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Simulating Entrepreneurial Learning: Assessing the Utility of Experiential Learning Designs

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Abstract

Current research exploring entrepreneurial learning is explored in this paper to identify the key factors that are considered to be important. It looks at how these factors can be simulated in a student learning environment and highlights the role of emotional exposure, action-orientation and discontinuity. These features of learning are then mapped against those required to make experiential learning effective. An argument is made for the role of experiential learning when seeking to simulate contexts similar to those in which entrepreneurs learn. In the research that is carried out a conceptual framework is introduced that highlights a course design based on the factors identified. In the data analysis formal course assessments are reviewed and narrative coding based on sixty-four written student reflections is evaluated. The paper finds that it is possible to simulate certain aspects of entrepreneurial learning, such as emotional exposure, but not others. It also shows a range of learning benefits linked to experiential learning in this context. In conclusion the paper explains why entrepreneurship education can play an important role in encouraging management learning.

Introduction

The purpose of the article is to explore student reflections on new venture planning courses exploring how or whether they promote entrepreneurial learning. Such courses seek to simulate learning in entrepreneurship by engaging in experiential learning and reflective practice. Effective venture planning programmes build on the observation that people learn from experience, especially where they are involved in solving problems (Burgoyne and Hodgson, 1983; Davies and Easterby-Smith, 1984), and as such, they can be described as evolving from the 'experiential liberalist' tradition of management education (Holman, 2000). A venture planning course can be viewed as experiential because it asks students to develop a business idea and work on practical plans to turn the idea into reality, the outcome of which is the development of a comprehensive business plan.

The paper will explain the nature of entrepreneurial learning showing how it can be viewed as a particular form of management learning (Gibb, 1997; Cope, 2003). Then new

venture planning as a form of entrepreneurship education will be introduced and explained. During this part of the paper the author will make clear how simulated approaches to problem-based learning can be used to create a learning environment that replicates important aspects of entrepreneurial learning. This paper will introduce the 'experiential liberalist' view of management education explaining how new venture planning fits within the philosophical basis of this approach (Holman, 2000). The author will then introduce the research study conducted exploring sixty-four student reflections on fifteen group venture planning projects. The paper will evaluate how effective this form of educational approach is for simulating entrepreneurial learning (McLoughlin and Thorpe, 1993).

Entrepreneurial learning

Seeking to understand how entrepreneurs learn has become a feature of academic study in entrepreneurship and major contributions have been made to discussion by a range of authors (Gibb, 1997; Deakins and Freel, 1998; Cope and Watts, 2000; Cope, 2003). Other authors in management learning have also begun to explore organisational features of learning in small firms (Penn et al., 1998; Anderson and Skinner, 1999). While these approaches introduce a welcome new paradigm in entrepreneurship by applying philosophies based on human action and reflection they can also be criticised for reproducing errors that have occurred in previous paradigms. First, many of these studies lack an explicit assumption about what is considered 'entrepreneurial' while making implicit assumptions. Secondly, the term 'entrepreneurial' has been used interchangeably with small business owner with little debate about the consequences of doing so. Finally, approaches in the management learning domain have tended to treat small firms in a homogenous fashion. Asking the question; can we find what makes organisational learning special in small firms?

Despite these criticisms the growth of study in this area is to be commended and provides interesting new dimensions to the subject. Within the context of this paper the issues are addressed by defining 'entrepreneurial learning' as: *"learning that occurs during the venture creation process".* This is a relatively narrow definition which is 'fit for purpose' because this paper seeks to understand how simulations of venture planning aid student

learning and to explore how this learning may be linked to how 'entrepreneurs' learn. The definition while depending heavily on the US assumption that 'entrepreneurship' is 'venture creation' does avoid some of the criticisms highlighted.

Theoretical and empirical study to date has so far illustrated a number of important features about 'entrepreneurial' learning, which can assist our understanding about how one might simulated such learning in a student context. (1) The important role of financial and emotional exposure (Cope, 2003). (2) That 'entrepreneurs' are action-orientated and learning is experientially based (Rae and Carswell, 2000). (3) Entrepreneurs learn primarily through 'learning by doing' and reflection (Deakins and Freel, 1998; Cope and Watts, 2000). (4) That episodes, crises and events are important mechanisms for creating seminal periods of entrepreneurial learning (Cope, 2003). (5) Learning activities of entrepreneurs come from reactive and proactive approaches to opportunities and problems (Young and Sexton, 1997). (6) That routine and habitual learning during non-linear events also play a role (Costello, 1996). The next part of the paper explores how such entrepreneurial learning might be simulated.

Simulating Entrepreneurial Learning

Simulating contexts for student learning that links to how entrepreneurs learn is inherently difficult and simulations as methods to encourage management learning are under-researched (Romme, 2003). It requires the creation of an uncertain and ambiguous context which forces students to step outside taken-for-granted assumptions about the educational process. In adding ambiguity and uncertainty to an educational process one replicates the circumstances in which an 'entrepreneur' founds a business. This is because starting a venture is a profoundly uncertain endeavour. Adding ambiguity into course design heightens emotional exposure because students must work on entirely unfamiliar activities, for which they have little previous experience, in conditions where group dynamics are essential but uncontrollable (Mumford, 1996). Careful educational and tutorial designs are required to counter this emotional exposure. One factor of entrepreneurial learning presented that cannot easily be simulated in a student experience is the financial exposure an entrepreneur faces

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when starting a business as this can only be experienced directly. The nearest approximation one can achieve is to link student academic performance to 'real' project performance.

A great deal of the literature highlights the role of action-orientation and experientially based learning (Rae and Carswell, 2000), which is also typical during the venture creation process. Creating a simulated context for student learning requires some form of project-based activity that is 'hands-on', experiential and requiring proactive behaviour (Young and Sexton, 1997; Keegan and Turner, 2001). A student simulation would need to enable a context whereby students 'do' something related to entrepreneurship and in 'doing' learn experientially. As will be explained later, however, in the experiential liberalist view of management education applied here it is not simply good enough to do, one must also reflect on action, and change one's future actions (Holman, 2000).

Creating a student learning environment that involves discontinuities, events or crises as explained by many theories in 'entrepreneurial' learning is probably one of the more problematic elements of a simulation (Cope, 2003). Discontinuities can be created within programmes by asking students to meet particular objectives or challenges, which create pressure in terms of timescale and which can be challenged by a learning coach, mentor or tutor (Mumford, 1996; Marsick and O'Neil, 1999;). In such environments, routine learning can occur by applying established knowledge to the problem at hand, ensuring this element is included (Costello, 1996), while creating 'critical' moments whereby this taken-for-granted knowledge is challenged, thrown-out or re-interpreted. These are not 'real' discontinuities in the sense explained by Cope (2003), as students do not have financial exposure, but such approaches do replicate the uncertainty and ambiguity associated with discontinuity. Table 1 draws together this analysis of the research into entrepreneurial learning and shows the key features a simulation would require if it sought to promote entrepreneurial learning. The next part of the paper explains how such a simulation can be described as experiential learning.

[Insert Table 1]

New Venture Planning as Experiential Learning

Entrepreneurship education has typically come in a number of forms 'about', 'for' and 'practice in' entrepreneurship. The 'about' form, can be likened to Holman's (2000) 'academic

liberalism' category of management education. Courses tend to focus on explaining 'entrepreneurship' and 'small business management' using traditional techniques. Knowledge is assumed to be objective and theoretical and the pedagogical aim is to acquire this knowledge using lectures, seminars and case studies. The 'for' entrepreneurship type can be likened to Holman's 'experiential vocationalism' because approaches focus on the acquisition of skills through learning by doing. These approaches typically lead to vocational based methods including competence testing, portfolios of practice and the acquisition of technical skills, pursuing direct vocational aims. The 'practice in' form can be associated with Holman's (2000) 'experiential liberalism'. In this form knowledge is assumed to be more subjective and experiential but remains linked to theoretical knowledge. Experiential processes such as reflection, conceptualisation and action tend to be used via teaching methods, which include for example, learning contracts, group work, action learning and self-development. The aim is to link experiential and theoretical knowledge to interpersonal and technical skills[1].

New venture planning courses can be found within all of the types outlined but it is with the 'practice in' form within 'experiential liberalism' with which this paper is concerned. New venture planning in this form, seeks to simulate 'entrepreneurial learning' by creating an environment where such learning can take place. In doing so new venture planning tries to replicate behaviour that is required in the difficult context of venture creation. Courses are designed to be rooted in 'real' experience within a context, which aids learning through action, reflection and re-conceptualisation. In this sense learning is understood to be a process of reflection on action while examining messy complex problems (Schon, 1983). Courses designed in this fashion ask students in groups to identify a new business idea, to research and examine the idea in some detail undertaking marketing research, exploring operations plans, writing financial forecasts and simulating investment decisions via engagement with external 'real' investors. In some cases student teams may go on to found the business. An appropriate simulation in this model of management education requires a problem-based approach, utilising an experiential learning design, which includes 'critical' moments, action and reflection on action and typically uses group processes (McLoughlin and Thorpe, 1993)[2].

Effective new venture planning courses can be linked closely to experiential learning. Experiential learning often involves project-based learning that is closely linked to reflective practices (DeFillippi, 2001). *Project-based learning* is defined as: *"…the theory and practice of utilizing real-world work assignments on time-limited projects to achieve mandated performance objectives and to facilitate individual and collective learning" DeFillippi, 2001, p. 5.* Learning through projects is associated with experiential learning because it assumes that people learn more effectively when working on problems (Burgoyne and Hodgson, 1983; Davies and Easterby-Smith, 1984). There are a number of features of this form of learning. (1) Opportunities are created for students to learn from mistakes and grow personally in choices and skills (McLoughlin and Thorpe, 1993; Mumford, 1994). (2) Project-based approaches are used to encourage learning (Raelin, 1997). (3) Reflection on situations must occur to reassess action (Burgoyne and Hodgson, 1983; Daudelin, 1996) through questioning insights (Smith, 1997). (4) Learning coaches are required to encourage learning from experience (Pedler, 1996). (5) The post-hoc examination of behaviour and implications for personal growth must occur to reframe future behaviour (Marsick and O'Neil, 1999). (6) Group dynamics provide important mechanisms for learning (McLoughlin and Thorpe, 1993). (7) Learning approaches may include: learning coaches, reflection, critical reflection, teamwork, 'real' projects, a focus on team processes, programmed knowledge and just in time learning (Marsick and O'Neil, 1999).

To be considered as a form of experiential learning new venture planning would need to include many, if not all, of these elements. In Table 2 the author maps these requirements against those needed to simulate entrepreneurial learning. The combination of these elements shows how new venture planning can be designed to encourage entrepreneurial learning.

[Insert Table 2]

In the following part of the paper a new venture planning course using these principles will be introduced and reflective accounts from sixty-four students undergoing the course in 2003 will be explored.

The Research

The purpose of the field research was to explore a number of themes identified in the theoretical section of the paper. First, to explore whether it is possible to create a simulated context for entrepreneurial learning (as outlined in Table 1) and second, to appreciate the mechanisms that work when seeking to create this context (as outlined in Table 2).

The study focuses on the new venture planning course at Lancaster University Management School and on the student cohort of 2003. 73 students completed the course, working in fifteen teams. The data used in the study analyses written student reflections of between 1500-2500 words, using narrative analysis and coding within the NVIVO qualitative analysis software. The total data set is 671,000 characters. The use of student reflections as a justifiable data source in management learning has been established and this study builds on this approach (Case and Selvester, 2002).

The new venture planning course at Lancaster has been running since the early 1980s. The design of the course has depended heavily on the tradition of management learning at Lancaster. The following features of the course illustrate that it fits the criteria established in Tables 1 and 2 that make it relevant for the purposes of this study. The course requires students to work in teams to develop a business idea and to turn the idea into a fully developed business proposition which is presented to local financial organisations. The task presents a real-world problem, a need to develop an idea and to develop it sufficiently to attract the attention of real investors. It is consequently complex requiring multi-disciplined teams and messy but requiring the application of prior knowledge in varied management disciplines.

The activity is also time-limited being carried out over a ten week period. As students have not typically started a business before, or planned one, uncertainty and ambiguity are embedded in the process. All prior models of education the students are familiar with are ignored, there are no essays, no exams and it is usually the first time a student has been assessed by the coursework method applied[3]. The business planning exercise is structured providing weekly problem-based tasks for teams to carry out and these are presented weekly to a tutor (learning coach) who is usually a local business person. These tutors do intervene

and regularly challenge prior academic knowledge and experience by asking penetrating questions based on their own business experience. The exercise requires students to apply knowledge from other management disciplines[4] to the problem of planning their venture. Time pressures are created by the intensity of the course design[5] and weekly tasks need to be carried out. In this sense the new venture planning course meets all of the objectives required to simulate an entrepreneurial learning context and meets the criteria identified that establishes it as a form of experiential learning. Figure 1 highlights a model of new venture planning.

[Insert Figure 1]

In the model presented a number of concepts are used that derive from experiential learning theory (Kolb, 1984) and from action learning (Revans, 1982). In the context of this paper they are used as descriptions of the learning activity undertaken within the course. Kolb's (1984) model, for example, provides four of the six concepts used. These include two modes of grasping experience, which are concrete experience (CE) and abstract conceptualisation (AC), and two forms of transforming experience, which are reflective observation (RO) and active experimentation (AE). The final two concepts come from Revans' (1982) approach to action learning and they include questioning insight (QI) and programmed knowledge (PK).

In the context of this paper concrete experience is operationalised as the 'actual' experience of 'doing' something. For example, in venture planning students conduct market research on their business concept, which informs their decisions about the business operation and financial plan, they consequently learn about market research by doing it. Abstract conceptualisation refers in this paper to grasping experience that uses knowledge which has been abstracted from its context via theory or concepts. In the model this is represented by lectures providing conceptual input into, for example, the value and role of market research in business planning.

In the first transforming experience reflective observation, the model represents student developmental points where they are forced through action and questioning insight to reflect and transform their understanding. Active experimentation is used to explain

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developmental points where students are forced into new experiences from which they generate concrete experience. For example, while many students have knowledge of financial forecasting via abstract conceptualisation, a venture planning course is often the first time such knowledge is required to be put into practice being embedded in prior decisions about the business concept and having a fundamental impact on the overall level of convincingness of the business proposition.

The concept of questioning insight, which is used extensively in action learning (Smith, 1997), is designed to encourage learners to discover how to pose fresh questions in conditions of ignorance or uncertainty (Revans, 1982). It is operationalised here via the external contribution of business owners who have concrete experience 'doing' or assessing venture plans and via the assessment mechanisms employed. In the model outlined these external contributors continually challenge the basis of the students' taken for granted assumptions about the proposition, leading them into reflective observation and transformative experience. The final concept used is programmed knowledge (Smith, 1997). This is operationalised here as the individual's taken for granted knowledge, either that based on concrete experience or abstract conceptualisation. In the case of new venture planning students typically arrive with a volume of existing abstract conceptualisation from other management disciplines, which is represented as programmed knowledge and external contributors have taken for granted knowledge based on previous experience. Exploring the model presented in Figure 1 it is possible to observe a number of learning loops within the course design, which incorporate these different forms of learning. These are not all typical of Kolb's learning cycle (Mainemelis et al., 2002) or Burgoyne's social learning cycle (Burgoyne, 1995)[6] but they do represent how the course design engages interaction between different forms of learning developing a balanced approach. These loops include idea generation and initial market assessment; market research; operations planning; financial forecasting; and, venture plan presentation and final document. Given these learning loops it is not surprising that the course is considered challenging by students and this is highlighted in the next part of the paper where the results from the data analysis are explained.

Empirical Results

Of the 73 students on the course 64 student reflections were analysed (87.7%). The data represents 15 teams working through the venture planning programme. The businesses researched included a range of business concepts with varying financial requirements. The business concepts included for example: child care; data storage; novelty products; home delivery services; physiotherapy centres; and, leisure complexes. Male to female balance of the student group in 2003 was 71% (male) to 29% (female). The students' who undertook the course were doing majors in both functional (12) and general management (61). The overall academic performance of the student cohort is typical of courses that have a group work element. The minimum group mark was 57%, the maximum group mark was 74% and the mean was 64.5% with a standard deviation of 4.8%. Individual marks mirror roughly the same distribution.

[Insert Table 3]

The students evaluating the course over a 3 year period have consistently ranked it above the school average on a number of dimensions as indicated in Table 3. Overall the course was ranked above the average (0.10), as was the course content (0.17), the tutorials and workshops (0.31), the level of understanding (0.59) and the learning environment (0.28). Factors ranked below the average included lectures (-0.51) and the helpfulness of staff (-0.14). Of those factors that can be consider significant (greater than the standard deviation) the level of understanding was identified as a positive, while the value of the lectures was highlighted as a negative. Interpreting formal evaluations is inherently difficult but two points can be made. First, the evaluation of lectures is relatively misleading because, while including basic introductory lectures, the course is principally problem-based rather than being lecture-based and, therefore, the assessment of this factor is less relevant than it might be normally. Secondly, key factors linked to 'learning' such as, level of understanding and learning environment are consistently ranked more highly than the average in the formal assessment. This finding highlights the question that influenced the development of this research, which is; why is an experiential design leading to a significantly higher level of understanding amongst the students when compared to an average course? In the next section the paper will begin to

explore the detailed empirical data from the student reflections, seeking to answer this question, and analysing the extent to which an experiential course design can promote 'entrepreneurial' learning.

Overview of the Narrative Coding

[Insert Table 4]

The data in Table 4 illustrate that emotional exposure (35.84%) created principally via group dynamics (25.79%) plays a major role in creating an environment within which effective student learning can take place in new venture planning. It is interesting to note that other aspects of the design seeking to create emotional exposure had a relatively low impact individually but a reasonably large one when combined (10.04%). Looking at this data it is also possible to argue that action-orientation (19.79%) has been successfully created in the course design. The role of experiential learning through project-based design is crucial when enabling action-orientated behaviour to happen (12.61%), while reflective practice also plays an important role (4.33%) encouraging learning to be consolidated. The data do illustrate the difficulty of creating discontinuities in a student context (9.81%), which are thought to be essential in entrepreneurial learning (Cope, 2003). It is clear from the data that only the pressure created by difficult timescales (4.57%) played a major role, while clear milestones (1.91%), external tutors (1.61%) and 'real' crises (1.71%) did not appear to have a significant impact on student learning. In the next part of the paper the narrative data is explored in more depth and examples are provided of the data that has been coded.

Creating and Managing Emotional Exposure

Creating uncertainty and ambiguity in the educational design was highlighted in Table 2 as an essential ingredient when seeking to simulate an entrepreneurial context. Examining the student reflections highlights a number of points in the course design where such ambiguity played a role. The complexity of coming up with a new business idea and gaining agreement within a group caused uncertainty to arise from the beginning, as David states: *"These ideas were researched over the Christmas period, at this point the group split into two,*

to research the ideas. When the team returned the situation was fairly problematic, the group could not decide which idea was best". Being able to agree on the initial idea proved problematic for a number of groups and was often linked to group dynamics. Identifying ideas also created ambiguity because of the fluidity of group membership, which was based on negotiation and choice. For example, in this cohort two teams ended up with the same idea creating competition even before the establishment of a 'real' venture, as Peter explains: *"There was a complication; we decided that we would use one of the hundreds of business ideas generated with the first group when we formed the second. Unfortunately the original group decided to use the same idea".* This role of idea generation in terms of simulating entrepreneurial learning is further highlighted by James when he points out: "*The failure of the first idea… was a significant learning point in the process, and it proved that doing more groundwork… would have been beneficial".* The failure, or crises caused, by the abandonment of an initial idea and the need to sacrifice time shows how uncertainty carefully embedded in experiential course design can lead to learning opportunities. Creating uncertainty in the potential viability of certain propositions, as well as, encouraging a need to act depending on circumstances, effectively mirrors how entrepreneurs learn when they learn by doing (Deakins and Freel, 1998). Emotional exposure of this nature is best highlighted by the following point from Tim: *"I didn't want to hand the project in, to let everyone read it, say it wouldn't make any money, which is true, but its one thing knowing this, another to be told it."* This point highlights that in the process of action and adaptation to a particular problem the student develops 'ownership' over the problem (Reynolds, 1997). Ownership over the problem is directly linked to the creation of emotional exposure when (external) questioning insight is applied because the student is forced to reflect on, or reassess something, for which they have a great deal of belief in.

Further uncertainty and ambiguity was created by an unfamiliar course design but this was viewed in relatively positive terms throughout the reflections and is supported by the formal course assessment (see Table 3). For example, Emma argues: *"This could have been because we were free to explore our own ideas with fewer boundaries than in other academic circumstances and I have learned a lot from being able to work in such a relatively*

unrestrictive manner". The nature of the course design and its relatively unstructured approach to learning in the narrative data can explain why the students felt the learning environment was beneficial, as highlighted by the formal course assessment (4.01). While having this learning environment was considered beneficial it did have disadvantages, as highlighted by Richard when he argues: *"... this lack of regulation did create problems when some members wanted to work and others did not".* Uncertainty when created consequently requires students to take responsibility for their own learning and can cause problems in terms of group dynamics. These problems themselves were viewed as part of the learning process by many students such as Kirsty, who explains the issue: *"Something as dynamic as a business plan could not be taught in lectures as no two business plans are the same and there are so many unexpected occurrences or problems that you learn from through making decisions."* Interestingly, it can be highlighted from the data that as ambiguity forces decision-making on the student teams they must take action and are 'forced' into a process whereby they learn by doing. Ambiguity and uncertainty can be observed in this data, to be a function of and prerequisite for, action orientated behaviour. The level of uncertainty does change as the business plan is researched and the student teams increasingly reduce the level of uncertainty in the proposition. What is interesting about this process is that it does simulate the start-up process particularly where it begins to replace some uncertainty and risk, associated with the early stage of 'not knowing', with more detailed information (Cope, 2003). This issue was something highlighted by Margaret when she explains: *"Our business was a drop in children sessional nursery. But due to the drop in nature it was hard to forecast the children that would use the service. There were no other companies like this that we could find, so the obvious question that we kept asking and was asked by others was, "if its so good why has no-one done it before", our initial answer was "we don't know! But in the end it became clearer, that the sales are very hard to forecast so it is risky, it is expensive to set up and rent in city centre locations is very costly, there are not huge amounts of money to be made to justify the risk".* One can conclude that the role of uncertainty in course design plays a crucial role in (1) simulating the early stages of the start-up process when the idea is uncertain and quick adaptation to circumstances is needed (Rae and Carswell, 2000). (2)

Recognising the need to make decisions and move on (Mumford, 1994). (3) Helping students to be acquainted with the dynamic nature of entrepreneurial contexts (Young and Sexton, 1997).

As well as the uncertainty built into the course it is interesting to explore how the students viewed an experiential design. Anthony for example states: *"This course gave me the opportunity to bring together a broad array of skills and ultimately enhance those skills by allowing me to apply them in a working environment",* highlighting the role of the application of theory in practice as a valuable contribution of this form of education (Burgoyne and Hodgson, 1983). This is a view that was highlighted extensively within the reflections. Why the educational design was viewed positively is more difficult to explain but certain aspects can be highlighted. For example, "*The multi-faceted approach to learning facilitated by the course has emphasised the interaction of various business functions, such as marketing, account and finance and management science that occurs in the everyday running of a business"*, which emphasises the role of problem-based learning in bringing together disparate knowledge (Raelin, 1997). While Philip highlights the role of the course in terms of challenging students to take responsibility for learning (McLoughlin and Thorpe, 1993): "*Whilst the theories presented to us were useful learning points and helpful as basic guidelines, in reality each situation is different and the theories don't necessarily cover what is required. The academic concepts received could be compared to stepping stones going part way across a lake with a need to swim the rest of the way".* Not all of the views were positive, one major issue with a dynamic learning design of this nature was that it made organisation and co-ordination difficult to handle when students must also manage other courses, Jason highlights the point: "*The dynamic framework in which this course is set meant at times it was hard to coordinate a group*". Having a new educational design can also provide difficulties for some students in terms of stepping out of the expected routines of behaviour, as John highlights: *"This did identify Jim's main problem and mine which was the inability at first to distinguish between an academic and a more hands on course".*

The key points about an experiential design as a way of creating emotional exposure can be highlighted. (1) It does allow for greater linkage between management theory and

practice by creating opportunities for students to learn from mistakes (McLoughlin and Thorpe, 1993). (2) Experiential learning of the venture planning type ensured that disparate functional management expertise became inter-related and applied holistically. (3) Making sure that students take responsibility for their own learning and (4) forcing them to step outside of their expectations about how to learn (Keegan and Turner, 2001).

The final aspect of experiential designs that can create emotional exposure, as identified in entrepreneurial learning, is the involvement of groups. As identified by the overview of the data there is significant evidence in this data (25.79% of the entire data set) about the role of group dynamics and further analysis will be carried out in subsequent research. An initial overview of the data, however, can highlight some key issues relevant to this paper. The first, which is suitably highlighted by Alan, is the importance of group dynamics in terms of its contribution to learning: "…*the actual process of working in a group, which shapes all of the learning aspects of the project. The fact that the plan is made in a group environment means that interaction and organisation are important and therefore the process mimics a business like environment. Of course, I have been in work groups before, but none have involved the level of commitment that was required for this course."* The point shows that by raising the level of emotional exposure the group becomes akin to Revans' (1971) 'fellows in adversity' because they are working upon a real venture, on project which is intense, which cannot be easily separated into discrete chunks and that is linked closely to their personal performance on a degree.

The role of integration between parts of the plan is highlighted as an issue by a large number of students as illustrated by George: *"In this course we were all required to know at all times exactly what was happening in the market research and in the financial report as all the decisions made would have a huge bearing on the rest of the parts of the business plan. In this way our group most resembled an actual business".* The importance of being able to see the business plan as a whole, rather than separating it into parts, was explained by many students to be one of the key reasons that the group dynamics in this course differed from others. This need to be continually involved in each section and understand how sections relate to each other led to an intense group process. The value of this intense group

experience in terms of learning was highlighted by Michelle's comments: *"I have worked in groups before, but never on a project of this scale… However I found that being submerged in such small groups was the most effective way of learning how to interact in such circumstances and I have also learnt a variety of new skills, and academic insights; from members of the group…"* A further point raised in this data, as highlighted by Michelle, is that problem-based design required submersion in the process, which also led to greater intensity of learning than would normally be the case.

The approach to group dynamics in the course design consequently had a number of implications in relation to the creation of emotional exposure. (1) The use of groups created a dynamic learning environment where peer-to-peer learning could occur (Raelin, 1997). (2) As a consequence of the problem-based nature of the project and the requirement for integration between different parts of the plan; group dynamics were found to be more sophisticated than in other contexts that the students had experienced before. (3) The involvement of groups created an emotional content that replicated important elements of entrepreneurial learning (Cope, 2003) because of the extended period over which the project was carried out and due to the intensity of the process.

Assisting the Development of Action-Orientated Behaviour

As highlighted during earlier parts of the paper simulating entrepreneurial learning requires the development of action-orientated behaviour by encouraging proactive activity, reflection on experience and project-based work. In the previous section of the paper it was identified from the data that the creation of emotional exposure and problem-based course design acted as prerequisites to action-orientated behaviour. It was particularly evident from the narrative coding that project-based design (12.61%) was the principal vehicle through which action-orientated behaviour was created. The evidence supporting this point is rather compelling and there is evidence in the data highlighting the role of proactive behaviour (2.85%) and reflection (4.33%); in terms of enabling learning to occur.

Examining the role of problem-based design from the data a number of key themes can be highlighted. It was evident that hands-on approaches enabled learning through

experience, which required action and consequently learning through action. This is a point highlighted by Rose: *"Developing my own business plan requires a lot more 'hands on' work as opposed to a case study, and so provides a lot more personal experience rather than just learning of how other people have done things."* Action required reflection and adaptation to circumstances. The business planning process should not be considered to be a linear process; it is iterative and requires changes to earlier elements as it progresses, changes which are led by reflective practice. This is a point highlighted by Joe: *"Upon reflection, our actual strategy emerged in an incremental process where we examined current situations and then changed to meet new demands… This incremental process suggests that learning is the transformation of experience into knowledge, skills and attitudes and increases one's capability to take effective action in the future."* The role of a 'real life' problem was, therefore, recognised as being essential to encouraging learning.

An important element of this 'free reign' in terms of responsibility and emotional attachment to the project is made clear by Martin who argues: *"Likewise, being able to choose the business idea inspired commitment and the drive to make it a success. This is considerably different from other group work where generic tasks are assigned to many groups and the sole motivation is to achieve a certain mark. They generally do not allow you to become fully enveloped in the assignment and take on a persona other than a student."* The role of 'persona' and 'emotional attachment' is worth highlighting. It is this closeness to reality that experiential problem-based course design encourages that enables students to step outside their 'reality' as a student and become enveloped into a new 'reality' of somebody starting a business for 'real'. It was also evident from the data that this 'learning by doing' led to unexpected consequences in terms of what the students took away from the course. For example Fiona makes the following point: *"There were countless things we learned as a team that are not specifically taught elsewhere within the management school, examples include things such as regulatory aspects involved in running a business and the processes involved with buying a property for business use. These things are likely to be of practical benefit in the future"*.

The unexpected consequences of learning via problem-based approaches were not only restricted to practical knowledge, as Gordon shows when discussing his personal learning: *"Sometimes there is a concern that you don't retain enough of the knowledge obtained within some of the courses but through my integration of all aspects of my business studies degree scheme I have shown that I have retained enough to adequately draw up a detailed business plan, and so this course has given me renewed confidence in my abilities."* This increase in confidence is also supported by other forms of personal learning, for example being more aware of ones strengths and weaknesses.

Finally, a problem-based design forced students to address aspects of the plan in a practical way even where they lacked confidence or skills helping them to address specific weaknesses, this is a view highlighted throughout the reflections but is most sensibly illustrated by Linda: *"My contribution to the project was predominantly focused on the financial aspects. This was a great learning experience for me as I had had little experience previously with financial aspects of business".*

As well as these unexpected consequences of learning, however, this form of problem-based approach enabled students to develop the skill of business planning in its own right, this is a point made by Jevern: *"This course has undoubtedly given me the chance to learn a real skill, namely, how to write a detailed business plan. It has been a very practical course and has given me an experience that may prove very useful in the future."* The use of a problem-based design consequently had a number of implications that were highlighted within the student reflections. (1) Problem-based approaches encourage learning through experience. (2) Enabling learning to develop incrementally through the venture creation process. (3) Which creates emotional detachment from student 'reality' and helps develop an awareness of the 'entrepreneurial' context through practice. (4) Leading to unexpected consequences of learning and encouraging reflection.

The Role of Discontinuities and Crises in the Learning Process

The final element required to simulate entrepreneurial learning as outlined by the literature is the role of discontinuities and crises (Cope, 2003). Based on the general narrative

this was the least successful element of the experiential design. Elements of the design used to create discontinuity were milestones and objectives (1.91%), pressure of timescales (4.57%), use of external tutors (1.61) and unexpected crises (1.71). It is evident from the narrative data that the pressure of timescales did have an effect on the learning process. When examining the details of the narrative data it is also possible to conclude that where crises did occur, they had a profound impact on learning, but crises only happened in two of the 15 groups. The impact of external tutors and milestones, however, was unexpectedly low.

When examining the narrative data in detail it is possible to highlight why the pressure of timescales assisted the development of the simulation. On the whole this was not viewed positively by students and had indirect effects on other courses in the curriculum. It did, however, effectively simulate an entrepreneurial context and did encourage learning by doing (Raelin, 1997). This is point highlighted by Stephen when he discusses the importance of time pressures for his personal learning: *"Although through my BBA degree I have undertaken a large number of group projects, this has certainly been the most intense and challenging of all. The amount of work that went into the report and presentation was immense and I have therefore learnt just how vital a good group structure is."* The benefit of time pressures was also highlighted by Alan when he argues: *"I believe that we got a little bit complacent and led ourselves to believe that we'd done most of the hard work. This wasn't the case however, and it became so that we had fallen behind other groups. This showed our lack of time management skills and we had to put in a lot of hours to make up for our own neglect."* Alan's point is mirrored by many others who highlight learning benefits that were derived from being put under some pressure to perform to a tight timescale. These included: the development of time management skills; the effective management of group dynamics; effective delegation of tasks; ensuring the creation of group milestones; a realisation of the commitment involved when starting a business; the need to 'make do' with less than perfect information; and, improving communication skills.

The downside of deliberately creating time pressures was also evident in the data. For example, it is not unusual for serious group disputes to occur partly due to the pressure that is created to deliver a business plan in a relatively short period of time. Jayne makes the point

well when she explains: *"Indeed, if I had been told before this course began that I would be required to work with 3 other people I had never met before, and produce a business plan of over 160 pages to convince a panel of potential investors that our business idea was sound and financially viable and adequately plan for the unexpected, within a timeframe of 10 weeks, and with other academic commitments I would not have felt that it was possible.",* which illustrates that the course design can have implications for the balance of activity in a student's portfolio. It is possible to argue that this also mirror's 'real' life, as the challenges of establishing a new venture can takeover all aspects of someone's life.

As outlined the general data did not highlight extensive experience of crises but where they did occur they do appear to have led to transformative learning. Two crises were highlighted as being of particular importance, one where a group irrevocably fell out and another where a group had to abandon the initial idea a 3rd of the way through the venture planning process. Jill, Wendy and Mark highlight the issues that occurred in the first crisis and how they impacted on learning. Jill explains: *"Initially, the group appeared to be working quite well; meetings had been arranged that fitted into the varying commitments of all the members and everyone appeared to be getting on well. However, later on in the term, one of the group's members failed to have any contact with the others for a two-week period and had also failed to produce a single piece of work for six weeks, despite agreeing to do so."*

Resolving the situation led to an unusually strong group dynamic and this element of the learning process was highlighted by Mark: *"I found it hard to be the figure head in such a confrontational matter and speaking for less forth coming people but I have learnt that I should not have been as aggressive and that we should have approached the matter a lot earlier on",* while the implications for the group were highlighted by Wendy: *"This event, for me, represented a new beginning for the group. No longer were we spending our time worrying about the other group member and could thus focus on getting the plan complete… A joint sense of purpose and mutual commitment seemed to arise that was not obvious before and communication between the group became far more effective."*

What is interesting about this data is how the crisis led to some key learning outcomes for all participants, for example, transformative learning about oneself and about how one

deals with particular situations. Although there are clearly ethical issues associated with deliberately designing courses that have 'crises' built in, it is clear from the data that such crises do lead to learning through transformative experience. Creating pressure in course design via group dynamics and pressures of timescale clearly does lead to crises arising, but in terms of learning, these should not necessarily be viewed negatively.

In summary it is possible to make some conclusions about the role of discontinuities in the design of experiential courses. (1) The pressure of timescales creates an intensity that requires effective group dynamics; (2) leading to a range of learning benefits. (3) Mirroring the 'real' experience of the business taking over the person's life. (3) Creating crises through which transformative learning can occur. (4) Somewhat simulating an important aspect of entrepreneurial learning.

Conclusions

As an academic 'teaching' entrepreneurship it is inevitable that people ask: 'is this something you can teach?' The evidence in this paper illustrates that the concept of 'teaching' the subject may be misleading. It is possible to identify how entrepreneurs learn and the data show it is possible to create experiential designs that simulate important aspects of entrepreneurial learning. At this stage, our knowledge about entrepreneurial learning is relatively weak and consequently our simulations are far from perfect. Even given our relatively basic knowledge of entrepreneurial learning there are important aspects that cannot be simulated, either for ethical reasons or because they are impractical. For example, creating financial exposure, which is one of the prerequisites for entrepreneurial learning, would be unethical in a student context and it is debateable whether it would be possible. Equally, the deliberate creation of crises and discontinuities is clearly debateable on ethical grounds, and rather difficult to do indirectly. The research does show a number of areas where simulating entrepreneurial learning is possible and it does highlight the important role of experiential learning in this process. The key findings show that the creation of emotional exposure, particularly via groups undertaking time restricted problems, does effectively simulate entrepreneurial learning. Likewise problem-based learning was seen to encourage action-

orientation and the course design was effective in assisting reflective practice. In conclusion two important elements of the simulation (emotional exposure and action-orientated behaviour) were achieved, while one (the creation of discontinuities) was not. One can conclude from this study that it is possible to create learning contexts for students that mirror, to a degree, the experience of entrepreneurs. Consequently, such approaches support new approaches to management learning as educators begin to design curricula seeking to help students develop the skills, confidence and ability to establish and manage their own enterprises.

The role of experiential learning design was also proven as essential in this research. The problem-based design encouraged adaptation; decision-making; linkage between management theory and practice; learning through experience; and, the convergence of disparate management knowledge. The group element encouraged social learning (Burgoyne, 1995) and emotional commitment, which led to learning by doing (Cope and Watts, 2000). Overall it can be concluded the experiential design or 'practice in' entrepreneurship was fundamental when trying to enable students to truly appreciate the context within which entrepreneurship takes place.

These conclusions have a number of pedagogic and policy implications for management learning. The role of 'entrepreneurship' or 'enterprise' education is becoming of significant importance within many developed countries (e.g. in the UK via the National Council for Graduate Entrepreneurship) and particularly within management education. The study shows that more work needs to be carried out into how 'entrepreneurs' learn if educators are to design effective programmes that provide a sophisticated approach to this form of management learning. It also illustrates the important role of the interaction between theory and practice. Without the students' prior experience of other management education (e.g. marketing; financial management) the learning experience would not have been as successful. The research shows that management education can benefit from the use of experiential learning designs and that entrepreneurship education can provide one route through which such approaches can be more widely introduced.

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Table 1

Key features required when simulating entrepreneurial learning

Contributing Theorists	Entrepreneurial learning	Key features required to simulate entrepreneurial learning
Cope (2003)	Financial and emotional exposure	Build in uncertainty and ambiguity. Force students to step outside normal educational processes. Heighten emotional exposure by introducing entirely unfamiliar activities or projects. Introduce group dynamics. Use tutorial and course design to carefully manage emotional exposure. Link student academic performance to their 'real' project performance.
Rae and Carswell (2000); Young and Sexton (1997);	Action-orientation and proactive behaviour	Use project-based, 'hands-on' experiential approaches. Ensure reflection is built into course design.
Deakins and Freel (1998); Cope (2003); Cope and Watts (2000);	Discontinuities, events, crises, failure.	Create regular milestones and/or objectives that are exceptionally challenging. Create pressure in timescales. Use tutors or mentors to constantly challenge thinking.
Costello, (1996)	Constant learning, habitual learning	Apply established knowledge to new problems.

Table 2

Features required when simulating entrepreneurial learning through experiential learning

Simulating entrepreneurial learning	The role of experiential learning
Uncertainty and ambiguity.	Use project-based learning to provide a 'real-world' problem in a time-limited environment. The complex messy nature of the problem creates uncertainty and ambiguity
Force students to step outside normal educational processes.	Add learning designs that are not typical of academic liberalist approach to management education. For example, abandoning essays, exams and case studies for reflective accounts, reports and peer assessment.
Heighten emotional exposure by introducing entirely unfamiliar activities or projects.	Ask students to address problems where they lack familiarity. In the case of new venture planning, the development of business plans is a new problem/skill.
Introduce group dynamics	Make problem based projects group assignments. Tie academic performance to group performance.
Use tutorial and course design to carefully manage emotional exposure.	Introduce learning coaches to manage and sometimes create emotional exposure. Design courses to create critical learning situations, as well as, habitual learning.
Link student academic performance to their 'real' project performance.	Ensure group performance is measured according to the project, use learning contracts, peer assessment.
Use project based, 'hands-on' experiential approaches.	Via project based learning
Ensure reflection is built into course design.	Assist the development of the reflective practitioner via learning coaches and assessment techniques.
Create regular milestones and/or objectives that are exceptionally challenging.	Via focused time-bound tasks that require completion
Create pressure in timescales.	Via focused time-bound tasks that require completion
Use tutors or mentors to constantly challenge thinking.	Via learning coaches
Apply established knowledge to new problems.	Use a learning design that build upon student's established knowledge in management.

Table 3

Overview of Formal Course Assessment for Three Years (2001-2004)

Compared to Assessment for All Courses in the School

	OVERALL MEAN	COURSE CONTENT	TUTORIALS / WORKSHOPS	LECTURES	HELPFULNESS OF STAFF	PRACTICAL APPLICATION	LEVEL OF UNDER-STANDING	LEARNING ENVIRONMENT	SAMPLE SIZE	REGISTRATIONS	%AGE WHO RESPONDED
All Courses 2001/2002	3.75	3.92	3.61	3.66	3.87	3.71	3.75	3.75	2275	N/A	N/A
All Courses 2002/2003	3.71	3.86	3.56	3.59	3.77	3.68	3.77	3.71	3057	9036	33%
All Courses 2003/2004	3.72	3.85	3.59	3.62	3.80	3.67	3.74	3.73	6874	9578	72%
THREE YEAR AVERAGE ALL COURSES	**3.73**	**3.88**	**3.59**	**3.62**	**3.81**	**3.69**	**3.75**	**3.73**	**4069**	**9307**	**52%**
New Venture Planning 2001/2002	3.78	4.16	3.48	3.28	3.52	3.56	4.4	4.08	25	64	39%
New Venture Planning 2002/2003	3.77	3.88	4.04	2.92	3.81	3.62	4.27	3.85	26	71	37%
New Venture Planning 2003/2004	3.92	4.1	4.16	3.14	3.7	3.89	4.37	4.11	63	88	72%
THREE YEAR AVERAGE for NEW VENTURE PLANNING	**3.83**	**4.05**	**3.89**	**3.11**	**3.68**	**3.69**	**4.35**	**4.01**	**38**	**74**	**49%**
Difference	**0.10**	**0.17**	**0.31**	**-0.51**	**-0.14**	**0.00**	**0.59**	**0.28**			
Standard Deviation for All Courses (2003)	**0.36**	**0.33**	**0.50**	**0.47**	**0.45**	**0.33**	**0.35**	**0.40**			

* All data were ranked on a scale of 1 to 5, where 1 is low and 5 is high.

Table 4

Summary of Narrative Coding Examining Entrepreneurial Learning in New Venture Planning

Coding Category	Total Coding	Average per Reflection	Standard Deviation	% of Data
Emotional Exposure (1)	**240,565**	**3,759**	**2,614**	**35.84**
Uncertainty and Ambiguity (1.1)	17,664	276	290	2.63
New Educational Processes (1.2.)	16,034	251	137	2.39
Unfamiliar Activities (1.3.)	17,661	276	179	2.63
Group Dynamics (1.4.)	173,134	2,705	1,746	25.79
Performance Linkage (1.5.)	16,071	251	262	2.39
Action-Orientation (2)	**132,857**	**2,076**	**1,721**	**19.79**
Proactive Behaviour (2.1.)	19,156	299	262	2.85
Project Based Approaches (2.2.)	84,639	1,322	938	12.61
Reflection (2.3.)	29,062	454	521	4.33
Discontinuities (3)	**65,819**	**1,028**	**1145**	**9.81**
Milestones and Objectives (3.1.)	12,804	200	205	1.91
Pressure of Timescales (3.2.)	30,683	479	371	4.57
Use of External Tutors (3.3.)	10,834	169	218	1.61
Crises (3.4.)	11,497	180	351	1.71
Number of Reflections	**64**			
Total Character Count	**671,206**			
Average Character Count (per Reflection)	**10,488**			
Total Paragraphs Coded	**3,605**			
Total Paragraphs (per Reflection)	**56**			
TOTAL % CODED DATA	**65.44**			

Figure 1: A Model of New Venture Planning as Experiential Learning
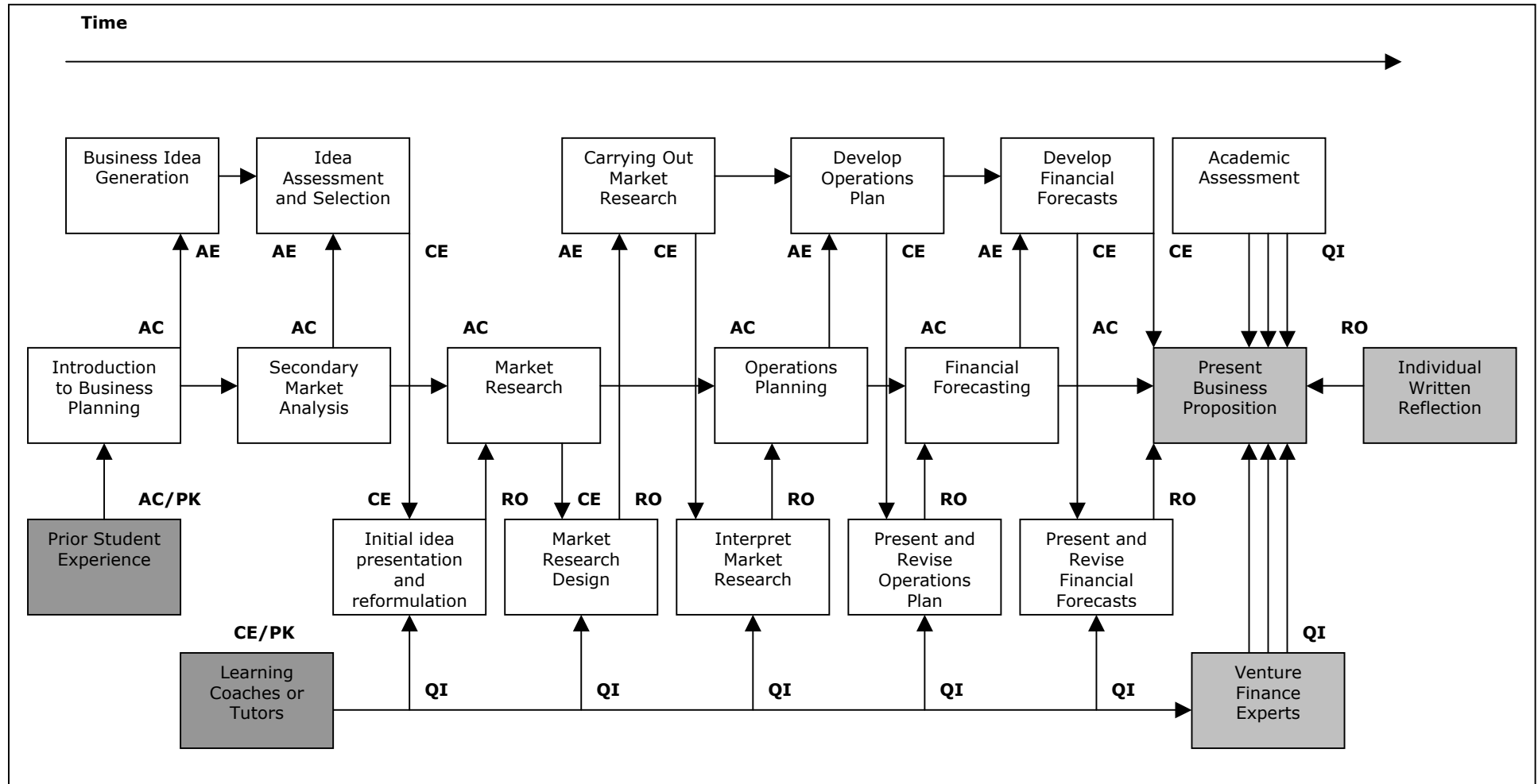
[1] The author is unaware of any approaches in entrepreneurship education that apply the 'experiential critical school' identified by Holman (2000) whereby critical learning and critical reflection are used to examine power and subjugation in practices and learning processes.

[2] One problem for experiential pedagogies like these outlined by Holman (2000) is that such approaches tend to be delivered to small numbers, the challenge presented in Higher Education he argues is to be able to create the same process with larger numbers of students and a diminishing resource base.

[3] 20% group presentation consisting of an investment ready abstract, a 15 minute presentation to external investors and a 40 minute interview with the investors. 60% written group business plan which is often assessed by local business people and 20% for an individual reflection on the learning the student believes they have gained linked to management learning theories. Peer assessment is not used currently.

[4] e.g. marketing, operations and accountancy

[5] The course is a full unit in one term; usually a full unit would be carried out across two terms.

[6] The concept of active encounter as developed by Burgoyne (1995) in his social learning cycle is not used in the concepts used in this model. It does, however, occur via the use of teamwork during the learning loops explained and by the creation of 'critical events', where external business people using questioning insight to challenge student plans for action. Both forms of activity could be described as 'active encounters' as conceptualised by Burgoyne (1995).