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The conceptual contribution of education to research on entrepreneurship education

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By building a bridge between the conceptual discussion of education science and entrepreneurship, this article demarcates the role of entrepreneurship education as a form of pedagogy and its connection to a progressive movement. As a form of pedagogy, entrepreneurship education changes the idea of the human being, brings action-orientation, autonomy and interplay between risk and responsibility to the centre of the learning process and challenges the previous ontological, epistemological and to some respect axiological bases of earlier learning paradigms and also presents new ideas for pedagogy and didactics. Thus, seen from an educational perspective, entrepreneurship can now be perceived as a form of pedagogy that renews the previous learning paradigms and furthers educational institutional practices.

Keywords: entrepreneurship education framework; entrepreneurship education concepts; learning paradigm; entrepreneurial learning; entrepreneurship pedagogy

1. Introduction

Since Alan Gibb's pioneering work in the late 1980s (Gibb 1986/1987) on modelling entrepreneurship education, we still lack but continuously call for shared frameworks to guide our research, practices and policies (cf. Pittaway and Cope 2007; Fayolle 2013). One reason for the difficulties in framing entrepreneurship education may be that we would rather draw our ideas from the field of entrepreneurship than turn to the science of education. As Richards (1995) argues, 'Educational concepts make presuppositions about the nature of reality and that which constitutes legitimate academic study'. To understand these educational concepts across different cultures requires more than a dictionary of educational terminology. By examining the differences in our basic concepts, we can begin to ask what might be missing from our own perspective. This view, that we need shared frameworks in entrepreneurship education and that we can learn a lot in this respect from education science, is shared by both previous recipients of the European Entrepreneurship Education Award (EEEA), Fayolle (2013), who calls for robust theoretical and conceptual foundations drawing on both entrepreneurship and education studies, and Allan Gibb (2005), for whom the major challenge is to go forward in research to clarify and agree on the concept of entrepreneurship education.

Encouraged by these scholars, this article, based on my EEEA Award presentation in 2014, focuses on the basic concepts of education in order to ascertain how the science of education could contribute to our current debate on entrepreneurship

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education research. Thus, the aim of this article was to build a bridge between the conceptual discussion of education science and entrepreneurship. In this respect, I will elaborate on the following questions: (1) What are the basic dimensions of educational concepts? (2) How are educational concepts approached in different cultural contexts? and (3) What is the role of entrepreneurship education in education and further in learning paradigms?

By answering these questions, we can determine the contribution of educational concepts to the entrepreneurship education debate and also how entrepreneurship education can contribute to the ongoing debate on education. This allows the teachers, researchers and policymakers to reflect on their current understanding of entrepreneurship education and to make conscious decisions on how each of them would like to define the concept of entrepreneurship education and adopt it in their respective tasks. Consequently the article contributes to the current debate on the basic concept and frames of entrepreneurship education and on their practical implementation.

Accordingly in the next section (Section 2), I will elaborate on the interplay between individuals, society and its institutions as the basic dimensions of educational concepts. Since to understand the interplay between these dimensions, there is a need to understand cultural differences, which will be the focus in the following section. Thus, Section 3 will discuss cultural differences in educational concepts, particularly the differences between the Central European and the Anglo-American tradition. This discussion will lead to a clarification of the basic concepts of 'pedagogy' and 'didactics' that seems to explicitly or implicitly dominate our current research agenda. When education and its concepts are understood differently in different cultural contexts, it leaves us with a challenge not only to merge the concepts of entrepreneurship and education, but also to bridge cultural conceptual borders in our research. In this cultural bridge building between the Continental European approach and the Anglo-American approach, the concept 'learning paradigms', i.e. the way we gather together the philosophical basis for our education and the adopted pedagogy and didactics, becomes important. The historical development of different learning paradigms and their relationship to entrepreneurship education will be addressed elaborated on Section 4. Finally, in Section 5, based on my argumentation in the article, I will evince some ideas for future research on entrepreneurship education.

2. Interplay between 'individuals', 'society' and its 'institutions'

First, the phenomenon of education always includes the human being, and this is therefore an integral part of and a premise for entrepreneurship education, otherwise we lose our phenomenon and the whole debate on entrepreneurship education becomes pointless. This view, however, is not shared in the conceptual debate on entrepreneurship, which often provides a foundation for our research on entrepreneurship education. When some scholars argue that human involvement is an integral part of the phenomenon of entrepreneurship (e.g. Barreto 1989; Carland and Carland 1991; Shane and Venkataraman 2000; Dimov 2011), others see it only as an approach or as a potential dimension (Davidsson, Delmar, and Wiklund 2002; Brush et al. 2003) defining the concept without human involvement. Thus, the alliance between entrepreneurship and education assumes that we follow the line of thought that takes human behaviour as an essential foundation for the phenomenon of entrepreneurship education, as, for example, Gibb (1993) argued two decades ago. For him entrepreneurship and entrepreneurship education are about human behaviour and can be defined as 'a sets of behaviours,

attributes and skills that allow individuals and groups to create change and innovation and cope with, and even enjoy, higher levels of uncertainty and complexity in all aspects of their life' (see also Gibb 2005, 45). This is not a new idea, but on the contrary means returning to history, where the alliance between entrepreneurship and education has its roots in the same Holistic school of science. According to this school, man must be educated to see nature as a complete, integrated and purposeful system with himself as an integral part thereof (Bowen [1981] 1995). This leads to the need to take the individual human being and his/her behaviour holistically as central elements in our conceptualization.

Consequently learning processes are deeply rooted in the personality and intelligence of individuals, also assuming a more profound understanding of the meta-level processes of learning that is the processes that concern a learner's competencies to reflect his/her learning, and consequently change or improve it. This research has only recently begun to attract researchers (Cope 2005; Hayton and Kelley 2006), but is rapidly gaining momentum among scholars of entrepreneurship education. Currently the research is about to expand from cognitive aspects of learning to the 'affective' dimensions relating to our emotions, temperaments, values and attitudes, and also the 'conative' aspects of motivation and volition as well as the interplay between these three dimensions. This research is expected to intensify further in the future, even though it does not figure prominently in recent literature reviews.

Second, society has become an integral part of our conceptualization of education in Western countries since the nineteenth century, when the right of all citizens to formal education was proclaimed. In the seventeenth and eighteenth centuries, there was no formal education for ordinary people, but for them, education meant life-long learning-by-doing in the context into which they were born. Since then, the conceptualization of education has been integrated into national policy decisions, plans and the developments of educational systems. As Bowen ([1981] 1995), for example, argues, education is society's medium for manifesting its ideas and as Pittaway and Cope (2007) point out, the research in the field of entrepreneurship education is policy-related and should always be understood in its context.

The ideas that educational systems adopt reflect what society regards as valuable for its success and welfare, and these ideas are mediated implicitly or explicitly from history to the present and the future through culture. In education, these ideas are embedded in learning paradigms and mediated to learning practices through curricula and teacher education. Even though there are differences in the needs of societies, there seems to be a shared understanding of the pressures that lead us to adopt entrepreneurship education in our education systems. As Gibb (2005) argues, education is always for the future and today different societies seem to rely on the transformative power and capacity entrepreneurship provides to solve the global, national, local as well as institutional and organizational needs for renewal.

This connection to the needs of societies has diverse consequences: For example, education is always a societal phenomenon and we cannot isolate the phenomenon and its societal practices, but rather regard the phenomenon as a result of the dynamics in play between education and societal practices. So far this dynamics has not attracted entrepreneurship education researchers. In addition, education is always a value loaded phenomenon. For example, Böhm (1995) points out that ethical questions are the very basis of all educational discourses, be they theoretical or practical. For example, considering the two basic dimensions of 'how' and 'what' to educate that dominate the current research, value questions bring us the need to include 'why' questions as an equal

partner in entrepreneurship education research (Pittaway and Cope 2007; Fayolle 2013). Unfortunately, as Fayolle (2013) reports, there was no research focusing on value issues among the hundreds of articles their research team reviewed (Byrne, Fayolle, and Toutain 2014; Fayolle and Linan, 2014; Nabi et al., Forthcoming).

Third, my reasoning brings the education system, by which I mean its institutions, into the phenomenon of entrepreneurship education. As the recent entrepreneurship education literature reviews indicate, research has expanded especially in the higher education context, but is still marginal at other levels of education (e.g. Pittaway and Cope 2007; Fayolle 2013). This aptly reflects the prevailing situation in education, since entrepreneurship education has only taken preliminary steps when it comes to comprehensive and secondary education, even though its adoption throughout the whole education system has been highly recommended by the European Commission throughout this millennium and even earlier.

When in 2002 the European Commission report recommended acknowledging the importance of entrepreneurship teaching in the national curriculum as well as in the curricula for each level of the education system as one of the key qualitative indicators for entrepreneurship education, at that time only Finland had done so (European Commission 2002). However, only five years later the 2007 assessment indicated that entrepreneurship had become a recognized objective of education systems and was embedded explicitly in the national framework curricula of five other countries, namely Cyprus, Ireland, Poland, Spain and the United Kingdom. Additionally, seven countries were planning or had partially implemented it (Czech Republic, Estonia, Germany, Greece, Latvia, Slovenia and Sweden). This intensifying policy commitment challenges researchers to expand their view to include studies throughout the education system, studies which today are marginal. As an example of the impact of the national commitment on the number of studies, we can take Finland, where, of 19 doctoral dissertations on entrepreneurship education published in the period 1997–2012, more than 50% focused on comprehensive and secondary education and only 37% on higher education (Kyrö and Hytti 2013).

Finally, the mediating concept of education between society, its institutions and individuals is curriculum. Curriculum is the document in the education system for articulating more specifically the wishes and needs of a society as well as for showing how to implement these wishes in practice (Seikkula-Leino 2008). The curriculum is based on learning paradigms, i.e. the concept that gathers together the philosophical basis, learning theories and adapted pedagogy and didactics. The curriculum specifies what kind of education programmes should be delivered (Bobbitt 2004). It defines the subjects and content guiding what and how to teach and learn (Flouris and Pasias 2003). In this respect, the objectives of entrepreneurship education vary between countries and their institutions reflecting their cultural and conceptual differences (Hytti 2002), which can be assumed to manifest as differences in practice as well. Considering this mediating role of curriculum between policy decisions, education systems and pedagogy, the problem is that it is typical of research to focus rather on different aspects of this dynamics, for example on pedagogy, rather than on that dynamics itself, for example on the dynamics between policy decisions and the institutional practices of education system and the consequences for the pedagogy adopted. The problem is that the lack of awareness between such relationships in research and among policymakers easily leads to unintended decisions and choices that make it difficult to link entrepreneurship and educational discussions and practices.

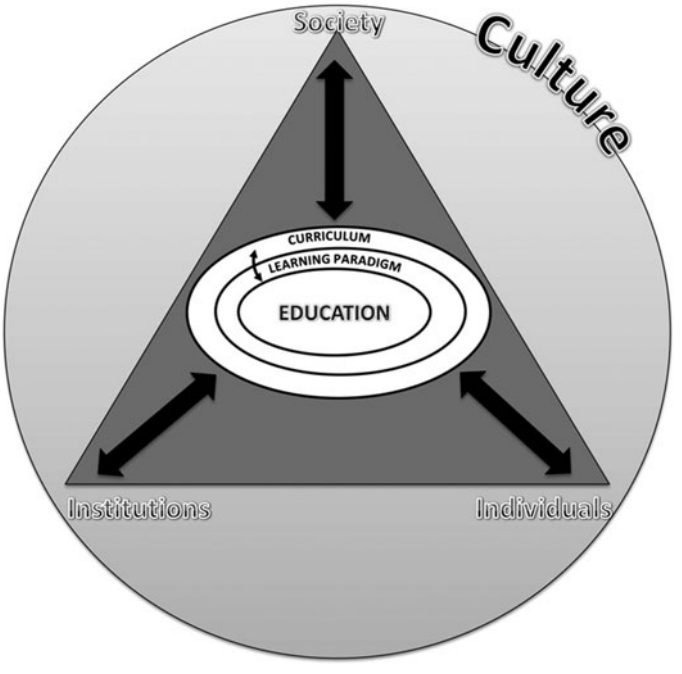

Figure 1. Conceptual dimensions of education.

Figure 1 illustrates the interplay of the basic dimensions of educational concepts, i.e. the individual, society and its institutions, an interplay that the current entrepreneurship education research seems to underestimate. Considering the cultural bond pertaining between these concepts, there is a need to see how cultural differences influence the conceptual understanding of entrepreneurship education. Thus, studying the conceptual interplay in different cultural settings might yield some insights on why, as Alain Fayolle concludes in his EEEA presentation 2013, this field is highly fragmented and not cumulative, and help us to see, as Richards (1995) suggests, what might be missing from our own perspective.

3. Cultural differences in educational concepts

To understand the cultural differences in approaches to entrepreneurship education necessitates seeing the dynamics between 'why', 'how' and 'what' questions, that is the dynamics between what, how and why to teach and learn. The problem is that currently the focus in entrepreneurship education research is on the 'what' and 'how' questions, leaving the 'why' questions unanswered. As Fayolle (2013) suggests, answering the 'why' question assumes a more profound understanding of the philosophical bases we rely on. In order to understand the concepts and the differences between them, we ultimately, implicitly or explicitly, turn to the interplay between axiology, ontology and epistemology, that is our value choices, ideas of reality and ideas of how to obtain knowledge of that reality. Before elaborating on the 'why' question and its axiology, ontology and epistemology, I will take a starting point in history in

order to understand the cultural differences between some central educational concepts; didactics and pedagogy.

3.1. An historical retrospect

To understand cultural differences in educational concepts, we need to delve into the history of education and see how the concepts of didactics and pedagogy have developed. Only in the nineteenth century did we create an educational system and the theoretical basis for learning, yet the conceptual development of education started earlier.[1] The very first meaning of *Didaktik* was almost the same as the art of teaching or *Lehrkunst*. The idea of the founders of the German Didaktik (*didactica*), Wolfgang Ratke (1571–1635) and Johan Amos Comenius (1592–1670), was to develop a general teaching method compared to the logical method (Kansanen 1995). The position of *Didaktik* with regard to pedagogics (*Pädagogik*) then changed in the following centuries. *Die Didaktik* was gradually brought into more general use to refer to teaching rather than a teaching method alongside *die Pädagogik* or pedagogics. However, its use was limited to the German-speaking countries or to countries having cultural relations with Germany. At the end of the nineteenth century, American educational research had many contacts with German research but this, however, was soon ruptured. Accordingly, conceptualization took different routes with respect to conceptualising the education and to educational practices, thus leading to quite different understandings of the basic concepts of education (Kansanen 1995).

The development departed from nondualistic thought by separating man and nature as well as mind and body, a separation that was accepted without critical analysis in the USA. According to Bowen ([1981] 1995), these ideas became the cornerstones of the positivistic tradition in educational psychology in the USA. Education became known as the science of instruction with pedagogy as its technology. Bowen ([1981] 1995) describes how, in the era of scientific positivism, 'the concept of education as an investment and human capital' burgeoned in the early 1960s (Bowen [1981] 1995, 530–531). During this period in history entrepreneurship was marginalized, equilibrium theories dominated scientific debate on macro- as well as micro-theories and positivism as a scientific idol was worshipped on both sides of the Atlantic. During this era, the contribution of Europe to entrepreneurship research also diminished and was dominated by that of the USA (Fayolle, Kyrö, and Uljin 2005).

The results of these developments in Continental Europe and the USA are evident in the contemporary use of the concepts of pedagogy and didactics. Taking Germany as an example, education has three basic problem areas: education in general, psychology and the sociology of education. General education consists of pedagogics and didactics (*Pädagogik und Didaktik*). Didactics is usually seen as a subdiscipline concentrating on questions of teaching (Röhrs 1969).

Thus, in the German literature, *Didaktik* and educational psychology are clearly separate fields in education. The situation in Great Britain and the USA is quite the contrary (Kansanen 1995). Consequently, the Central European discourse on didactics became very close to the Anglo-American discourse on pedagogics. Pedagogy, on the other hand, was sometimes taken as a synonym for the science of education (e.g. Moss 2002).Thus, the concept of didactics disappeared in the American tradition. Nowadays 'didaktik' is in use in the Central European and Scandinavian countries, but is practically unknown in the English or French-speaking countries. Given such different

conceptions of education, it is no wonder that entrepreneurship education faces challenges in developing its conceptualization.

Kansanen (1995) claims that, 'die Didaktik' in Germany has always been essentially philosophical thinking, theorising and the construction of theoretical models. The Scandinavian educational dialogue has also followed this approach. On the other hand, the situation in the USA has been quite different. According to Kansanen (1995), in the American literature on research on teaching, the problems of teaching and learning in general are usually taken together without any theoretical model building. Attention is paid to the methodological problems. On the theoretical level, the development of theoretical models has concentrated on empirical research and on testing these in real situations (Kansanen 1995). These differences of the nature of the conceptualising process give us lead us to identify two different routes to conceptualising educational concepts: The Anglo-American approach starting from practice and leading to teaching and learning models and the Continental approach starting from a philosophical basis that leads to theoretical models and further to teaching and learning practices.

The differences in the concepts of education and their conceptualising processes in the Anglo-American and European continental contexts lead to two different approaches to educational concepts. This has also influenced entrepreneurship education research and practices. Next I elaborate these differences.

3.2. Philosophical bases for understanding the different approaches to entrepreneurship education

To explicate the differences in the conceptualising process of entrepreneurship education in the Continental European and Anglo-American contexts entails delving rather deeper into the dynamics of the philosophical concepts of ontology, axiology and epistemology that are related to the why questions in entrepreneurship education. In short, ontology refers to our ideas of reality and how it is constituted. Epistemology, in turn, is interested in how we can acquire knowledge about that reality. Epistemologists try to identify the essential, defining components of knowledge (Audi 1995). Thus, both of these provide bases for learning and teaching; they appear in learning theories and/or, what we understand by learning and teaching leads back to the ontological and epistemological assumptions.

But to seize upon the missing value question and get answers to 'why' questions in entrepreneurship education, we need to turn to axiology that relates to value theories (Audi 1995). It considers the values related to both ontology and epistemology. In its broad sense, in the context of ontology, it addresses questions such as what is considered valuable in our world and our existence in therein. Further, in the context of epistemology, it addresses the question of what is valuable knowledge in that world and what means are valued in order to gain access to that knowledge. Thus, it brings into entrepreneurship education research the missing ethical aspect which Fayolle and his colleagues are calling for (Fayolle 2013). Axiology and its interplay with both ontology and epistemology focus on the 'why' questions in learning mediated through learning paradigms to the levels of pedagogy and didactics, that finally give answers as to what and how to learn and teach.

3.3. *Two different cultural approaches to entrepreneurship education*

Combining the contextual differences in Section 3.1 and their philosophical bases in Section 3.2, it is possible to identify two different cultural approaches for conceptualising entrepreneurship education, the Continental and the Anglo-American.

The Continental approach starts by pondering ontological, axiological and epistemological questions, i.e. the 'why' question, and then deduces learning theories from these. This is the foundation for learning paradigms and further learning and teaching, i.e. the pedagogy and didactics that emerge in learning and teaching practices.

The Anglo-American approach, for its part, starts from practices, and then through pedagogy generates models for teaching and learning, i.e. the 'what' and 'how' questions. Thus, for example, if we talk about learning models, we follow the Anglo-American approach, where the philosophical basis is more implicit than explicitly articulated.

Thus, the points of departure, the focus and the direction in which to proceed are different in these traditions. Consequently, the Anglo-American approach puts more emphasis on the 'what' and 'how' questions, whereas the Continental approach deduces its basis from the 'why' questions. Figure 2 summarizes these findings as two different routes for the dynamics of educational conceptualization.

Comparing the Continental and Anglo-American approaches to education, it is now possible to examine the differences between both the conceptualization processes, i.e. how the concepts are developed and the actual concepts, i.e. what the different concepts mean.

The conceptualization process of the current research on entrepreneurship education focuses rather on 'what' and 'how' than 'why' questions. Thus, it follows the Anglo-American route. This renders comprehensible 'why' axiological questions are not at the

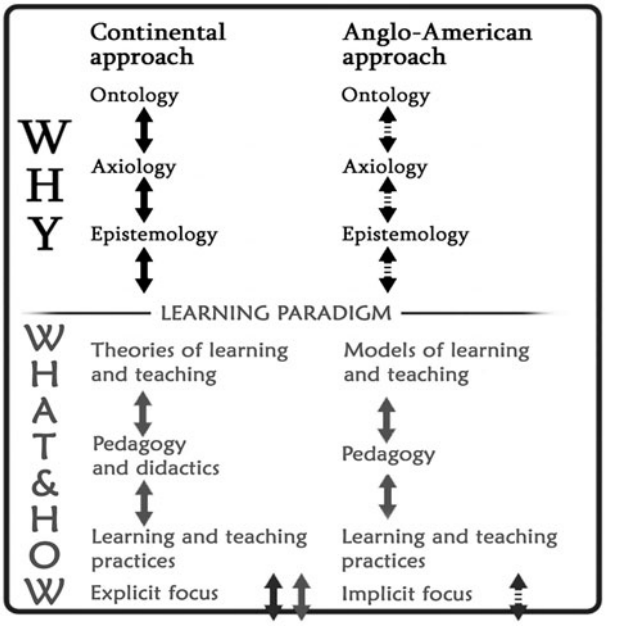

Figure 2. The continental approach and the Anglo-American to educational concepts (Kyrö 2005).

forefront of the contemporary research, but it also leaves us with a challenge to focus in the future on the philosophical questions and especially axiological issues. Criticism of lacking theoretical approaches in entrepreneurship education research may partly be due to the fact that starting from practice and modelling makes it very difficult to reach a valid theory-oriented outcome. Indeed, if learning theories from the science of education are not well known, this easily leads to ad hoc choices between different contradictory learning theories, for example with the intention to underline an individual's own goal-orientation and action, but adopting theories from the field of behaviourism that treats an individual as an object of orders.

Considering the differences in the concepts that we are using in the Anglo-American approach, the concepts of 'models of learning and teaching' are parallel to 'theories of learning and teaching' in the Continental approach. 'Pedagogy' in the Anglo-American approach contains both concepts 'Pedagogy and Didactics'. Thus, explicating what is meant by pedagogy in each study is needed to transcend the cultural borders of the research.

Even though this picture is obviously a very simplistic description of a complex conceptualization process, it nevertheless sheds some light on the difficulties we face when searching for a shared conceptual understanding of entrepreneurship education. It also provides a reflective tool to analyse robust theoretical and conceptual foundations for research.

Regardless of the approach applied, we can conclude that the concept of 'learning paradigm' plays a crucial role as the mediating concept of 'how' and 'what' on the one hand, and the 'why' question on the other, i.e. the learning paradigm gathers together the philosophical basis as well as adapted pedagogy and didactics. Due to its importance in my argumentation, in the next section I will elaborate on the concept in more detail.

4. The interplay between 'learning paradigms' and 'entrepreneurship'

In this section, I will further discuss the development of learning paradigms and their relationship to entrepreneurship and entrepreneurship education. First, I will clarify the concept of a learning paradigm. Second, I will describe the socio-historical transitional context of the development of the relationship between learning paradigms and entrepreneurship education. Third, this is followed by a description of individual paradigms in the course of a history, and finally, based on these descriptions, it is possible to identify what entrepreneurship education can add to these previous learning paradigms.

4.1. The concept of a 'learning paradigm'

As a concept, 'paradigm' is an outcome of the intensified discourse of the dynamics of science that gained strength in the latter decades of the twentieth century. Drawing on Niiniluoto's ideas (1984) of the nature of a paradigm, I see it as a concept that gathers, on the one hand, the philosophical bases for the phenomenon or the field of science, and on the other hand, the methodological bases.

To define what the learning paradigm means, we can refer to Kuhn's definition of a paradigm. For Kuhn, the paradigm is a key component in the development of scientific knowledge and scientific work and thought are defined by paradigms consisting of formal theories, classic experiment and trusted methods. As he underlines, paradigms are

conceptual world views (Kuhn [1962] 1992) referring to the philosophical assumptions and these bases 'are firmly embedded in the educational initiation that prepares and licenses the student for professional practice' (Kuhn 1996, 5). Drawing on Kuhn's paradigm definition, its core relates to the interplay between ontology, axiology and epistemology.

Applying this reasoning to the context of education, learning paradigms are conceptual world views, that is what society believes is valuable for its success. This interplay between axiological, ontological and epistemological questions, that is the 'why' question is followed as Kuhn defines by trusted methods. These methods refer to the levels of what and how to learn and teach, i.e. pedagogy and didactics. Finally, classic experiment refers to learning and teaching practices, their processes and outcomes. Thus, we have a logical flow of concepts organized as a learning paradigm that binds philosophical bases to pedagogy and didactics. Table 1 clarifies these relationships.

Next, by adopting this view on a learning paradigm and a socio-historical approach, I trace their transitional development in history.

4.2. The transitional development in history

The interplay between learning paradigms and entrepreneurship has developed through transitions over time. Such transitions have taken place twice in history, at times when ideas of freedom and the need for a new kind of reality have been particularly crucial to the success of society (e.g. Wilken 1979; Casson 1982; Barreto 1989). The transitional capacity of entrepreneurship on the one hand creates new practices, while on the other it breaks down old systems and institutions. In this respect, entrepreneurship and learning paradigms can be approached as developing as a transitional dialectical process between reality and science (Kyrö 2006).

The first, the modern transition, took place at the beginning of industrialization, from the eighteenth century to the beginning of the twentieth century. Out of the modern transition developed the modern era, which, for its part, started to draw to its close in the 1970s, when the post-modern transition started (Kyrö 2000).

The scientific descriptions of entrepreneurship originated in France during the Enlightenment. At the end of the Middle Ages in France, two institutions, feudalism and the crafts system were coming to an end. Instead of hereditary privileges and institutions, citizens started to demand freedom for trade and industry: in general, freedom to decide how to earn their living (Lindeqvist 1905; Dillard 1967). The new challenges of industrialism threatened the monopoly and the predictable and secure social order of the crafts system. Science started to model and describe this new environment. On the one hand, its interests turned towards those new, unknown circumstances, while on the other hand, it was harnessed to break down old systems and behaviours. (Schmoller 1881; Weber 1969) The descriptions of entrepreneurship followed the industrialisation, liberalization and democratization processes from country to country. Since these processes are country-specific, the transition as a whole was relatively long.

The roots for entrepreneurship in science can be found in the ideas of the French physiocrats during the eighteenth century. They opposed mercantilism, feudalism and the craft system. For them, entrepreneurship referred to a farmer and farming in free conditions. Slightly later entrepreneurship started to be applied to emerging industry. It started to refer to extraordinary human beings who, with freedom and responsibility for their own lives, through their own actions, by combining resources in a novel way,

Table 1. The development of learning paradigm.

TIME	Beginning of the Modern era eighteenth century	Towards the end of the Modern era twentieth century	Postmodern transition 1970s	Some ideas drawn from entrepreneurship education
ONTOLOGICAL BASES IDEA OF THE WORLD and IDEA OF THE HUMAN BEING	Aristotle – empiricism Human being analogous to an animal. World can be controlled through reason based on observations	Platon – rationalism Human being analogous to a machine or a part of a system. Man as an information producer and processor. World and nature are constructed through order and organising and it is controlled by technology.	Still rationalism but with some questions challenges the cognitive paradigm and its idea of the human being. Human being is more complicated and so is the environment. Experiences are meaningful in learning. World is polarized and complex.	Pragmatism – world is made Holistic approach to world and the human being. Human being as interacting with and influencing on the world as a free, creative, risk-taking and responsible actor. Truth changes according to action
Axiology	Democratic values ????			
EPISTEMOLOGICAL BASES IDEA OF KNOWLEDGE	Knowledge is based on sense impressions and reached through observations. Learning is evaluated through quantitative measures	Knowledge is accomplished through reasoning and memorising.	Individual him/herself constructs knowledge based on his/her past experiences later also other people are involved in this process (social dimension)	Knowledge is created through action and interaction with others knowledge changes
LEARNING PARADIGMS	BEHAVIOURISM	COGNITIVE PARADIGM	CONSTRUCTIVISM, LATER SOCIAL CONSTRUCTIVISM	EXPECTATION FOR A NEW POSTMODERN PARADIGM COMPLEMENTED BY ENTREPRENEURSHIP EDUCATION
PEDAGOGY WHERE AND HOW TO LEARN	Learner is an object of indoctrination and control Learning is a sum of reactions. Take place in classrooms. Can be studied in laboratories.	Learning takes place inside a person first through memorising, then by giving much organized information. Learning meant changes in the information structure. The analogies found from an EDP machine or programme.	Learning is individual and social phenomenon. It is not dependent on place and time. Individual her/himself is in centre of learning, deciding where and how to learn.	Learning as a complex and diverse process dependent on action. It takes place everywhere
DIDACTICS HOW TO ACT AND HOW TO TEACH	Teacher tells what to learn and how to learn it, teacher gives questions and right answers for them	Teacher tells what to know and what is right knowledge. Teacher gives much organized information	Teacher supports learning and creates resources and contexts for that.	People around and a learner her/himself create possibilities for learning. Learner decides how to learn and how to act.
	Reform pedagogy		Entrepreneurship education as a form of reform pedagogy	

applying new knowledge and taking risks in this process created something new, which in turn generated economic progress (e.g. Wilken 1979; Casson 1982; Barreto 1989).

Each transition and the era between them produced its own modifications of entrepreneurship according to its specific needs. In the transition from traditional to modern, the focus was on the one hand on the economic process at the macro-level, and, on the other hand, on the extraordinary individual producing this process. When the Western world showed a decline in growth rates in the 1970s, followed by the notions of complexity and unpredictability, a new stream of discussions emerged (Piore and Sabel 1984; Turner 1990). The discovery that new work was not actually being created by large organizations, but rather by small firms and organizations served to stimulate this discussion (e.g. Drucker 1986). There is much similarity between this discussion and that in France during the transition from traditional to modern. Again we are searching for new models for succeeding in new circumstances. In the post-modern transition, entrepreneurship has, for example, pervaded organizational, economic and learning theories with its original features, aiming to renew practices and to break up old systems (Petrin 1991; Gibb 1993; Pinchot and Pinchot 1996; Fiet 2001). Thus, in the transition from modern to post-modern, entrepreneurship again found a new object, now a product of the modern era, the organization. This was followed by further new entrepreneurship related concepts, social, societal, public as well as environment- and education-related entrepreneurship.

The qualities used in the early discussions are also used in the contemporary debate on the definitions of entrepreneurship. Today there seems to be a consensus that the core of entrepreneurship is related to the process of opportunities, new venture creation, growth, risk and acquisition and allocation of resources in order to make things happen (e.g. Carland and Carland 1991; Venkataraman, 1997; Davidsson, Delmar, and Wiklund 2002; Ardichvili et al. 2003; Brush et al. 2003; Shane 2003).

4.3. Learning paradigms

Even though education as the right of all citizens is a product of the Enlightenment and the ensuing modern transition, not until the modern era was a consensus about learning theories reached, when behaviourism started to dominate learning theories and formed the basis for the first learning paradigm. This was followed by the cognitive paradigm and finally, in the post-modern transition, by the constructive paradigm and later also social constructivism. Thus, each of these learning paradigms has its own time and place in history and changes transitionally. In transitions, different paradigms and suggestions for a paradigm can emerge at the same time, challenging each other and competing for dominance.

4.3.1 Behaviourism – empiricism and order in learning theories

Behaviourism, based on empiricism, claims that sense impressions and observations are the criteria for truth and knowledge (e.g. Niiniluoto 1984; Sarvimäki 1988). The justification of knowledge in empiricism is provided by observations and deduced from them (e.g. Boyd 1991). As the idea of the human being as the product of his upbringing achieved dominance, the human being was categorized and classified. Following the ideas of Charles Darwin (1809–1882), the human being started to become analogous with an animal.

The learner was regarded as an object who can be controlled and learning was measured through reactions – more reactions meant more learning. The knower in empiricism can thus be regarded as an externally-observed object, whose world is restricted to the observable world. Formal learning was organized as lectures in classrooms and it could be investigated in laboratories. The teacher's role was to dictate what and how to learn, as well as to ask questions and give the right answers to them.

The dominance of behaviourism was not taken for granted; on the contrary, it was disputed on both sides of the Atlantic. At the beginning of the twentieth century, progressive movements both in Europe and the USA tried to find solutions to the unsolved problem of dualism between empiricism and rationalism. In Europe, perhaps the most prominent representative was Maria Montessori, who following the Holistic School of Science, created child-centred pedagogy (Bowen [1981] 1995). Not least in the USA, pragmatism represented a progressive movement assuming that truth is stable, independent of time, be it based on empiricism or rationalism. Instead of defining the subject, content and object of knowledge, they focused on the process itself – understanding reality through action truth was an acquired quality. For example, Dewey (1951) argued that it is something that happens to an idea while it is verified, while James (1913) claimed that it is the same as a process of verification. Similar to the progressive movement in Europe, pragmatism did not gain a footing in the mainstream discussion, but was harshly criticized by behaviourists from two directions. On the one hand, it was regarded as too eclectic and, on the other hand, its idea of 'usefulness as a criterion of truth' was criticized (e.g. Hilgard and Bower 1966).

4.3.2 The cognitive paradigm – rationalism and knowledge in learning theories

During the modern era, in the period from the beginning of the twentieth century to the 1970s, the dominating ideas of organising and technical development also changed the idea of the human being. The notion that the world can be controlled and changed through order and technology was also applied to human beings and society (e.g. Etzioni 1968; Morgan 1986; Zuboff 1988; Halsey et al. 1997). In the cognitive paradigm, the human being was treated as a part of a machine or system (e.g. Bowen [1981] 1995; Fiske and Taylor 1984). The cognitive paradigm, following the ideas of rationalism, assumed that it is possible to access true knowledge through intellectual intuition or reasoning. There exists an 'a priori' truth, which does not need empirical support (Niiniluoto 1984; Sarvimäki 1988).

Whereas in behaviourism, learning was verified through external reactions, the cognitive idea focused on internal cognitive structures. Learning meant much memorising and later much information leading to changes in the information structure. The development of electronic data processing machines and programmes provided models and ideals for learning. The role of teachers was to determine what to know and what the right knowledge was, as well as to give as much organized information as possible.

4.3.3. Constructivism – bringing the human being and complexity into learning

In the postmodern transition, after the 1970s, the cognitive ideas gained the position of a learning paradigm and started a search for more complex forms. Now competing initiatives came from humanistic ideas and, for example, andragogy was developed for the specifics of adult learning acknowledging that adults are different learners. These initiatives, however, did not gain the status of a paradigm. Rather, they questioned the

mechanistic ideas of the human being in other paradigms. Considering andragogy, the research findings started to indicate that the differences between adults and children were due to adults' experiences, not different learning *per se*.

The latest paradigm, constructivism, both follows and, at the same time, questions cognitivism. Based on constructivism, knowledge is not transferred, but constructed by individuals. Individuals choose and interpret information, assimilate and accommodate it, constructing new knowledge based on previous experiences. This learning process is always situational, tied to the culture the learner lives in and with (Von Wright and Von Wright 1998). The latest version of constructivism also underlines the social dimension of learning. This means that, rather than individually, learning takes place in interaction with other learners. Recently, this paradigm has also moved towards innovative and creative learning practices. Thus, social constructivism has changed the role of the teacher, who is now supposed to support the complex individual and collective learning process, to create resources and a context for it. Recently, many countries have adopted social constructivism in their curricula but also integrated entrepreneurship education to their national educational efforts by introducing it into their educational institutions.

4.4. What does entrepreneurship education add to the existing learning paradigms?

In Europe, the necessity for entrepreneurial practices has recently been argued from two complementary standpoints. First, it has been regarded as valuable for employment, revitalising and renewing local, regional and national economies, as well as renewing practices within organizations. Secondly, the European Union has linked it to democracy and active citizenship. These two motives were also the cornerstones for the entrepreneurship dialogue during the first, modern transition. The role of entrepreneurship education can thus be drawn from the early entrepreneurship contributors, who underlined the right and ability of free human beings to create their own welfare and living through creative action by combining resources in a novel way, applying new knowledge and taking risks in this process, and below I will elaborate on these issues in more detail.

4.4.1. The holistic human being and entrepreneurship education

The idea of a holistic human being as interacting with and influencing the world through his/her own action is the aspect lacking from earlier learning paradigms. This idea of human leads to pragmatism. For pragmatists, knowledge is born and evaluated through and for action. What guides the action and evaluation is meanings and subjective interests. Dewey (1951) saw man as a living being in interaction with the world, and we must assume that interaction with the world concerns other human beings as well. Meanings, like culture, are simultaneously collective and individual. Thus, from this perspective, knowing is also a social phenomenon, an interaction with other people. This is something we can learn from the paradigm of social constructivism. In a changing reality, we are facing the fact that what one is supposed to know and learn is changing, too. In the complexity, these changing factors are numerous. To choose what to focus on and consequently how to act depends, according to pragmatism, on our own interests. In entrepreneurial learning, this means that learners are actors in this knowing and learning process, and that their interests guide the process. Thus, adopting entrepreneurship education assumes that we change the idea of the human being, which

is a quite a fundamental change compared to earlier learning paradigms. For learning practices, it means that the starting point is a learner-led process and the context, arrangements with teaching practices are organized accordingly. Considering an individual learner, it means that the interplay between affective and conative dimensions is fundamental to the learning process. Thus, the role of a teacher and cognitive aspects of learning get different positions compared to any earlier learning paradigms.

4.4.2. Creative action in entrepreneurship education

Learning from the entrepreneurship paradigm discussion we can say that it mostly challenges dualism and focuses on complexity, i.e. how to act creatively and exploit opportunities in a complex and changing world. This creative action-orientation as the starting point for entrepreneurship has been underlined by many scientists since its early days (e.g. von Mises 1966; Barreto 1989; Carland and Carland 1991). Comparing this action-focused approach to earlier learning paradigms shows that none of them has underlined creative action; on the contrary, reacting and knowing have been central to them. The human being has been isolated as an object or a mechanistic knower, or as a constructor or social constructor of knowledge, rather than a feeling and creatively acting entity. Thus, creative action as a guiding principle of entrepreneurship education complements earlier learning paradigms. Creative action-orientation brings learners' experiences and experiential and explorative learning processes to the centre of the learning. Again, it challenges the role of the teacher in the learning process and both the learning arrangements and contents that should be adjusted to a creative action.

4.4.3. Autonomy and entrepreneurship education

The features of learning deduced from early entrepreneurship contributors emphasize the learner's freedom referring to autonomy. The simple idea of freedom is that a person has the right to choose how to act, what and how to learn, and more generally by how to earn her/his living and how to think, as a holistic phenomenon. However, freedom is not only an individual concept as often understood in the entrepreneurial literature, but rather concerns the whole learning situation and context. Thus, defining one's own learning goals and the means to achieve those goals is an essential part of entrepreneurial learning. The same learning methods and tools as used, for example, in business planning might yield quite different outcomes depending on the state of these basic elements of freedom. If these opportunities are not present in learning arrangements, the same learning activities produce quite different learning outcomes. This changes the role of the teacher compared to what it has been in all preceding learning paradigms. Currently, Van Gelderen (2010), for example, argues that autonomy is the guiding aim of entrepreneurship education. It is easy to argue that both paradigms of the modern era, namely behaviourism and the cognitive paradigm are quite contradictory to the principles of autonomy. However, when it comes to constructivism, this kind of difference is not so evident, since it has taken individual and his/her experiences as a centre of learning. Thus, we can say that *autonomy* underlined in entrepreneurship education on the one hand follows and, on the other hand, complements the latest learning paradigm.

4.4.4. Risk and responsibility in entrepreneurship education

Freedom to decide and choose entails responsibility for the consequences and the ability to take and tolerate the risk involved in the learning process. The fear of failure discussion of entrepreneurship thus is embedded in entrepreneurship education. Adopting a broad understanding of risk as insecurity further expands and changes the nature of pedagogy and didactics (Kyrö 2008). Comparing all learning paradigms, it is easy to see that none of them emphasize these aspects. Thus, the interplay between risk and responsibility also introduces new elements into the earlier and current learning paradigms.

Together these aspects – the idea of the human being, action-orientation, autonomy and interplay between risk and responsibility – are at the core of entrepreneurship education but absent from the earlier learning paradigms, give guidance for the different ontological, epistemological and to some respect to axiological bases as well as for pedagogy and didactics. Thus, they contribute ideas to all three 'why', 'how' and 'what' questions. The problematic point here still concerns axiological bases. This is due to the fact that when education is an expression of the values of a society, all learning paradigms in democratic societies are expected uphold democratic values, which is not so evident in earlier learning paradigms. This is arguably attributable to the contradiction between market ideology and democracy (e.g. Engel 2000), that hampers adopting the democratic values in a school system. The paradox is that educators often address this criticism of entrepreneurship education without noticing its role in transforming, not following, the current practices in society and economy. This complementary interplay between economy and democracy is among the greatest axiological and conceptual challenges for the future research of entrepreneurship education.

These differences from earlier learning paradigms and challenges for future entrepreneurship education lead me to suggest that from an educational perspective, entrepreneurship can now be seen as a form of pedagogy that renews the previous learning paradigms and furthers educational institutional practices. As a form of pedagogy, it can be compared to the earlier progressive movement that has emerged as a critic in response to earlier learning paradigms. Thus, the transitional capacity of entrepreneurship has been harnessed also to education. Table 1 illustrates this role of entrepreneurship in educational debate. Its last column summarizes the specifics of entrepreneurship education and based on these the last row indicates its role as a form of pedagogy.

5. Conclusions and some expectations for the future

In this article, I have elaborated on the contribution of educational concepts to entrepreneurship education research. It is easy to conclude that entrepreneurship education research could benefit from learning more about the basic educational concepts and their interplay. However, by adopting these concepts, we can also identify how entrepreneurship education can contribute to the educational debate. The interplay between entrepreneurship and educational concepts demarcates the role of entrepreneurship education as a form of pedagogy and its connection to a progressive movement. As a form of pedagogy, entrepreneurship education changes the idea of the human being, brings action-orientation, autonomy and interplay between risk and responsibility to the centre of the learning process and challenges the previous ontological, epistemological and to some respect axiological bases of earlier learning paradigms and also

presents new ideas for pedagogy and didactics. Thus, seen from an educational perspective, entrepreneurship can now be perceived as a form of pedagogy that renews the previous learning paradigms and furthers educational institutional practices.

Considering the cultural differences in conceptualization rather than calling for shared views, we should better understand different views and identify our own conceptual view in each study. This requires us to increase our reflectiveness on the use of the concepts. These suggestions are consonant with the recommendations made by Gibb as well as those made by Fayolle, and the earlier literature review by Pittaway and Cope. However, I hope now that we can further argue for why and how to increase a reflective approach to our own research and thus also reconcile the conceptual differences and increase collaboration with scholars in different cultures. As Fayolle suggests (2013), we need to reflect upon our practices and take a more critical stance, breaking away from the far too common 'taken for granted' position. This concerns all the 'what', 'why' and 'how' questions.

Considering the 'why' question, the great challenge for future research is to integrate axiological discussion into entrepreneurship education research and see its connections to 'what' and 'how' questions, since the axiological debate seems to be fundamental in identifying the role and specifics of entrepreneurship education in transitions. For the 'how' question, it is possible now to condense the contribution of entrepreneurship education into the interplay between the three A's – Axiology, Autonomy (and the risk and responsibility inherent in it) and creative Action. Finally, considering the 'what' question, it is obvious that we are about to draw it from entrepreneurship research in the future, too. This presents us with a multiple challenge to integrate the latest findings from entrepreneurship research into entrepreneurship education. Even though these challenges are huge, I am convinced that the growing global community of entrepreneurship education scholars coming from both fields – education and entrepreneurship – will together bring us interesting findings and new frames for future research.

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Note

1. For a rather more comprehensive description of these two different routes, see Kyrö (2006).

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