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Utilising Enterprise Education to Prepare Healthcare Professional Graduates for the Real-world

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Objectives: Every year, HEIs around the world provide an increasing number of graduates with professional degrees in various areas of healthcare including for example medicine, pharmacy, dentistry and podiatry. In most cases, these graduates will get the opportunity to develop a range of generic transferable skills during their HE. Yet, many of these become self-employed or responsible for managing a business, but are not always exposed to curricula that develop their awareness of the concepts of enterprise and entrepreneurship and their role in developing economies and societies, and, thus, do not have the necessary range of enterprise skills that they will need in the real-world, whether employed or self-employed.

This paper investigates the extent to which Enterprise Education (EE) is applied at professional health schools at HEIs to develop graduates' 'soft' and 'functional' enterprise skills, and how effective the process of delivering this education is.

Prior work: Previous literature mainly deals with the application of EE through business and management schools, rather than professional ones. Yet, there is a call for researching EE and skills with more focus on exploring the methods and objectives of specific disciplines. At the same time, research investigating learning in professional degrees focuses almost entirely on the development of technical skills related to the discipline, without a general perspective on developing a wider range of enterprise skills.

Approach: The study draws on a qualitative research study in the pharmacy education context. Personal interviews with pharmacy employers and academics were carried out, and thematic analysis was applied to identify themes and codes.

Results: Despite that experiential and interactive learning approaches, which can support the development of graduates' enterprise skills, are applied quite often at pharmacy schools, the application of these approaches is focused on discipline-related material and, therefore, can only support the development of graduates' 'soft' enterprise skills. However, there appears to be resistance against developing graduates' 'functional' enterprise skills in pharmacy disciplines, especially in light of the lack of awareness of the concept of EE among academics. The study offers some possible opportunities/propositions that could facilitate the development of more enterprising healthcare graduates, while highlighting the importance of raising the awareness of academics in this regard and embedding EE as part of schools' philosophies.

Implication: This study should help professional health schools at HEIs decide more accurately on how to develop their graduates' 'soft' and 'functional' enterprise skills, and address the needs of the real-world.

Value: This study directs the attention of HEIs to support developing professional graduates who are ready for the real-world, and who can support the growth and success of any organisation whether employed or self-employed.

Introduction:

There is a great emphasis nowadays, which is likely to continue, on having HE graduates who can compete at an international level, and demonstrate enterprise skills that allow for developing various business ideas and achieving effective enterprising environments and organisational growth (NSTF, 2000; CIHE, 2003; Draycott and Rae, 2010; Rae, 2010). This emphasis has put more pressure on HEIs to develop their graduates' enterprise skills through Enterprise Education (EE) programmes that are applied across business and non-business disciplines, particularly that the traditional idea of an educated person who can demonstrate strong academic knowledge without enough skills is no longer a valid one. Yet, the delivery of EE programmes in non-business disciplines has not, so far, received significant attention despite the growing importance and attention toward private enterprises, the starting-up of new businesses and the need for entrepreneurship training in these disciplines (Harsha, Hung-Bin, & Donald, 2010). This study investigates the extent to which EE is applied in non-business disciplines, with particular focus on the pharmacy education context in HEIs, and considers how effectively EE is being delivered in this context.

The study considers the development of enterprise skills from two facets; the first facet is in terms of skills that influence the progress of businesses and business approaches (Neal, 2001), and, thus, affect the growth of the economy by increasing productivity and competitiveness, as well as creation of new businesses and opportunities (Thurik & Wennekers, 1999). These skills are, hereafter, referred to as the 'functional' enterprise skills (Volkman, Karen, Mariotti, Rabuzzi, & Vyakarnam, 2009). 'Functional' skills involve ability to demonstrate a range of management skills such as strategic planning, writing business plans, marketing and product development, financial literacy, competitiveness, staff recruitment and retention, ability to take risks and many other skills, which are necessary for carrying out business tasks effectively (Broad, 2007). The second facet of enterprise skills that this study considers is in terms of generic transferable enterprise skills related to employability, which have been shown to have a growing impact on national competitiveness and the innovativeness of companies and individuals (Hytti & O'Gorman, 2004). These skills are, hereafter, referred to as the 'soft' enterprise skills (Davies, 2002), and include skills such as problem solving, self-learning, creative thinking and ability to demonstrate leadership.

Following a comprehensive review of EE frameworks in the UK, especially for younger people in secondary education, Draycott and Rae (2010) contended that a clear distinction has to be expressed between both sets of 'soft' and 'functional' enterprise skills in any context discussing these skills. This issue was also emphasised by authors as Draycott and Rae (2010), Refai (2012) and Sewell & Pool (2010) in order to minimise the confusion surrounding the concept of EE. However, in whichever context these skills are used, enterprising people always present with high self-esteem and a sense of self-worth; they are always on the outlook for new opportunities that are likely to improve their future (Rohn, 2002). For that, they are seen as confident and courageous people, with excellent communication and creativity skills. Furthermore, enterprising people have a positive influence on the working environments they operate in; their effect may even extend beyond that to a wider range of individuals outside their work environment (Atherton, 2007). Therefore, this study does not only consider enterprise skills as skills needed by those intending to start or have started their own business, but rather considers them from a wider perspectives as skills needed by everyone in all contexts, whether employed or self-employed.

Developing enterprise skills through EE should involve an understanding of the theory behind management and entrepreneurship (Chiles, 2003), and should be associated with processes of creating new businesses, which are based on an understanding of business start-up management issues and addressing potential customers (Harsha, et al., 2010). Such understanding and application of management theory is apparently lacking in healthcare disciplines, and addressing this lack of understanding gap would inflict challenges on professional health schools, particularly in light of the large amounts of disciplinary knowledge that need to be delivered in a limited period of time. Addressing this issue is not a matter of helping the health profession survive as it is rather impossible that the demand for the health sector would diminish; rather, it is a matter of allowing the profession to thrive and preserve its professional image while coping with the flow of changes in the marketplace.

Addressing the needs of the marketplace is a matter that has been emphasised by Galloway et al. (2005) who proposed that educators have a responsibility of preparing HE graduates for the economies where they will work. In this regard, Whiteley (1995) stressed that EE in HEIs should mainly aim to bridge studying and working environments by equipping graduates with life-long self-learning skills that are necessary for handling real-life working environments, and Rae (2007) emphasised the need for strong connections between EE and employability despite the challenges that this might impose on educational systems.

Despite the importance of enterprise skills, recent studies have shown lack of satisfaction among employers by the level of graduates' enterprise skills (e.g. Lowden, Hall, Elliot, & Lewin, 2011), and employability skills (e.g. AGR, 2008; Cotton, 2001).

Accordingly, the need for enterprise skills for healthcare professional graduates is being increasingly emphasised (e.g. Sector Skills Assessment, 2012; Davies *et al.*, 2012). However, there is yet a lack in research addressing the development of enterprise skills in non-business disciplines in general. Such understanding is essential in order to be able to assess the challenges of application of EE more closely, and, accordingly, propose a clearer framework for delivering EE more efficiently in healthcare disciplines.

This study investigates the extent to which EE is delivered at pharmacy schools to develop graduates' 'soft' and 'functional' enterprise skills, and how effective the process of delivering this education is. In doing so, the study evaluates the opinions of professional academics and employers in the pharmacy sector, reflects on their views, and offers some possible opportunities/propositions that might facilitate the development of more enterprising healthcare graduates.

Developing Enterprise Skills through EE:

The development of enterprise skills through EE has evolved over the years. EE initially started with a focus on developing students who are capable of starting and running their own businesses; (Brown, 1990; David A. Kirby, 2004), and mainly reflected an interest in utilising this education as a driver for national economic growth (Caird, 1990a, 1990b, 1991). However, EE was thoroughly explored at a national level in the UK by the Centre for Education and Industry (2001), where they highlighted the lack of research in the area of EE and the confusion surrounding its concept. The Davies Report (2002) was issued following the CEI Report and provided some practical solutions into EE and a more comprehensive definition of enterprise competencies. Thus, the concept of EE evolved to encourage pursue of new opportunities and the sustainability of HEIs' own autonomy by considering relationships between HEIs, industries and the community (Gibb, 2002); Matlay (2006) viewed this education as a way to equip graduates with the skills and competencies to move from education to real-world, and a number of studies e.g. (Martin, West, & Bill, 2008; National Skills Task Force, 2000); stressed the need for entrepreneurship education to address the development of entrepreneurial attitudes and skills that are not essentially targeted for the start-up of new businesses. In this regard, (Rae, 2004) also supported collaborative efforts to deliver EE within different contexts of non-business backgrounds as the creative industries; and the same has been argued for the science, engineering and technology disciplines (Hynes & Richardson, 2007). Broad (2007) has also drawn attention for the need to research EE and enterprise skills with more focus on exploring the methods and objectives of specific disciplines.

Accordingly, more generic definitions of EE were introduced to include all its relevant aspects. Broad (2007) defined EE as *'the processes or series of activities that aim to enable an individual to assimilate and develop the knowledge, skills, and values required to become enterprising'* (p.5). The Department of Education and Training in Australia also defined EE in their Enterprise Grants Report (2012) as provided by the Ministerial Council on Education, Employment, Training and Youth Affairs (MCEETYA), where EE was defined as *'learning which is directed towards developing in young people those skills, competencies, understandings and attributes which assist them to be innovative, identify, create, initiate and successfully manage personal, community, business and work opportunities, including working for themselves'* (p.3).

Several frameworks were suggested for delivery of EE including education 'about', 'for' and 'into' enterprise. Education 'about' enterprise is usually a theoretical approach that focuses on developing understanding about entrepreneurship and enterprise (Jameison, 1984; Gibb, 1999). Therefore, it cannot support the development of the skills necessary for graduates to become successful business people (Solomon and Fernald, 1991). Kirby (2002) also mentioned that education 'about' enterprise does not add to creativity or ability to act strategically in changing environments, and, therefore, is not seen to be capable – by its self – of producing students who can handle real-life problems (Berry, 1993; Doyle, 1995; Barrows, 2003). Education 'for' enterprise specifically aims to prepare entrepreneurs and motivate learners to start up their own business; this education equips students with 'functional' enterprise skills which have been argued by (Galloway, et al., 2005) to be useful for those going for employment in addition to those seeking self-employment. Education 'into' or 'through' enterprise, however, focuses on developing the 'soft' enterprise skills that are essential for effectively carrying out various organisational tasks; it does not cancel entrepreneurship as a possible option for graduates, but does not set it as an anticipated outcome (Hartshorn, 2002). Education 'into' enterprise is concerned with learning approaches embedded within the

curricula that aim to develop students' enterprise skills rather than delivering EE through separate courses provided normally by business schools.

Experiential learning and interactive learning approaches are applied quite a lot at professional health schools in HEIs, such approaches have been proposed by Refai (2012) as means for education 'into' enterprise that could support the development of healthcare graduates' 'soft' enterprise skills when embedded within the discipline-related curricula at professional health schools. Such an approach would encourage students to integrate the knowledge and skills they gain across different courses and modules in ways that allow them to realise the practical application of their knowledge and support the development of a range of 'soft' enterprise skills. Application of experiential learning approaches at professional health schools in HEIs can take place through several learning approaches such as Problem-based Learning (PBL) e.g. (Barrows, 2000; Savin-Baden, 2000, 2003, 2004, 2007), Enquiry-based Learning (EBL) e.g. (Kahn & O'Rourke, 2004; Price, 2003; Savin-Baden, 2007), Case-based Learning (CBL) e.g. (Chi-Wan & Lopez-Nerney, 2005; Richards & Inglehart, 2006; Savery, 2006; Srinivasan, Wilkes, Stevenson, Nguyen, & Slavin, 2007), team-based learning e.g. (Hassan, 2011; Stewart, Brown, Clavier, & Wyatt, 2011), and opportunity-centred learning e.g. (Rae, 2003). Several authors e.g. (Barrows, 1986; Refai, 2012; Savin-Baden, 2003; Walton & Matthews, 1989) stressed the importance of delivering education 'into' enterprise across the discipline, and incorporating it as part of schools' teaching and learning strategy in order to improve the value of skills developed, as opposed to delivering it in a non-ubiquitous manner that is limited to academics who are personally interested in applying such education. In the latter case, academics can become quite frustrated for not seeing how their efforts could be developed throughout the programme, leading to students' skills being developed out of context in an unstructured manner at most times (Refai, 2012; Savin-Baden, 2003).

As for developing healthcare graduates' 'functional' enterprise skills through EE, research shows that, over the past two decades, entrepreneurship programmes in non-business disciplines have gained growing importance, especially across the US HEIs (Katz, 2003). Such programmes are usually offered as management courses provided through business schools (Gartner & Vesper, 1994). In the UK, EE has started to gain more importance in Engineering and Arts and Design disciplines, but is still very much behind in the health and medicine disciplines (Botham & Mason, 2007). This is supported in the findings of the Survey of Entrepreneurship in HEIs in Europe (2008), which showed that such education is provided more intensely, and in different and more elaborate ways, to students attending business schools or multidisciplinary institutions with a business school department, while specialised HEIs particularly technical ones are still somewhere behind. Thus, the survey highlighted that EE in Europe is still in its infancy stage, and there are yet a lot of challenges and obstacles to overcome. In the UK, Broad (2007) also highlighted that entrepreneurship programmes are still mainly offered to undergraduates in business schools, and mostly focused on developing students' knowledge and understanding of entrepreneurship rather than the development of their skills, attitudes and behaviours. Such relatively low levels of enterprise activity added to the importance of conducting more research into EE to study and assess its applicability and value in different disciplines.

The importance of investigating enterprise skills for healthcare professional graduates

The health sector market

In the UK, there are about 62,000 healthcare establishments, which are represented by various employers (Sector Skills Assessment, 2012). The health sector represents the sixth largest sector in the UK economy, and comprises 7% of the workforce in the UK; there are just over 2 million people working at this sector, and the NHS is regarded as the main employer comprising about 73% of the employment in the sector (Morton-Holmes, 2010), with more than 300 occupational opportunities available (Sector Skills Assessment, 2010).

Occupational opportunities in the healthcare sector comprise various occupational groups among which is the qualified medical support group, including, for example, community and hospital pharmacists, dieticians, physiotherapists and speech and language therapists. Other occupational groups under the healthcare sector include medical professionals, nurses, dentists, audiologists, biomedical scientists and medical physicists. Furthermore, these occupational groups include assistant/support roles such as nursing assistants and care assistants, qualified ambulance staff, therapeutic services such as art therapists and music therapists, and complementary medicine such as acupuncturists and sports therapists. The health sector is mainly dominated by nursing staff followed by the medical practitioner's occupational groups comprising approximately 661,000 employees, while the vast majority of pharmacists work in large retail

chains and independent pharmacies, and about 6,000 pharmacists are currently employed as hospital pharmacists, mostly in NHS hospitals (Sector Skills Assessment, 2010).

Demand for skills by the health sector

Considering the occupational opportunities for health graduates, it is apparent that a considerable number of these graduates will ultimately manage a business, as in the case of pharmacists, dentists, medical practitioners, acupuncturists and therapists. In the case of pharmacists, nearly 90% of pharmacy graduates choose their careers in the retail sector, where they would be responsible for handling various aspects of a pharmacy outlet (AGCAS, 2011). In such cases, professional health graduates would be expected to run and manage a business to various degrees, whether employed or self-employed, taking into consideration that in the case of privately-owned business, a health professional graduate is likely to require more aspects of 'functional' enterprise skills.

Furthermore, The Expert Group Report (2008) also stressed the importance of integrating EE into scientific and technical disciplines to develop the enterprise skills of graduates in order to support important innovations and spin-offs in the field, and optimise the value of exploiting innovations, knowledge transfer and commercialising of technologies. The report mentions "*While the creation of graduate start-ups is therefore a desirable outcome, it should not be forgotten that entrepreneurship is also (and equally) about successfully managing innovation and growth*" (The Expert Group Report, 2008, p. 23).

Furthermore, the Health Sector: Sector Skills Assessment (2012) produced a report that draws upon various research studies that have been carried out by the Skills for Health over the past five years in the UK. The report shows that the health sector demands a higher level of skills than the average level required by other sectors. Yet, there are concerns about the level of basic skills, such as caring and personal services, which are demonstrated by the sector, as well as numeracy skills that are especially important in tasks as drug administration. The report highlighted the importance of 'soft' enterprise skills such as communication, problem solving, team-working and customer service for the sector, and added that employers will have to pay continuous attention to such skills since the sector aims to provide on-going high quality healthcare. According to the UK Commission's Employer Skills Survey (B. Davies, Gore, Shury, Vivian, & Winterbotham, 2012), employers in the health sector were not satisfied by the level of a number of these skills particularly the oral communication skills, written communication skills, customer handling skills, team working skills and problem solving skills. Such skills are necessary, especially that a recent literature review by UKCES (Garrett, Campbell, & Mason, 2010) showed that demonstration of a high level of skills by the workforce in an organisation is seen as one of the factors that support successful fulfilment of organisational goals, and, accordingly, support the performance of the sector. As for the 'functional' enterprise skills, The health sector: Sector Skills Assessment (2012) reported that '*Whilst the sector reports a high level of skills, there are persistent questions around management and leadership capability within the sector, as well as the effectiveness of some of the high performing working practices*' (p. xi). In this regard, the UK Commission's Employer Skills Survey (Davies *et al.*, 2012) showed that employers in the health sector are especially dissatisfied by the level of planning and organisation skills, as well as strategic management skills.

From another perspective, most of the current research in healthcare disciplines is focused on teaching and learning to equip HE professional graduates with professional and technical skills that are related to the discipline, without having a more general perspective on developing a wider range of their work-related skills or the extent of the need for these skills. This issue was raised by (Refai, 2012) who concluded that the skills needed by the health sector graduates might comprise a greater range of skills than those normally attended to, namely, clinical and patient-care skills. Therefore, it becomes necessary to investigate the role of HEIs in developing healthcare professional graduates' 'soft' and 'functional' enterprise skills, especially that the careers of those graduates are very specialised and normally associated with high levels of risk, long working hours and challenging situations that add to the importance of equipping them with the necessary skills, which would allow a smoother transition from HE to the workplace, and support them to carry out their tasks more effectively.

Methodology and data collection

This exploratory study was conducted in the pharmacy education context in the UK. The study adopted Gadamer's hermeneutic phenomenology; such a qualitative research methodology was deemed appropriate as it supported the consideration of various views of relevant parties by bringing them together in points of 'fusion of horizons' without imposing personal prejudices of the researcher or completely bracketing them out

(Gadamer, Barden, & Cumming, 1975). Yet, as in any qualitative study, it is not possible to reach complete objectivity, which is an issue that can impact the confirmability of results. Furthermore, generalisability cannot be claimed. Accordingly, this paper does not offer clear cut answers as to how professional healthcare schools at HEIs develop, or should develop, their graduates' enterprise skills, but, rather, offers a theoretical basis for better understanding of the extent to which EE is delivered at pharmacy schools to develop graduates' 'soft' and 'functional' enterprise skills, and how effective the process of delivering it is. Therefore, data was collected from pharmacy academics who can provide the best feedback about the delivery of EE at pharmacy schools, and pharmacy academics who deal with recent pharmacy graduates, and are thus capable of assessing their level of skills. Consequently, the study offers suggestions to improve EE at professional health schools in ways that address the general needs of the real-world marketplace. In doing so, the study highlights debates of academics and employers in the field, and addresses certain issues that impact the delivery of EE in healthcare professional health schools at HEIs.

Face-to-face interviews with pharmacy employers and pharmacy academics were conducted, where respondents were selected using snowball sampling. Thirteen interviews were conducted with pharmacy employers to evaluate their extent of satisfaction by the level of skills demonstrated by recent graduates, and their opinions regarding the need for 'soft' and 'functional' enterprise skills in their health sector. Interviews with pharmacy academics included twenty interviews with academics teaching at pharmacy schools across seven HEIs in the UK; these aimed to evaluate academics' views regarding development of pharmacy students 'soft' and 'functional' enterprise skills during their studies, and efforts placed to develop those skills. Data was analysed using Thematic Analysis (TA) as described by (Braun & Clarke, 2006), which, consequently, allowed for developing interpretations and drawing conclusions relating to the questions addressed in this study including:

- To what extent is EE delivered at pharmacy schools to develop graduates' 'soft' and 'functional' enterprise skills?
- How effective is the process of delivering EE at pharmacy schools?

The interviews with employers and academics were further deepened through a second set of interviews with four academics and three employers selected from amongst the same original participants. These interviews allowed further reflection on the views of other participants in the research, and also supported the researcher's interpretation of data, thus, minimising chances of personal bias.

Results

Delivering EE to HE professional graduates

There was no general understanding amongst academics of the concept of EE in the sense referred to in this study. Academics generally related this concept to entrepreneurship education only, or more specifically to concepts of management and starting up and running of new businesses, without understanding the wider perspectives and applications of this concept. Yet, several academics mentioned that the educational process focuses on developing a range of students' 'soft' enterprise skills, but this does not take place under the term of EE. This was reflected, for example, by Academic 16: *'I probably wouldn't use the word enterprise... enterprise to me means business and management, and we don't teach management here whatsoever, but we do pharmacy practice skills for the skills they would actually need in practice'*. Some academics mentioned that there is a small number of pharmacy schools that provide students with separate management courses, but in most schools this does not take place.

A lot of enthusiasm was noted among academics to engage students in the learning process through interactive learning activities that encourage them, for example, to present, negotiate, write proposals, interact with patients, research references and tackle problems; Academic 19: *'...in every topic related to science, practice or pharmacology they do posters and oral presentations sometimes in groups and sometimes on their own to develop their oral communication skills'*. Such activities take place within pharmacy modules as part of various experiential learning approaches, and are applied not only to build students' knowledge in an interactive way, but also to develop a wide range of their transferable skills, while helping them develop better understanding about the career path they wish to go for and what they would need to develop to go for that path. However, academics agreed that the implementation of such experiential and interactive learning approaches is not obligatory; they are applied more thoroughly in certain pharmacy subjects rather than others, and only by some academics who are personally interested in applying them. This was critically observed in comments by Academic 6: *'It's a personal effort by the module leader... it's*

largely down to the individual members of staff and how passionate they are about using alternative learning methods', and Academic 19: 'In practice yes, all academics apply innovative learning approaches. But I'm not so sure if it's applied as strongly in pharmacology and pharmaceuticals'.

Academics also added that pharmacy schools are now increasingly interested in integrating a professional identity in the educational process. Students should not learn only for the purpose of gaining knowledge and skills, but should be able to see further how the knowledge and skills they develop would shape their future professional lives. Academics mentioned that the interactive learning approaches that students engage in should help them develop such professional identities.

Employers supported academics' views about the importance of involving students in practical learning activities that support the development of their skills, particularly through placements that engage them in real-world activities. Employer 6, for instance, commented: *'...I believe encouraging pharmacists to train in work settings during their studies in college would help them develop their knowledge and skills in such a way that would aid them in learning better'*. However, employers were not satisfied by the level of practical learning embedded in pharmacy education, as critically observed in comments by Employer 12, for example, *'I don't think graduates present with a sufficient level of skills, and I believe one of the main reasons for that is that universities don't focus on the practical part of learning'*.

Views about the need for enterprise skills by recent graduates

All academics and employers agreed that 'soft' enterprise skills are essential for professional graduates to pursue their careers whether employed or self-employed, and added that graduates are exposed to critical real-life situations from the moment they start their careers, which makes developing their enterprise skills essential. Employers mentioned that HEIs could contribute to developing more knowledgeable pharmacists, but that does not necessarily mean they would be good pharmacists, and, therefore, considered enterprise skills to be as important as knowledge in a pharmacist's career. For instance, it is essential for pharmacists to have enough confidence to establish strong communication channels with patients and other professionals in the health sector. Professional graduates in the health sector should also present with organisational skills and time management skills that enable them to handle the multiple tasks imposed by their work environment; Employer 4, for instance, commented *'... Pharmacists should be able to take on a leadership role, be confident and know how to serve and help the communities in which they work'*). Other skills such as resourcefulness, ability to work in teams, organising and prioritising tasks, interaction and problem-solving were also seen as important for healthcare professional graduates.

Many employers also stressed the importance of business and management skills. Pharmacists, for instance, can be involved in purchase transactions, promotional offers, customer/patient enquiries, customer/patient complaints, profits and losses, corporate governance, organisational culture and other aspects of business environments. This was critically observed with Employer 2: *'When I interview someone for a job I try to evaluate both the knowledge and skills. I hope to find the necessary skills in pharmacists who can cope with situations, have people skills and management skills'*, and contrasts with comments by Employer 10: *'...organisational skills particularly, I think, need to be developed for the multi-tasking we are involved in here to be able to use knowledge, but at the same time be able to work in a busy environment and under pressure...'*. Senior health professionals will also need to manage and inspire staff, delegate tasks, involve in budgeting and preparation of plans and annual reports. Employers saw that such skills are very important for pharmacists. Employers considered 'functional' skills to be very important, and in some cases prioritised them over clinical skills. This is reflected in comments by Employer 5: *'...we're in a business, and when you're in a business your clinical skills are not seen as more important than your business skills, your ability to bring a business alive and to make it profitable becomes more important than your scientific pharmacy and clinical skills... pharmacy is not only about drugs, it's about managing other people and resources...'*. Therefore, despite that employers encouraged HEIs to take part in building pharmacy graduates' management skills, they did not support the development of those skills through separate management courses especially that pharmacy students study for a science degree that should be focused on the discipline.

Academics also saw that the 'functional' enterprise skills are valuable skills, but did not prioritise them over pharmacy knowledge and clinical skills, as they could be developed through experience in the real-world. Therefore, academics did not support developing those skills through separate management courses as this does not match with the pharmacy discipline, which should be focused on a scientific degree. This rejection was coupled with some hostility in the responses of some academics such as Academics 5, for instance,

'whoever is clever enough to study for a pharmacy degree, should find it easy to develop management skills in the real-world'; this also contrasts with Academic 16: 'We focus on the skills they would actually need in practice, and not things like management or finance and such... it's the clinical and dispensing skills really, and nothing beyond that...'

The level of skills demonstrated by recent graduates

Despite being satisfied by the level of professional graduates' knowledge, employers were not satisfied by their ability to demonstrate a range of enterprise skills. Regarding the level of 'soft' enterprise skills, employers were particularly concerned about graduates' ability to demonstrate confidence and good communication skills; they were also not satisfied by the level of personal skills including time management and team skills. As for the 'functional' enterprise skills, employers saw that recent graduates lacked organisational skills, delegation and management skills. This was reflected, for example, in comments by Employer 2: *'Pharmacists usually get exposed to real-life situations immediately after finishing their studies, and they find themselves unable to deal with people and manage different situations'*, which contrast with comments by Employer 5: *'Graduates are underprepared, especially when it comes to some of the most essential skills as communicating with patients, they lack the necessary communication skills. They also lack enough assertiveness and seem to be weak in decision making'*.

Academics agreed with employers that the level of graduate enterprise skills should be improved further, especially when it comes to 'soft' enterprise skills as confidence and communication skills, and agreed that more cooperation between HEIs and the employment sector is needed in this regard. This was noted in comments by Academic 5 *'I think confidence is an important area, and I think pharmacy probably hasn't been very good at that over the last years...'*, which contrasts with comments by Academic 10: *'...they find it difficult to interact with other health team members, we do encourage them...but they find that really really difficult'*. Academics also added that presenting with such skills is necessary to maintain the image of the health profession, and mentioned that this image today is not as bright as it used to be in the past, and definitely not as bright as it should be. Academics stressed the importance of having capable pharmacist and not just knowledgeable ones, and that the educational process should define exactly what healthcare professionals are here for in order to help them understand the uniqueness of their profession, and the different 'non-discipline' aspects, which they are expected to take part in in order to effectively fulfil their roles in the marketplace. Yet, academics also believed that healthcare professional graduates are ready to meet the challenges of the real-world, and mentioned that they should have the necessary level of knowledge and skills to meet the needs of the real-world in whichever sector they decide to go for.

Discussion

This paper aims to identify the extent to which pharmacy schools at HEIs apply EE to develop graduates' 'soft' and 'functional' enterprise skills, and evaluate the extent to which the process of delivering this education is effective. Employers and academics in this study were in agreement that the development of graduates' enterprise skills is a valuable matter that can enhance graduates' employability and professional identity as well as their ability to apply their knowledge in practice, which is a matter that has been supported in literature in general e.g. (Draycott and Rae, 2010; Rae, 2007, 2010), and for the health sector in particular (e.g. The Expert Report, 2008; Sector Skills Assessment, 2012). Despite this importance, there was a general dissatisfaction among employers by the level of enterprise skills demonstrated by recent pharmacy graduates, where employers mostly blamed HEIs for not preparing graduates for the job; this confirms with the findings of previous studies that showed lack of satisfaction among employers by the level of graduates' enterprise skills (Lowden, Hall, Elliot, & Lewin, 2011), and employability skills (AGR, 2008; Cotton, 2001).

While pharmacy schools supported the development of graduates' enterprise skills through the various experiential and interactive learning approaches, which have been proposed by Refai (2012) as means for education 'into' enterprise, this development of skills did not take place at pharmacy schools under the umbrella of EE. Several issues that could hinder the development of graduates' enterprise skills were uncovered in this regard; some of which are related to the approaches followed in the application of interactive and experiential learning approaches, and others that are related to the level of awareness of EE. With regard to the approaches followed, application of experiential and interactive learning approaches at pharmacy schools takes place in discipline-related contexts and through discipline-related activities, and, therefore, can support the development of graduates' 'soft', but not 'functional', enterprise skills (Refai, 2012). Furthermore, despite that literature calls for applying experiential and interactive learning approaches as part of schools' teaching and learning strategies e.g. (Barrows, 1986; Refai, 2012; Savin-Baden, 2003;

Walton & Matthews, 1989), this is not the case in pharmacy schools where the application of such learning approaches is not obligatory nor part of schools' teaching and learning strategies, which does not support the continuity or integration in the application of these teaching and learning approaches as academics can become quite frustrated due to the lack of support from their schools (Refai, 2012; Savin-Baden, 2003).

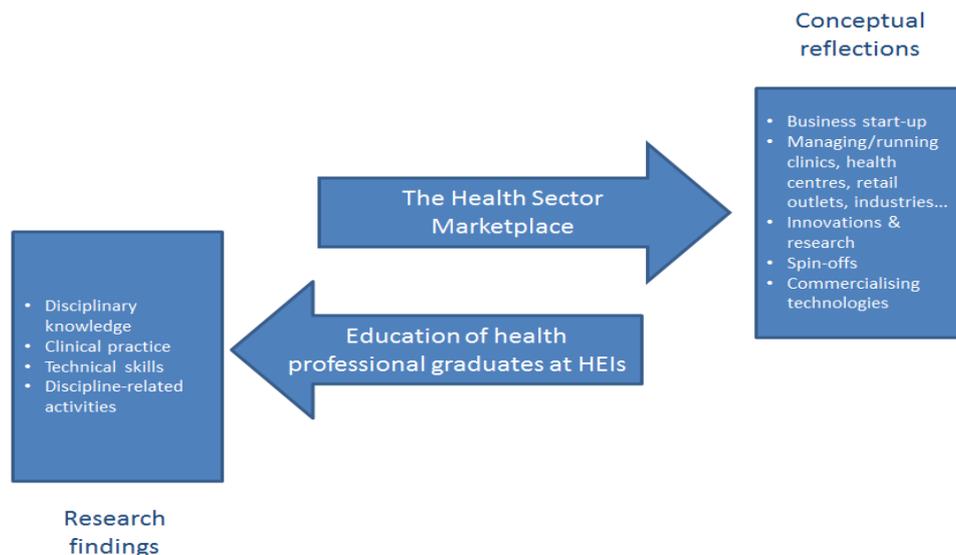
Regarding the level of awareness of EE, academics lacked awareness and knowledge of the concept of EE, and could not see how their teaching and learning styles could fit under EE. Academics and employers related the concept of EE merely to separate management courses provided to pharmacy students through collaboration with business schools. Such courses support the development of graduates' 'functional' enterprise skills (Broad, 2007), which have been argued in academic literature as necessary for scientific disciplines (The Expert Report, 2008; Sector Skills Assessment, 2012). Such courses fit well under education 'about' enterprise, which is mostly a theoretical approach (Gibb, 1999) that has been argued by Solomon and Fernald (1991) as insufficient to equip students with the necessary enterprise skills to become successful business people, and by Kirby (2002) as unable to add to their creativity or their ability to act strategically in changing environments. Therefore, it is not seen to be capable, by its self, of producing students who can handle real-life problems since they would lack the necessary skills to integrate and relate their knowledge (Barrows, 2003; Berry, 1993; Doyle, 1995). This issue was raised by Refai (2012) who concluded that health disciplines in HEIs should consider developing a wider range of skills for graduates in the health sector, where such skills should go beyond the clinical and patient-care skills that are essentially part of the discipline.

Therefore, it is essential for pharmacy schools at HEIs to clearly define their teaching and learning strategies for both, education 'about' and 'into' enterprise in order to minimise the confusion surrounding the concept of EE. This confusion was highlighted in literature by a number of researchers e.g. (Draycott and Rae, 2010; Refai, 2012; Sewell & Pool, 2010) who mentioned that EE could mean different things to different people, making it essential to clearly define this concept in every context it is used.

Academics also stressed the importance of engaging students in teaching and learning activities that mimic real-life situations in order to build their professional identity as pharmacists. Academics saw this as an important matter, particularly in light of the currently declining image of the pharmacy profession. This might be an interesting aspect of this research as there are many studies investigating professional identities in general, and to a lesser extent in the healthcare sector in particular e.g. (Hall & Burns, 2009; MacLeod, 2011). However, there are hardly any studies investigating the relation between EE and the development of professional identities, which might be an area for future research.

In light of the lack of support from pharmacy schools to embed the development of enterprise skills as part of schools' philosophies and the lack of awareness of academics of the concept of EE, it was not surprising to find that there is no movement, or even intention of movement, in pharmacy schools toward the development of 'functional' enterprise skills, nor was it surprising to face rejection, and sometimes even some hostility, from academics and employers to the idea of delivering EE through business and management schools. However, based on reviewing relevant literature, the growing importance of integrating enterprise into healthcare disciplines cannot be neglected, as enterprise skills are becoming an essential driver of the real-world health sector, which, besides showing more business start-ups and managing and running of businesses, is also showing increased focus on innovations and spin-offs, as well as knowledge transfer and commercialising of technologies (The Expert Report, 2008), as shown in Figure 1. Whilst this is important, Figure 1 also shows that the findings of this research show that professional health schools at HEIs are not moving with the flow of the marketplace, where their attention is still focused on disciplinary knowledge and technical skills. This should not imply, however, that the current focus of HEIs is not important as disciplinary knowledge and technical skills are at the core of healthcare disciplines, but should rather raise the attention of professional health schools at HEIs to manage the dynamics of the real-world more carefully in order to prepare professional graduates who can drive success, and revive the image of the profession.

Figure 1: Real-world vs. HE in the health sector.



Conclusion:

Through investigating EE in this study, the lack of awareness of the concept of EE among healthcare academics alongside the lack of support from healthcare schools to have it applied as a teaching and learning strategy became apparent. This might explain why pharmacy schools do not have collaborative efforts among their departments or formal bodies to discuss the delivery and objectives of EE across pharmacy school. Thus, a lot of the 'soft' enterprise skills, which are currently developed through experiential learning approaches, are developed in an unstructured manner, while no notable efforts to develop 'functional' enterprise skills observed. Several institutions have supported collaborative efforts between departments to support models for EE at HEIs (Broad, 2007). Therefore, before focusing on delivering EE at healthcare schools at HEIs, it would be wise to consider means by which an EE culture can be instilled within these professional health schools starting by raising awareness about the concepts of EE and enterprise skills at the level of management and staff, before moving on to delivering it to students. This is important because, obviously, EE cannot be delivered effectively without building a prior understanding among academics about the concept of EE and the need for both, 'soft' and 'functional' enterprise skills.

Accordingly, this paper proposes the concept of 'educating the educators' as means to encourage professional health schools at HEIs to embed EE as a teaching and learning strategy, and to overcome the traditional idea that EE can only be delivered through business schools. This way, healthcare academics will be expected to take part in EE, and take on an active role in developing curricula in ways that formally address the development of enterprise skills, without compromising the science content of healthcare programmes. This is also expected to reduce the rejection/hostility that healthcare academics show against providing EE through business schools as they themselves would be offered the opportunity to develop students' enterprise skills, which is something that the students themselves might also find interesting.

It is well-acknowledged that HE of health professionals in all sectors will always have a main shared goal of providing safe and effective treatment and patient-care. However, the importance of the knowledge of the profession and areas of application of knowledge seem to be gaining more importance in light of the changes in the marketplace, and it cannot be neglected that such dynamic changes are likely to lead all professions in the health sector to require business and management knowledge and skills to become an essential part of healthcare disciplines. So, whether opening a retail pharmacy, or setting up a clinic practice, dentistry clinic, podiatry clinic or nutrition centre, health professions are probably, nowadays, integrated in business more than ever, which makes the matter of developing healthcare professional graduates' enterprise skills an essential issue to address.

In summary, this paper emphasises that appreciating the value of enterprise and ability to demonstrate a range of enterprise skills should not be confined to business disciplines nor to people studying entrepreneurship. Furthermore, despite that this study was conducted in the pharmacy context, reflections on what is going on in this sector are likely to be valuable and applicable across the health sector in general. This paper, therefore, should provide guidance to educators wishing to design, develop and implement EE in healthcare disciplines by highlighting the importance of embedding an enterprise culture in professional

health schools, which appeared to be lacking in this research. This paper also invites future research in this area that investigates means by which an enterprise culture can be embedded in professional health schools starting from the management and staff in these schools before moving on to students, and also sets ground for further research that investigates processes of delivering EE in professional health schools more thoroughly.

References:

- AGCAS. (2011). Pharmacy – Career areas, from http://www.prospects.ac.uk/options_pharmacy_career_areas.htm. Copyright Association of Graduate Careers Advisory (AGCAS) & Graduate Prospects Ltd.
- AGR. (2008). Association of Graduate Recruiters Survey 2008. *The Association of Graduate Recruiters, Cambridge*.
- Atherton, A. (2007). Preparing for business start-up: “pre-start” activities in the new venture creation dynamic. *Journal of Small Business and Enterprise Development*, 14(3), 404-417. doi: 10.1108/14626000710773510
- Barrows, H. S. (1986). A taxonomy of problem-based learning methods. *Medical Education*, 20, 481-486.
- Barrows, H. S. (2000). *Problem-based Learning Applied to Medical Education*. Springfield, Illinois, Southern Illinois University School of Medicine.
- Barrows, H. S. (2003). Personal Communication. (February 28).
- Berry, L. L. (1993). Our roles as educators: present and future. *Journal of Marketing Education*, 15(Fall), 3-8.
- Botham, R., & Mason, C. (2007). Good Practice in Enterprise Development in UK Higher Education. In N. C. f. G. E. R. R. 004/2007 (Ed.).
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. doi: 10.1191/1478088706qp063oa
- Broad, J. (2007). Enterprising Skills: A Literature Review *Enterprise research report*. The University of Sheffield.
- Brown, R. (1990). Encouraging Enterprise: Britain's Graduate Enterprise Program. *Journal of Small Business Management*, 28(4), 71.
- Caird, S. (1990a). Enterprise Competencies: An Agenda for Research. *Journal of European Industrial Training*, 14(7), 3-8. doi: 10.1108/03090599010005973
- Caird, S. (1990b). What Does it Mean to be Enterprising? *British Journal of Management*, 1(3), 137-145. doi: 10.1111/j.1467-8551.1990.tb00002.x
- Caird, S. (1991). Testing Enterprising Tendency In Occupational Groups. *British Journal of Management*, 2(4), 177-186. doi: 10.1111/j.1467-8551.1991.tb00025.x
- Centre for Education and Industry. (2001). Independent Research Into Learning for Enterprise and Entrepreneurship. In U. o. Warwick (Ed.). Coventry.
- Chi-Wan, L. Y., & Lopez-Nerney, S. (2005). Using case-based learning to enhance awareness of communication principles: An exploratory study. *Reflections on English Language Teaching*, 4, 47-65.
- Chiles, T. H. (2003). Process Theorizing: Too Important to Ignore in a Kaleidic World. *ACADEMY OF MANAGEMENT LEARNING & EDUCATION*, 2(3), 288-291.
- Cotton, K. (2001). Developing Employability Skills. In N. R. E. R. Laboratory (Ed.). Portland.
- Davies. (2002). A Review of Enterprise and the Economy in Education.
- Davies, B., Gore, K., Shury, J., Vivian, D., & Winterbotham, M. (2012). UK Commission's Employer Skills Survey 2011: UK Results *Evidence Report 45*. UK Commission for Employment and Skills. Wath-upon-Deerne.
- Doyle, P. (1995). Marketing in the new millennium. *European Journal of Marketing*, 29(13), 23-41. doi: 10.1108/03090569510147712
- Draycott, M. and Rae, D. (2010). Enterprise Education in Schools and the Role of Competency Frameworks. *International Journal of Entrepreneurial Behaviour and Research*, Vol. 17 No. 2, pp. 127-145.
- Gadamer, H.-G., Barden, G., & Cumming, J. (1975). *Truth and method*. London: Sheed and Ward.
- Galloway, L., Anderson, M., Brown, W., & Wilson, L. (2005). Enterprise skills for the economy. *Education + Training*, 47(1), 7-17. doi: 10.1108/00400910510580593
- Garrett, R., Campbell, M., & Mason, G. (2010). The value of Skills: An Evidence Review *Evidence report 22*. London: UKES and the National Institute for Economic and Social Research.
- Gartner, W. B., & Vesper, K. H. (1994). Experiments in Entrepreneurship Education: Successes and Failures. *Journal of Business Venturing*, 9, 179-187.

- Gibb, A. (1999). Can we build effective entrepreneurship through management development. *Journal of General Management*, 24(4), 1-21.
- Gibb, A. (2002). In pursuit of a new 'enterprise' and 'entrepreneurship' paradigm for learning: creative destruction, new values, new ways of doing things and new combinations of knowledge. *International Journal of Management Reviews*, 4(3), 233-269. doi: 10.1111/1468-2370.00086
- Guirdham, M., & Tyler, K. (1992). *Enterprise skills for students*. Oxford: Butterworth-Heinemann.
- Hall, L. A., & Burns, L. D. (2009). Identity Development and Mentoring in Doctoral Education. *HARVARD EDUCATIONAL REVIEW*, 79(1), 49-70.
- Harsha, D., Hung-Bin, D., & Donald, F. (2010). TEACHING SCIENTISTS ENTREPRENEURSHIP: A DIALECTICAL APPROACH. *Journal of Enterprising Culture*, 18(2), 193.
- Hartshorn, C. (2002). Understanding notions of enterprise in the higher education sector. *Industry and Higher Education*, 16(3), 149-158.
- Hassan, S. (2011). Teaching ethics to pharmacy students using a team-based learning approach. *Pharmacy Education-An international Journal for Pharmaceutical Education*, 11(1). doi: <http://pharmacyeducation.fip.org/2011/08/teaching-ethics-to-pharmacy-students-using-a-team-based-learning-approach/>
- Hynes, B., & Richardson, I. (2007). Entrepreneurship Education: A Mechanism for Engaging and Exchanging with the Small Business Sector. *Education & Training*, 49(8-9), 732-744. doi: 10.1108/00400910710834120
- Hytti, U., & O'Gorman, C. (2004). What is "enterprise education"? An analysis of the objectives and methods of enterprise education programmes in four European countries. *Education + Training*, 46(1), 11-23. doi: 10.1108/00400910410518188
- Kahn, P., & O'Rourke, K. (2004). Guide to Curriculum Design: Enquiry-based Learning. *Higher Education Academy*, [Online]. doi: Available at (<http://78.158.56.101/archive/palatine/files/1009.pdf>). Accessed on 30/5/2011
- Katz, J. A. (2003). The chronology and intellectual trajectory of american entrepreneurship education 1876 - 1999. *Journal of business venturing*, 18(2), 283-300. doi: 10.1016/s0883-9026(02)00098-8
- Kirby, D. A. (2002). *Entrepreneurship Education: Can Business Schools Meet the Challenge*. Paper presented at the International Council for Small Business 47th World Conference, San Juan, Puerto Rico 16-19 Jun.
- Kirby, D. A. (2004). Entrepreneurship education: can business schools meet the challenge? *Education + Training*, 46(8/9), 510-519. doi: 10.1108/00400910410569632
- Lowden, K., Hall, S., Elliot, D., & Lewin, J. (2011). Employers' perceptions of the employability skills of new graduates. London: University of Glasgow Scottish Council for Research in Education (SCRE) Centre.
- MacLeod, A. (2011). Caring, competence and professional identities in medical education. *Advances in Health Sciences Education*, 16(3), 375-394. doi: 10.1007/s10459-010-9269-9
- Martin, L., West, J., & Bill, K. (2008). Incorporating Problem-Based Learning Strategies to Develop Learner Autonomy and Employability Skills in Sports Science Undergraduates. *Journal of Hospitality, Leisure, Sport and Tourism Education*, 7(8). doi: [doi:10.3794/johlste.71.169](https://doi.org/10.3794/johlste.71.169)
- Matlay, H. (2006). Researching entrepreneurship and education. *Education + Training*, 48(8/9), 704-718. doi: 10.1108/00400910610710119
- National Skills Task Force, N. (2000). Skills for All: Proposals for a National Skills Agenda. *Final Report of the National Skills Task Force*. DfES, London.
- Neal, T. (2001). Corporate entrepreneurship: Antidote or oxymoron? *European Management Journal*, 19(5), 526.
- Price, B. (2003). *Studying nursing using problem-based and enquiry-based learning*. Basingstoke: Palgrave Macmillan.
- Rae, D. (2003). Opportunity centred learning: an innovation in enterprise education? *Education + Training*, 45(8/9), 542-549. doi: 10.1108/00400910310508928
- Rae, D. (2004). Practical theories from entrepreneurs' stories: discursive approaches to entrepreneurial learning. *Journal of Small Business and Enterprise Development*, 11(2), 195-202. doi: 10.1108/14626000410537137
- Rae, D. (2007). Connecting enterprise and graduate employability. *Education + Training*, 49(8/9), 605-619. doi: 10.1108/00400910710834049
- Rae, D. (2010). Universities and enterprise education: responding to the challenges of the new era. *Journal of Small Business and Enterprise Development*, 17(4), 591-606. doi: 10.1108/14626001011088741
- Refai, D. (2012). Developing enterprise skills through enterprise education: the significance of the contribution of experiential learning approaches in the pharmacy education context in the UK HEIs. *University of Huddersfield. Unpublished PhD*.

- Richards, P. S., & Inglehart, M. R. (2006). An interdisciplinary approach to case-based teaching: does it create patient-centered and culturally sensitive providers? *Journal of dental education*, 70(3), 284.
- Rohn, J. (2002). Creating opportunity. *E-Zine Journal*, 22 January 2002(116). doi: http://www.jimrohn.com/index.php?main_page=page&id=682
- Savery, J. R. (2006). Overview of Problem-based Learning: Definitions and Distinctions. *Interdisciplinary Journal of Problem-based Learning*, 1(1), 3. doi: 10.7771/1541-5015.1002
- Savin-Baden, M. (2000). *Problem-based learning in higher education: untold stories*. Buckingham: Society for Research into Higher Education. Open University Press.
- Savin-Baden, M. (2003). *Facilitating problem-based learning: illuminating perspectives*. Maidenhead: Society for Research into Higher Education.
- Savin-Baden, M. (2004). Understanding the impact of assessment on students in problem-based learning. *INNOVATIONS IN EDUCATION AND TEACHING INTERNATIONAL*, 41(2), 223-233. doi: 10.1080/1470329042000208729
- Savin-Baden, M. (2007). *A practical guide to problem-based learning online*. London: Routledge.
- Sector Skills Assessment. (2010). Skills for Health Research and LMI Team.
- Sector Skills Assessment. (2012). Skills for Health Research and LMI Team.
- Sewell, P., & Pool, L. D. (2010). Moving from Conceptual Ambiguity to Operational Clarity: Employability, Enterprise and Entrepreneurship in Higher Education. *Education & Training*, 52(1), 89-94. doi: 10.1108/00400911011017708
- Solomon, G. T., & Fernald, L. W., Jr. (1991). Trends in Small Business Management and Entrepreneurship Education in the United States. *Entrepreneurship Theory and Practice*, 15(3), 25.
- Srinivasan, M., Wilkes, M., Stevenson, F., Nguyen, T., & Slavin, S. (2007). Comparing Problem-Based Learning with Case-Based Learning: Effects of a Major Curricular Shift at Two Institutions. *Academic Medicine*, 82(1), 74-82.
- Stewart, D. W., Brown, S. D., Clavier, C. W., & Wyatt, J. (2011). Active-Learning Processes Used in US Pharmacy Education. *American Journal of Pharmacy Education*, 75(4), article 68.
- Survey of Entrepreneurship Education in Higher Education in Europe. (2008). In F. NIRAS Consultants, ECON PÖyry (Ed.).
- The Expert Group Report. (2008). Entrepreneurship in higher education, especially within non-business studies.
- Thurik, R., & Wennekers, S. (1999). Linking entrepreneurship and economic growth. *Small business economics*, 13(1), 27-55. doi: 10.1023/a:1008063200484
- Volkman, C., Karen, E., Mariotti, S., Rabuzzi, D., & Vyakarnam, S. (2009). Educating the Next Wave of Entrepreneurs. *World Economic Forum, Switzerland*.
- Walton, H. J., & Matthews, M. B. (1989). Essentials of Problem Based Learning. *Medical Education*, 23(542-558).
- Whiteley, T. (1995). Enterprise in Higher Education – an overview from the Department for Education and Employment. *Education + Training*, 37(9), 4-8. doi: 10.1108/eum0000000003867