learning, the role of the student’s connection to the wider environment, and the critical role of reflective problem solving on the part of the learner (Santrock, 2010). Since these early pioneers, there has been an immense body of knowledge generated. There has also been considerable focus on different stages of learning, for example, Piaget’s Stages of Cognitive Development (1952), and Case’s Developmental Staircase (1985). A third important contribution has been made by Vygotsky’s (1962) with his Zone of Proximal Development. Piaget (1952) and Vygotsky (1962) were a social constructivist and Case a cognitive and social constructivist. Constructivist theories shun the transmission of
knowledge by traditional rote methods, and indicate that students must construct knowledge either based on their existing cognitive skills (cognitive constructivist view) or with their peers, some of whom are more, and others less knowledgeable (social constructivist view). Vygotsky (1962) is particularly relevant with regards to action based team projects whereby the instructor acting as facilitator and student peers who have varying levels of multi disciplinary skills and knowledge, can achieve higher levels of mastery labeled the Zone of Proximal Development (ZPD). Eventually a student may be able to work at the higher level on their own once they have performed the tasks in the ZPD (Santrock, 2010). The importance of the social context in which an individual develops is presented by Bronfenbrenner (1997, 2004) whereby a much broader sphere of influence is acknowledged, for example, his model includes the attitudes and ideologies of the macrosystem culture as well as the microsystem of the learner. In other words, just about everything influences a learner ranging from mass media, legal services, friends and family, individual characteristics and the culture of the referent group(s). The complexity of Bronfenbrenner’s model reflects the dynamic view of current teaching and learning influences.

**Cognitive Psychology**

Researchers have also labeled learning as behavioral (e.g. Terry, 2006) versus cognitive (e.g. Bandura 2007). Terry (2006) proposes that we cannot observe the mental (cognitive) processes so study of behaviors is appropriate. Recent research favors the cognitive approach.

Cognitive psychology can be utilized to inform us of ways in which we can enhance learning. As summarized by Brown and Parker (2009) a range of motivational theories can be utilized to provide a starting point in understanding the teaching and learning process. Hilgard (1980) suggested a trilogy to explain how the mind works: Cognition (rational thought), Affect (emotion – both long and short term), and Conation (goal oriented) with the understanding that these processes interact. Conation has been divided into processes that lead to the “motivation” to do something and “volition”, the processes by which the motivation is acted upon (Snow, Corno, & Jackson, 1996). Emotions, both positive and negative, are a powerful influence on learning (Bower, 1994). During learning, an emotional reaction can increase the motivation to learn and in the long term, an emotional association is stored alongside the learned material and can enhance recall ability.

Intrinsic motivation describes non reward oriented emotional associations, as opposed to reward driven extrinsic motivation. Psychological theories attempt to describe what motivates humans. Drive theory suggests that basic needs (e.g. food, shelter, sleep) explain motivation. Physiological Arousal Theory based on heart rate etc. partly explains behavior. Bruner (1966) suggests curiosity is a powerful motivator, and when new knowledge is incorporated then cognitive disequilibrium is overcome by further learning. Humans have a need to show that they are in control, thus competence motivation (White, 1959) is relevant. The need for Achievement (McClelland, 1961) proposed as a powerful motivator is recognized to vary considerable across humans, and can also inform teaching and learning.

Cacioppo et al. (1996) explore the variation in people according to their “need for cognition” and find considerable variation. Expectancy-value theory (Fishbein & Ajzen, 1974) is based on cognitive weighting in relation to decisions. Maslow’s Hierarchy of Needs, showing physiological, safety, social, self-esteem and then self-actualization in an ascending list is considered an important contribution in motivation theories. Locus of Control (Rotter, 1966) proposes the duality of those with internal or external views of what controls their attitudes and behaviours. Linked to this is Attribution Theory (Weiner, 1985) which provides a more fine
grained analysis based on three dimensions, namely locus, controllability and stability. It is suggested, for example, that attributions can be “socialized as elements of gender roles” (Brown & Parker, 2009).

Effort, which is a combination of a controlled, internal locus, that is stable over time is considered the most effective attribution. Beliefs about self are powerful in terms of motivation. Self-worth theory (Covington, 1984) suggests that people avoid actions that will lead to a reduction in their self-worth. Some people believe in Entity Theory – that their intellectual ability is already fixed, while others believe in incremental theory where it can be increased (Dweck & Leggett, 1988). Self Efficacy Theory explains how people gauge their ability to achieve a particular goal (Bandura, 1982) and this is an important theory for viewing teaching and learning. Judgements about competence are an important influence on motivation and Nicholls (1984) divided this into task involvement and ego involvement. He posited that task involvement led to very creative outcomes rather than ego involvement. Goal setting is a key attribute of human cognition as is self regulation. This area is a rich source of ideas and theories from which we can develop some sound strategies for approaching the teaching of entrepreneurship.

The “Self” (Learner)

An influence on teaching and learning is the socio-emotional development of the individual. Perhaps the most critical element of which is the sense of “self” which includes the concepts of self-concept, self esteem (Harter, 2006), and identity development (Erikson, 1968), for example with questions like career choice which are common during high school and university students (Davis, 2008; Kroger, 2007). A related concept is emotional development (Tronick, 2007), which influences the positive and negative affect, and is related to emotion regulation (Gross, 2006). Intelligence is a key attribute that is controversial in terms of assessment. Theories of multiple intelligences are common, for example Sternberg (2007, 2008) proposes analytical, creative and practical intelligences. Gardner (1983, 2002) proposes verbal, mathematical, spatial, musical, interpersonal, intrapersonal, naturalist and existential skills. However, these approaches have not been widely researched. Emotional intelligence or self-awareness is a major factor in exercising self control and understanding the viewpoint of others (Goleman, 1995). Basically this approach is aimed at a greater understanding of the self which then allows for more understanding of others, their differences and similarities. Creativity, which according to Amabile (Conti & Amabile, 1999) encompasses the new or novel, is of major interest to a range of stakeholders but especially for educators. Intrinsic motivation has been linked to creativity and high achievement (Amabile et al. 1994). Adaptive and innovative creativity are both seen as valuable and necessary for change.

Learning and thinking styles are also important concepts or preferences when considering the teaching and learning process (Dunning, 2008; Zhang & Sternberg, 2008). Personality types have also been proposed, for example, the Myers-Briggs (Myers, 1962) that are considered to be an influence on learning and thus teaching methods. Temperament is also aligned with personality and includes how a person may respond in certain circumstances (Rothbart, 2007), however, research in this domain is still at an early stage.

Student diversity can influence the teaching and learning process (Sills, 2005; Tajfel & Turner, 1986; Tannen, 1995; Williams & O’Reilly, 1998). For example, culture often influenced by ethnicity, can affect behavior, attitudes, values and so on (Kitayama & Cohen, 2007; Brewer, 1986, 2000). “Race, origin or ancestry, identity, language and religion” (p. 140, Santrock et al.
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2010; Fox, 2007; Harrison, Price & Bell, 1998; Hayashino & Chopra, 2009) are highly influential, as are the prejudice, discrimination and bias that may be associated with diversity (Monteith & Mark, 2009; Wright & Taylor, 2003). Various subcultures exist and an important determinant is often socio-economic status which in turn influences human, social and financial capital (Hoston & Ripke, 2006; Metzler, 2003; Sills, 2005). Gender is a socio-cultural construct that comes under the heading of diversity and can have an important influence on individual learning (Rangins, Townsend & Mattis, 1998). Associated issues include, for example, gender socialization, gender stereotyping, gender-role classification, gender bias, sexism (prejudice), and sexual orientation (Hornsey & Hogg, 2000; Hunt, 2008; Kanter, 1977; Perez, 2005). Diversity in the student cohort can also take the form of exceptionalities. For example, students who are intellectually gifted, and those challenged due to physical (Williams-Whitt, 2007), emotional, psychological and behavioral conditions (Lengnick-Hall, Guant, & Kulkarni, 2008; Santrock et al. 2010).

In sum, there are a variety of cognitive approaches and influences on the process of learning (Santrock et al. 2010). These are summarized in Table 1 below.

<table>
<thead>
<tr>
<th>Social Cognitive</th>
<th>How behavior, environment and person (cognitive factors) interact to influence learning.</th>
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<tbody>
<tr>
<td>Cognitive Information Processing</td>
<td>How individuals process information through attention, memory, thinking and cognitive processes.</td>
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<tr>
<td>Cognitive Constructivist</td>
<td>How learners’ cognitive construction of knowledge and understanding influence learning.</td>
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<tr>
<td>Social Constructivist</td>
<td>How collaboration with others produces knowledge and understanding.</td>
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</tbody>
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**MODEL BUILDING**

Based on an examination of the literature, Table 2 proposes a model of learning that encompasses a range of influencing constructs. This is an elementary stage of model building on this topic. However, it does highlight the complexity of the teaching and learning process. For example, the self is influenced by attention, memory, thinking and cognitive processes. The self, when in the context of the learner, undertakes the cognitive construction of knowledge which influences learning. The self while in learning mode or not, has a cognitive interaction with the environment, with the current behavior of the self and learner, and also depending on the person. Lastly, the self and others interact and when this is aimed at collaborative learning there is enhanced knowledge building and greater understanding. This model is an early stage model which will be developed for later stages in this exploration of teaching and learning in relation to university-based entrepreneurship education.
Table 2. Model of the Approaches to Learning and Influences on Learning.

<table>
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<tr>
<th>THE SELF</th>
<th>COGNITIVE INTERACTION</th>
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<tbody>
<tr>
<td>Attention</td>
<td>Behavior</td>
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<td>Memory</td>
<td>Environment</td>
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<tr>
<td>Thinking</td>
<td>Person</td>
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<td>Cognitive</td>
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<tr>
<th>THE LEARNER</th>
<th>SELF AND OTHERS</th>
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<tbody>
<tr>
<td>Cognitive construction of knowledge and understanding</td>
<td>Collaboration with others produces knowledge and understanding</td>
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Table 3 below is an example of a model utilized in an Entrepreneurship class (Kaciak & Menzies, 2003) to illustrate venture concept and pre-launch potential thinking and activities. Given the range of factors that have been identified in the Literature Review above, only the items underlined in Table 2 actually correspond to constructs contained within the Review. These include: reflection, self-efficacy, co-efficacy, attitudes, behaviors, personal traits, characteristics, desires, personal capabilities, and sustained effort.

Table 3. Model of Venture Concept and Pre Launch Activities.

Continual Reflection on Self Efficacy and Co-Efficacy of Potential Instrumental Actors

Continual Reflection on the Risk/Reward Ratio – Also an Opportunity Cost Assessment

Venture Concept is born
a) Fit with personal attitudes & behaviors (personal traits, characteristics, desires within framework of social norms)
b) Fit with personal capabilities (real or imagined, measured by self efficacy).

Feasibility Study
Perceptions about the Opportunity
a) Informal, elementary, perhaps solitary. If promising, go to (b)
b) Formal feasibility, wider scope, more formal, sustained effort, usually involving networking, sharing of ideas. Concept is cameleon-like, evolves to changing

Formal Business Planning
a) Industry research & analysis
b) Market research & analysis including competitive analysis
c) Economics of business
d) Marketing
e) Design & Development
f) Operations
g) Team
h) Critical risks
i) Financial plan

Informal and Formal Networking Activities

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CONCLUSION

This paper is an attempt to build a model of learning that will inform us with regards to effective teaching of entrepreneurship. The current literature on the fundamentals of teaching and learning has been reviewed and summarized to provide key attributes that have been examined and form current theories about the important aspects of “self” that can influence the ability to learn and that play a role in the attitudinal and behavioral, social and cognitive debate about learning.

Teaching, especially at universities, is not a common debate. Teaching methods include “chalk and talk”, Socratic, case based, and action based methodologies. Instead of pedagogy (teaching of children), we are generally speaking about andragogy (teaching of adults). The end purpose of this research stream is to assist with theory building in relation to university-based entrepreneurship education. This first step is a work-in-progress that includes further development of the model depicted in Table 2. A review of the current research in management education and more particularly entrepreneurship education will be undertaken to examine what is currently being considered in an attempt to effectively teach entrepreneurship.

REFERENCES


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Learning and teaching tools, methodologies and pedagogical approaches including learning outcomes and Information and Communication Technology practices (ICT practices) will be available for professional development of the partner country institutions' teaching staff. A modern, tailored, module-based curriculum for higher education teacher training based on contemporary education science and aimed at professional development of the academic staff will be developed and piloted at each partner country institution.

3. To establish a network of Centres for Teaching and Learning in partner country institutions We have to construct such teaching-learning models that are supported by well-defined learning theoretical paradigms and facilitate University entrepreneurship education: a design thinking approach to learning. January 2019. Journal of Innovation and Entrepreneurship 8(1). This learning approach enables student-centered learning and focus on skills more applicable to entrepreneurs. It is also argued that the entrepreneurship process is not linear; therefore, creativity is central and finding structure is an unstructured process. Design thinking emphasizes a practical approach where students step outside the classroom. 1 Process vs. method approaches to teaching entrepreneurship based on Neck and Greene (2011). Linton and Klinton Journal of Innovation and Entrepreneurship (2019) 8:3 Page 4 of 11. Content courtesy of Springer Nature, terms of use apply. Rights reserved. Recent research on entrepreneurship education has moved from content questions to the process of learning and teaching. This assumes that we actually have conceptual frameworks for combining learning to teaching. This paper presents a general framework that combines these aspects for fostering individual meta-competencies in planning, conducting and evaluating teaching interventions. 1 Context: Experience-based learning is recognized as a critical mechanism in preparing individuals for the practice of entrepreneurship (eg. Fayolle and Gailly 2008; Solomon et al. 2002). However, as action-and experience-based entrepreneurship programmes are still a relatively new phenomenon, few studies exist which compare design and pedagogy across institutions. Experiential Learning Models in Social Entrepreneurship Courses Through the research on social entrepreneurship courses, a number of course pedagogies which integrate experiential learning bring to light the impact of hands-on learning by students. Course assignments can range from writing a traditional social entrepreneurship business plan to analysis of a social venture, writing a case analysis or interning with a social venture. More innovative models integrate service learning, including writing a case on an actual social venture, developing a business plan for a social venture or consultin