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Supporting Student Innovation through an Engagement, Employability and Employment Ecosystem

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Structured Abstract

Purpose
This paper explores how students, full-time and part-time, may be supported in becoming ambidextrous - developing 'intrapreneurial' skills and capabilities, as well as being introduced to more typical 'entrepreneurial' activities. It is proposed that both perspectives will be necessary for future graduates.

Design/methodology/approach
The paper highlights the fast changing nature of the economic and employment context and the future requirements for graduate skills. It analyses and evaluates a framework of curricular and extra-curricular activities which has been developed to address future skills needs. The paper uses a case study to illustrate the issues.

Findings
The paper concludes that with increasingly flexible career paths there is a need for graduates to be prepared for portfolio careers in which they move between employment and self-employment. The development of an independent mindset which can identify and exploit innovation is therefore important.

Research limitations/implications
N/A

Practical Implications
The paper outlines an approach, that has been implemented in a UK higher education institution, to the development of innovation skills which is responsive to a wider range of students than the conventional cohort of young, full-time students.

Originality/value
The paper highlights the importance of designing educational experiences which directly address students' situations and experiences. It also identifies the role of work-based research in the development of an innovative mindset.

Keywords currently: ambidexterity, ecosystem, intrapreneurship, practitioner research, entrepreneurship, work-based learning

Introduction

Much research on, and many practical interventions in, higher education institutions (HEIs) concerning student enterprise and innovation have perhaps, by necessity, focussed on support

mechanisms that assume a homogenised student body. Such support is primarily designed to assist young, inexperienced student cohorts seeking to develop start-up businesses. While, for many institutions – and for many students – this focus is apt, it may be unsuitable for an older, mature, in-work student body. And it will become increasingly less relevant as the student body changes, perhaps driven by the requirements of reskilling and the spread of apprenticeships. Non-homogeneous students will, especially as the world of work changes, have careers that are unlike those who are currently at work. It is likely that students will experience a variety of work types - as employee, as entrepreneur, and as employer. They will have to manage their '*portfolio*' careers in a different way and need a skill set that is both entrepreneurial and intrapreneurial. This paper explores how such a student cohort may be supported in developing '*intrapreneurial*' skills and capabilities, as well as being introduced to more typical '*entrepreneurial'* activities. The paper employs a case study of an atypical, research-intensive UK HEI to illustrate the arguments.

Future Skills and Work Context

It is widely recognised that the context for higher education in the 21st century is distinctly different to that of the 20th century, and that future graduate skills requirements reflect that difference. A major role for higher education (HE) lies in educating the graduate workforce, and universities typically prepare students to be specialists in a range of fields. However, as HEIs have recognised, and governments have prompted, students will often not work in the specialised field in which they graduate, nor do some of the skills gained at university always readily translate to the world of work. As students have borne a higher proportion of the costs of gaining a degree, the notion of university being a place where employability skills are developed has blossomed. While some softer skills such as team working, presentation delivery and time management are universal and timeless, changes in the world of work mean that other skills may be ephemeral or partial - coding perhaps, and some technology use skills certainly. HEIs are then left to develop skills for an unknown, and perhaps unknowable, future working life since, as Susskind and Susskind (2017) claim, the world is on the brink of a '*fundamental and irreversible change in the way that the expertise of specialists is made available in society*', and that technology is the main driver of this change. The pace of technological change, coupled with economic globalisation, has led to a world of '*wicked*' problems, which have been defined as '*problems which are ill-formed, where the information is confusing, where there are many clients and decision makers with conflicting values'*

(Churchman, cited in Dunn and Martin 2006). Such problems occur in a context where '*periods of relative stability and minor incremental changes are constantly punctuated by shifts in system dynamics*' and where '*knowledge and actors' perceptions and preferences are always provisional and changing*' (Head and Xiang, 2016). The extreme fluidity of such a context has real implications for the future work patterns of students now in higher education. As Hopson (2009) points out, '*In the 20th century people rarely thought about a new job unless they were unhappy with the existing one or had lost it*', in contrast, '*Today, no organization can offer a career or job for life. Organizations are born and die or are reinvented'*.

It is in this context that the concept of the ambidextrous organisation has emerged. He and Wong (2004) suggest that ambidextrous organisation exhibit the dynamic capabilities that are needed to blend exploitation and exploration. Harryson et al (2007) argue that ambidextrous organisations are able to embrace incremental and revolutionary change, creating an environment in which established and emerging businesses can coexist. They maintain that innovation is as clearly related to the exploitation and future development of existing organisational knowledge as it is about exploring for new knowledge to develop capabilities that secure future innovations.

Further, as March (1991) identifies, an appropriate balance between exploration and exploitation is a primary factor in the survival and prosperity of organisations, while Schreyogg and Sydow (2010) see organisational ambidexterity as a core dynamic capability, referring as it does to adaptable fluidity and efficient stability. Graetz and Smith (2008) claim that organizational ambidexterity, '*provide[s] buffering contexts [by] enabling explorative project teams to work independently yet cooperatively alongside the traditional management hierarchy, drawing on its resources [of both] experience and expertise',* thus, facilitating an effective response to a constantly changing and uncertain environment. Raisch et al (2009) point out that, '*Some studies indicate that ambidexterity is rooted in an individual's ability to explore and exploit*', and that therefore ambidextrous individuals, who can undertake both exploratory and exploitative activities, may be fundamentally important to organisations. If such abilities are fundamental to organisations then, as people are the primary resource in organisations, it is these people who will need to deliver ambidexterity. This paper argues that HEIs need to develop ambidextrous people - those who can be entrepreneurs and intrapreneurs over their working lives.

The fluidity in the economic environment has implications for future employment patterns, and, therefore, for the future education of graduates. It has led to a move away from a single, stable career path for professionals, and towards a range of different career patterns, including life-style careers (in which employment patterns are adjusted to accommodate family responsibilities, the wish to travel, do voluntary work, or return to study) and portfolio careers, in which a range of occupations is undertaken (Hopson, 2009). This requirement for much greater flexibility in approaches to, and types of, employment means that traditional forms of higher education, based on academic disciplines, cannot sufficiently prepare students for a future requiring trans-disciplinary, generic skills (Institute for the Future, 2011). Generic capabilities necessary to support graduates in the future include the '*need for self-management, reinvention, and knowing how to manage life transitions*' (Hopson, 2009). In managing careers which are likely to be a mix of periods as an employee and periods of self-employment, students need to develop the individual ambidexterity which is becoming increasingly important.

It is with awareness of these differing demands on current and future graduates that Birkbeck, University of London established its model of a Portfolio Education. Birkbeck is a near 200 year old research-intensive institution with a mission to provide higher education for working people, most of whom are located in London. This model is used in this paper to illustrate the concepts discussed.

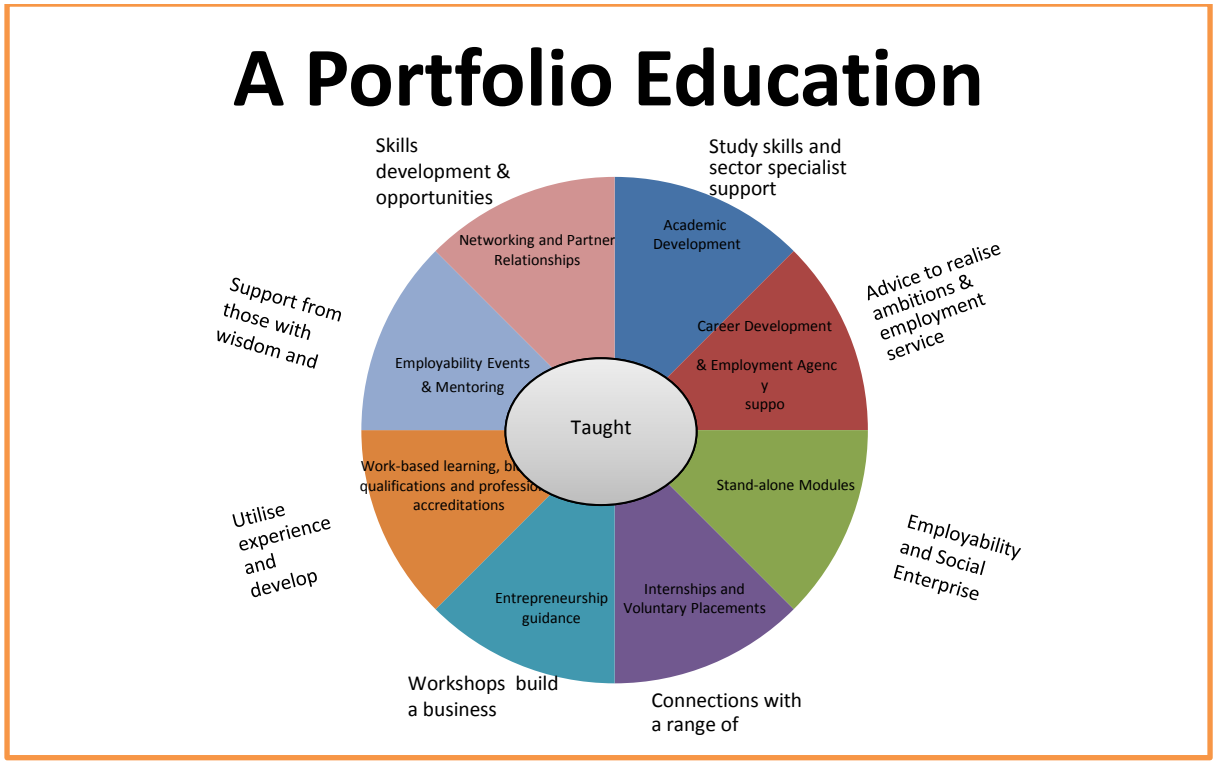

Figure 1: Birkbeck Model of a Portfolio Education

As illustrated in Figure 1, a portfolio education falls under eight categories, and offers a range of activities to support a rounded student experience, and to develop their skills, networks and confidence to make the right choices during, and upon completion of, their studies. Brief outlines of the different activities are shown in Table 1:

Activity	**Detail**
Academic Development	Academic development is key in all HEIs. As in many, the College employs Learning Development Tutors to help students develop study skills and research techniques at all levels of study. The other aspect of this segment is support for students who wish to pursue an academic career via further study and research training.
Career Development and Employment Agency Support	The College has established an employment agency as well as a careers service (rather than use the central, University of London, service) for students, which holds their CVs and matches them to vacancies – this has strengthened the College's link with employers.
Stand-alone modules	Free standing modules in employability and social enterprise skills are offered to students across the College, so that students who wish to can augment their studies with a more generic and skill-based option.

Internships and Voluntary Placements	The demographic of the Birkbeck student is changing and younger students value the opportunity for work experience. The College therefore introduced internship and volunteering opportunities for students.
Entrepreneurship Guidance	Recent statistics suggest that up to 80% of students consider themselves as entrepreneurial (see later) and, recognising the national trend towards self-employment, the College offers a range of activities related to entrepreneurism.
Work-based learning, blended qualifications and professional accreditations	Students are given the opportunity to use their work activities as part of their studies. In addition, the College recognises professional qualifications as part of a blended learning qualification with professional bodies such as the ICAEW. There is also a range of professionally-accredited courses. The development of a range of degree apprenticeships forms a further leg of this activity.
Employability Events and Mentoring	Regular employability events take place and there is a growing mentoring programme which focuses on soft skills and supporting individuals to understand the culture of organisations and the demands of the professions to which they aspire.
Networking and Partner Relationships	Given the nature of the College, student networking is important, and extra-curricular activities provide excellent networking opportunities with fellow students, alumni and employers. Typically, students who come from families with no history of higher education and professional work, lack the social networks that facilitate entry into professional careers. In addition, the College has partner relationships with other HEIs and other organisations, both nationally and internationally.

Table 1. Portfolio Education activities

Many of the activities outlined above will be offered by other institutions, but the nature of Birkbeck gives the activities a distinctive '*flavour*'. The College's tradition as a widening access institution educating, from 1823, working Londoners means that Birkbeck students are diverse – they are not categorised by age, and they usually work and live close by, as do the alumni. This combination of factors is highly unusual. Graduates of non-metropolis institutions tend to move to large cities post-graduation, and high quality institutions not catering to mature, working students have more mobile alumni, with many returning overseas. In contrast, current students and alumni are able to keep close contact with the College, and its alumni are also unusual in their willingness to give back to it. For example, the Birkbeck School of Business, Economics and Informatics has active contact with 11,068 alumni, of whom 5,148 have London postal addresses and a further 2,608 are resident in the south east.

Such a close relationship facilitates partnerships with employers and professional bodies, and

provides opportunities for internships and placements. This provides networking chances for students who have no background in, nor existing ties to employment sectors and so face more difficulties sourcing work opportunities in sometimes '*closed*' fields. Internships which have been developed are either fully- or part-funded, which helps to address the issue that unpaid internships can be taken up only by those students in a financial position to be able to devote time to them. In addition, drawing on alumni resources, Birkbeck has established Mentoring Pathways, through which current students are mentored by alumni, and Careers Clinics, where alumni offer CV and interview clinics to students. The benefits of these activities include the softer skills development, access to networks and sometimes to employment. However, in addition to the various activities aimed to support students in gaining or enhancing employment opportunities, there is evidence of many students' active interest in the development of entrepreneurial skills and the focus in this paper is on two specific aspects of the students' portfolio education – the entrepreneurship guidance, and the opportunities for students to base their learning on their activities in the workplace through using the work-based learning project modules - a form of intrapreneurship. Together, these approaches emphasise the co-creation of knowledge, and support students at different stages of their professional development.

Entrepreneurship

Entrepreneurship is one career route for graduates, but it is less well understood and catered for by HEIs. The GUESSS project (Global University Entrepreneurial Spirit Students' Survey) addresses the question of student entrepreneurial intentions post-graduation; it is a global survey of more than 700 universities in 34 countries. Data from this survey (undertaken in 2013/14) indicates that only 6.6% of all students intend to work in their own firm directly after graduation, either as the founder of a business or as a member of a family business. However, 5 years after finishing their studies, 32.5% of students wish to run their own firm.

Research identifies a number of factors that affect students' attitudes towards self-employment and entrepreneurship. Gender is one factor – there is a considerable literature evidencing a stronger male predisposition towards entrepreneurial activities (de Bruin et al, 2007; Chen et al, 1998; Gupta et al, 2009). There is evidence that children of entrepreneurial parents are more likely to become entrepreneurs themselves (Laspita et al, 2012; Dunn and Holtze-Eakin, 2000). In all, 42.5% of all students with entrepreneurial parents intend to

follow an entrepreneurial career path, be it as a founder or as a successor in the parents' firm (or in another firm). For students without entrepreneurial parents, this share is only 31.5%.

Discussing younger students, Martinez et al (2007) argue that entrepreneurship becomes more attractive for people who are about to make career choices, as this perspective allows participation in the labour market while keeping personal freedom. In addition, Levesque and Minniti (2006) point out that the willingness to transform entrepreneurial intentions into real actions may be contingent on the individual's age.

In the literature, the main concepts referred to when exploring the relationship between entrepreneurial education and entrepreneurial intention are: human capital theory and self-efficacy theory. Bae et al (2014) define human capital as, '*the skills and knowledge that individuals acquire through investments in schooling, on-the-job training, and other types of experience'* – in other words as the skills and capabilities which are developed through formal and informal learning. Self-efficacy theory has been applied in a number of contexts, but in this particular context Chen et al (1998) define it as, '*the strength of a person's belief that he or she is capable of successfully performing the various roles and tasks of entrepreneurship*'. This confidence in one's own skills is fundamentally important in the translation of entrepreneurial intention into entrepreneurial action.

Interestingly, Sieger et al (2014) point out that, if the results of the GUESSS survey from 2013/14 are compared to those of the comparable 2011 survey, it appears that entrepreneurial intentions are declining. In addition, England is one of the countries showing a decline in such intentions across all fields of study. As careers become more fragile and flexible, there is an increased need to equip students with the skills to be entrepreneurial whether they wish to be, or are forced to be, the initiators of their employment. Enterprise education has been found to be an important factor in supporting students with entrepreneurial intentions, and it is found to be generally effective (Bae et al, 2014; Martin et al, 2013).

The distinctive nature of the Birkbeck student body means that it is important to gain a clear view of their needs and interests in the area of entrepreneurship. As an atypical higher education institution, catering to a diverse student body, assuming that Birkbeck students are similar to typical school leavers is erroneous. The data gathered by internal College surveys shows that, during their studies, 20.41% of students are working for themselves, around half

of these as entrepreneurs. However, 45.65% aspire to set up their own business at some time after graduating with about half of these seeing themselves as self-employed consultants. In addition, approximately 12% of Birkbeck students are employer-sponsored. These findings provide a strong contrast to the findings related to intentions reported earlier, and reflect a more heterogenous student body than that of many HEIs, indicating that a '*one size fits all*' approach to entrepreneurship education would be unlikely to be effective.

Generally, the notion that enterprise education is effective in supporting students with entrepreneurial intentions (Bae et al, 2014; Martin et al, 2013) is based on the recognition that entrepreneurial dispositions, skills and competencies can be shaped by education (Kuratko, 2005), and appears to positively affect entrepreneurial intention even when controlled for age and gender (Souitaris et al, 2007; Kolvereid and Moen, 1997). However, in the GUESSS study almost two thirds of responding students had not taken any courses related to entrepreneurship, although around 20% had taken an entrepreneurship course either as a compulsory module or as an elective option. Fewer than 10% of students took a programme which specifically focused on entrepreneurship.

When designing enterprise education for its students, Birkbeck needs to support students in effectively developing entrepreneurial activities, rather than in just knowing more about entrepreneurship. The focus of workshops and events is therefore on providing practical guidance on how to get started. The Birkbeck Enterprise Community, Competitions and Awards (BECCA) course is offered to all students across the College. Its primary aims are to: provide the environment for students to develop new creative ideas; provide knowledge of how to generate income from such ideas; support students in applications to external enterprise competitions and programmes, and build student self-confidence in relation to entrepreneurship and enterprising activities. The course includes advice on how to set up a business using Lean Start-Up methodology; identifying customers and raising finance; a business planning master-class in support of the Santander Entrepreneurial Awards; and expertise '*on tap'* where guest professionals are available to offer advice. On completion of the course students are able to identify suitable opportunities in a wider London ecosystem for advancing their entrepreneurship or enterprise project goals.

As Cope (2003) points out, in actuality, the '*learning activities of entrepreneurs emerge from the reactive or proactive response to opportunities and problems*' - that they are experiential.

All Birkbeck's enterprise activities are designed on the basis of experiential learning. For example, on the student entrepreneurial boot camp, students from Birkbeck and from two partner higher education institutions, spend the day working on a variety of different business models including PESTLE analysis, and focus on developing their problem solving and idea generation skills. Student teams pitch their creative ideas for a solution to a live Microsoft business problem with the winning idea receiving a cash prize. The competition is judged by their fellow peers and institution staff. Other activities included the piloting of co-working spaces for student entrepreneurs in hubs across London to gauge the effectiveness of such provision. Further, recognising that students with entrepreneurial intentions are not an undifferentiated group, the services of two specialist coaches are provided in order to support entrepreneurs in the technology industry, and those wanting to make the switch from life in a corporate environment to a self-employed one. In order to ensure wide accessibility of entrepreneurial materials, on-line enterprise tutorials are made available across the College.

The range of extra-curricular activities outlined are designed to develop human capital in the form of entrepreneurial skills and capabilities, and the confidence to apply these. Defining an entrepreneur as someone who, '*notices and seizes opportunities; converts those opportunities into commercial ideas; adds value via processes, effort, capital or capabilities; and confronts the risks of the competitive market to apply those ideas*', Gundogdu (2012) argues that entrepreneurship is a *mindset.* However, although entirely familiar with the term *'entrepreneur'*, students frequently are not clear on what activities and attitudes are required to fulfill the role. In such a context, entrepreneurship education can have a two-fold effect. On the one hand, the positive effects of entrepreneurship education are uncontested, as it may enhance students' relevant skills and capabilities, and may '*prepare*' them for an entrepreneurial career. On the other hand, entrepreneurship education may make some students realise that becoming an entrepreneur may also have disadvantages and that it is challenging and difficult to be successful. Put differently, some students may have glamorised and inaccurate expectations of entrepreneurship, and might be brought '*back to reality'* by attending entrepreneurship education offerings. Hence, entrepreneurship education could 'sort out' students with unrealistic expectations but make the '*remaining*' intentional entrepreneurs more committed and more skilled.

Intrapreneurship and Work-Based Learning

The foregoing discussion of entrepreneurialism focuses on students who have self-identified as interested in innovation and in being entrepreneurs, who wish to bring something new into being which will be to their own eventual benefit. This provision caters for students – either full-time or part-time – who already find the concept of innovation attractive. However, many Birkbeck students are permanently employed – in public, private and third sector organisations – and they are studying in order to improve their career prospects with their current employer. Therefore, experience at Birkbeck indicates that a definition of entrepreneurship, which focuses on innovation ab initio, outside the parameters of an existing organisation, whether large or small, is a limiting one. As Carrier (1996) points out, '*entrepreneurship as a source of innovation is not the exclusive province of new venture creation*', and she argues that innovation within organisations is equally important. Referring to the move in the academic literature from discussing innovation in terms of entrepreneurship to the consideration of both entrepreneurship and intrapreneurship, she states that, '*the concept of intrapreneurship is almost always synonymous with innovation initiated and implemented by employees*' (Carrier, 1996). In addition, Seshadri and Tripathy (2006) point out that, '*intrapreneurial innovation can be incremental or radical*'. Intra-organisational innovation undertaken by employees provides the context in which intrapreneurship and work-based learning is linked.

Many Birkbeck students who are already employed (over three-quarters report being employed on enrolment) often do not wish to change their employment status, although they are seeking advancement in their careers. Working students, as work-based learners, are also keen to demonstrate the relevance of their studies. The College recognises this and provides the opportunity for them to develop intrapreneurial skills and capabilities through work-based learning project modules. Intrapreneurship involves the exercise of entrepreneurial skills by employees within an organisation. For organisational innovation to take place, it is important that those working in an organisation move from an '*employee*' mindset to taking psychological ownership of their working activities and becoming '*intrapreneurial'*. The work-based learning modules provide students with the opportunity to explore work-place issues of direct interest to them and of relevance to their organisations. The adoption of a new critical perspective from which to consider familiar practices and processes supports students in a deeper engagement with their work-place, and leads them to propose innovation and change in this context. The ability to evaluate or explore work-place practice is

something which can be of particular value in the context of small and medium-sized enterprises.

Seshadri and Trepathy (2006) argue that, although intrapreneurship can take place at any level of an organisation, an intrapreneurial approach '*fundamentally involves taking ownership, i.e., operating with an entrepreneurial mindset'*. Such a mindset involves '*a much more intense form of engagement [with the workplace] than operating with an 'employee mindset"*. This paper does not focus on how such an intrapreneurial mindset is developed, but the case is made here that, by involving work-based students as practitioner-researchers in their own workplace, they develop a perspective which enables them both to '*problematize'* their own work context and to become more deeply engaged with it.

For example, the Professional Studies programme at Birkbeck is a part-time undergraduate degree programme which is designed to enable students, who are usually working full-time, to use their activities in the workplace as the focus for their studies. One way in which this happens is through students undertaking work-based research projects, where they act as practitioner-researchers and undertake embedded research in their own organisations. Griffiths (2004), discussing teaching-research links, outlines a typology of approaches to teaching which relate teaching and research. These are as follows*:* (i) *research-led* teaching is based on specialist research interests of academic staff; (ii) *research-oriented* teaching which focuses on the processes of knowledge production; (iii) *research-based* teaching where the curriculum comprises inquiry-based activities; and (iv) *research-informed* teaching which is a systemic reflection and evaluation of the teaching and learning process itself.

The Birkbeck model falls into the third category, and takes the form of what Gibbons et al (1994) would term Mode 2 knowledge, in that the inquiry-based applied research deals with knowledge produced in the context of its application which is therefore trans-disciplinary. Gibbons et al argue that 'Disciplinary boundaries matter far more in education than in research. They are more important inside the university than outside'. Engagement with work-based research helps contradict the notion that '*problems fall under disciplines, that they come pre-packaged, and that they have correct answers*' (Beckett and Hager, 2002). As Van Manen (2001) points out, '*What distinguishes this new epistemology of transdisciplinary (sic) and application is that it is more context sensitive, eclectic, transient, and inventive than traditional (or mode 1) ... research practices and methodologies*'. The adoption of a

transdisciplinary approach enables the research to be driven by the interests and challenges of the workplace, as opposed to the interests and practices of an academic discipline. In contrast to the more conventional placement student, who spends a set period of time in the work-place as part of their studies, Professional Studies students are employees. They are undertaking research in the context of their own practice, a context which is familiar to them. Jarvis (1999) points out that practitioner-researchers have a '*qualitative and in-depth involvement*' in the '*richness of the potential problematic situation'*, and are, therefore, '*more likely to be in a position to pose the right questions for research than individuals coming from outside to investigate*'. This familiarity with the complexities of the work context means that work-based researchers can focus on research which is most relevant to the professional practice in their area, recognising why it is necessary to explore a particular issue. As Costley and Armsby (2007) identify, work-based/practitioner-researchers undertake their research '*with the intention of bringing about useful and immediate outcomes*'. They, therefore, have a strong motivation to succeed in their exploration.

Academic staff working with students who are practitioner-researchers in their own workplace need to be aware of the methodological complexity which arises from the closeness of the researcher and the focus of the research. However, as Siebert and Mills (2006) explain, '*It is not argued ... that the worker/researcher is immune from or is able to exist outside the workplace context, only that by dint of having to see the workplace from the context of the academy and vice/versa s/he is in a much better place to strive for an autonomous understanding of the world experienced there'*. Having to negotiate the boundary between the worlds of work and of research provides the student with a new perspective on a context which was previously familiar, and deepens their understanding of their workplace. It provides them with an alternative viewpoint to draw on. Students are given the research tools with which to evaluate their own context, and, as Hodkinson (2005) points out, '*existing practices are challenged by crossing the boundary into a new situation'*. Van Manen (2006) argues that the stance which focuses on '*objectively*' theorising a practice from a detached perspective, rather than actively engaging with it, expresses '*the modern theoretical attitude [which] tends to turn us into non-participating spectators, surveyors of the world'*. Such a perspective is not useful from the pragmatic perspective of the practitioner. Practitioner-researchers do not attempt to explain their world in a detached manner, either to themselves or others, but intend either to inform it or change it. As Jarvis (1999) explains, the '*practitioner researcher begins with a question about practice, rather*

than a question about the theoretical interpretations of practice'. With such research, '*The emphasis is on relevance, practicality and meeting the specific information needs of specific decision-makers and policy makers*' (Patton cited in Costley and Armsby, 2007). Practitioner researchers are, therefore, frequently involved in research which will have a direct impact on the context in which it is carried out.

However, in respect of the research undertaken, the requirement for the adoption of a '*Robust methodology and a meticulous audit trail will ensure that interpretations are justified and supported with evidence, and that the voice of the researcher will dominate over the voice of the worker'* (Siebert and Mills, 2006). The distinction, here, between worker and researcher is of fundamental importance. It is made clear to students that there are different ways of seeing their work context and practice – from the perspective of worker/employee, and from that of researcher. The latter stance requires them to take an appropriately neutral view of any situation being researched, providing an evidence base for any judgements made. In order to successfully complete practitioner research in the workplace, students must negotiate access to the workplace resources and to the respondents which will enable them to answer their own research question. They must, therefore, build confidence in their approach to their research.

As Walsh (2010) explains, such research is undertaken with the explicit intention of contributing to work-based practice and/or to improved and better-informed organisational functioning. Frequently, the practitioner/researchers will make recommendations for change to processes and procedures. Such incremental innovations are context-specific, and would not have emerged without the student's engagement in the work-based research which is part of their academic study. Their commitment to the research and its outcomes demonstrates the '*extremely strong sense of 'psychological ownership' that is well beyond the call of duty*', which Seshadri and Tripathy (2006) claim is the hallmark of the intrapreneur. It is also consistent with Carrier's (1996) claim that, '*the intrapreneur's usual job conditions the type of innovation he or she will propose'.*

The entrepreneurship and intrapreneurship activities analysed here are brought together as part of a College-wide ecosystem.

Enacting an Ecosystem

The activities which form the entrepreneurial and intrapreneurial curriculum are embedded in the Birkbeck Engagement, Employability and Employment Ecosystem (B4E), which the College has established by building on its unique educational philosophy and it long tradition of providing flexible learning. For most of its 194 year history, Birkbeck has specialised in part-time evening courses for mature students, 76% of whom are employed while they study. The commitment to widening access to working Londoners means that the College has delivered a rich and distinctive classroom experience to a heterogenous student body. The experience offered in such a context provides a strong contrast to that provided in more conventional HEIs with predominantly full-time students who enter higher education directly from school. The B4E has enabled the strengthening and embedding of many existing activities in the College, providing students with a '*portfolio education'* which gives them the opportunity to develop or enhance employment and employability skills, and to engage more effectively with workplace practice.

Business ecosystems encompass a number of organisations whose individual activities are intertwined. A business ecosystem is a collaboration of organisations that seeks to create a system of complementary capabilities and provides an opportunity for participants to develop links within a co-operative approach to developing businesses. Modelled on a business ecosystem, the B4E aligns Birkbeck with what is happening in the work-place with the development of portfolio careers and the need for a more entrepreneurial and intrapreneurial approach. It also enables the institution to engage more deeply with business and the community.

The development of an ecosystem fits with Cornuel's (2007) view that the future will involve partnerships and alliances that will give economies of scale and better opportunities for staff and students, and that learning will become more '*real world*'. In the current market model of higher education, it is argued that a customer-led perspective is instrumental in improving performance and competitiveness. However, listening too closely to your customers may inhibit change, as responding to customers' expressed needs is short-term and reactive. In contrast, according to Bailey and Dangerfield (2000) a more effective market orientation is concerned with anticipating customers' current and future, expressed and latent needs, involving a longer term focus and more innovation. Businesses and other large organisations are the primary '*customers*' of HEIs but they are dissatisfied customers (Barber et al, 2013).

Yet, many businesses currently engage with universities only when it comes to the recruitment of graduates, which is too far downstream to have any real impact on the HE curriculum or other university activities. Recent attempts to enforce greater employer involvement, such as the development of Degree Apprenticeships, have caused some concern over the shape of the curriculum (Powell and Walsh, 2017). HEIs' external stakeholders need to be more actively involved in explaining their requirements to the sector, and to engage in discussions relating to areas from course development to shaping policy. The B4E with its model of mutually dependent stakeholders offers a way to reconcile differing demands, to the benefit of students and organisations.

As part of the B4E, the provision of a portfolio education provides a range of complementary activities to develop students' skills, networks and confidence. As Dobrow et al (2012) point out, '*trends such as globalization, technological innovations, and changes in organizational structure ... make securing developmental assistance from a number of people who span various social spheres more necessary than ever for individuals'*. Through the B4E the College provides for students and alumni a range of diverse networks, offering them access to the information or resources which can enhance their personal and professional development. The College has a large intake of students who are from groups which traditionally have very low engagement with higher education – such students do not have a strong social capital in their background, nor do they have access to the kind of networks which are increasingly important in getting and maintaining employment. Therefore, this range of activities is likely to have particular value for those students who come from a widening participation background, and whose access to professional networks would otherwise be limited.

Students are able to select the opportunities which are most relevant and appropriate for them, and the flexibility of the model allows a response to changing needs over time. Those students wishing to establish their own business or develop a particular business opportunity are provided with workshops and activities relating to entrepreneurship and innovation, whereas students who are employees can use their activities in the workplace as the basis for the work-based learning modules.

Discussion and Conclusions

The nature of the current work context changes graduate skills requirements. As Susskind and Susskind (2017) point out, the pace of change is so rapid that, in future, career success will '*depend less on having great swathes of technical knowledge than on having creativity and strong interpersonal skills*'. There is a need for people to have the capabilities to manage a flexible career path, and to move between occupations, rather than climb a stable hierarchy in an organisation. Small and medium-sized enterprises will be more important in the new economic structure, as they are the '*strengthening small actors of the growing world economy*' (Gundogdu, 2012). In such a context, technical knowledge may be necessary, but it will not be sufficient. The opportunity for students learn through engaging with practice increases in importance. This is because, as Raelin (2009) explains:

> [practice-based learning] *is a form of learning which resists closure because it is based on real-time inquiries ... It also responds to the need for critical reflection about work and organizational processes that concurrently enhance self-awareness and political consciousness.*

Self-employment and entrepreneurship are growing in scale. Yet, in the phase immediately after new product development/new firm creation, it is unlikely that any innovation will be the basis for a full-time job, and small enterprises frequently employ part-time workers as they develop in scale. It is, therefore, likely that the distinction between employment and self-employment will be less clear cut, and that graduates will be changing roles between employment and entrepreneurship. In such a context there is a need to network effectively to ensure access to opportunities (Hopson, 2009).

The B4E offers activities which are designed to build and nurture a community of students who are interested in innovation and entrepreneurship, providing them with the skills necessary to start and maintain their own business. It helps develop an innovative mindset in students who are employed, but who wish to influence practice in their organization. Gundogdu (2012) argues that, '*Entrepreneurship is first and foremost a mind-set. To seize an entrepreneurial opportunity, one needs to have a taste for independence and self-realization*'. Birkbeck has a relatively high proportion of students who are entrepreneurial, but employed students find independence and self-realization appealing. It is easy to overlook the contribution to organizational innovation which is made incrementally, but, as Seshadri and Tripathy (2006) point out:

> *intrapreneurism can manifest itself in any role and function in an organisation. ... We*

> *could, thus, have intrapreneurs in technical or non-technical functions; senior, middle or junior management levels; line or staff functions; manufacturing or service-related roles.*

As Amabile and Pratt (2016) argue, '*the creativity of individuals and teams feeds organic innovation in organizations'*, and '*people are most creative when they are primarily intrinsically motivated'*. The important aspect of entrepreneurial and intrapreneurial skills development in a university context is that it supports and enhances intrinsic motivation. By emphasising the co-creation of knowledge and applying the criticality which is an intrinsic part of higher education, the university encourages the mind-set which is appropriate for entrepreneur and for intrapreneur/employee. In addition, by setting this approach, in the context of the B4E, the College alerts students to the value of networking and of crossing boundaries – something which is likely to be of increasing value in their future professional life.

The activities described here have built up year by year. The mentoring programme now runs with 150 mentors and mentees. The careers clinic provides advice to hundreds of students supported by 37 alumni. A Birkbeck student was runner-up in a national enterprise competition. However, many of the entrepreneurial and intrapreneurial activities aim to impart long-term skills, so the value of these activities may not be apparent for some time. With its long tradition of educating working people and its '*local*' identity, Birkbeck envisages study at the College as providing a '*lifetime membership*' rather than a one-off credential. Because of the varying ages and motivations of the student body, the institution recognises that higher education is '*about providing access to and updating of all kinds of abilities, interests, knowledge and understanding through life*' (Osborne, 2007). There is a recognition that, in addition to the content of the formal curriculum,:

> *The co-curricular and extra-curricular is vital in offering different kinds of opportunities for learning as well as different ways of learning, particularly through active participation in projects that contribute to civil society and engage the public.*
>
> (Rammell, 2016)

As Tomlinson (2017) points out, formal and informal experience in higher education can significantly enhance the agency of students, building a variety of personal capitals. Activities provided as part of the B4E, together with work-based learning in the formal

curriculum, engage with students in the co-creation of knowledge, building students' confidence in their own self-efficacy. In addition, the collaboration between staff and students, between students and students, and between students and alumni evidences the importance of working with others in the social creation of knowledge. In this way, students are alerted to the value of collective action at the same time as they engage with their local HE community.

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