
**Understanding Teaching Models in Entrepreneurship for Higher Education**

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December 2005

ISSN : 0840-853X
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ABSTRACT:

Whereas several dimensions relevant to the teaching of entrepreneurship continue to be studied, research on entrepreneurship education generally fails to consider the reasons that motivate particular educational choices. We address this issue by defining an analytical framework that centers on the concept of teaching model. We illustrate how five teaching models find an expression in entrepreneurship programs, courses, and pedagogical activities. In the end, we show how the proposed framework can help entrepreneurship educators assess the coherence of their own teaching practice, and encourage scholars to consider how the education literature on teaching models could further research on entrepreneurship education.

Keywords: Entrepreneurship education; Teaching models; Conceptions of teaching; Teaching approaches; Higher education.

RÉSUMÉ :

Malgré les nombreuses dimensions à l’étude dans l’enseignement en entrepreneuriat, peu font référence aux raisons sous-jacentes aux choix pédagogiques des formateurs. Dans le cadre de cette recherche, nous travaillons sur le concept de modèle d’enseignement et proposons une typologie qui permet de mieux comprendre les conceptions et les approches des professeurs dans les programmes, les cours et les activités pédagogiques en entrepreneuriat dans le contexte de l’enseignement supérieur. Cette démarche débouche sur une réflexion théorique et pratique concernant l’importance de la cohérence entre ce que les professeurs pensent et font en termes de choix pédagogiques dans leur classe.

Mots clés : Éducation entrepreneuriale; Modèle d’enseignement; Conception de l’enseignement; Approche d’enseignement; Enseignement supérieur.
Understanding Teaching Models in Entrepreneurship for Higher Education

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1. Introduction

Within the domain of entrepreneurship education, there is a long tradition of research that focuses on the entrepreneurship courses and programs offered in a variety of educational contexts, and particularly in institutions of higher education (i.e., universities and two-year colleges in the U.S. / also labeled tertiary education in other countries). Starting with Vesper’s pioneering efforts of the mid 1970s (e.g., Vesper, 1974; 1975; 1976), several of these studies aim at measuring the emergence of entrepreneurship as a distinctive area of education within the management sciences (e.g., Chusimir, 1988; Fayolle, 2000; Katz, 2003; Menziès & Gasse, 1999; Plaschka & Welsch, 1990; Robinson & Haynes, 1991; Solomon & Fernald, 1991; Solomon et al., 1994; Solomon et al., 2002; Vesper & Gartner, 1997; 1999; Zeithaml & Rice, 1987). In some cases, inventories of this sort are conducted to study specific dimensions of entrepreneurship education, whether in terms of course content (e.g., Gartner & Vesper, 1994; Fiet, 2001a), objectives (e.g., Béchard & Toulouse, 1998; Garavan and O’Cinneide, 1994a; Hills, 1988) pedagogical methods (e.g., Gartner & Vesper, 1994; Katz, 1999) or evaluation approaches (e.g., Solomon et al., 1994).

From an education point of view, however, it is interesting to note that whereas these studies focus on a wide array of dimensions relevant to the teaching of entrepreneurship, they generally fail to consider the reasons – theoretical or otherwise – that shall motivate different pedagogical choices. In a way, this is as if we were studying what entrepreneurs do without considering the factors that influence their intentions, and motivate their actions.

The purpose of this paper is to address this issue. We argue that if these considerations have been left aside in the past, it is because our college of scholars and educators lacked a conceptual framework grounded in education research, and that was specifically tailored to highlight the
coherence link between the conceptual underpinnings that motivate particular educational choices, and the operational manifestations of these choices.

Building on current literature in education sciences that centers on the concept of teaching model, we define an analytical framework that considers 1) the conceptions and explications that motivate particular approaches to teaching; 2) the concrete manifestations of these approaches; and 3) the coherence link between conceptions of teaching, and pedagogical choices and actions. In turn, we illustrate how particular teaching models find their expression in research that reports on specific entrepreneurship education programs, courses, or other pedagogical activities. In the end, we show that the proposed framework could help entrepreneurship educators assess the coherence of their own teaching practice, and encourage scholars to consider how the education literature on teaching models could further current research on entrepreneurship education.

2. Conceptual bases

In the education literature, the concept of teaching model finds its origins in the idea that “most experienced teachers practice their craft within the context of some theory or conceptual framework (Anderson, 1995: 89; but see also Joyce & Weil, 1996).” Legendre formally defines teaching models as the “representations of a certain type of organization (to address) a pedagogical situation, in function of particular goals and objectives, and that integrate a theoretical framework that justifies this organization and gives it an exemplary character (Legendre, 1993: 868).” However, the term ‘theoretical’ should not but taken here in its academic sense, but more in the sense of a coherent ensemble of “explanations and justifications offered by teachers for their classroom behavior (Marland, 1995: 131).” Seen in this light, teaching models consist of both explicit and implicit elements. That is, teaching models can be anchored in formalized, codified knowledge (e.g., a theory in the academic sense), but can also emerge from deeply personal experiences.

The important point, however, is that teaching models form a bridge between educators’ knowledge, conceptions and beliefs about teaching, and their teaching behavior per se. On the one hand, teaching models are influenced by individual characteristics from gender to abilities and attitudes to past experiences, by the discipline one is educated in, by the discipline one is teaching, and by a range of departmental and institutional factors (cf. Neumann, 2001; Singer, 1996). On the other hand, teaching models influence lecturing styles (cf. Robertson, 1999; Saroyan & Snell, 1997), which in turn influence students’ learning approaches and ultimately, learning outcomes (cf. Kember & Gow, 1994). In practice, these causal considerations suggest the importance of maintaining an optimal degree of coherence between one’s conceptions and beliefs about teaching, and one’s behavior vis-à-vis a given pedagogical situation (cf. Murray & MacDonald, 1997; but see also Biggs’ notion of “constructive alignment”, cf. Biggs, 1999: chapter 2).

With respect to our purpose, the relevance of teaching models is that the concept is centered on the link that unites the conceptions that scholars and educators have about teaching, and their actual teaching behavior. In this light, the concept of teaching model integrates a number of dimensions anchored at the two organizing levels of ontology and operation. Ultimately,
different configurations of these dimensions allow for the identification of common archetypes – teaching models so to speak.

2.1 The ontological dimensions of teaching models

The ontological level groups dimensions that have to do with educators’ basic assumptions about the nature of the world in general, and of education in particular. As such, the ontological level integrates three particular dimensions: 1) philosophical paradigms; 2) theoretical bases; and 3) a series of conceptions that educators may have about education.

*Philosophical paradigms* refer to one’s fundamental perspectives about the nature of reality. The idea is that different perspectives should support different theories of education (Reboul, 1999/80) – and by extension, different teaching models. For instance, does one conceive reality as independent of its perceiver, and education as apprehending this reality ‘out there’ – an objectivist stance? Or does one conceive reality as always subject to the mental representations of its perceiver, and education as a process of making sense of this reality from the perceiver’s point of view – a subjectivist stance? Alternatively, does one conceive reality as both influencing and influenced by human agency, and education as a process of co-construction – an interactionist stance? Again, the point is that how one views the world should have an influence on how that person will approach education and teaching – including the design of particular programs, courses and pedagogical activities.

*Theoretical bases* consist of models of human agency (i.e., theories) that are anchored in different disciplines, and that support particular teaching models. Relevant theories can come from all social-science disciplines, from psychology to sociology, economics, or anthropology.

*Educator’s conceptions* are just that, conceptions that an educator has about a series of elements relevant to education (cf. Kember, 1997; Ramsden, 2003; Robertson, 1999). These conceptions concern what teaching is (its meaning / its focus), what a teacher is and what students are, and conceptions about the knowledge to be taught.

2.2 The operational dimensions of teaching models

The operational level groups dimensions that have to do with how the above ontological dimensions are translated at the level of teaching acts, from the design and implementation of programs, courses, and class sessions to actual exchanges with students, in group or one-on-one with the educator. These dimensions represent the manifest expression of the ontological dimensions discussed above. As such, the operational level integrates four particular dimensions: 1) teaching goals; 2) knowledge emphasized; 3) pedagogical methods and means; and 4) forms of evaluation.

First, different teaching models value different *teaching goals* (cf. Anderson et al., 2001). These goals can include to remember and apply knowledge to solve simple problems, to understand and organize knowledge in meaningful ways, and to evaluate a situation and create/reorganize knowledge for action.
Second, different teaching models emphasize different types of knowledge. This knowledge can be abstract (i.e., theoretical, de-contextualized, generalizable to many situations), contextualized to the person (i.e., framed in terms of her particular goals, motives and needs), or contextualized to the situation at hand and the actions to be performed (cf. Tardif, 1997). In addition, this knowledge can be declarative (i.e., assertions about the world, facts, notions etc.; cf. Ohlsson, 1994), procedural (i.e., methods to achieve goals; cf. Ohlsson, 1994), or affective (i.e., knowledge about the self; cf. Boekaerts, 1994).

Third, different teaching models rely predominantly on different pedagogical methods and means (cf. Béchard, 2000; Laurillard, 2002). This dimension of pedagogical methods and means concerns both the form of interpersonal communication, and the use of different educational technologies (e.g., the use of audio-visual or computer-based technologies, etc).

Fourth, different teaching models favor different forms of evaluation. These forms could be summative or formative in spirit (i.e., meant to assess learning over an entire education episode, such as in formal end-of-term examination, vs meant to provide feedback throughout the learning episode, such as with mentoring (cf. Scriven, 1994). Other forms aim to assess performance in authentic situations (cf. Biggs, 1999: 151). Among others, assessments of this sort can take the form of practicum (e.g. work assignments), interviews, reports on critical incidents, contracts, projects, case studies, reflective journals, or portfolio assessments.

Within each teaching model, these four operational dimensions aim to represent the concrete manifestations of the ontological considerations reviewed above.

3 Analytical framework: three different teaching models

Within all the possible variations defined by the above three ontological and four operational dimensions, education scholars have shown that pedagogical choices and actions converge on a select number of discrete archetypes – teaching models so to speak. We focus here on three such archetypes: 1) the supply model; 2) the demand model; and 3) the competence model. The name of each archetype is taken from Reboul’s (1999/80) discussion of different philosophies of education. Table 1 synthesizes the characteristics of each model.
Table 1:
Analytical Framework: Three Teaching Models in Higher Education

<table>
<thead>
<tr>
<th>Philosophical paradigm</th>
<th>The supply model</th>
<th>The demand model</th>
<th>The competence model</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ontological level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theoretical bases</td>
<td>Behavioral psychology</td>
<td>Humanistic psychology</td>
<td>Cognitive psychology</td>
</tr>
<tr>
<td></td>
<td>Reproduction theory (in sociology of education)</td>
<td>Human capital (in economy of education)</td>
<td>Socio-historical psychology</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social and personality psychology</td>
<td>Situated cognition theory</td>
</tr>
<tr>
<td><strong>Educator’s conceptions about teaching</strong></td>
<td>To teach is to impart information</td>
<td>To teach is to assure the appropriation of knowledge</td>
<td>To teach is to converse with the students about the knowledge</td>
</tr>
<tr>
<td></td>
<td>Teaching as telling a story</td>
<td>Teaching as organizing students’ activities</td>
<td>Teaching as making learning possible</td>
</tr>
<tr>
<td></td>
<td>Egocentrism</td>
<td>Aliocentrism</td>
<td>Systemocentrism</td>
</tr>
<tr>
<td><strong>Educators’ conceptions about themselves and the students</strong></td>
<td>A teacher is a presenter</td>
<td>A teacher is a facilitator and tutor</td>
<td>A teacher is a coach / developer</td>
</tr>
<tr>
<td></td>
<td>Students are passive recipients</td>
<td>Students are participants</td>
<td>Students are active participants in the co-construction of their knowledge</td>
</tr>
<tr>
<td><strong>Educators’ conceptions about the knowledge to be taught</strong></td>
<td>Content is primarily defined by scholarly research in the relevant discipline(s)</td>
<td>Content is primarily defined by students’ needs, with respect to a given domain of activity</td>
<td>Content is primarily defined by the problems to be solved by competent actors in real-life situations</td>
</tr>
<tr>
<td><strong>Operational level</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Teaching goals</td>
<td>To remember (retrieve from memory)</td>
<td>To understand (give meaning)</td>
<td>To evaluate (conclude / criticize)</td>
</tr>
<tr>
<td></td>
<td>To apply (solve simple problems)</td>
<td>To analyze (organize knowledge)</td>
<td>To create (reorganize knowl. to act)</td>
</tr>
<tr>
<td>Knowledge emphasized</td>
<td>Theoretical (decontextualized)</td>
<td>Personalized</td>
<td>Competences to mobilize the relevant learning resources (knowl. + networks)</td>
</tr>
<tr>
<td></td>
<td>Declarative and procedural</td>
<td>Declarative, procedural and affective</td>
<td></td>
</tr>
<tr>
<td>Pedagogical methods and means</td>
<td>Methods and means emphasizing the transmission and reproduction of knowledge and application of procedures (e.g. lectures; reading print material; watching / listening audio-visual documents, DVD, etc.)</td>
<td>Methods and means emphasizing exploration, discussion, experimentation (e.g. library, web or other interactive searches, labs, field trips, simulations)</td>
<td>Methods and means emphasizing communication and discussion (e.g., seminar, presentations, debates, on-line exchanges, etc.) and production (e.g. essays, animation, modeling, portfolios, etc.)</td>
</tr>
<tr>
<td>Forms of evaluation</td>
<td>Summative</td>
<td>Formative and summative</td>
<td>Performance in authentic situations</td>
</tr>
</tbody>
</table>
In the next sections, we describe the characteristics of all three models of teaching. We also describe two hybrid models that combine elements from more than one archetype.

3.1 The supply model

As its name suggests, the supply model is centered on the supply-side of education, i.e., on the teacher’s teaching. In terms of its philosophical foundations, the supply model proceeds from an objectivist paradigm. This paradigm assumes that there is a reality ‘out there’ that is independent of human agents. This paradigm further emphasizes the influence of external factors on an individual’s behavior. Seen in this light, education is a means to apprehend this external reality, and individual learning is primarily shaped by factors external to the individual (e.g., what the student is exposed to, and notably by the teacher). Behavioral psychology – i.e., the idea that an individual’s behavior is largely dictated by stimuli from its environment – exemplifies the kind of theoretical roots that anchor this teaching model (cf. Watson, 1925). In sociology of education, the supply model is also associated with reproduction theory – i.e., the notion that the primary function of education is to transmit (i.e., ‘reproduce’) the knowledge, values and practices that are at the basis of society’s institutions (cf. Goslin, 1965). Here again, the primary drivers of education remain external to the learner – hence the primary role played by the educator.

Now, even if the link is often more implicit than explicit, the above philosophical and theoretical roots are reflected in a series of conceptions associated with the supply model. Given the views that there is an outside reality that must be apprehended, and that learning is primarily influenced by external factors, teaching is conceived here as “imparting information” (Kember, 1997), or as “telling a story” (Ramsden, 2003). The premise is that with more or less efforts on their part, students are to learn whatever it is that is presented to them by the educator. Education is thus centered on what the teacher knows, thinks and does – a perspective that Robertson (1999) labels egocentrism. In line with this perspective, teachers are thus conceived as presenters, and students as passive recipients (Kember, 1997). Furthermore, the supply model is associated with the notion that the knowledge / content to be taught should be primarily defined by scholarly research in the relevant discipline(s).

As can be expected, the ontological dimensions that define the supply model of teaching find an echo in its operational manifestations. First, and in the words of Anderson et al. (2001), the primary teaching goals emphasized within the supply model are to remember (i.e., to retrieve pertinent facts from long-term memory), and to apply (i.e., to use procedures to solve (simple) problems or complete (simple) tasks). Second, and given the ontological foundations discussed above, the kind of knowledge that is emphasized within the supply model is theoretical knowledge, i.e., knowledge that is general in nature, abstract, and de-contextualized – in the sense that it is meant to be applicable to a whole range of situations. With this in mind, the supply model values the transmission of what educational psychologists label declarative and procedural knowledge. While the former corresponds to more or less accurate assertions about the world (e.g., facts, principles, generalizations, or knowing “what”), the latter consists of more or less efficient methods for achieving goals (e.g., heuristics, routines, strategies, or knowing “how”). Third, the methods and means associated with the supply model generally emphasize actions of transmission and reproduction of knowledge and application of procedures (lecturing
and other narrative forms as reading print material; listening / watching audio-visual documents, DVD, etc.). Fourth, and lastly, the supply model is generally associated with summative forms of evaluation. The goal of evaluation is to assess the student’s degree of retention of the knowledge taught by the teacher. Evaluation is generally conducted after some learning is supposed to have take place, and often with the aim of sanctioning the students’ mastery of the subject.

3.2 The demand model

Just as the supply model focuses on the teaching-side of education, the demand model focuses on answering the learning goals, motives and needs of students. In terms of its philosophical foundations, the demand model proceeds from a subjectivist paradigm. This paradigm assumes that reality must be understood from the point of view of human agents. As a result, this paradigm emphasizes the influence of internal factors on an individual’s behavior. Seen in this light, education is a means to make sense of the outside world, and individual learning is primarily driven by factors internal to the individual (e.g., her knowledge, but also her affect, her emotions, her goals, motives and needs, her desire to learn, etc.). With its emphasis on the mental and affective factors and processes that preside over behavior, humanistic psychology and social and personality psychology exemplify the kind of disciplinary roots that anchor this teaching model. More specifically, humanistic psychology – i.e., the idea that education should allow for the personal development and autonomy of the individual who is being educated (cf. Rogers, 1994/69) – provides further theoretical bases for the model. In economy of education, the demand model is also associated with human capital theory – i.e., the notion that education endows individual with an education capital that benefits both the individual and society (cf. Becker, 1964). Seen in this light, then, it becomes critically important that education answers the particular needs of students.

The above philosophical and theoretical roots help to understand the conceptions most often associated with the demand model of teaching. Within this model, teaching is conceived as the construction of an environment dedicated to the appropriation of the knowledge taught (Kember, 1997), or as “organizing the students ‘activities” (Ramsden, 2003). Given the premises that reality must be understood through the eyes of the perceiver and that an individual’s learning is largely influenced by her internal states and resources, “organizing the students’activities” implies that the educator shall place a particular emphasis on answering the students’ goals, motives and needs. Education is thus centered on what the student knows, thinks and does – a perspective that Roberston (1999) labels alicentrism. In line with this perspective, teachers are thus conceived as tutors, and students as active participants (Kember, 1997). Furthermore, the demand model is associated with the notion that the knowledge / content to be taught should be primarily defined by students’ needs – with respect to a given domain of activity.

Here again, the ontological dimensions that define the demand model of teaching find an echo in its operational manifestations. First, and in the words of Anderson et al. (2001), the primary teaching goals emphasized within the demand model are to understand (i.e., to construct new meaning by mixing new material with existing ideas), and to analyze (i.e., to subdivide content into meaningful parts and relate the parts). Second, and given the ontological foundations discussed above, the kind of knowledge that is emphasized within the demand model is
knowledge that is contextualized to the individual, i.e., knowledge that is tailored to the individual’s particular goals, motives, and needs. With this in mind, the demand model values not only the declarative and procedural knowledge emphasized with the supply model, but adds to those a particular emphasis on the development of affective knowledge. Among other things, affective knowledge includes beliefs about the self, emotions, moods, and behavioral control mechanisms – all forms of knowledge that can influence subsequent learning. Third, the pedagogical methods and means associated with the demand model generally emphasize activities of exploration and discussion (such as library, web or other interactive searches on CD-ROMs), and experimentation (such as laboratory, field-trips, simulations and other adaptive forms). Fourth, and lastly, the demand model generally relies on both summative and formative evaluation. While the former focuses on the retention of knowledge, the goal of the latter is to provide continuous feedback to help students assess their own learning progress. Such evaluations can be graded or not, and can be repeated throughout the learning process.

3.3 The competence model

Unlike the two preceding models, the third model focuses neither on the supply nor on the demand of education, but on the interaction between the two. This is the competence model. In terms of its philosophical foundations, the competence model proceeds from an interactionist paradigm. As its name suggests, this paradigm assumes that reality is both influencing and influenced by human agency. As a result, this paradigm emphasizes the concurrent influences of both external and internal factors on an individual’s behavior. Seen in this light, education is a means to engage the world, and individual learning results from the interactions between external and internal factors. In line with this paradigm, the competence model finds its roots in disciplines like socio-historical and cognitive psychology. In that perspective, three theories have been particularly influential: the constructivist theory of Piaget – i.e. the influence of developmental changes in concept formation, assimilation, and accommodation (cf. Piaget, 1952), and the socio-historical theory of Vygotsky – the notion that human intelligence (and the production of knowledge and understanding) develop in interaction with other people and the environment (cf., Vygotsky, 1996/62). In addition, the competence model is associated with the theory of situated cognition – i.e., the idea that conceptual knowledge cannot be abstracted from the situations in which it is learnt and used (cf. Brown et al., 1989).

As with other models, the above philosophical and theoretical roots also find an echo in the conceptions associated with the competence model. Given the premises that learning emerges from an interaction between human agents and their environment, teaching is conceived as a strategic intervention to allow for – and influence – how students organize the resources at their disposal (i.e., knowledge, abilities, etc.) into competences that can be mobilized for action. In the words of Ramsden (2003), this conception corresponds to the phrase “teaching as making learning possible.” Education is thus centered on the entire system of interactions between context, teacher and students – a perspective that Robertson (1999) labels systemocentrism. In line with this perspective, teachers are conceived as coaches who assist students in developing their conceptual understanding, their ‘view of the world at the deeper level’ so to speak. Furthermore, the competence model is associated with the notion that the knowledge / content to be taught should be primarily defined by the problems to be solved by competent actors in real-life situations.
As can be expected, there is a link between the ontological dimensions that define the competence model and its operational manifestations. First, and in the words of Anderson et al. (2001), the primary teaching goals emphasized within the competence model are to evaluate (i.e., to come to a conclusion about something based on standards/criteria), and to create (i.e., to reorganize elements into a new pattern, structure, or purpose).

Second, and as its name indicates, the competence model emphasizes the development of competences, that is, of knowing how to solve complex problems in particular contexts by mobilizing relevant learning resources, i.e. knowledge and networks (cf. Le Boterf, 1998). The competence model assumes that in real-life, tasks and problems are often ambiguous, divergent, or ill-defined: there are no single correct answer. With this in mind, it becomes important “that the student shows how the problem may reasonably be approached, how resources and data (can be) used, how previously taught material (can be) used, how effectively the solutions meet likely contingencies and so on (Biggs, 1999: 179).” In this sense, the learning resources that are emphasized in the competence model are situated, contextualized to a particular task or complex problem. At the same time, these learning resources are action-oriented, constructed and organized to address particular issues in that situation, to engage that situation so to speak. Interestingly, the model posits that relevant learning resources can be mobilized from both the self (i.e., prior knowledge and abilities) as well as from others (i.e., knowledge and abilities of others, and that can be mobilized from the network of peers, colleagues, mentors, educators, etc.). In this sense, the model values a form of social competence. But more so than in the other models, the competence model recognizes that students are not ‘blank slates waiting to be taught’: the knowledge and abilities that they already possess color their subsequent learning. The model thus emphasizes the development of capabilities to think critically, and to revise existing stores of knowledge and abilities if need be.

Third, and unlike the two preceding models, the pedagogical methods and means associated with the competence model generally emphasize activities of communication and discussion (e.g., such as seminar, presentations, debates, on-line exchanges, etc.) and of knowledge production (such as essays, animation, modeling, portfolios, etc.). Fourth, and with respect to evaluation methods, the competence model emphasizes authentic assessments methods, whereby the educator uses a variety of means (e.g., portfolio, direct observation, interview, etc.) to assess learning in situations that are meant to be as close as possible to the complex and uncertain situations faced by professionals in their day-to-day activities. In other words, the purpose of evaluation in the competence model is “to reflect the complex performances that are central to a field of study (Laurillard, 2002: 204).” Furthermore, one does not measure the quantity of knowledge retained and applied, as much as the degree of resolution of unique, imprecise, incomplete and complex problems.

3.4 Hybrid models

Now, the fact that the three archetypes of teaching are described above as having well-defined characteristics is not meant to imply that each model forms a rigid set of principles that must be taken whole, in their entirety. In practice, each model can be seen as a particularly telling configuration of elements in a multidimensional space. As such, other forms are possible that integrate elements from more than one model.
Two such hybrid forms appear particularly common (cf. Kember, 1997; Robertson, 1999): a hybrid model that combines elements from the supply and demand models; and a hybrid model that combines elements from the demand and competence models. Figure 1 illustrates the “position” of such hybrid models vis-à-vis their “pure-blood parents.” Note however that the distinction between “hybrid” and “pure” models is more a matter of expository convenience than an empirical reality: in practice, the distinction between adjacent models is oftentimes a matter of nuances and particular emphases. Again, the point is that “pure” models tend to show characteristics of only one archetype, while hybrids exhibit characteristics of more than one model, and that at different degrees.

**Figure 1:**
The “position” of hybrid models vis-à-vis the other models

![Diagram showing the positions of hybrid models](image)

In the first case, the hybrid model combines the ontological foundations of both the supply and demand archetypes, adopting for instance a position where “the teacher sees his job as one of processing very tough material into more easily digestible nutrient for rather simple minds (Fox, 1983: 153; cited in Kember, 1997: 266). In turn, this hybrid conception shall influence the pedagogical approaches of the teacher, opening the door for a wider variety of pedagogical means and methods, evaluation forms, and emphases on particular types of knowledge than in a single model. The same rationale holds in the second case, with a model that draws elements from both the demand and competence models.

In practice, education scholars have observed that within her professional life, an educator could move from one model to another, depending on her personal tendencies but also, on the context in which she was teaching (cf. Neumann, 2001; Singer, 1996). The passage from one model to another takes place when an educator begins to feel unsatisfied with a particular model, and/or begin to perceive this model to be insufficient or inadequate (cf. Robertson, 1999). For example, the passage from the supply model to the demand model may be encouraged by a particular desire to adapt one’s teaching to the individual particularities of students. Likewise, the passage from the demand to the competence model may be encouraged by a particular desire to adapt one’s teaching to the particularities of a given professional context. In both cases, this realization is followed by a period of search and experimentation, which leads the educator to
adopt a new teaching model that better corresponds to her newly developed conceptions and practical approaches.

Evidence suggests that these transitions between models are not necessarily common – nor are they necessarily easy (cf. Kember, 1997; Murray & MacDonald, 1997). Nevertheless, research and practical observations suggest that the passage from one model to another could take place through the kind of hybrid models described above. By extension, the same hybrid forms could also represent practical solutions for educators with sympathies towards a particular model, but who work in a context / tradition that strongly value another model.

### 4 Teaching models in entrepreneurship education

Table 2 illustrates how the above five teaching models find an expression in entrepreneurship education. More specifically, the table provides excerpts of research articles reflecting specifically on a particular entrepreneurship education program, course, or pedagogical activity.

Now, we must point out that in the education literature, research on teaching models is generally conducted at the level of individual educators, and not so much in terms of educational programs, courses, or pedagogic activity. Again, the purpose of this type of education research is to reveal the particular models of teaching used by educators, and to analyze the factors that influence the adoption of particular models, and the impact that these models may have. We believe that the same kind of research could be conducted in entrepreneurship education. However, the purpose of our present text is not to provide this kind of analysis, but rather, to illustrate how particular models can be translated in terms of entrepreneurship teaching and research. In this light, we posit that scholarly articles describing particular pedagogical efforts are supported by the same kind of coherence link between ontological and operational dimensions that can be found with individual educators. In other words, the text of these articles should reflect the same kind of ontological and operational dimensions that in the first place, animated their authors’ efforts to develop and implement the programs, courses and other pedagogical activities in questions.
Table 2:
Illustration of Teaching Models in Entrepreneurship Research and Education

<table>
<thead>
<tr>
<th>Teaching Model</th>
<th>Ontological level</th>
<th>Operational level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply model</td>
<td>This article suggests three areas – the role, function, and historical perspective in which the phenomenon of entrepreneurship is misunderstood. (…) This framework provides instructors of courses on entrepreneurship with an approach to curriculum development that attempts to capture the essence of the classical economic phenomenon known as entrepreneurship. (p. 27)</td>
<td>As a starting point in the curriculum formulation process, three broadly-based curriculum objectives have been suggested: 1) to explore the economic nature and role of entrepreneurship; 2) to discover and examine the principles of innovation; 3) to track the role of entrepreneurship and the principles of innovation as they occur in economic history. Though a student may master the material presented in a course on entrepreneurship, not every person will be in the right place at the right time with the right resources to innovate and thus be known as an entrepreneur. However, that student will definitely have a (fuller) understanding of the entrepreneurial phenomenon, and by doing so, become a more competent stakeholder – whether investor, employee, manager, or possibly, entrepreneur. (pp. 30-1)</td>
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<td>Maranville, JEB</td>
<td>A course on entrepreneurship should be viewed as the study of, rather than training in, entrepreneurship. Training in this endeavor is best left to the business organization in which market feedback is the most accurate of evaluators. (p. 31)</td>
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<td>Benson, JABR</td>
<td>Because entrepreneurship is most often perceived to be a business-related subject, many non-business students are effectively precluded from the study of entrepreneurship at most colleges, and many business students are very seldom exposed to non-business course material. (…) All of this is truly unfortunate because in the experience and research of this author, non-business students have often shown themselves to be the best entrepreneurs, or the students with the best entrepreneurial potential and interest (…). (…) With the above in mind, it is the purpose of this article to provide examples of the ways in which the Classics can be used to help students capture the essence of entrepreneurship and the entrepreneurial experience. (pp. 135-7.)</td>
<td>It is (…) extremely difficult, if not impossible, to teach intuition and instinct in a traditional sense. One of the things that I have found to be extremely helpful, however, is to have my entrepreneurship students read Ralph Waldo Emerson's essay on &quot;Self-Reliance&quot;. (…) I have found (that) having my entrepreneurship students read this essay, followed by class discussion, to be immensely helpful in helping students to capture the essence of the importance and instinct and intuition to entrepreneurship and the entrepreneur. (pp. 138-9)</td>
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<td>Sexton and Bowman-Upton, JSBM 1987</td>
<td>(The authors) have structured a course and a delivery mechanism to appeal to the unique personality characteristics of the entrepreneurship student. The idea of a course structure which reflects the student's psychological needs is not new. (…) Primary and secondary school teachers have long known that certain teaching behaviors are related to student achievement and learning gains. (…) The course structure reported here represents a</td>
<td>This model requires the instructor to develop objectives based on the characteristics of the students before instruction. Before and during instruction, the teacher must apply both learning process concepts and motivational ones in accordance with the teaching methods chosen. (p. 36)</td>
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<td>The course was actually structured (or unstructured) as a typical doctoral level course. Assignments were given with deadlines, but no</td>
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<tr>
<td>Teaching Model</td>
<td>Ontological level</td>
<td>Operational level</td>
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<td>significant departure from traditional classroom patterns, based on the authors’ belief that a new approach would result in a more effective entrepreneurship course. (pp. 35-6)</td>
<td>additional guidance were provided. Class sessions were not lectures, but seminar-type discussions. Each written assignment was critiqued, graded, and suggestions were offered for improvement. A suggested reading list was provided, but no specific assignments were made. In addition, students were assigned market research projects for products that had not been introduced into the marketplace. Consequently, data was not readily available to them. When it was available, it could not be found in the customary journal sources. (p. 38)</td>
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| Demand-competence model Mitchell & Chesteen, S&G 1995 | The focus of this article is an instructional pedagogy that improves students’ entrepreneurial expertise by applying the recommendations of information theorists regarding script acquisition. (p. 288) The term expert script refers to highly developed, sequentially ordered knowledge in a specific field. An expert script is acquired through extensive real-world experience, and it dramatically improves the information processing capability of an individual. (...) Thus, we might speculate that if an individual is exposed to “a little bit of appropriate situational context,” then that individual’s ability to recognize the context as applicable to his or her situation may reveal his or her level of expertise. In our study, these little bits of situational context, drawn from the extensive entrepreneurship descriptive literature, are defined as script cues. In a sense, these script cues serve as stimuli to elicit responses that signal the expertise of an individual. (pp.289-90) | To enhance expertise, Glaser (1984) suggests an educational process that uses individual contact with expert scripts as a primary instructional technique. The process follows a course of interrogation, instantiation, and falsification in which script rules and generalizations are tested and revised in ways that facilitate learning and thinking. (p. 290) The courses encompassed four basic components of instruction that were integrated to form the basis of the experiential learning context. These components were knowing, thinking, doing, and participating, all of which are active rather than passive in nature. As noted in the description that follows, the application of the script-based instructional strategy was conducted in the participating component of each course. (...) In the treatment group’s experiential activity, novices compared their entrepreneurial scripts to those of experts, as suggested by expert theory. The group’s participatory portion of this activity was an experiential project in which the novices were divided into groups and assigned an “entrepreneur-mentor” – someone who had successfully created a new enterprise (...). Each group conducted an in-depth interview that covered at least the questions shown in Table 1. (pp. 291-2) |

| Competence model Bird, IJEE 2002 | Individual-level behavioral competency is one of the goals of entrepreneurship education in universities and colleges as well as other training venues. This paper focuses attention on the competencies of entrepreneurs to start and succeed in a new venture and being by presenting several models of competency. The paper then advocates an experiential and self-directed approach to competency development for adults. Self-direction involves student centrality in the design and execution of a learning project and asks faculty to assume more of a facilitator role. Self-directed learners have high degrees of autonomy self-management, independence, and control over the course of learning. (abstract) | A particular method of self-direction, the use of self-assessment and a learning contract, are proposed. The paper concludes with a step-by-step approach for use of this methodology. An example of an entrepreneurial competency contract is provided. (abstract) |
The article by Maranville (1993) provides a good illustration of the characteristics associated with the supply model. At the ontological level, the author clearly builds on the premise that the content of entrepreneurship courses and programs shall be defined by scholarly research on the phenomenon – a conception at the root of the supply model. There is a phenomenon ‘out there’ that is called entrepreneurship, and that shall be understood from a theoretical standpoint. In this light, the objectives pursued are to master knowledge that is theoretically defined, and that is clearly de-contextualized, in the sense that it is intently generalizable to a wide array of situations. Here again, this kind of emphasis is directly associated with the supply model. Interestingly, we observe that throughout his text, Maranville provides few specific details on either the conceptual roots of his positions, or on the practical implementations of these positions. These dimensions remain generally implicit. Indeed, the pedagogical means are assumed to proceed directly from the objectives he puts forth.

The article by Benson (1992) provides a good illustration of the characteristics associated with the first hybrid model, that model which contains elements from both the supply and demand model. The fundamental premise of the text is found in the author’s dissatisfaction with the traditional business curriculum, which in the author’s point of view does not address the professional needs of business students. At the ontological level, this conception of education as starting from the students’ needs is closer to the demand model than to the supply model. Yet, the author’s arguments proceed from a view where “the essence of entrepreneurship and the entrepreneurial experience” is defined by the educator himself or herself. What the author proposes is to use a different content matter than what is traditionally used to teach entrepreneurship. With this in mind, however, the task of the educator remains to impart the “essence of entrepreneurship” (as defined by the author/educator) to his or her students – even as the author conceive his job as “to be a facilitator, a coach, and a cheerleader…” At the operational level, this implies a combination of pedagogical methods associated with the supply model (e.g., reading), as well as with the demand model (e.g. discussion). Likewise, the author relies on a form of evaluation that draws from both models, in that it is open to self-reflection at the same time as it is summative in spirit. Having said that, one can observe that the distinctions between the hybrid “pure” models are essentially distinctions of degree and nuances, rather than black and white contrasts.

The article by Sexton & Bowman-Upton (1987) provides a good illustration of the characteristics associated with the demand model. The fundamental premise of the authors’ course and pedagogy is “to appeal to the unique personality characteristics of the entrepreneurship student” – a premise that is directly associated with the subjectivist paradigm found at the root of the demand model. Furthermore, both the content to be taught and the pedagogical approach are primarily defined by students’ needs with respect to the practice of entrepreneurship. At the operational level, objectives are defined with the students in mind. The course attends to the students’ affective knowledge (particularly with respect to their motivations). The course relies on pedagogical methods that emphasize exploration (self-introspection, self-direction) and activities of communication. Evaluation includes a large formative component. All these operational characteristics are associated with the demand model.

The article by Mitchell & Chesteen (1995) provides a good illustration of the characteristics associated with the second hybrid model, that model which contains characteristics of both the
demand and competence models. At the ontological level, we note that the premise of the authors’ efforts is to improve the entrepreneurial expertise of students, or in other words, to better answer their needs with respect to this particular context. Such a premise is closely associated with the demand model. With this in mind, however, the authors draw heavily from cognitive psychology (e.g., the notion on expertise), but with a developmental bent (i.e., the acquisition of expertise). In this light, their efforts show a tendency towards the competence model. In the same vein, the authors’ introduction seems to support both ideas that teaching is making the acquisition of expertise possible, but also, that teaching is to organize students’ activities to acquire this expertise.

While some of these ideas are more implicit than explicit, it remains difficult to associate the conceptions underpinning Mitchell & Chesteen’s article with only the demand model: it seems more appropriate to see it as an expression of an hybrid between the demand and competence model. Yet, we refrained from characterizing the text as a pure competence model. In the words of the authors, the script cues are only “little bits of situational knowledge.” Seen in this light, the contextualization is limited. The authors seem to encourage expert knowledge about the practice of entrepreneurship, but do directly foster students’ development of a competence to mobilize what they learnt to address complex entrepreneurial problems. In the same way, the pedagogical means and methods proposed to acquire expertise (e.g., interviews) are closer to the idea of experimentation and knowledge production, but the students are still not the one actively performing entrepreneurial tasks – at least within the particular activity reported by Mitchell and Chesteen in their text. As a result, evaluation is not taking place in authentic context, but is more formative and summative. Considering that some characteristics of this activity emulate the demand model, while others are closer to the competence model, Mitchell and Chesteen’s article is best characterized as illustrative of the second hybrid model, that drawing from both the demand and competence models.

Lastly, the article by Bird (2003) provides a good illustration of the characteristics associated with the competence model. Clearly, the concept of competency is at the heart of her argumentation. More to the point, her arguments for the benefits of a self-directed approach are directly in line with a conception where students are active participants in the co-construction of their knowledge. But it is at the operational level that her text is most closely aligned with the characteristics of the competence model. For instance, she advocates the use of a pedagogical means (i.e., learning contract) directly associated with the competence model literature. Her reliance on self-assessment for evaluation also proceeds from the same general thrust associated with the competence model.

5 Implications and challenges

As we stated in the introduction, the purpose of this chapter was to define an analytical framework grounded in education research, and that was specifically tailored to highlight 1) the conceptions and explications that motivate particular approaches to teaching; 2) the concrete manifestations of these approaches; and 3) the coherence links between conceptions of teaching, and pedagogical choices and actions. Doing so, we characterized five teaching models, and illustrated how each model can find echoes in research that focuses specifically on particular
entrepreneurship education programs, courses, and other pedagogical activities. Pursuing in this vein, we highlight the implications that our analytical framework has for the teaching of entrepreneurship, as well as for scholarly research on entrepreneurship education.

5.1 Implications and challenges for entrepreneurship educators

First, it is important to assert that no model of teaching is inherently superior to others. They all represent particular configurations of conceptions and practices, and the appropriateness of these configurations depends on a range of factors anchored at different levels (e.g., individual, administrative, institutional, cultural, historical, etc.). The central point is that through their influence on students’ approaches to learning, teaching models have an impact on learning outcomes (cf. Kember and Gow, 1994). In this sense, what matters is to define what sort of learning outcome is deemed most desirable in a given situation – taking into account what is achievable in that context.

Second, we have shown that the concept of teaching model touches upon several dimensions of education, some of which can often remain implicit. Seen in this light, the framework proposed above could be used by educators (and trainers) to reflect on their teaching practices, and identify the various positions that they have with respect to different dimensions of education. A practical exercise could thus be to ask ourselves: “where do I stand on each of these dimensions?”

Third, the observation that discrete models of teaching may form coherent configurations suggests the need for educators to be, indeed, coherent in their practices. For instance, Biggs (1999) drew attention to the dangers of combining operational elements that were at odds with one another. This situation is illustrated by a hypothetical example where an educator would emphasize learning objectives associated with the competence model (e.g., students are to develop their critical thinking and competence at mobilizing relevant learning resources to address real-life problems), but test these competences with methods associated with the supply model (e.g., summative evaluation). What Biggs (1999) showed is that when this kind of incoherence are present, students systematically tend to learn less – and that regardless of the learning objectives. Biggs thus suggests that educators are well advised to seek a certain coherence between the objectives they pursue, the knowledge they emphasize, the pedagogical means and methods they use, and the evaluation forms they rely upon.

Fourth, the same idea of coherence appears equally desirable with respect to the link between the ontological and operational dimensions. As Murray and MacDonald (1997) observed, there can be a disjunction between lecturers’ conceptions of teaching, and their actual practice of it. Given the potentially negative impact of such disjunctions on students’ learning, it is posited that educators are well advised to seek a certain coherence between the conceptions they have of education and teaching (i.e., the dimensions that explain and justify their pedagogical choices), and the actual behavior that embody these choices.

In practice, many reasons could explain the above two forms of incoherence. Individually, educators tends to rely predominantly on one particular teaching model. This predisposition is often associated with the personality of the educator, her concept of self, her abilities but also,
her training, her past experiences as an educator, and the particular discipline she was trained in (cf. Neumann, 2001; Singer, 1996). Accordingly, we advance that it is important that educators be not only exposed to different models, but that they be able to experience these models firsthand. This has immediate implications for pedagogical training, and particularly for the new generation of doctoral students that are specifically trained in entrepreneurship. With this respect, however, we remain critical of Brush et al.’s arguments that pedagogical training be limited to “sessions on teaching entrepreneurial cases and entrepreneurial experiential exercises, developing courses and curricula, performing service activities, and advising student activities professional development workshops” (Brush et al., 2003: 324; a position criticized in Béchard and Grégoire, 2005).

In line with the above concerns, it appears important that doctoral students in entrepreneurship be offered the possibility to experiment with different approaches within their doctoral training. But in the same breadth, we do not think that such concerns for experimenting with different teaching models is relevant solely for doctoral students: it also has implications for adjunct instructors and established faculty who may well benefit from renewing their own approach to teaching entrepreneurship. Again, the framework developed here could help educators reflect upon the degree of consistency between the operational dimensions of their teaching, as well as between their conceptions and practices of teaching.

In spite of these individual considerations, however, it remains that reliance on a teaching model is not a purely individual choice: it is also tributary to the particular contexts of courses, programs, disciplines, departments, institutions, educational systems, and even cultural or national tradition(s). Accordingly, some inconsistencies may subsist because an educator may find herself in a context where her particular tendencies and sensibilities are at odds with the norms and practices in place. Given these disciplinary and institutional pressures, calls for seeking a maximum of coherence may reach practical limits. Having said that, the good news is that teaching models are not necessarily rigid. Indeed, we have seen that hybrid models could provide for intermediate positions between adjacent models, which in turn could help negotiate the tensions between individual sensibilities and contextual pressures.

5.2 Implications and challenges for entrepreneurship education scholars

In terms of entrepreneurship education research, an important contribution of the framework developed and illustrated here is to expand the theoretical bases upon which to document the continuing evolution of entrepreneurship courses and programs – and particularly in institutions of higher education. As we noted in the introduction, past inventories of entrepreneurship education tended to occult the link between the ontological dimensions that motivate particular pedagogical choices, and the operational manifestations of these choices. Seen in this light, the framework developed here opens up the possibility of exploring a number of research questions relevant for the development and practice of entrepreneurship education, such as:
Are the five teaching models listed above represented in entrepreneurship education practices? Are there models that are more prevalent than others?

Are the five teaching models listed above equally represented in different contexts? Are there models that are more prevalent than others in particular courses, programs, departments, institutions, educational systems, national traditions or cultures?

What has been the historical evolution of these models? Are there models that are more prevalent at particular stages in the development of an infrastructure for entrepreneurship education?

Do the five teaching models listed above result in different learning outcomes (achievement)? Are particular models more effective with particular types of students? Are particular models more effective in particular courses, programs, departments, institutions, educational systems, national traditions or cultures? Are particular models more effective at particular stages in the development of an infrastructure for entrepreneurship education?

Now if these empirical questions are relevant for the development of entrepreneurship education as a whole, these questions also proceed from larger theoretical issues that are already well articulated in the education literature. But as was observed elsewhere (cf. Béchard and Grégoire, 2005; Gorman et al., 1997), the educational underpinnings that anchor entrepreneurship education have often been left tacit, resulting in research that is not always as theoretically articulated as it could be. With this respect, we encourage scholars to consider the theoretical anchors that, in education sciences or elsewhere, could motivate empirical research on the above questions. For instance:

Do we have theoretically-grounded reasons to expect that different teaching models would be more or less prevalent in entrepreneurship education?

Do we have theoretically-grounded reasons to expect that different teaching models would be more or less prevalent in different courses, programs, departments, institutions, educational systems, national traditions or cultures?

Do we have theoretically-grounded reasons to expect that different teaching models would be more or less prevalent at different stages in the development of an infrastructure for entrepreneurship education?

Do we have theoretically-grounded reasons to expect that different teaching models result in different outcomes, and that depending on the type of students, the courses, programs, departments, institutions, educational systems, national traditions or cultural contexts in which these models are relied upon, or the stage of development of the institutional infrastructure for entrepreneurship education?
Ultimately, all these questions proceed from a general interrogation of the factors – individual and contextual – that influence the reliance of particular teaching models, and their effectiveness in different conditions. Interestingly, there is a long tradition of research in education that has investigated these issues. Among the relevant sources, the works cited in this text could provide for a general introduction to these issues.

6 Conclusion

Writing in 1994 on the successes and failures of experimentation taking place in entrepreneurship education, Gartner and Vesper commented that “when undertaking a pedagogical experiment, there seems to be a myriad of interactions among all the different facets of an entrepreneurship course, so that changes made in one aspect of a course influence, and are influenced by, other aspects (1994: 186).” Among such interacting elements, they noted the influence of instructor’s assumptions about students’ prior mastery of business knowledge and skills, the variability of students’ prior knowledge and skills, misconceptions about what distinguishes entrepreneurship education from management education, the difficulty of addressing the equivocality inherent in entrepreneurship, the changing roles and demands of using guest speakers, and the apparent inadequacy of some pedagogical methods to address the needs of students. But while Gartner and Vesper noted a “healthy diversity of new ideas and efforts” in entrepreneurship education (1994: abstract),” their text remained inconclusive as to the driving forces influencing the success (or failure) of pedagogical experimentation.

We believe that the above framework provides a rich avenue to address this issue in a constructive and effective manner. If entrepreneurship education is to go beyond the “standard ingredients” of business plan competitions, guest speakers, and case studies, it becomes important for scholars and teachers alike to consider the coherent links that unite the conceptions and explications that motivate particular approaches to teaching, with the concrete manifestations of these approaches. In the end, it is our hope that our discussion of the supply, supply-demand, demand, demand-competence, and competence models of teaching will contribute to these efforts.
References


