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Enterprise Skills Development Programmes

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Enterprise and Entrepreneurship for Postgraduate Research Students

Report One

Desk Exercise: Enterprise Skills Development Programmes

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Executive Summary

Phase 1 of the project consisted of research into training provision at British universities to collect and assess information about enterprise skills development programmes for postgraduate research students (PGR). The information was retrieved through online sources including official university web pages and national researcher development websites. Following exploration of over 300 institutional web sites, we found *14* universities running independent enterprise programmes specifically aimed at PGRs. We also found that consortia of universities have created *4* regional PGR enterprise boot camps as joint initiatives. The most interesting and effective of these programmes are co-ordinated and hosted by the University of Manchester (Manchester Enterprise School and range of PGR Enterprise modules), University of Birmingham (PESS), University of Leicester (ESPR), University of Cardiff (i-Solve), and University College London (LERU Boot Camp). University College Dublin and Trinity College Dublin, Ireland have also been included in this report as they provide a comparative perspective owing to their inclusion of enterprise modules on PhD programmes which provide ECTS accreditation and recognised certification.

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Introduction

Many British universities are increasingly becoming focussed on developing entrepreneurship in the curriculum owing to the impact it can have on academic infrastructure, organisational culture, engagement and potential alternative sources of employment for graduates. Within the UK, the NCGE (National Council of Graduate Entrepreneurship) and BIS (Department for Business Innovation and Skills) have also developed competitions for the most entrepreneurial universities. In the 2010/2011 competition, Brunel University was voted Entrepreneurial University of the Year. University of Central Lancashire, University of Hertfordshire, Imperial College London, University of Plymouth and Teeside University were finalists.¹

Many of the universities we assessed have entrepreneurship and enterprise programmes that are either primarily targeted at undergraduates or available to all members of the organisation. However, only a relatively small number of universities provide entrepreneurship and enterprise skills specifically for postgraduate researchers. This finding emphasises the importance of recognising and understanding the nature of programmes that are designed solely for postgraduate level. These programmes have been found to have intellectual value through improved communication between researchers, but they can also have significant impact by providing an inter-disciplinary platform for researchers, professional mentors and professional external bodies, commerce and industry to create synergy with participants from the university in the context of entrepreneurship. Such programmes can also have a considerable impact on various stakeholders of the organisation as they can be used as a form of competitive advantage and added value for the research experience whilst also creating a wider impact by inspiring and engaging ‘tomorrow’s professionals’ through the process of equipping them with enterprise and entrepreneurship skills that can be used across a large range of social, commercial and industrial opportunities.

The analysis and assessment of postgraduate enterprise and entrepreneurship skills is currently an underdeveloped area of academic literature and there is a need for academics, practitioners, and organisations to understand the potential benefits of developing this research. Zeleski & Swiscowski (2009) investigated the influence of gender and attitudes of 345 UK doctoral researchers in SET (Science, Engineering and Technology) disciplines and found that although, all respondents of the survey preferred to work in academic institutions,

¹ http://www.ncee.org.uk/publication/entrepreneurial_university_of_the_year.pdf

males were more inclined towards commercial industries whereas females would prefer to enter the public sector. Women were also less likely to start their own businesses than their male counterparts. In addition, there is also a positive relationship between education and entrepreneurship, as education increases an individual's propensity towards entrepreneurship and thus makes them more likely to establish faster growing firms (Storey, 1994; Evans and Leighton, 1990).

Gartner (1985) believed that entrepreneurs respond to their environment and therefore, 'incubator organisations' can in fact create entrepreneurs. Enterprise and entrepreneurship should be of an interest to all doctoral researchers regardless of discipline or planned career path. This is because of the wider transferability of such skills, which enhance graduate employability. Many existing enterprise programmes available to postgraduate researchers have been designed around the environmental variables of entrepreneurship, for example, Bruno and Tybejee (1982) found a variety of environmental variables have a significant influence on new venture creations such as the availability of venture capital, proximity of universities, availability of supporting services, governmental influences, and the presence of experienced entrepreneurs.

Methodology

The methodology consisted of compiling a list of institutions on the UCAS recognition list. A manual search process was conducted through a three step procedure to identify current postgraduate enterprise training programmes.

1. The first step consisted of entering the title of the university with keywords such as "PGR Enterprise", "Postgraduate entrepreneurship", "Enterprising skills", "Doctoral Enterprise", "Academic Enterprise", "Postgraduate skills" etc.
2. The second step was to access the various areas of the website and internal newsletters by searching in the business and development, graduate centre, research degrees, support for postgraduate students/researchers, and many other aspects of the website. The third step consisted of searching internally on the university search engine to confirm whether programmes were in fact available. Many colleges of higher education were excluded from the three stage search process as they did not offer PhD programmes and therefore, would not be operating such Doctoral/PGR training programmes. Universities offering specific

programmes to PhD researchers were reviewed and programmes which were not specifically targeted at postgraduates were also excluded from the findings.

3. The Third step was using online search engines to access intermediary websites such as Vitae (online) to ensure that all relevant events are included in this report.

1. University of Birmingham: (PESS) – Postgraduate Enterprising Summer School

Programme duration: 5 day (intensive)

Target audience: Doctoral Researchers, MRes, and MPhil students.

The programme covers a range of topics related to entrepreneurship and enterprise including innovation, business planning and strategy, marketing, finance, communication, presentation and networking skills. This programme seeks to provide enterprising skills to enhance career development opportunities, with its deliverables being transferable to enterprise, academia or any other sector. As well as providing the benefits of entrepreneurial skill sets, it also focuses on the networking aspects by providing a platform for internal and external like-minded members to communicate and build networks.

The programme is delivered through interactive professional skills training sessions, interactive workshops, internal and external speakers, guest speakers and a variety of activities. Furthermore, it seeks to develop team building skills to create innovative new products and services. The participants of the programme use the skills that have been learned during the programme and are required to deliver a pitch to panel at the end of the programme. The cohorts are divided into 6 teams and are required to develop a feasible idea of a new product/service which can have a positive impact to society and/or the environment.

The cost of the programme is £30 to all PGRs which includes all necessary training materials, lunch and refreshments. Applicants are only allowed to take the programme once in 12-18 months.

2. University of York (The Enterprising Researcher)

The Enterprising Researcher is a three day programme in which various types of workshop, case study material and external consultant speakers aid the delivery of the programme. The

content of the programme consists of market scoping, intellectual property rights and management, marketing and sales, raising finance, negotiating, pitching, leadership skills, networking, motivation, business plan development, spin out company formation and licensing agreements and exit strategies. The course places importance on the team working skills which contributes to the development of a virtual product. The final session consist of delivering a sales pitch and an investment panel constituting of external speakers.

The programme is designed for PhD students, post-doctoral and early career research staff. Although the programme invites applications from other universities in Yorkshire, priority is given to those that are funded by the EPSRC. The programme is free, including the hotel lodging of participants. The programme is beneficial to those wanting to advance their commercial and social opportunities in research (Institution) and future careers (Industrial). The affiliation of this programme is with Science City York with the University of York.

3. Salford University (SPoRT Programme)

There are three modules within the broader programme of 'SPoRT,' which covers many aspects of postgraduate training such as research methods, information literacy, personal qualities, research management, communication etc. This is aligned with the Researcher Development Framework. There are three workshops within the programme which cover entrepreneurship skills:

3.1 *Idea Generation:* aims to encourage the participants to be creative and develop business ideas. The group spends 10 minutes to brainstorm on related topics and move simultaneously to different tables. The groups are then required to report on their particular product or service in which they believe there is a market potential.

3.2 *Xtreme Brand Makeover:* Focuses on developing marketing skills which can be beneficial to the participants' PhD Studies and their personal development. The workshop intends to encourage the transfer of various contexts of creativity and marketing to career and research management. Participants are provided with problematic companies and are expected to resolve the problem through brainstorming and identifying selling points of their brand, target audience, brand associations and marketing messages. Towards the end of the workshop, the participating groups produce a 30 second advert for their brand.

3.3 *Business Start-Up:* The session focuses on important factors needed to be considered when starting a business such as funding, legalities, IPR, and markets. Participants

are placed into groups and required to develop a business idea and apply all the factors related to the business. This programme is linked to a workshop on idea generation and students are allowed to remain in the same group throughout the programme session.

4. University of Plymouth (PhD Enterprising Skills Project)

The programme is open to postgraduate students of the University of Plymouth and the objective is to develop enterprising skills such as interpersonal skills, generic research skills, innovation and enterprise practices, knowledge transfer and outreach activities, career management and developing employability. The programme is cross discipline and participants are not required to have any previous skills of business and enterprise. The programme is funded by the EPSRC. There is currently no further information on whether this programme is being continued as the last update was posted in 2008-2009.

5. University of Manchester (Enterprise and Entrepreneurship Elective Modules and Workshops)

The University of Manchester has a range of enterprise modules and workshops related to entrepreneurship. The workshops invite postgraduate and postdoctoral researchers to gain skills which will be relevant in academia and the commercial world. The workshops invite participants from a range of disciplines enabling them to maximise their attractiveness to potential employers. They focus on creativity, networking, intellectual property, risk versus rewards/change, finance and marketing. Participants are given the opportunity to pitch their business ideas in groups to a panel of judges.

In addition, there are 12 elective optional modules related to entrepreneurship that are also available to postgraduate researchers and are also cross disciplinary. The elective modules are drawn from various MSc programmes that have an enterprising/entrepreneurship content. The modules are knowledge transfer, developing enterprising individuals, fundamentals of enterprising organisations, shaping ideas for the market, business creation and development, skills for sustainability and social responsibility, business thinking for the arts, finance funding and business planning in the creative industries, creative industries marketing

strategy, new entrepreneurship ventures, research methods, technology, innovation and the commercialisation of research.

6. University of Leicester (Enterprise Skills for Postgraduate Researchers)

The University of Leicester provides postgraduate researchers with enterprise skills, which include knowledge of functional aspects of business such as marketing, finance, and business planning skills and helps to develop their behaviour and attributes to broaden their entrepreneurial capacity and ambition. The skills gained from the course intend to enhance the professional development of researchers. These are delivered through the two programmes below:

6.1 *'The Winning Team'* sponsored by the EPSRC (Three Day programme)

This programme invites researchers from all departments within the University but specifically focuses on researchers from engineering and science backgrounds. They are placed in small teams to develop a new product for sale in the economy and prepare a business plan leading to a final presentation 'pitch' to a panel of examiners that judge their efforts.

6.2 *Young Entrepreneurs Scheme*

The Young entrepreneurs scheme consists of two years competitions to help participants develop enterprising skills and to also receive practical experience in commercialising their research by relating concepts such as product design, marketing, and business planning. This consist of two annual competitions 1) Biotechnology YES and 2) Engineering (YES).

7. University of Cardiff (I-Solve)

The programme utilises interdisciplinary teams of postgraduate students and research staff to develop innovative skills and to identify commercial opportunities for breakthrough technologies being developed within the institution. The students collect and analyse information to take technology to the market. The programme invites postgraduates from all disciplines to create the interdisciplinary teams to find solutions for real-life projects. The programme is funded by the EPSRC.

The programme was first developed at MIT in Boston and at Cambridge University. The programme encourages the development of interpersonal skills, team working, and inter-disciplinary networking. The programme does not require any previous experience.

8. University of Stirling (SURE)

The programme intends to develop the essential skill set of postgraduate students to increase their employment opportunities. The programme is still in development and further information about this programme will be available in a few months.

9. University of Bath (PG skills: Postgraduate skills training)

The enterprise programme has been broken down into various workshops which are available to research staff and research postgraduates. This includes collaborating with commercial organisations and university intellectual property, Innovation for researchers, intellectual property, commercial research, consulting in academia, finances for business, thinking about business, turning ideas into great businesses and business plan writing. There are three e-learning modules on entrepreneurship which enables the users to gain an understanding about defining entrepreneurship, recognising opportunity, creation and evaluation of ideas, and managing resources (people, teams and finances).

10. Oxford Brookes University (Enterprise Training)

This programme is delivered through a series of three workshops and invites postgraduates and staff to gain enterprise training. The programme is free of charge. There are no further details available about the content of the programme on online sources.

11. University of Strathclyde (Enterprise Academy)

The programme is available to Early Career Researchers and Postgraduate Researchers and is held at a hotel. The Academy delivers a clearer understanding of developing business plans, communication skills such as 'Elevator Pitches', marketing and financial skills, inspiring and capturing audiences, generating and screening new ideas and information about the relevancy and types of entrepreneurship. Participants are placed in inter-disciplinary teams to create an idea and will use the skills learned in a real live pitching competition. The ideas are presented to an MBA panel and an S1000 members event. The winning team is invited to an Enterprise

awards dinner ceremony. Successful completion of the assignment provides a Level 2 qualification in "Preparing for Business Enterprise". Up to 50 users are allowed to join this academy per year.

12. University of Nottingham (Biotechnology YES)

This scheme is only designed for bioscience postgraduates and post-doctoral researchers, assisting them to create a business plan through a competition.

13. Kings College London (Lion's Den)

This programme is open to all postgraduates (Masters, PhD, and Post-Doctoral) and provides a series of enterprise seminars, workshops and events with input from entrepreneurs to acquire skills such as networking, market research, marketing technique and generating new ideas. The top prize of £2000 is provided to the winner of the programme. Further information is only available for members of the organisation.

14. University of Sheffield (CREED: Ideas to Enterprise I2E)

This programme is open to first, second and third year postgraduate research students registered on the Doctoral Training Programme and Research Training Programme Schemes. The programme lasts 7 weeks which is organised through a series of 3x3 hour workshops and 2x1 hour meetings, 1x2 hour presentation and discussion and also a final panel assessment sessions. This requires participants to participate in teams and also work on projects in their own time. The programme allows participants to understand enterprise, innovation and entrepreneurship and work with Fusion IP plc which is a University partnership and work in interdisciplinary teams. Participants are expected to develop a solution, product, or service to a company and take an individual director role (e.g., CEO, finance, technical, sales). The teams will develop a business plan based on the product/solution/service and will present this in a pitch for investment/funding. The examining panel consists of three people from industry who are potential investors. The winning team receives a cash prize and trophy.

The aim of this programme is to develop enterprise and entrepreneurial skills which are outlined as networking skills, marketing, creativity, intellectual property management and starting a business.

15. Ireland: University College Dublin and Trinity College Dublin

These two institutions based in Eire have created ‘The Innovation Academic: *Study Makes a scholar, Action Makes an Entrepreneur*’. The innovation alliance consists of the institution being affiliated with various types of industry (e.g. Havok, Changing Worlds, Opsona Therapeutics and BiancoMed).

The Academy is a joint venture between the two institutions and is designed to build resources and synergies between them and recognises the need for higher education to be a catalyst for innovation in Ireland. The programme not only has a focus on innovation but also develops entrepreneurship to create new inventions, ideas and knowledge that can lead to new products, services and policies of benefit to society and the economy.

The programme invites PhD researchers (from any stage of their PhD progression) from a wide range of disciplines (arts, humanities, business, science and engineering) to create synergy and to encompass creativity, leadership, cultural and policy innovation. The programme provides a platform from cross disciplinary, multi-cultural, and vibrant community graduates to develop complimentary skill-sets to their PhD disciplines.

The innovation academy allows students and academics to interact in multi-disciplinary groups with mentors from the public and private sectors to develop and nurture creativity, innovation, entrepreneurship and teamwork. This also provides postgraduate research to realise the potential for innovation innate within them and their research. The programme has two components:

15.1 *Creative Thinking and Innovation (10 ECTS) Total: 200 hours*

This is one week intensive short project which includes a mentor from the public or private sector to add value in the research teams. The projects are created to promote constructive team dynamics amongst researchers and to develop network relationship between peers and potential future patrons and employers.

Assessment of this programme is through activity based exercises, self-reflection log, and mentored project.

15.2 *Opportunity Generation and Recognition (5 ECTS) Total: 100 hours*

This module helps provide the PhD student to identify and assess the skill-set required to develop their ideas. Following the ethos of a multidisciplinary academy, participants develop networks with peers with similar skills sets from other disciplines with whom they work with on the future development of new ventures. Following completion of the modules, PhD researchers can identify any potential pitfalls that they are likely to encounter during the development and implementation process and have the strategy to navigate around them. Assessment of this module is through activity based exercise and self-reflection log.

Following completion of the programme participants are awarded with a ‘Graduate Certificate in Innovation and Entrepreneurship’ in addition to the candidate’s PhD.

16. BOOTCAMPS

17. Northern Enterprise Consortium

Universities of the NW region include Sheffield, Liverpool, Leeds, Lancaster, Durham, York and Manchester. Within the Northern Enterprise Consortium there are three programmes:

17.1 *Lancaster Enterprise School*

The programme invites postgraduate research students and post-doctoral researchers from all disciplines to an intensive residential course of four days. The training encompasses a range of enterprise skills, knowledge and practices which can be used in academia, industry and commerce. The school places a great emphasis on social enterprises and exploration of opportunities from the creative industries to develop enterprising skills. This course provides a variety of benefits and opportunities for the development of the participants’ networking and teambuilding skills. The project is funded by the EPSRC. Researchers are invited from NW Universities which include Sheffield, Liverpool, Leeds, Lancaster, Durham, York and Manchester.

17.2 *Durham Enterprise School*

The four day programme is designed to develop the personal skills for enterprise such as team working, problem solving, creativity, communication etc. Participants are divided into various teams and each team has 8 members with an experienced tutor. Experienced

entrepreneurs are also invited to work with the participants to help them develop a business plan and to pitch their ideas. The Enterprise school invites postgraduate research students and post-doctoral researchers from a range of northern Universities to take part in the event. By attending this programme, learners benefit from the networking opportunities and gain an understanding of small business start-up, social enterprise, and intrapreneurship. The programme is free and has 19 places, including overnight accommodation and meals.

17.3 *Manchester Enterprise School*

The programme delivers enterprise and innovation skills to research students and is intended to help them apply their knowledge in their job roles, academic careers and to start new business ventures. The programme divides students into groups where they can develop new ideas and produce a pitch, which is assessed at the end of the programme in a manner similar to the TV series of “Dragons Den”. Throughout the programme, students are provided with skills such as opportunity recognition, market research, intellectual property, basic finance and team building skills. It also provides interactive sessions to encourage networking and team building of cross disciplines and universities. The programme also includes a visit from a guest entrepreneur and experts to provide further information about live access to patent information and market research databases.

The University of Manchester Business School also provide a range of individual enterprise based workshops per term which include start-up business, networking, creativity, critical thinking, opportunity recognition, patent searching, marketing, market research, finance, intrapreneurship, business plan, Xing business simulation game, sustainability and negotiation. In the seminars, entrepreneurs from various backgrounds are invited and only researchers can attend these modules.

18. IMPACT: Enterprising Academic

Impact Bootcamp is a joint programme between the University of Hertfordshire, University of Plymouth, University of Central Lancashire, Coventry University, and the University of Nottingham.

The programme aims to stimulate entrepreneurship and create entrepreneurial opportunities to encourage research activity to have greater economic impacts. The course invited researchers, teachers, fellows, managers and research students. The programme is sponsored by Santander and teaches its learners the value of intellectual property from a commercial

standpoint, helps using value to develop funding options and resources efficiently and effectively, increases communication skills with business professionals, government agencies and media on local, regional, national and international communities. The impact boot camp programme also delivers the seminar to increase the knowledge of its participants to engage with business industry, licensing, setting up a business/spin out, models of social enterprise, pre start proof of concept, and securing research income.

The Enterprising Academic - Impact Bootcamp invites its participants from the University of Central Lancashire, University of Plymouth, University of Hertfordshire, Coventry University, and The University of Nottingham. The partners of this programme are Department for Business Innovation and Skills (BIS), NCGE, and Technology Strategy Board.

19. League of European Research Universities (LERU): Doctoral Summer School

Essential Enterprise Skills for Early Career Researchers (17-22 July). Participants are invited from University College London, Imperial College London, University of Oxford, and the University of Cambridge. LERU also has agreements from many European Universities and invites doctoral researchers to take part in the programme.

UCL hosts the LERU doctoral summer school and is currently in its second annual year (2011). The aim of the programme is to deliver relevant knowledge and skills to assist development of business ideas in academic, business, scientific and human domains. Students are provided with initial training followed by the allocation of cross discipline teams on proposed business ideas which are focused on global challenges such as energy, ageing, population, growth, urbanisation, climate change. Specialists within the area of intellectual property and resource management are available throughout the duration of the course to provide formal learning input. During the business plan development, teams are encouraged to produce a video diary of their activities to enhance creative energy and the learning experience to provide transparency of the procedures used to reach the final results. At the end of the programme, the teams are required to pitch their ideas to a panel of experts.

The programme agenda consists of networking skills workshop, introduction to course, and workshop of skills development, Workshop: “What do businesses want from Universities and what do universities want from businesses?; Introduction to global challenges and project remit, writing business proposals, presentation skills, negotiating and licensing, panel

discussion on the successful entrepreneur, networking dinner; Business planning and learning, opportunity recognition, and feedback from experts for self-reflection.

LERU affiliated Universities selects one or more candidates to participate in the programme. The programme only accommodates 40 maximum. The attendance cost of the programme is £375 including all course material, accommodation, dinner, and candidates are required to contribute to any additional costs for social activities undertaken. The criteria for admission requires that participants are advanced in their PhD projects and are fluent in written and spoken in English.

20. Midlands Training Hub (Postgraduate Enterprise Summer School)

The programme is a one week intensive training workshop specifically designed for PhD researchers which covers many topics related towards enterprise and entrepreneurship. This programme corresponds with Birmingham University through the Midlands Hub Training Exchange. The training exchange is between doctoral students from University of Warwick, Coventry University, Birmingham University and Loughborough University. Further information is unavailable about the programme as the session has ended for this year.

Conclusion

The most interesting and effective programmes are co-ordinated and hosted by the University of Manchester (Manchester Enterprise School and range of PGR Enterprise modules), University of Birmingham (PESS), University of Leicester (ESPR), University of Cardiff (I-Solve), and University College London (LERU Boot camp). As an alternative, University College Dublin and Trinity College Dublin, Ireland have also been included in this report as they provides a comparative perspective owing to their inclusion of enterprise modules on PhD programmes which provide ECTS accreditation and recognised certification. The programmes mentioned above are selected on the basis of the programme length, perceived effectiveness, and the wide range of potential skills provided to participants. Furthermore, these Universities are comparatively conducting more in-depth enterprising programmes in comparison to the other institutions.

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