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RESEARCH ARTICLE

Student Clubs: Experiences in Entrepreneurial Learning

Abstract

Student-led clubs that seek to enhance entrepreneurial learning can be found in many universities. Yet, like many areas of extra-curricular activity in entrepreneurship education, their role in supporting learning has not been researched widely. The paper introduces research that addresses this gap and investigates the nature of the learning process student's encounter when they take part in clubs. The study explores the literature on entrepreneurial learning, it examines the different concepts and considers their contribution to understanding student learning experiences. From the literature a conceptual framework is presented, highlighting the key aspects of entrepreneurial learning relevant for the field research. The methodology is introduced, including a series of qualitative studies and a survey of students. The study focuses on two types of student-led clubs 'entrepreneurship clubs' and 'Enactus clubs' and provides a comparative analysis. The findings reported show a range of student learning benefits that simulate important aspects of entrepreneurial learning, such as, learning by doing, learning through mistakes and learning from entrepreneurs. More nuanced findings are also presented showing differences in learning benefits between club forms and heighten benefits for students taking leadership roles. The paper concludes explaining the policy and practice implications of the research.

Key Words: Student clubs; entrepreneurial learning; experiential learning; experience

Introduction

The purpose of this research is to explore how student clubs assist and develop student learning in entrepreneurship and to explore whether this simulates important aspects of entrepreneurial learning. For the purposes of this research we apply Brew's definition of a club and consider it to be:

"...a community engaged in the task of educating itself" (Brew, 1943: 67)

As such, a student club is considered to be an autonomous group of students who meet regularly with the express aim to enhance their personal learning around a given topic or theme. Clubs are typically 'self-organised' or 'sponsored', the former is led purely by students while the latter is mediated by external organisations. Student clubs can focus on diverse interests that include, professional honours societies (e.g. Sigma Beta Delta), subject specific clubs (e.g. investment) and specialist interests (e.g. Chinese business). They also engage in a diversity of activities that depend on the club's particular mission, activities can include for example: guest lectures; seminar series; panel discussions; networking meetings; competitions; off-campus visits; and, community service projects (Cox and Goff, 1996). Within entrepreneurship education at universities clubs play a role in student learning and there are some common forms supported by entrepreneurship programs. Enactus (formally Students in Free Enterprise), for example, engages students in community-based social entrepreneurship and is active in more than 40 countries with over 1300 clubs. The Collegiate Entrepreneurs Organisation (CEO) in the US and the National Association of College and University Entrepreneurs (NACUE) in the UK both support 'entrepreneurship clubs'. Likewise, the European Confederation of Junior Enterprises (JADE) engages with university students across Europe to help them set-up and run social enterprises on campus. Consequently, entrepreneurship educators spend considerable time,

effort and resources supporting such extra-curricular activities, as described, and they do so with the implicit belief that these clubs assist student learning.

The research on student clubs, despite a long history, is rather thin on evidence about their role in student learning (Rubin, Bommer and Baldwin, 2002). Early educational researchers considered that clubs might actually subvert formal academic studies (Coleman, 1959; Terenzini, Pascarella and Blimling, 1999) while later views consider them to be important in developing interpersonal skills (Burggraaf, 1997). It has also been widely noted that career counsellors and recruiters consider the value of club involvement in recruitment decisions (Felson, 2001). Studies have found negative relationships to academic performance (Grayson, 1997), have discovered higher high school achievement and college attendance (Mahoney, Cairns and Farmer, 2003) and have linked involvement in clubs to future career attainment (Boone, Kurtz and Fleenor, 1988; Howard, 1986). At least one study found enhanced benefits for students who take on leadership roles (Rubin et al., 2002). Much of the work on clubs though has been anecdotal, reporting a particular educator's experience of advising a club, rather than focusing on empirical research. From these studies some common themes emerge. Educators regularly link engagement in clubs to the enhancement of interpersonal skills (Rubin, Bommer and Baldwin, 2002) and view the experience that students gain as 'experiential learning' (Cox and Goff, 1996; Evans and Evans, 2001). They also conclude that clubs widen students' engagement with the target community of practice (Block and French, 1991) and help them learn by trying things out and making mistakes (Grinder, Cooper and Britt, 1999). Other benefits have been noted including that clubs enable students to develop new skills, such as, oral, written, management and enterprise skills (Burggraaf, 1997; Kahl, 1998; Montes and Collazo, 2003) and help improve employment prospects (Rutter and Jones, 2007). Educators also believe

that students gain improved motivation and self-confidence from their involvement in clubs (McCorkle et al., 2003).

Clearly, student clubs are considered by educators to be important extra-curricular activities that aid student learning and yet the research domain is perhaps unclear about exactly what benefits accrue. Student clubs are also widespread in entrepreneurship, are supported by individual educators, universities and national organisations, and considerable resources are applied to help students learn through such opportunities. Government agencies and large corporations have also invested heavily in national organisations that support student clubs at universities, again with the implicit belief that they assist student learning. Given this context we seek to explore ‘how’ student clubs in entrepreneurship assist student learning and we are particularly interested in whether this simulates entrepreneurial learning. We start the paper by introducing and explaining entrepreneurial learning. In particular, we consider the experiential aspects of entrepreneurial learning given that most educators consider student learning through clubs to be a form of experiential learning (Cox and Goff, 1996; Evans and Evans, 2001). We conclude the first part of our paper by developing a conceptual framework of student learning from clubs that draws on these foundations. In the latter part of the paper we introduce our study and explore the results from the field research. Here we explore both the nature of the engagement students have in clubs and the type of learning they acquire from their involvement; explaining these as they relate to the conceptual framework. Finally, we conclude the paper by explaining the conclusions, emphasizing the implications for educators and the development of educational policy.

Student clubs and entrepreneurial learning

A review of the entrepreneurship education literature (Pittaway and Cope, 2007) indicated a number of unexpected gaps that remain largely unaddressed (Pittaway et al. 2010). While the entrepreneurship education literature has undertaken much work on pedagogical issues and student self-efficacy it continues to ignore the role of extra-curricular activities. Student clubs, as highlighted, are one form of extra-curricular activity that are considered by entrepreneurship educators to support student learning. Research on the role of clubs in entrepreneurship, like the general study of the subject, has been limited. Edwards (2001) conducted some initial work on ‘E-clubs’ that outlined some of the benefits and linked these to ‘experiential learning’ and Pittaway et al. (2010) undertook qualitative research that explored how student learning from clubs simulated entrepreneurial learning. The work showed some initial and positive conclusions in key areas, such as, learning from action and experience and learning through problem solving. This paper seeks to build on these prior studies and aims to further expand the empirical evidence on how student learning is enhanced by involvement in student clubs. Before introducing the study, however, two conceptual issues need to be addressed. The first issue to be explored relates to how ‘entrepreneurial learning’ is conceptualised and used within the context of this study. Here the paper will explore contemporary research on entrepreneurial learning and will use it to help explore whether engagement in student clubs simulates key aspects. Interwoven with this discussion is a second conceptual issue and this is the extent to which the learning students experience can be appropriately described as ‘experiential learning’. Since most educators consider involvement in student clubs to be a form of experiential learning the discussion will consider this form of learning and its relationship to the entrepreneurial learning literature.

Experiential learning is commonly defined using Kolb's (1984) definition that it is,

“the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience”
(Kolb, 1984, 41).

Experiential learning is thus conceived to include the construction of new knowledge and/or meaning through collective experiences (Baker, Jensen and Kolb, 2005), it typically involves project-based activity that is linked to reflection (Daudelin, 1996; DeFillippi, 2001) and engages participants in ‘real-world’ assignments linked to problems in the workplace (Burgoyne and Hodgson, 1983; Davies and Easterby-Smith, 1984). Typically in experiential learning opportunities are created for individuals to learn from mistakes and grow personally as they gain new experiences (McLaughlin and Thorpe, 1993; Mumford, 1994). Researchers have concluded that such experience must be social and involve social learning, which engages others in the process (Lervik, Fahy and Easterby-Smith, 2010; McLaughlin and Thorpe, 1993). Experiential learning has been considered to provide a deeper more effective form of learning for students who experience it (Biggs, 1993; Entwistle and Ramsden, 1983) and it is often encouraged in many educational domains including entrepreneurship education (Gibb 2002).

A cursory review of the entrepreneurship education literature shows that the term ‘experiential learning’ is widely used (or misused) and it can be argued that it is used inappropriately to justify studies that explore learning from ‘experience’. While educators clearly believe that the learning students gain from engagement in student clubs is ‘experiential learning’ this cannot be accepted uncritically as the term is often overused and is loosely defined. Much of the applied research describes experiential learning as a part or a stage of learning

(Saenz and Cano, 2009), the stage that engages student in ‘active experiences’. This view, however, appears to be a common misinterpretation. Kolb’s original conception presents a different view of experiential learning. His concept introduces a cycle, or spiral of learning, where the learner, ‘touches all the bases’, experiencing (CE), reflecting (RO), thinking (AC) and acting (AE), in a recursive process that is responsive to the learning situation. Experiential learning requires the learner to be able to move through each of these skill sets, which can in turn create conflict. More specifically, in Kolb’s theory of experiential learning, there are two dialectically opposed dimensions, experience versus thinking (CE-AC) and acting versus observing (AE-RO). In the process of learning the individual moves in varying degrees along each of these dimensions. Kolb (1984) subsequently, presents four learning styles. Namely these are *converging* utilizing AC and AE; *diverging* utilizing CE and RO, *assimilating* utilizing AC and RO; and *accommodating* utilizing CE and AE. When educators describe learning through student clubs they are making a common error of viewing all experience as experiential learning. For example, students learning from an organised speaker may be categorized more as ‘assimilating’ learning (AC-RO), while a student-led service project might lead to more ‘accommodating’ (AE-CE) or ‘diverging’ (CE-RO) learning. Yet, both activities could be led by the same student club. When returning to the prior literature on student clubs highlighted in the introduction it is evident that any student-led activity involves students in action (AE) and concrete experience (CE) where the students are involved in organising the club and/or activity. This aspect potentially explains heightened learning outcomes gained for student leaders of clubs (Rubin et al., 2002) and will be further investigated. It also illustrates that different learning activities led by clubs may lead to different learning outcomes. Attempts to get closer to the community of practice of entrepreneurs, for example by organising visits, are deliberate attempts

by students to enhance their socially connected or networked assimilating learning (Block and French, 1991) and are aimed at getting students beyond the classroom and into the social environment they seek to emulate (Brown and Kant, 2008). Other activities, such as running on-campus ventures or engaging students in community-based projects are deliberate attempts to enhance *accommodating* learning by engaging students in actions that lead to real-life experiences, which allow for the opportunity to try things out and make mistakes (Evans and Evans 2001; Grinder, Cooper and Britt, 1999; Montes and Collazo, 2003). Consequently, the currently identified learning benefits of clubs highlighted in the literature (better skills; improved employment prospects; enhanced self-confidence), even if correct, cannot be easily connected to one form of learning that can be described as ‘experiential’, as in fact experiential learning includes many forms that are viewed to exist in an interconnected cycle. To further enhance understanding of the forms of learning that might apply in this context then we must turn to concepts and theory in entrepreneurial learning and integrate these with experiential learning.

Action, experience and adaptive learning

The concept of ‘adaptive learning’ and ‘learning by doing’ have a long heritage in entrepreneurial learning (Jones, Macpherson and Wollard, 2008; Watts, Cope, Hulme, 1998). It is commonly accepted that entrepreneurs are action orientated people and that much of their knowledge is acquired tacitly as they develop learning maps from the contexts within which they operate (Dalley and Hamilton, 2000; Johnston, Hamilton and Zhang, 2008). Entrepreneurs have been widely noted to ‘learn by doing’, through action and experience (Rae, 2002; Rae and Carswell, 2000) and it is argued that successful entrepreneurs are effective at ‘learning as they go’ (Gartner, 1988). They do so in several ways: through engaging in actions, through

experience gained when engaging in practice and through the learning accumulated over time from experience (Reuber and Fischer, 1999; Smilor, 1997). Such adaptive learning also highlights the entrepreneur's aptitude to adjust to circumstances as they arise (Cope and Watts, 2000), changing their behaviours and their business strategies as the context warrants (Deakins and Freel, 1998). These approaches suggest that effective learning by doing engages entrepreneurs in a gradual process of knowledge accumulation that leads to a change in their orientation as they acquire experience (Pittaway and Thorpe, 2012). This aspect of entrepreneurial learning mirrors Kolb's 'active experimentation' (AE) concept well, while the experience accumulated mirrors his concept of 'concrete experience' (CE) and the nexus describes '*accommodating learning*', supporting the view that experiential learning is 'real-world' and embedded in the work context (Burgoyne and Hodgson, 1983; Davies and Easterby-Smith, 1984). When relating these concepts to student clubs it is clear that 'immersive' aspects of club activities where students are engaged in 'real-life' situations, such as, community-based service projects and/or starting ventures may be more aligned with this form of entrepreneurial learning. For students to learn this way they would have to engage in highly contextualised situations, they would be required to take initiative and act and be involved with the activities for some time to gain concrete experiences that build up over time. Within the entrepreneurial learning literature experience alone has been considered inadequate for deeper forms of learning and so research has begun to consider the role of reflection.

Reflecting inward, outward, backward and forward

Research in entrepreneurial learning has also regarded reflective practice as being important (Taylor and Thorpe, 2004). In Kolb's theory there had always been a tension between

‘active experimentation’ (AE) and ‘reflective observation’ (RO), one can find it difficult to reflect when one is deeply involved in the ongoing action, and this tension is evident in the research on entrepreneurial learning. It has been widely acknowledged that early studies over-emphasised action and experience when reflective observation may be required for the learner to translate the action into changes in future behaviour (Cope, 2003; Gibb, 1997). Indeed, research in experiential learning argues that reflection is essential because cognitive change only occurs once an individual has reflected on their experiences (Burgoyne and Hodgson, 1983; Daudelin, 1996) and in entrepreneurship more reflective learners have been considered to be more capable entrepreneurs (Cope, 2003). Reflection itself though is not a simple concept. Cope (2003), for example, makes a distinction between reflection that occurs from ongoing ‘day-to-day’ activities and ‘critical reflection’ that leads to significant reconsideration of personal norms and assumptions that change self-perceptions. There are four forms presented by Cope (2005) including, ‘inward’, ‘outward’, ‘backward’ and ‘forward’. Inward represents introspection about self while outward describes reflection about interaction with others. Backward considers reflection on past events while forward represents visualisations about how the experience should change future actions (Cope, 2005). The RO concept then is important in both areas of theory. Within the context of student learning from clubs it is important to observe the extent to which students reflect on their club experiences and to consider the nature of these reflections. The extent to which *diverging learning* (CE-RO) occurs, having experiences and reflecting on them, will be essential in understanding whether students are simulating entrepreneurial learning or not.

Contextual learning, ambiguity and failure

More recent study in entrepreneurial learning has highlighted the important role of ‘context’ in learning (Cope, 2010; Pittaway and Thorpe, 2012). The varying contexts within which entrepreneurs engage lead to different learning outcomes and can be highly diverse and not necessarily transferable. Ambiguity and uncertainty are also recognised to be important aspects of entrepreneurial contexts that are not often shared to the same degree by other domains, such as, employment (Corbett, 2007; Gartner, 1988; Smilor, 1997). Cope (2010) considers several such contexts and describes them as temporal phases, such as, ‘learning during start-up’; ‘learning post start-up’; ‘learning from failure during the immediate aftermath’; and, ‘learning from failure during the recovery process’. Such contexts can be considered to be diverse and can include the different phases of a venture’s development and the wide range of industrial, political and cultural contexts within which an entrepreneur and their business is embedded. Entrepreneurial learning is thus recognised as being highly contextualised and consequently each entrepreneur’s ‘stock of experience’ is considered to differ as they go through different events (Macpherson, Kofinas, Jones, and Thorpe, 2010; Minniti and Bygrave, 2001). In terms of experiential learning this is akin to the concept of ‘concrete experience’ (CE) whereby individuals gain and apply learning from unique personal experiences. One such experience that has been highlighted in entrepreneurial learning is the role of ‘failure’ (Reuber and Fischer, 1999; Young and Sexton, 1997). Failure, crises and mistakes are considered to have transformative learning impacts on entrepreneurs (Cope, 2005; Deakins and Freel, 1998). Experience of failure without reflection is considered unlikely to lead to learning outcomes (Reuber and Fischer, 1999) and so *diverging learning* (CE-RO) is yet again considered critical. The difference, however, is the nature of the events encountered (i.e. the context), the stress caused by ambiguity and uncertainty, which consequently influence a heightened sense of

awareness and more significant, transformative learning (Cope, 2010). In other words, not all contexts are the same, some inherently lead to more pronounced learning outcomes (Jones et al., 2008; Macpherson et al., 2010). For this study, the extent to which students experience failures or mistakes while engaged in the experience of student clubs will be important in understanding whether they are gaining learning similar to that encountered by entrepreneurs. Likewise the extent to which the contexts students experience have significant aspects of uncertainty and ambiguity will be considered as important in mirroring entrepreneurial contexts.

Social engagement and practice

The social dimension of entrepreneurial learning has become increasingly important in recent years within the subject (Harrison and Leitch, 2008; Leitch and Harrison, 2005; Pittaway and Thorpe, 2012). This social aspect was highlighted early on by Gibb (1997), it has been noted that entrepreneurs do not work in isolation from other people and that entrepreneurial endeavour is inherently collaborative (Hines and Thorpe, 1995; Jack, Drakopoulou Dodd and Anderson, 2008; Taylor and Thorpe, 2004). Social aspects of learning, therefore, derive from a recognition that learning is contextual and approaches often apply Lave and Wenger's (1991) concept of situated learning (Cope, 2010; Drakopoulou Dodd and Hynes, 2012). Here learning is an integral and inseparable process of social practice and social relationships (e.g. with spouses and mentors) play an important role in learning and decision-making processes as they relate to the business (Karataş-Özkan, 2011). Such social relationships can also be the cause of significant conflict and create transformative learning for entrepreneurs (Cope, 2005; Jones, Macpherson and Thorpe, 2010). Viewing entrepreneurial learning as a social process makes sense in the context of experiential learning in terms of the *assimilating* (AC-RO) nexus. Entrepreneurs test ideas on spouses and discuss decisions with employees as a way to think and

reflect about the business before engaging in actions. Likewise they may reach out to mentors to gain experience vicariously and learn from other's experience, mistakes and failures so that they may avoid them. In so doing, they are engaging in *converging* (AC-AE) learning, they are talking to others to think about decisions before acting. In terms of Kolb's framework social dimensions appear to be an important part of the equation drawing in assimilating and converging learning alongside diverging and accommodating learning, allowing all aspects of the experiential learning spiral to be included. Within this study then the extent to which student clubs draw students into the 'life world' of the entrepreneur via social processes and become involved with entrepreneurs seems to be important with regard to these two aspects of experiential learning and for simulating entrepreneurial learning.

(Figure 1)

The conceptual framework guiding the research design is outlined in Figure 1. Clearly, students learning through engagement with entrepreneurship clubs would have to encounter learning that is similar for it be described as 'entrepreneurial learning'. They would have to face problems and engage with others to think through these problems (AC), actions will be taken (AE) and entrepreneurial experiences will need to be gained (CE). Students may also have the opportunity to make mistakes and experience failure, and will subsequently need to reflect on these experiences (RO). To learn effectively students will also need to have experienced the target context and/or have gained knowledge of this context via assimilated learning (AC-RO) and engagement with the 'community of practice'. We will now progress to explore the field research conducted and explore what students 'do' when they engage in student clubs and investigate the nature of the learning they gain. Before introducing the data we will explain in detail the methods used in the research carried out.

Methodology and methods

The research began by drawing concepts from the literature as outlined in Figure 1. It then carried out a series of exploratory studies to test the entrepreneurial learning concepts and then conducted a survey of students who were involved in clubs. The research design is summarised in Figure 2.

(Figure 2)

The purpose of the first phase of the research was to test the current concepts in the field and allow others to emerge in a grounded way (Glaser and Strauss, 1967; Strauss and Corbin, 1990). Here we took a grounded theory approach that aimed to elaborate on existing theory (Vaughan, 1992) in entrepreneurial learning. The concepts were used as a framework which were *'elaborated and modified as incoming data were meticulously played against them'* (Strauss and Corbin, 1998, p.159). The exploratory study was composed of several inter-related qualitative studies that all undertook purposive sampling by seeking out respondents who could provide 'information rich' sources (Hamilton, 2006). The first (2007) involved a series of unstructured interviews with students (n=9) engaged in an Enactus club at a UK university. The study explored in a deep way their experience of founding the club and explored student learning from service-based projects in the community. The second exploratory study (2007) involved a secondary analysis of entrepreneurship clubs in the UK and a series of semi-structured interviews (n=17) with students who had been members of entrepreneurship clubs. The third (2008) included an 'e-mail postcard' to students engaged in entrepreneurship clubs (n=28) that

asked respondents to summarize the value of the club for their personal learning in one paragraph. Our data analysis process followed the accepted procedure of grounded coding whereby our broad concepts guided our initial interaction with the data, which was then followed by data emerging to create further themes that allowed us new insights into the concepts we were exploring (Siggelkow, 2007). The first step was thematic coding that explored themes from the entrepreneurial learning conceptual framework and the second step involved grounded coding (Strauss and Corbin, 1990), which allowed additional themes to emerge via observations from the data (Siggelkow, 2007). We began this broad inquiry by applying the concepts in entrepreneurial learning as explained earlier in the paper. The method of data collection included face-to-face interviews, telephone interviews and an e-mail postcard and, therefore, we used a mixed method approach employing both unstructured and semi-structured interviewing techniques, as well as, the collection of short qualitative responses via e-mail. The data-set, therefore, had a range of depth from one hour interviews to a few written sentences. The data coding used an iterative process that required on-going interaction between the data coding and the concepts being explored (Denzin and Lincoln, 1998) with the researchers moving frequently between data and concepts. Due to the nature of this process NVivo, a computer aided qualitative data analysis software, was used to assist the coding of data and ensure rigour. Two researchers were involved with the transcription and coding of the data, although we did not assess the intercoder reliability of the data as suggested by Miles and Huberman (1994).

A second phase was carried out in 2009 using a survey constructed from the entrepreneurial learning concepts explained and using the outcomes of the exploratory study. The survey designed was informed by current thinking on survey methodology and specifically followed best practice in terms of question design (Gideon, 2012). It had several parts and was

constructed iteratively between the researchers and then pilot tested on a small sample of students (n=4). The pilot was used to test the veracity of the questions and the length of the survey. Following testing it was reduced in length and redesigned, developed online and retested with another small sample of students (n=3), with further modifications being carried out to the length of the survey with the removal of 11 further question sets to reduce the survey's length. The online version was pilot tested a third time to ensure effective data collection and no further modifications were required at this point. The questionnaire had 37 questions and took around 35 minutes to complete. The questions covered items about the club, about the individual's interest and engagement in the club, about the respondent's future intentions, personal learning and confidence, and finished by asking about the respondent (see Appendix 1). The categorical questions covered aspects, such as, the length of time involved in the club, the role of the student in the club and the student's year at university, as well as, other common items (e.g. sex, age, country of origin and country of study). The survey included items that were on a Likert scale and these were used for collecting student's impressions about their personal learning, intentions and motivations. Student participation was sought via an open 'non-probability' sample of the USA and UK which was collected randomly. We sent direct requests to known student clubs in entrepreneurship, discovered during the exploratory research, and sent a general call to established networks via newsletters and e-mails specifically targeting Enactus and CEO. Though random in nature we did specifically aim to develop a sample that explored both Enactus student clubs and entrepreneurship clubs.

The measurement instruments used in the research design were constructed specifically for the study. On personal learning, confidence and future intentions the survey constructed and tested items based on the prior exploratory research. So, for example, students were asked to

respond to questions, such as, “I have enhanced my ability to solve problems [as a consequence of my involvement in the club]” using a 5 point Likert scale (1=strongly disagree and 5=strongly agree) to show the extent to which they believed that they had learnt (or not). These items were closely aligned with the conceptual framework outlined previously. Using the software program SPSS we scrutinised the data using a range of statistical methods appropriate to the data type including one-way ANOVA, Pearson Chi-Squared and the Fisher Exact tests, as well as, explored descriptive results where these had some value. On two occasions data were recoded. The initial data included options, such as, ‘technology entrepreneurship club’ and ‘investment club’, due to very low response rates from these two forms the data were excluded from the analysis (n=7). When the data were explored to gauge the difference between ‘leaders’ and ‘members’ in clubs we recoded ‘project leaders’, ‘presidents’ and ‘executives’ into one group and considered these respondents to be critical club leaders versus other less active members.

A sample of 77 students was achieved across 29 different institutions from the UK and USA. The sample included 35 students that were members of entrepreneurship clubs and 34 students who were members of Enactus (eight students from other clubs). Sixteen students were club presidents (21%), 20 (26%) held executive positions and 40 (52%) held other roles. There was a 2 to 1 gender distribution (66% male; 33% female). The sample is skewed towards the UK and so a comparative analysis between the USA and the UK was not undertakenⁱ. The survey provided information on age, ethnicity, and year and level of study. There was an expected distribution across age groups although a notable number (17% n=13) were mature students (31+ years). Likewise the distribution regarding ethnicity was expected, as was the level of studyⁱⁱ, and the year of study (between 20-28% for each year). There were, however, 23 (31%) students operating in a second language, which could be considered high. There is little

variation in this sample between the two club types. The only difference being that Enactus students tended to be younger and more likely undergraduates in their second year of study, while entrepreneurship clubs tended to have older students including more postgraduatesⁱⁱⁱ.

To the best of our knowledge this is the first study to explore entrepreneurial learning benefits of different student clubs in entrepreneurship and makes a number of useful contributions as outlined later (Pittaway et al., 2011). Despite this the research design does have some limitations. As the study uses a non-probability sample there is potential for non-response bias, students who did not gain learning benefits from clubs may not have responded. The risk may be negligible, however, due to our use of incentives (prizes) to encourage response and our observations of the sample provide us with some confidence that it is representative of the population of students involved in student clubs. The research also has the limitation that it relies on students self-reporting and as such may be open to some self-report bias. We believe, however, that such data is necessary when researchers try to understand perceptions of learning and in order to reduce the problem we have collected data using different methods (Podsakoff et al., 2003). Future research can build on this study by seeking objective tests of certain skills, by using pre- and post-tests and by undertaking longitudinal research (Pettigrew, 1990). Benefits may accrue, particularly in qualitative research, if participants are tracked over time as they engage in clubs. Next we will explain the results of the research.

Results from the exploratory research

Although the exploratory research has been reported in full (Pittaway et al., 2011) data from this phase did provide some compelling areas for further investigation in the second phase

of the research reported here. The data from the first phase of the research is summarised in Table 1.

(Table 1)

When exploring the data with regard to the reasons for student engagement in clubs there were a range of different outcomes, students have different motivations for being involved and clubs have different missions. Motivations focused on both enhanced employment prospects and gaining knowledge of the entrepreneurship context. They were, however, quite diverse and included a range of other considerations, such as, helping others; enhancing transferable skills; and, gaining practical experience. Motivations did appear to vary between different types of clubs. Enactus teams focused more on ‘practical experience’ and ‘transferable skills’, while students in entrepreneurship clubs were more focused on awareness of business ownership and acquiring skills that would help them start businesses. These differences also led to different club missions and different activities led by the club. The first phase of the research thus led the second phase to consider in more detail the motivations that guided students to engage in clubs and sought to further explore differences between the two types of club common in entrepreneurship.

When exploring the data associated with entrepreneurial learning the first phase of the research also provided some key insights. Here the research identified that student clubs appeared to enhance ‘learning by doing’ and showed a number of situations where individual students had gained concrete experience (CE) via engaging in practical activities (AE). In this data, however, there did appear to be some variation based on a student’s leadership role and the specific context of the experience gained. Contexts included both ‘start-up’ and ‘technical’ experiences that were highly contextualised somewhat simulating the entrepreneurial domain and

demonstrating the importance of *accommodating learning* (AE-CE). The data also highlighted the important role of reflective learning (RO), students were observed to be reflecting on experiences they encountered and ‘making sense’ of them. Reflective learning was illustrated in the four forms presented earlier with ‘outward’ and ‘forward’ being the most common and so evidence of *diverging learning* was observed (CE-RO). Likewise student’s efforts to use their club experience to learn from social engagement with the entrepreneurial context was ranked highly (14.3% of data). Students in entrepreneurship clubs, in particular, appeared to be engaging in *assimilating learning* (AC-RO) as they engaged with entrepreneurs, while in contrast Enactus students appeared to be engaged in more *converging learning* (AC-CE) as they drew on people in the context to gain knowledge that contributed to their ‘stock of experience’. The contrast of learning between the two club types was, therefore, considered an important element to consider in the second phase of the research. Within the qualitative data other aspects of entrepreneurial learning were less clearly represented. In particular, student engagement with ‘mistakes’ and ‘failure’ and consequent ambiguity, uncertainty and emotional exposure were not particularly evident and so during this phase of the research it was concluded that important aspects of the entrepreneurial ‘life-world’ were likely missing and so clubs could not be considered a full simulation of entrepreneurial learning. The next phase of the research had some obvious outcomes to achieve. It had to further validate the exploratory findings. It had to further unpick club activities, reasons for being and needed to understand students’ motivations for involvement. Finally, it needed to appreciate more deeply student learning benefits and consider how these learning benefits might differ depending on leadership roles and club type.

Results from the survey

Club activities, purpose and student motivations

Universities often have more than one club associated with entrepreneurship programs, and clubs get assistance from student unions (29%), entrepreneurship centres (57%) and business schools (49%). Clubs (up to 30%) also get funding from these sources and many have faculty advisors (61%). These data demonstrate that universities make investments in student-run clubs with the assumption that they aid student learning (Burggraaf, 1997). Within the clubs activities widely used include: networking events (93%), talks by entrepreneurs (89%) and other business people (88%), competitions (86%) and training workshops (73%), which mirrors the views of educators in the literature (Cox and Goff, 1996). Notably many of the top-ranked activities, unlike the exploratory research, are within the ‘thinking-reflecting’ (utilizing *assimilating learning*) part of Kolb’s cycle more than the ‘acting-experience’ part (*accommodating learning*). As such, learning from entrepreneurs or ‘vicarious learning’ (Block and French, 1991) seems to be more highly utilized in general than activities leading to concrete experience (e.g. social or community projects; running real businesses). Activities leading directly to active experimentation (AE) and concrete experience (CE), however, still feature strongly and were engaged in by a large number of clubs^{iv} (Grinder et al., 1999). When comparing Enactus with entrepreneurship clubs it is clear that Enactus clubs use more activities that seem to engage in ‘learning by doing’ while entrepreneurship clubs seem to use more activities that engage in ‘social learning’ (Harrison and Leitch, 2008; Rae, 2002; Taylor and Thorpe, 2004). While many activities are common, for example both have speakers, networking events and competitions; there remain differences between the clubs. Enactus clubs engage in more community service projects and actual social/business start-ups^v while entrepreneurship clubs were more likely to organise seminars^{vi}.

Some of the reported ‘reasons for being’ behind the establishment of clubs did seem to contradict some of the prior research on clubs. In entrepreneurship ‘employability’ did not immediately appear as important (Rutter and Jones, 2007). The data focused on Likert scales of purpose (articulated purpose for the club and its activities) ranging from one, being of lowest importance, to five, being of highest importance. These were tested comprehensively to first explore the main reasons for the establishment of clubs and then to illustrate the differences between the two forms of club (Enactus versus entrepreneurship). Initially, a t-test was used to compare the means of the groups. This is not continuous data, however, so a further analysis was undertaken, using a Pearson Chi-square test to test the null hypothesis. Under this test, there are a large number of cells that count less than five, therefore, a Fisher’s Exact Test was used in order to test for significance ($p < 0.05$) see Table 2.

(Table 2)

We can see from Table 2, that the results are corroborated by each test – the only contradiction of significance being ‘helping me successfully secure employment’. Highly valued reasons for starting clubs include: ‘developing entrepreneurship skills’ (4.20), ‘inspiring interest in entrepreneurship’ (4.16), ‘enabling me to learn from entrepreneurs’ (3.99) and ‘helping me to gain business start-up knowledge’ (3.88). Clubs tended not to focus on helping employability to the same degree and it was less highly ranked. The general data on club existence then support the view that clubs in entrepreneurship are designed to get students close to the ‘community of practice’ of entrepreneurs and allow them to gain entrepreneurial competencies. When purpose is considered for entrepreneurship and Enactus clubs separately a different picture emerges. Enactus is more focused on helping students gain practical experience in order to enhance employment prospects, supporting the view that some clubs do focusing on enhancing

employability skills (Rutter and Jones, 2007). Meanwhile, entrepreneurship clubs are focused on inspiring an interest in entrepreneurship, gaining business start-up knowledge and learning from entrepreneurs, showing that these clubs are more focused on allowing students to understand entrepreneurship as a prospective career path (Edwards, 2001).

The study also asked about the students' personal motivations for their involvement. Important personal motivations in the study were: 'to enhance my personal skills' (4.26); 'to learn by doing' (3.97); 'to gain knowledge of starting a business' (3.76); 'for personal enjoyment' (3.72); 'to gain awareness of business ownership' (3.69); 'to do something to help others' (3.64); and 'to see my ideas put into practice' (3.53). The data here show that students are motivated to learn skills through active experimentation (AE) and by gaining concrete experience (CE), as well as, through *assimilating learning* (AC-RO) from entrepreneurs (DeFillippi, 2001). It appears from the data that students are principally motivated to gain some practical experience through 'learning by doing' (Cope, 2005), while also learning vicariously from entrepreneurs (Jones, Macpherson and Thorpe, 2010). A desire to enhance 'employability', once again, does not feature strongly and students do not seem to be trying to support classroom based learning.

(Table 3)

When exploring the difference between Enactus and generic entrepreneurship clubs (see Table 3) significant differences again emerge. Students motivated to learn about entrepreneurship and start a business are more inclined to engage in entrepreneurship clubs. Students who want to enhance employment prospects and do something to help others (social enterprise) are more inclined to get involved with Enactus^{vii}. Clearly, the data show empirically what many would

expect anecdotally, that the two clubs are doing different things and catering for different needs for students broadly interested in entrepreneurship.

When asked about changes to their employment prospects, regardless of their motivation for involvement, most students felt that they had become more attractive to employers (67.1%) and interestingly this did not vary between clubs. So, although it may not be the motivation behind involvement students feel that one outcome of being involved in a club is that they become more attractive to employers. Motivations for involvement do not vary based on other variables (e.g. role in the club, age of the student, length of time in the club or gender).

Simulating entrepreneurial learning

The research sought to understand the nature of learning students acquired, whether it differs between club forms and whether it varies based on the student's role in the club. The learning benefits for students are pronounced with students reporting positive results across all areas (3.53 is the lowest ranking on point 5 scale). These broad learning benefits seem to support the view that students consider their learning to be enhanced when they engage in clubs (Burggraaf, 1997; Rubin et al., 2002). Students report learning most through problem solving, having to cope with mistakes and from action (AE) and experience (CE), which seems to support the view that students are gaining most from *accommodating learning* or 'learning by doing' (Deakins and Freel, 1998). They benefit from engaging in actions and practical activities that lead to concrete experience. Although considered less important uncertainty, ambiguity and reflection (RO) still play a role; as does social learning (AC). Broadly, these results confirm the entrepreneurial learning conceptual framework outlined. Student learning via clubs simulates

many aspects of entrepreneurial learning and it seems to do so through allowing space for all forms of learning in the experiential learning cycle. The concepts that are particularly well supported in the data are the ‘active’ aspects (AE-CE) of experiential learning, student’s engagement in actions and problem-solving and what they learn from mistakes are critical. The results, reported in Table 4, confirm the exploratory research, learning by doing (Deakins and Freel, 1998), learning from mistakes (Cope, 2005) and reflective learning (Cope, 2010) all play important roles in the learning process when students engage in clubs.

(Table 4)

When explored by the different forms of club (Enactus versus entrepreneurship) the only difference is that students in Enactus tend to learn more through dealing with ambiguity than students in entrepreneurship clubs and are experiencing a slightly heightened level of ‘*accommodating*’ learning. It is expected that this can be explained by the higher level of project-based activity encountered by Enactus students. Contrary to expectations, based on club missions and student motivations, different clubs have not led to significantly different forms of learning. They contributed in a fairly equal way with particular benefits being associated with ‘learning through doing and gaining experience’ (AE-CE). When the data were tested for significant variation by student role in the club (e.g. president versus member), there were some very subtle differences. Intriguingly, ‘project managers’ did seem to be reporting learning at a heightened level, when compared to other roles. The data grouped project managers, executives and presidents together, as active organisers, and this group was compared to other group members, who were likely to be less active and engaged (see Table 5).

(Table 5)

Table 5 shows there are differences between the roles of club members, students taking on leadership roles seem to gain more (Rubin et al., 2002). Project managers were all members of Enactus clubs and were leading ‘hands-on’ service projects while executives/presidents were actively managing the organisation, its events and activities rather than just attending them. It would appear from the data that taking on a leadership role has implications for the student and they seem to gain more of a complete experiential learning cycle. In the case of Enactus project leaders and/or executives, like all members, they gain significant ‘*accommodating*’ learning from active involvement in projects and are gaining ‘*diverging learning*’ when they reflect on these experiences but they also acquire more ‘*assimilating*’ learning because they must strategically plan, analyse and reflect on projects for annual competitions (also enhancing *converging learning*). For entrepreneurship club presidents and executives, like all members, they gain significant ‘*assimilating*’ learning from attending events organised by the club but they also have more responsibility for the organisation and its events/activities and gain greater ‘*accommodating*’ learning and greater ‘*diverging learning*’ than passive members as a consequence of their active role. In both cases, it can be argued, leaders of the club gain a more complete form of experiential learning and based on the data they seem to gain greater student learning benefits. Regarding social engagement, students also report learning from working with fellow students (4.06 and 3.96) and from entrepreneurs (4.03) but perhaps learn less from other members of the community (3.66). This finding demonstrates that clubs are successful at drawing students closer to the community of practice they seek to emulate and are thus helpful at encouraging ‘vicarious’ learning (Hines and Thorpe, 1995; Taylor and Thorpe, 2004). The evidence^{viii} does show that students in entrepreneurship clubs learn more from entrepreneurs than Enactus students, which makes sense given the different focus of the clubs.

The data also show that students experience changes in confidence from their club involvement (McCorkle et al., 2003). Students report a marked increase in personal confidence and changes occurred in confidence of: 'their personal skills' (4.14), 'about themselves' (4.10) and 'about their business knowledge' (4.10). Students also report improved confidence to 'set up a business' (3.99), 'to be an employee' (3.96), and in 'their enterprising skills' (3.99). Entrepreneurship clubs provide students with more confidence about starting a business than Enactus clubs^{ix}, which makes sense. When exploring future intentions involvement in clubs has made students consider themselves as more likely to start businesses in the short-term (55.3%) and in the long-term (75.0%) and students have become more aware of the skills they will need in the workplace (82.9%). Entrepreneurship clubs are somewhat more likely to enhance student intentions to become entrepreneurs in the short-term (in the next three years)^x than Enactus clubs, while both clubs seem to enhance intentions towards entrepreneurial activity equally over the longer term (after three years).

Conclusions

The aim of this research was to explore why students engage in clubs, what learning benefits they gain and whether this simulated entrepreneurial learning. There are a number of interesting conclusions from the work. By being involved in clubs it is clear that students are seeking to build learning experiences that have value. In the case of entrepreneurship, Enactus clubs are engaging students in practical projects and enhancing employability and in the case of entrepreneurship clubs students are gaining greater insights into the 'life world' of the entrepreneur and getting closer to their target 'community of practice'. Student motivations for involvement clearly vary but a large majority of students are either attracted to clubs because

they want to have practical learning experiences and/or want to learn ‘about’ entrepreneurship from entrepreneurs. Students report many learning benefits and it can be concluded from this data that both confidence and intentions change as a consequence of club involvement, as does attractiveness to employers (in the students’ view). Many significant learning benefits accrue around certain themes. In particular, ‘*accommodating learning*’ (AE-CE) stands out, students consider benefits to arise when they are engaged in active experimentation and gain experience from projects and activities; including managing and organising the club. This learning is also heavily contextualised and so each student gains a unique experience that builds on their wider ‘stock of experience’. ‘*Assimilating learning*’ (AC-RO) also seems important in the data. Students are seeking out entrepreneurs and speakers who get them closer to the domain of entrepreneurship, so that they can begin to assimilate experience vicariously. Notably, the two club types also differ in this regard with Enactus seeking to promote more *accommodating learning* and entrepreneurship clubs seeking to promote more *assimilating learning*. In this sense, within entrepreneurship programs more broadly, the two clubs would appear to be fairly complementary and are not clear alternatives to each other. To an extent student engagement in clubs does appear to simulate aspects of entrepreneurial learning, particularly ‘learning by doing’ and ‘situated learning’. Evidence for reflective learning is more mixed, certainly students in the exploratory research demonstrated different forms of reflection but it did not stand out as much in the survey data^{xi}. It was also quite evident in both phases of the research that certain aspects of the entrepreneurial learning context, such as, ambiguity, uncertainty and emotional exposure were not simulated to any significant degree when students engage in clubs. In this sense the research can conclude that entrepreneurial learning is not fully simulated but that parts of it are (such as, learning by doing and social learning). Interestingly, the research does illustrate that

those students who take on leadership roles in clubs are gaining a more complete experiential learning cycle and thus are getting a more fully simulated experience (particularly if they start the club). These students are benefitting more and gaining a learning experience that is closer to what entrepreneurs encounter.

This paper, therefore, makes a unique contribution. It has highlighted the value of understanding the student learning benefits accrued from student engagement in clubs. Universities, governments and large corporations support these organisations with the belief that they aid student learning in important ways and this research confirms that this type of investment is not misplaced. Clubs provide an important form of learning within universities that gives students access to opportunities to engage in forms of learning that they do not always gain in the curriculum. They provide some notable learning benefits for students, such as enhanced interpersonal skills, and in the case of entrepreneurship the data confirm increased confidence and student intentions to become entrepreneurs, which supports the idea that student clubs can assist students' awareness of and interest in entrepreneurship. The study has also been able to illustrate in entrepreneurship education, what clubs do, how students learn from clubs, what motivates students to engage in them and has explored the extent to which clubs enhance students' entrepreneurial learning. There are implications from this research. For club advisors, career counsellors and recruiters the study confirms their tacit beliefs. Students do enhance their skills when involved in these activities and as a consequence should be more attractive employees. This implies that recruiters are right to consider recruiting students who have demonstrated active involvement in student clubs, particularly where they have taken on leadership roles. For entrepreneurship and other educators the research highlights why students engage in clubs and illustrates their value alongside the formal curriculum. This implies that

time spent managing clubs, is time well spent, and the study confirms that clubs should remain an integral component within the development of entrepreneurship programs. They enhance forms of learning that can be difficult within the curriculum and, therefore, supplement formal programs of study. For students the research shows that extracurricular activity is important, for career development, for employability and for entrepreneurship. Based on this research students are well-advised to get involved in student clubs and to take on leadership opportunities. Employers will value the skills gained and for entrepreneurship students they will gain learning by doing and vicarious learning benefits that will support their efforts to become entrepreneurs. For policy makers and corporate executives the research provides further justification for investing in and supporting nationwide efforts to promote clubs. While the research cannot make recommendations about the veracity of specific national organisations (e.g. NACUE or CEO) it is clear that clubs at the university level do have a role in enhancing self-confidence in entrepreneurial endeavour and do help shift students' intentions, both in the short and long-term, towards a preference for becoming an entrepreneur. Likewise elements of student competence are enhanced and students get closer to the entrepreneurial 'life world', giving them important insights should they consider entrepreneurship as a career option.

Based on the research carried out there are a number of follow-up research opportunities. First, confirmatory research is required. Qualitative research using a longitudinal design to examine changes in student learning over time would be valuable as would a larger survey using more objective controls. Qualitative research that examines the learning benefits accrued to community service project leaders (in Enactus) might produce interesting results given the nature of these roles or indeed survey-based research that focuses solely on club presidents and executives might also be valuable. There is scope to examine the learning benefits of other clubs

in entrepreneurship (e.g. investment clubs, technology clubs and professional honours societies). Likewise, in entrepreneurship education there remains much work to do to further understand the role of other forms of extracurricular activity in student learning.

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Figure 1. Conceptual framework

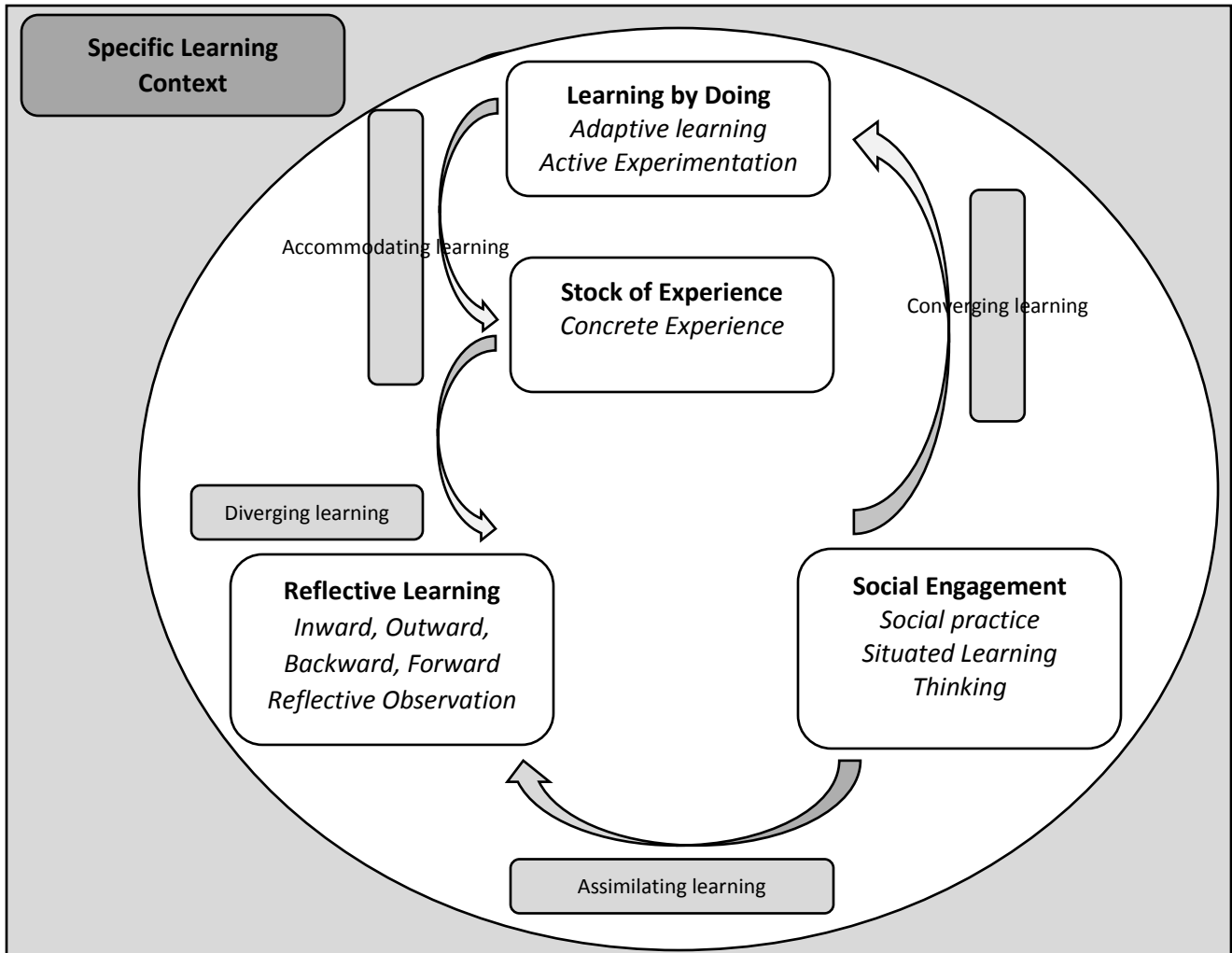


Figure 2. Research design

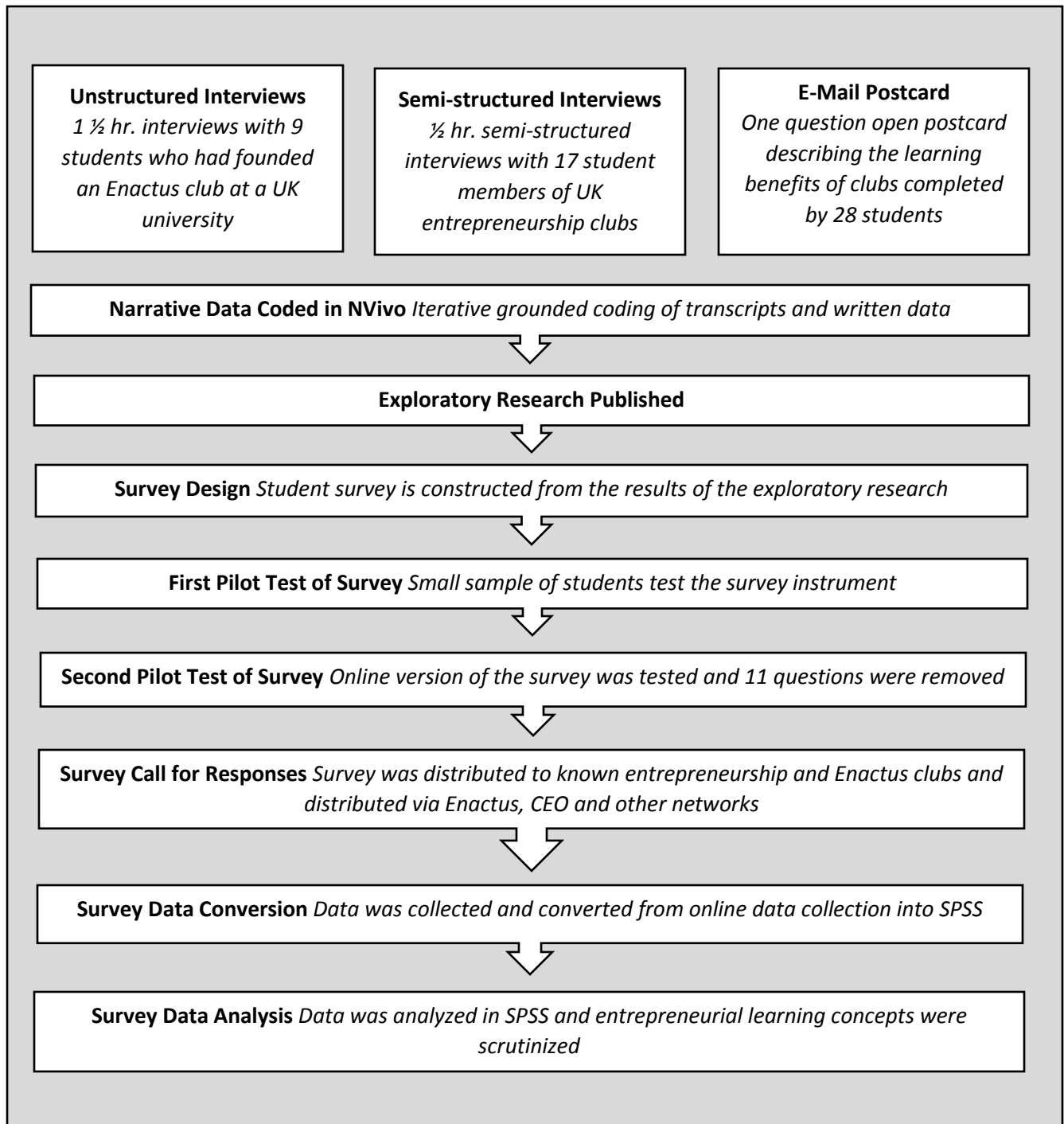


Table 1. Summary of the narrative data

Thematic Category	Character Counts	Percentage	Emergent Category	Character Counts	Percentage
Action Orientation	86317	34.7	Experience Gained	14075	5.7
			The Act of Doing	48896	19.6
			Learning Accumulated	23346	9.4
Mistakes, Crises and Failure	10119	4.1	Mistakes	1637	0.7
			Transformative Learning	3912	1.6
			Critical Learning Events	4570	1.8
Reflection	39878	16.0	Observations of Self in Action	9087	3.7
			Observations of Self to Others	13610	5.5
			Changes in Self Perception	3410	1.4
			Meta-learning	13771	5.5
Opportunities and Problem Solving	12748	5.1	Use of Problem Solving Skills	5028	2.0
			Evidence of Problems	4417	1.8
			Enhanced Problem Solving	3303	1.3
Uncertainty and Emotional Exposure	3716	1.5	Awareness of Uncertainty	934	0.4
			Emotional Exposure	2782	1.1
Social Practice and Engagement	35499	14.3	Social Practice and Engagement	35499	14.3
Self-Efficacy and Intentionality	60661	24.4	Encouragement to Start a Business	12246	4.9
			Changed Views of Confidence	6991	2.8
			Original Motivation	41424	16.6
Total Coded Data	248938	100	Total Coded Data	248938	100.0

Table 2. Reasons for a club's existence analysed by club type

Purpose	E Clubs	Enactus Clubs	Duncan's Oneway ANOVA Posthoc	Pearson Chi-square	P	Fisher's exact test	P
Developing entrepreneurial skills	Mean = 4.31 N = 35 Std. = .963	Mean = 4.27 N = 33 Std. = .944	F = .032 Sig. = .858	6.664	0.127	6.105	0.149
Helping me successfully secure employment	Mean = 2.82 N = 34 Std. = 1.242	Mean = 3.64 N = 33 Std. = .929	F = 7.768 Sig. = .007*	9.329	0.052	9.191	0.054
Helping me to become an enterprising employee	Mean = 3.56 N = 33 Std. = 1.106	Mean = 3.64 N = 33 Std. = .929	F = .096 Sig. = .757	4.635	0.339	4.803	0.297
Inspiring an interest in entrepreneurship	Mean = 4.49 N = 35 Std. = .853	Mean = 3.85 N = 33 Std. = 1.034	F = 7.717 Sig. = .007*	10.623	0.017*	10.564	0.014*
Helping me to gain business start-up knowledge	Mean = 4.23 N = 35 Std. = 1.031	Mean = 3.48 N = 33 Std. = 1.176	F = 7.711 Sig. = .007*	10.186	0.031	10.098	0.027*
Enabling me to learn from other students	Mean = 3.76 N = 34 Std. = 1.103	Mean = 3.97 N = 33 Std. = 1.104	F = .578 Sig. = .450	4.082	0.386	3.976	0.392
Enabling me to learn from other entrepreneurs	Mean = 4.50 N = 34 Std. = .707	Mean = 3.39 N = 33 Std. = 1.144	F = 22.810 Sig. = .000**	17.807	0.000*	18.980	0.000*
Helping me to learn from running projects	Mean = 3.32 N = 34 Std. = 1.093	Mean = 4.52 N = 33 Std. = .906	F = 23.532 Sig. = .000**	25.747	0.000*	27.741	0.000*
Promoting ethical business practices	Mean = 2.76 N = 34 Std. = 1.327	Mean = 4.24 N = 33 Std. = 1.001	F = 26.358 Sig. = .000**	19.783	0.000*	20.255	0.000*
Developing awareness of your community through outreach	Mean = 2.71 N = 35 Std. = 1.341	Mean = 4.41 N = 32 Std. = .837	F = 37.539 Sig. = .000**	25.433	0.000*	25.978	0.000*

Note. In all cases, there were cells with a count of <5, in which case the Pearson statistic should be given less reliability, hence the use of the Fisher's exact test for significance. *These values have a p-value <0.05, i.e. we can reject the null hypotheses at the 95% level that there is no difference between groups.

Table 3. Students' motivations for club involvement analysed by club type

What were your motivations for getting involved in the club?	Pearson Chi-square	P	Fisher's exact test	P
To gain financially	2.048	0.802	2.323	0.765
To get a job	14.753	0.003*	14.348	0.004*
To learn by doing	9.415	0.019*	9.519	0.016*
To gain awareness of business ownership	9.588	0.044*	9.760	0.038*
For social interaction (to meet people)	3.667	0.500	3.308	0.543
To gain knowledge of starting a business	15.014	0.003*	14.924	0.003*
To do something to help others	10.346	0.031*	9.959	0.033*
To enhance my personal skills	6.548	0.117	6.401	0.115
To see my ideas put into practice	3.733	0.462	3.816	0.442
For personal enjoyment	5.749	0.230	5.372	0.248
To become a better employee	7.160	0.130	7.032	0.132
To support my learning for an entrepreneurship class	0.905	0.940	1.060	0.933

Note. In all cases, there were cells with a count of <5, in which case the Pearson statistic should be given less reliability, hence the use of the Fisher's exact test for significance. *These values have a p-value <0.05, i.e. we can reject the null hypotheses at the 95% level that there is no difference between groups.

Table 4. Students' personal learning organised by entrepreneurial learning type

Entrepreneurial learning type (rank order) <i>(1 is strongly disagree and 5 is strongly agree)</i>	N	Std.	Mean
Opportunities			4.03
I have had an opportunity to put my ideas into practice	73	1.257	3.95
I've learnt more about where to find new ideas and opportunities	73	1.189	4.10
Problem solving			4.02
I have enhanced my ability to solve problems	73	1.032	3.93
Having some problems to solve has helped me learn	73	1.069	4.10
Experience gained			3.92
I am starting to have new ideas more often	73	1.080	3.74
I've improved my willingness to take part and do things	73	.988	4.10
Action orientation			3.91
I have become a more proactive person	73	1.098	4.04
I have become better at doing new things	73	1.061	3.77
Learning from mistakes			3.86
We've made mistakes but I've learnt from them	73	1.301	4.03
I've found that the mistakes I've made helped me learn new things	73	1.268	3.68
Reflection on experience			3.62
In order for us to progress I have needed to reflect on my personal skills	73	1.105	3.58
Because I've been involved in doing things I've been forced to reflect more	73	1.346	3.66
Uncertainty			3.62
At times we've been unsure about how our activities will progress	73	1.296	3.71
When we started we were very unclear about where it would lead	73	1.226	3.53
Ambiguity			3.57
Our plans have had to change quite a lot as events occurred	73	1.240	3.82
Where we've ended up was very different from where we intended	73	1.571	3.31

Table 5. Students' perceived personal changes analysed by club role.

Personal Changes	Pearson Chi-square	P	Fisher's exact test	P
I have become a more proactive person	9.035	0.094	8.661	0.086
I have enhanced my ability to solve problems	8.066	0.130	7.515	0.142
In order for us to progress I have needed to reflect on my personal skills	7.348	0.178	6.765	0.204
I'm starting to have new ideas more often	8.354	0.118	7.720	0.131
I have become better at doing new things	4.532	0.531	4.394	0.513
At times we've been unsure about how our activities will progress	12.757	0.020*	12.010	0.025*
When we started we were very unclear about where it would eventually lead	5.435	0.386	5.417	0.369
Having some problems to solve when developing our club has helped me to learn	11.290	0.031*	11.356	0.025*
We've made mistakes when running the club but I have learnt from them	14.119	0.011*	14.374	0.008*
I've improved my willingness to take part and do things	4.031	0.420	3.643	0.462
I've had an opportunity to put my ideas into practice	3.553	0.650	3.865	0.587
Our plans have sometimes has to change quite a lot as events have occurred	10.968	0.045*	10.888	0.039*
I've found that the mistakes I've made while involved in the club have helped me learn to do new things	11.041	0.044*	10.759	0.042*
Because I've been involved in doing things I've been forced to reflect more	4.047	0.565	4.113	0.553
I've learnt more about where to find new ideas and opportunities	10.831	0.046*	10.644	0.041*
Where we've ended up was very different from what we originally intended	12.955	0.021*	12.351	0.026*

Note. In all cases, there were cells with a count of <5, in which case the Pearson statistic should be given less reliability, hence the use of the Fisher's exact test for significance. *These values have a p-value <0.05, i.e. we can reject the null hypotheses at the 95% level that there is no difference between groups.

Appendix 1. Survey design

Categorical Data	Motivation	Personal Learning
<p>About the clubs</p> <ul style="list-style-type: none"> Type of club Number of entrepreneurship clubs Role in the club Nature of university support Faculty advisor Purpose of the club Club activities Challenges to sustainability Managerial practices Credit bearing Length of involvement 	<p>Personal motivations</p> <ul style="list-style-type: none"> Reason for getting involved Interest in learning 	<p>Entrepreneurial learning</p> <ul style="list-style-type: none"> Action orientation Mistakes, crises and failure Reflection on experience Opportunities and problem solving Uncertainty, ambiguity and emotional exposure
<p>Individual</p> <ul style="list-style-type: none"> Gender Age Country of birth Ethnicity Country of study Course of study Stage in study Language of study Family experience of entrepreneurship Personal experience of 	<p>Future intentions</p> <ul style="list-style-type: none"> Business ownership (long term) Business ownership (short term) Improved employability 	<p>Social learning</p> <ul style="list-style-type: none"> Learning from whom
	<p>Changes in self-confidence</p> <ul style="list-style-type: none"> Within the club Starting a business Employability Enterprise skills 	<p>Employability</p> <ul style="list-style-type: none"> More attractive to employers

Notes

ⁱ 52% (n=38) of the respondents were born in the UK and the majority were studying there (90%, n=67)

ⁱⁱ 67%, n=50 were undergraduates while 26%, n=20 were postgraduates

ⁱⁱⁱ As the sample varied between clubs we conducted in-depth cross analysis of the data to ensure that the greater number of mature students in entrepreneurship clubs was not impacting on our analysis and found no adverse effects

^{iv} 65% n=49 engaged with service projects and 44% n=39 ran real businesses

^v Tested using Pearson Chi-squared (0.050 significance)

^{vi} Tested using Pearson Chi-squared (0.050 significance)

^{vii} Tested using ANOVA comparison of means (0.050 significance)

^{viii} ANOVA test of variation between means (sig. 0.000)

^{ix} ANOVA test of variation between means (sig. 0.034)

^x Cross-tabulation Pearson Chi-Squared test (sig. 0.002)

^{xi} Although this may be a feature of the different research method used