THE HISTORY OF ENTREPRENEURSHIP EDUCATION IN THE UNITED KINGDOM 1860-2020

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Meet The Authors

Luke Pittaway is the Copeland Professor of Entrepreneurship at Ohio University and a Justin G. Longenecker Fellow at USASBE. His research focuses on entrepreneurship education and learning and he has a range of other interests including: entrepreneurial behaviour; networking; entrepreneurial failure; business growth; and, corporate venturing. In 2018 Dr Pittaway was nominated and selected to be USASBE's Entrepreneurship Educator of the Year and in 2023 he was nominated and appointed a Presidential Research Scholar at Ohio University.

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David Kirby is a Holder of the Queen's Award for Enterprise Promotion. In the early 1980s he introduced Enterprise Education to Wales, which he did in Egypt 25 years later, as founding Dean of the British University. He has held Entrepreneurship Chairs at Durham, Middlesex and Surrey Universities, is the author of 'Entrepreneurship' (McGraw-Hill 2003) and the founder of the first ever SETsquared incubation centre. On returning to the UK in 2017 he formulated 'Harmonious Entrepreneurship', an award-winning concept that addresses the global sustainability challenge. With Dr Felicity Healey-Benson, in 2022, he co-founded Harmonious Entrepreneurship Ltd, a spinout of UWTSD.

John Thompson is Emeritus Professor of Entrepreneurship at the University of Huddersfield; he is also a Visiting Professor at Anglia Ruskin. In the past he has had visiting links with Universities in Australia, Finland and New Zealand. He has written several texts on both entrepreneurship and strategy; his most cited papers are on social entrepreneurship. He was a Board Member of The Case Centre for 25 years and also served on the EEUK and ISBE Boards. He is committed to experiential entrepreneurship and his main research interest remains identifying people with the potential to be entrepreneurs and social entrepreneurs – work he first developed with the late Dr Bill Bolton. In 2009 John received the Queen's Award for Enterprise Promotion.

History of EEUK Introduction

'If you want to understand today, you have to search yesterday.' (Pearl S. Buck)

To know and understand history is critical. History gives us the tools to examine and explain the past; it provides an ability to see patterns that might otherwise be invisible in the present, and ultimately provides a crucial perspective for understanding and addressing current and future challenges. At EEUK, our history doesn't stay behind us, it stays with us, witnessed and communicated through our work, our Membership, and our Honorary Fellows.

EEUK has a long and rich history. It was first established in 2001 as UK Science Enterprise Centres (UKSEC). The catalyst for the development of UKSEC was Science Enterprise Challenge (SEC) funding provided by the UK Department for Trade and Industry (DTI) that established 13 Science Enterprise Centres and consortia. By 2004, the importance of innovation in service provision and in discipline areas beyond science and technology was gaining traction and universities responded by extending their enterprise and entrepreneurship education across disciplines and beyond the curriculum into extra-curricular activities such as student enterprise clubs and societies. In 2007 UKSEC resounded by widening its focus to disciplines beyond science and technology and rebranding as Enterprise Educators UK (EEUK), reflecting its wider remit and reach. Over the next 10 years, organisational membership grew, EEUK became an independent legal entity – a not-for-profit company limited by guarantee, and in recognition of the excellent enterprise education being delivered beyond universities membership was opened to Further Education colleges and other organisations with a clear enterprise education purpose. In 2018, EEUK rebranded and launched the EEUK Fellowship at its independent conference IEEC; the International Enterprise Educators Conference. Now in 2023, we are an international organisation with members both in the UK and beyond, we work collaboratively with multiple partners to create new and exciting events and activities, and we continue to react to and inform policy through our work with government.

EEUK has been the driver, defender and backbone of enterprise and entrepreneurship education since 2001, but enterprise and entrepreneurship education's origins far predate our existence, and it now exists within a much larger and diverse body of work. Reflecting on Pearl S. Buck's quote above, it was with great pleasure that EEUK presents the paper; The History of Entrepreneurship Education in the United Kingdom, 1860 to 2020. In this work, the authors, eminent scholars of enterprise and entrepreneurship education, seek out the rich picture of

entrepreneurship education in the UK. Beginning with the 19th century and the industrial Revolution the paper charts developments in phases thereafter up until the present with the aim of exploring the evolution of practice over time. What is subsequently presented is a comprehensive, structured and analytical review of the history of entrepreneurship education in the United Kingdom (1860-2020). However, the authors recognise that this is just the beginning. Whilst we contend that their work is a valuable contribution and a starting point, they and EEUK now call for other researchers to build on this body of work going forward.

Dr Emily Beaumont
Past President of EEUK

Introduction

'A generation which ignores history has no past.' (Robert A Heinlen). The purpose of this paper is to address an oversight in our understanding of entrepreneurship education in the United Kingdom (UK) by presenting its history, from 1860 to 2020. Our aim is to document this history, so that future generations of entrepreneurship educators have access to the foundations on which their practice builds. Unlike the US where contemporary histories of entrepreneurship education do exist (Katz, 2003; Kuratko, 2005; Kuratko & Morris, 2018; Solomon et al., 1994) the UK's history remains largely unreported. While studies have reviewed the evidence of practice at certain times (Levie, 1999; Hannon et al., 2006; Price, 2004; Matlay & Carey, 2007), and have discussed aspects of our history (Blackburn & Smallbone, 2008; Rae et al., 2012; Watkins & Stone, 1999), there remains no comprehensive account.

In conducting our work, we follow the example of Wadhwani & Viebig (2021), by looking more deeply into our past. While contemporary histories have linked entrepreneurship education's origins to the United States (US) in the 1970s and 1980s (Kuratko & Morris, 2018) Wadhwani & Viebig's work shows that practice has deeper roots. Likewise, it is common to assume in the UK that entrepreneurship education started and grew, following the 1971 publication of the Bolton Report (Blackburn & Smallbone, 2008; Rose et al., 2013). As Wadhwani & Viebig (2021) point out for the US and Germany, the true picture is more complex.

In this paper we seek out this richer picture for the UK, looking for entrepreneurship education's deeper roots. We begin in the 19th century during the industrial revolution and chart developments in phases thereafter up until the present. Our study aims to explore the evolution of practice over time, and we adopt the concept of "social imaginaries" used by Wadhwani & Viebig (2021), whereby we define entrepreneurship education as a form of social change, i.e. entrepreneurship education is "*the forms of education that prepares students … in ways that aim at autonomy and emancipation from an imagined social status quo*" (revised from Wadhwani & Viebig, 2021: 343). This conceptualization considers phases of entrepreneurship education as widely held conceptions of moral order, that account for expectations regarding how things fit together and organize practice (Taylor, 2004). As such, social imaginaries are the normative, assumed images, that underpin assumptions about how practice should be conducted at points in time and are the widely held beliefs of communities of practice (Wadhwani & Viebig, 2021).

Our study takes an interpretive historical approach to entrepreneurship research (Wadhwani et al., 2020). The work we carry out examined publications, courses and programmes in universities as well as considered changes in the broader higher education system and UK society (Welter, 2011). We draw on a wide range of sources. For our contemporary history we spoke to actors, with firsthand experience (from the 1970s onwards), and constructed a chronology from these sources and accounts (see Appendix A). As such we present an analytically-structured history designed to examine the social imaginaries of entrepreneurship, we aim to explore how they impact practices in entrepreneurship pedagogy and consider how they evolve over time (Rowlinson, Hassard & Decker, 2014). Our paper is organised as

follows. First, we introduce the different phases of historical development, starting with the rise of the English civic universities in the 1860s. Next, we consider and discuss the implications of these interwoven social imaginaries and how they influence contemporary entrepreneurship education practice. Finally, we consider 'what's next', how should entrepreneurship education develop going forward, given its history.

A HISTORY OF ENTREPRENEURSHIP EDUCATION IN THE UK

Entrepreneurship Education During the Industrial Revolution (c. 1830-1890)

Wadhwani & Viebig (2021) trace the rise of entrepreneurship education in the United States (US) and Germany to the 19th century and enlightenment political thought. Developments led to some rethinking of Western systems of training and education that rejected the prior forms, of master and apprentice (Ruef, 2020). In the US and Germany educational movements took on different shapes. Reform in the United Kingdom (UK) mirrors these underlying changes, often as a reaction to the increasing industrial power and technical education developed by France, Germany and the US, but also as a result of industrialisation (Pratt, 1997). These fears of lost ground materialised most intently in the 1860s following the 1867 Paris Exhibition, *"in the forefront were supposed weaknesses of technology or entrepreneurship and the panacea from some was tariffs and end to free trade, and for others more technical and scientific education"* (Sanderson, 1972, p. 9). Many examples of industrial decline accumulated over the period to the point at which, *"the entrepreneur was blamed, his own educational background and his negligent attitude to higher education and science in the prosecution of his business"* (Sanderson, 1972, p. 16)[i]. This sentiment, of a negligence of education in entrepreneurship and a reluctance to engage with higher education, reappears regularly (Brown et al., 1996; Tiratsoo, 1998).

Though the UK's universities have a long history[ii], for much of the time they were focused on producing skilled canon law for the Church. In the mid-seventeenth century they began to become gateways to the professions, the city, banking and politics[iii]. Industrial development was limited and most skills were taught within the family or home and pre-industrial professions were acquired 'on the job' through apprenticeships (Ruef, 2020). During industrialisation links between universities and the new industries were limited, innovation often came about from observation of practice[iv]. This situation changed within Scottish higher education in the early 19th century (Gray, 1912), which was at the forefront of 'academic entrepreneurship', and grew in importance in English civic universities, founded later (Sanderson, 1972).

Efforts to provide higher scientific-practical training initially occurred outside of universities. For example, the earliest Polytechnics were formed as societies. The Cornwall Polytechnic Society (1832) aimed to, *"promote the ideas and inventions"* of the Perran Foundry workers, while the Royal Polytechnic Institution aimed, *"to help the acquisition of practical knowledge of the various arts and branches of science connected with manufacturers, mining operations and rural economy"*[v]. Education was designed to be practical and focused on the application

of science and these early developments led to the growth of technical colleges across the UK that in the 1960s become polytechnics. The idea that education should be focused on 'vocational needs' rather than 'for its own sake' was, however, contentious[vi] with traditional scholars and universities disagreeing. The basic philosophy constructed on behalf of vocational education at this time, is a critical root on which many subjects build, including entrepreneurship education and later remerges in the 1960s during the launch of the polytechnic movement and in the 1980s via the Royal Society of the Arts, Manufacture and Commerce (RSA) 'Education for Capability' initiative.

In England several drivers led to a period of higher education expansion, starting in the 1860s, giving rise to English civic universities (Jones, 2019). The population grew substantially and shifted to the North of England. Industrial competitors, notably Germany and the US, began to catch up. The industrial structure changed so that higher scientific training was needed, while universities in the 1860s started to become a source for industrial innovation and entrepreneurship. In the 1870s and 1880s gaps in the training of 'the sons of industrialists' forced British industry to import immigrant labour and led to an increase in British citizens studying abroad (Sanderson, 1972). Managerial appointments were promotions of unskilled clerks, who lacked formal training. The economy in the 1830s-1870s, therefore, demonstrated a need for vocational education; for technical, management and entrepreneurship skills, but it had little supply. Existing universities and apprenticeships were thought to be failing but no adequate system had developed, while competitors such as the US and Germany, were growing and developing valuable systems of technical education supporting the development of these skills (Wadhwani & Viebig, 2021).

The situation led to a rise of the civic university in England (Rose et al., 2013; Jones, 2019). Though each university had slightly different origins they shared a common dependence on the local business and shared a common aim to provide practical benefits to their communities by connecting applied science to local industry. Manchester (1851), the first of the civics was started following a large endowment from a businessman (John Owens) and initially applied the liberal educational principles of the time (Jones, 2019). Only in 1873 did it begin to focus on a more German system connecting education and practice and join the Victoria federation (1881). Other civics were started in a wave. Liverpool (1883), followed by Leeds, Sheffield, Birmingham, Bristol, and Newcastle (affiliated with Durham)[vii]. This sudden flow of investment in new universities demonstrated a noteworthy level of support from industry for the growth of universities that moved beyond the traditional model[viii]. Industry supported the civics with some sense of expectation of a return on their investment. To attract support these new universities made statements of purpose that they were formed to serve industry (Sanderson, 1972)[ix].

Within this context we see the first strand of 'entrepreneurship education', very different from how it is viewed today, focused on science and technology education for 'sons of merchants, industrialists and others involved in commercial enterprises' and *"many of these sons entered the father's works and became the next generation of scientifically trained entrepreneurs in family businesses"* (Sanderson, 1972, p. 97). These new universities aimed to educate entrepreneurs[x] by providing them with strong foundations in engineering and science that

would be required to lead the increasingly complex industrial enterprises that were growing rapidly. They were, however, different from their German counterparts. In Germany higher education had split into Humboldtian universities that retained a focus on classics and humanities and the new commercial schools, that focused on the integration of technical and commercial education (Wadhwani & Viebig, 2021). In contrast, the new English universities retained a focus on the liberal arts and combined it with specialized training in science and engineering. At this point though, there is little 'commercial' education as it was understood in Germany and the US at that time (Jones, 2019).

Applied Economics and Commerce (c. 1890-1914)

While the first strand of entrepreneurship education in the UK owes its origin to science and engineering competition with Germany the second strand owes its inspiration to the US. As Wadhwani & Viebig (2021) point out, major commercial cities in the Northeastern and Midwestern US started to develop small private schools tutoring in commerce as early as the 1820s. These schools included theoretical subjects like business law, accounting, penmanship and political economy, as well as practical subjects involving business simulations (venture creation orientated) and public lectures. During the 1890s this trend of educating 'for commerce' began to enter the UK. Alongside awareness of this form of education there were several contextual factors that influenced its growth. First, changes in legislation (the Limited Liability Acts 1856 to 1862) made accountancy more important as a specific form of training (Ireland, 1984). Secondly, as production management of factories became more complex knowledge of cost accountancy grew in demand. Finally, the study of economics gained attention as it was thought to assist with industrial relations that aimed to address growing labour militancy (Sanderson, 1972).

The 1890s appears to be a watershed. Commentators pointed out that the UK was aware of its backwardness and the British Association, the London Chamber of Commerce and the London Technical Education Board subcommittee on Commercial Education all raise concerns about the UK's deficiency in commercial education (Sanderson, 1972, p. 187). In this context, the London School of Economics (LSE), the Birmingham University Faculty of Commerce and Cambridge Economics get started. While the LSE and Cambridge aim to make economics more applied[xi] Birmingham's story is of particular interest (Pressey, 2017).

In 1898, on behalf of Birmingham Chamber of Commerce, Arthur Chamberlin led a delegation to the US to examine university education for business. Their report led the charter of the university (then Mason College) to propose a faculty of commerce (Pressey, 2017). As Sanderson (1972, p. 193) points out, *"Mason College had not been attracting students of business families in the numbers they hoped, and commerce education, like the charter and university status, was a means of attracting the young industrialist on his way into the firm"*. The initiative was greeted sceptically by the local business community[xii]. William Ashley was recruited and returned from Harvard University to become the faculty's first chair. Ashley *"believed commerce training could give more zest and stimulus to those third-generation entrepreneurs who were inheriting family businesses"* (Sanderson, 1972, p. 195), when compared to the UK's former focus on science and technology education. The programme

offered languages, foreign commercial correspondence, made sure students were familiar foreign economic literature and technical business periodicals (Pressey, 2017). The faculty appointed the first professor of accounting. Accounting was taken in each of the three years and some students studied commercial law, as well as trade, money and banking (finance). Professors were encouraged to keep in constant touch with the realities of business, were appointed from industry and an advisory board of local businessmen was formed. In this sense, commerce education was a copycat of what had developed in the US, though it remained somewhat behind developments there (Wadhwani & Viebig, 2021).

Developments in applied economics and commerce led many UK universities to follow suit[xiii]. There was a rapid reception for 'applied economics' and 'commerce', with a gradual shift towards commerce (Sanderson, 1972, p. 207). In addition to Birmingham, Leeds offered a full B.COMM degree and diplomas in 1902[xiv] and other universities offered certificates. This second strand of entrepreneurship education remained focused on training the 'sons of merchants and industrialists' and there were only a few students. Those educated were the third generation, working in or inheriting family businesses (Sanderson, 1972), and the education received was closer to 'management' or even 'international business' than 'entrepreneurship' as we understand it today.

Higher Education before Bolton (c. 1918-1960)

During the interwar period we see a shift from training entrepreneurs (or sons of entrepreneurs) to training managers. This change is largely due to the war, with management succession being particularly acute, due to the loss of labour. Companies grow, move away from being family owned and the 1920s depression increases managerial complexity. A new managerial class of higher education trained managers emerges to work in these large corporations. Consequently, 'entrepreneurship education' declines in favour of 'management education' and a focus on 'family businesses' declines in favour of a focus on 'large enterprises'. Commerce education grows but begins to be displaced by a new form of management education called 'industrial administration'. This type starts in Manchester (1918) [xv], removes aspects of liberal arts (e.g., languages, geography and banking) and begins to look more like modern business education[xvi].

After the Second World War perceived science and technology deficiencies during the war are acknowledged, reappear as a priority, and the UK sets about expanding the number of scientists and engineers, which leads to a new period of university expansion (during the 1940s and 1950s). The English civics grow and several colleges gain university status[xvii]. Management education begins to add more mathematics including economic analysis, business statistics and operational research and two management schools are started at Henley and Ashridge (Dimock, M. E., 1956; Ivory et al., 2006).

The 1960s sees another watershed moment and various pressures[xviii] led to a third period of university expansion. A range of new universities is built[ix]. In Scotland Dundee becomes independent of St. Andrews and Strathclyde receives its charter (1967). In Northern Ireland a university at Coleraine (Ulster University) is started. Then in 1966 thirty technical colleges are

designated to become polytechnics. These shifted education into a new form, including the development of a sandwich degree, where students study partly in industry, and introduced vocationally-orientated subjects that were designed to have direct application, renewing the early intentions of the polytechnic societies.

Though this period is notable for its absence of education explicitly 'for entrepreneurs' there are developments that play a role later. Two of the new universities (Lancaster and Warwick) build new management schools as the university is founded. These two schools reconceptualise management education into a form that is like the modern business school[xx]. Through its 'Enterprise Lancaster' initiative the university aimed to connect with industry, despite being in a largely rural location (Rose et al., 2013). Warwick set about having 'a close relationship with industry' from its outset[xxi].

These developments were further amplified by a US Marshall grant ($9 million) designed to help the UK build postgraduate and post-experience higher business education like the US (Sanderson, 1972; Locke,1989). A report, led by Lord Franks, recommended the formation of two new graduate business schools, which were eventually established at LSE/Imperial College (eventually London Business School) and at Manchester (Locke,1989; Pullan & Abendstern, 2000). The new graduate schools and developments at Lancaster and Warwick led many other universities to begin establishing modern business schools, which proliferated across the UK during the '60s (Tiratsoo, 1998). Consequently, though general business education becomes established there is little focus on entrepreneurship. This is best illustrated by one of the few programmes founded in the 1960s. In 1962 Sir Walter Salomon started Young Enterprise in the UK to assist the development of business education in secondary schools. It was modelled on the US programme Junior Achievement (founded in 1919) and adopted a 'large business' ethos in its design. Later, Young Enterprise becomes an important contributor to entrepreneurship education in schools, but its initial design adopts the general focus of 'large enterprise' education evident in the 1960s.

Small Business Management Education (c. 1968-1982)

While the first modern entrepreneurship programmes were taught in US business schools (Katz, 2003), it was not until the 1970s, 20 years or more later, that this new strand of entrepreneurship education appeared in the UK[xxii]. There are two reasons for this. First, it was not until the late 1960s that modern business schools[xiii] within universities existed in the UK and secondly, the importance of entrepreneurship and small and medium-sized enterprises (SMEs) went unrecognized[xxiv] (Watkins and Stone, 1999). Although the number of business courses in UK universities had been expanding during the 1960s the focus had been on the management of large companies. Partly this was because the rationale for the introduction of the new business schools was to address recognized deficits in UK business education, and in part, because large firms paid the fees for the new post-graduate programmes. In many universities it was argued that entrepreneurship and small business management should not be taught and that it was *"considered an almost deviant form of academic behavior"* (Watkins and Stone, 1999: 382). This began to change in 1971 with the publication of the "Report of the Committee of Inquiry into Small Firms" (Bolton, 1971). The Bolton report, as it became known,

'brought consideration of small firms into mainstream discussions of economic growth" and became "synonymous with studies of small firms in the UK" (Wapshott and Mallet, 2022: 7).

One of the first programmes started was an elective on the MBA at Manchester Business School. This proved to be highly popular and similar courses began to emerge elsewhere. These were aimed at postgraduates[xxv]. Durham University Business School followed offering a small business option in its MSc in Management Studies, as did Sheffield Polytechnic, London Business School and the Cranfield Institute of Technology. These were mostly conceptualised as being 'about small business management' and the practice was to offer an occasional elective class at postgraduate level, led by a motivated professor (Watkins and Stone, 1999).

In the mid-1970s, the UK government became increasingly concerned about the high rates of unemployment and created the Manpower Services Commission to co-ordinate employment and training services[xxvi]. At the same time, the UK Small Business Association was formed to lobby on behalf of small firms and in the northeast of England (1975) the first of the UK's small firms' advisory services was founded together with the Teaching Company Scheme (later renamed as the Knowledge Transfer Partnership) to facilitate research collaboration between universities and SMEs.

This increasing focus on small businesses during the 1970s led to the establishment of a National Small Business Management Teachers Programme (1977), which was launched at London Business School. It aimed to train university and college staff to teach small business management. The programme ran for ten years and led, in the late 1980s, to the forming of the United Kingdom Enterprise Management and Research Association (UKEMRA), now the Institute for Small Business and Entrepreneurship (ISBE). In the same year (1977) a sixteen-week New Enterprise Programme, was developed at Manchester Business School (Watkins, 1979)[xxvii]. The programme aimed to help senior managers of large firms, who had been made redundant, explore the concept of starting their own business and was the first form of entrepreneurship education in the UK designed for 'venture creation'. It was a response to a Manpower Services Commission report entitled "Young People and Work", a Youth Opportunities Programme and a Job Creation Programme, were also developed to help address other youth unemployment issues.

In 1978 the first UK Small Business Policy Research Conference was held at Durham University Business School, jointly with Ashridge Management College, but the number of academics capable of teaching start up programmes remained small. This small business management focus developed such that by the end of the decade Curran and Stanworth, (1982: 3) were able to write *"academic interest in small enterprise has increased in the subsequent decade to a level where few business schools or management departments dare be without their small business specialists and small business courses"*. Even so, there existed a tension between the practical needs of the small business community and the academic needs of universities. Consequently, much of the research and teaching at that time was 'about SMEs' and not 'for them'. Over the decade the management skills gap between large and small firms continued to widen. This led Kirby (1982) to propose that if progress was to be made there was a need for an independent service provided by the UK government.

The Enterprise Skills Agenda (c. 1982-1989)

The situation began to change in the 1980s when the Manpower Services Commission began offering a range of start-up courses such as Firmstart, the New Enterprise Programme and Teamstart. These were intended to help unemployed people start businesses or become self-employed. They were delivered mainly by private consultants, polytechnics and colleges of further education as still "*with few exceptions, the older universities did not undertake this kind of work at all*" (Watkins and Stone,1999: 383). One exception was the University of Durham. Following a two-year research project into *"Economic Growth in the North East of England"* (in 1970), a young economist, the late Allan Gibb (1939-2019)[xxviii], established a Small Business Centre in the University's new business school. He did so with the support of sixteen small businesses and a grant from the university. The centre grew rapidly and became the top ranked entrepreneurship programme outside of the US (Vesper and Gartner, 1997). By the end of the decade, it had forty staff and a turnover of almost £2 million[xxix]. Before beginning the centre Gibb seconded himself to a local garage and car dealership to learn about the world of the owner-manager. He then set up the centre as an entrepreneurial venture with several autonomous units each focusing on a key client group and each developing its own programmes, often in partnership with leading companies including the high street banks, ICI, Marks and Spencer and Shell. Two of these units dealt specifically with entrepreneurship education: i) an enterprise education unit (focused on schools); and ii) a graduate enterprise unit (focused on higher education).

A similar centre, the Scottish Enterprise Foundation, was established at Stirling University in 1980 by Professor Tom Cannon. Both he and the late Professor Mike Scott, the founding director, had previously been employed at Durham University Business School. According to Vesper and Gartner (1997), Stirling was the third entrepreneurship programme outside of the USA, behind Durham and Swinburne in Australia, with two other UK institutions, Cranfield and London Business School, in 7th and 8th positions, respectively.

By the 1980s the focus of entrepreneurship education had begun to change. In the US, the research of Birch (1979) had revealed the job generation capability of new and small firms while in the UK the Rt. Hon. Margaret Thatcher had become Prime Minister and was beginning to change the country's economic landscape by reducing the role of the state. These events helped to create, or rather re-create, a focus on the 'enterprise culture' and 'enterprise skills' in the UK, a culture in which the alternative to employment was not unemployment but self-employment[xxx]. It also helped shift the focus in entrepreneurship education more towards 'venture creation/startup' and expanded education for 'general awareness of enterprise', aiming to use education to help change the UK's culture, which is often described as the 'enterprise skills agenda'.

Under such circumstances, and with the introduction of many new interventions to support new and small firms, attitudes began to change and the number of start-up and growth programmes in the UK increased. While one of the features of this development was the variety and innovative nature of the programmes on offer, a significant influence was the new venture creation work of Timmons and Spinelli (1973) in the US. Typical examples of this in the UK were the Graduate Enterprise Programmes introduced in Scotland by the Scottish

Enterprise Foundation, in Wales at the University of Wales, Lampeter, and in England by Cranfield. At Durham, the Small Business Centre helped introduce two innovative student internship programmes, STEP (Shell Technology Enterprise Programme) a six-week SME placement for undergraduates and GAP (Graduate Apprenticeship Programme) a yearlong SME work-based learning programme for graduates of any discipline. Not only did such programmes introduce the participants to the concept of self-employment but they required the students to learn experientially and to develop their enterprise competences/skills. The outcomes of the English and Welsh Graduate Enterprise Programmes were investigated by Brown (1990) and Kirby (1992), while research undertaken by Westhead et. al. (2000: 272) indicated that the STEP students *"expressed a statistically significantly more 'positive' attitude than non-STEP students towards self-employment or starting their own business"*.

In 1980 a manifesto entitled *"Education for Capability"* was published by the Royal Society of Arts (RSA) and signed by 140 eminent academics. It claimed that the education and training process placed too much weight on analysis, criticism and the acquisition of knowledge and not enough on problem-solving, doing, making and organizing. This effort had a historical link back to the 1850s and 1960s polytechnic movements and to prior calls for more vocationalism in education. The signatories argued that education should develop skills and prepare young people for the world of work. Despite criticism of the concept (Thompson, 1984) the society developed a recognition scheme (RSA, 1981) led by its president the leading organisational management guru, Charles Handy. Each year the scheme recognized and celebrated a small number of educational projects in schools, colleges and universities that met the scheme's criteria[xxxi]. Both Graduate Enterprise in Wales and its Scottish equivalent were recipients[xxxii].

In 1981, the London Enterprise Programme offered a series of training courses at the Polytechnic of Central London (now the University of Westminster). These ranged from one-day business idea courses to weekend courses for growth businesses, while the first national small firms conference was held in London. The proceedings and key papers were edited by Stanworth et.al. (1982). Also in 1982, the first UK edited journal the "European Small Business Journal" (now the "International Small Business Journal") was introduced and Shell Livewire, a competitive award for young entrepreneurs, was launched in Scotland.

1983 saw the foundation of the Small Business Research Trust (Stanworth, 2014), while 1984 witnessed the launch of the first regular UK survey of Small Firms, "The Quarterly Survey of Small Businesses in Britain" (Bannock, 2014). The Shell Technology Enterprise Programme was launched in 1986 and in December 1987, the Manpower Services Commission launched its national Enterprise in Higher Education initiative. This was not intended to create "Thatcherite Entrepreneurs" as it was mistakenly believed but rather to: i) develop the qualities of enterprise amongst those seeking higher education qualifications; ii) enable higher education to embed activities that promote enterprise into the work of its institutions; and iii) foster and enhance partnerships between higher education and employers, particularly with SMEs. To facilitate this, the universities could bid for up to £1million of development funding over a continuous five-year period providing it was matched with funding from the institution itself and the business community.

While several commentators (Elton, 1991, 1995; Wright, 1992) recognised the positive benefits of the initiative and Bridges (1992) argued that it was an extension of the concept of liberal education, others were less convinced. Coffield, an educationalist, was especially opposed to the concept. Not only did he and MacDonald claim that the term enterprise is a *"Farrago of 'Hurrah' words like 'creativity', 'initiative' and 'leadership'."* (MacDonald and Coffield, 1991: 30) but he concluded that *"there is no generic skill of enterprise whose essence can be distilled and taught"* (Coffield, 1992, 59). For Bailey (1992) this introduction of a culture and ethos of the market economy into universities was akin to indoctrination. Thus Grant (1986: 65) concluded that *"…it may be said that considerable interest in enterprise education is beginning to emerge in the United Kingdom"*. Clearly, there was growing recognition of the importance of entrepreneurship and a realisation, by the end of the 1980s, that entrepreneurship education was not just for students of business administration or graduates, nor solely about new venture creation and small business management. There remained opposition to it, coupled with confusion over what it was (Grant, 1986), and whether it can be taught, as well as a suspicion that it was a right wing inspired initiative to promote capitalism (Erkkila, 2000).

By the end of the decade though enterprise education was on a much stronger footing. In 1988 the Economic and Social Research Council (ESRC) introduced a small business research programme that funded several research projects and created three small business research centres[xxxiii], while in 1989 the UK Enterprise Management and Research Association (UKEMRA) was formed enabling the growing number of educators and researchers to meet to share their ideas and experiences and promote their research. The 1980s thus saw the establishment of an 'enterprise skills agenda', that broadened educational provision to a wider audience, established a professorate and discipline, and layered this strand alongside the existing 'small business management' and 'venture creation' strands.

Small Business Support Training for Competitiveness and Growth (c. 1990-1997)

In the UK, entrepreneurship imaginaries of the 1990s were characterized by policies that shifted away from 'enterprise skills' development toward policies that sought to support existing SMEs and encourage new venture creation (Storey & Greene, 2010). Whereas the focus of the 1980s had been on increasing the quantity of small businesses, the 1990s focused on increasing their quality (Greene et al., 2004) by enhancing competitiveness and growth potential. Storey & Greene (2010) highlight that by the '90s the number of new businesses had increased by 50 per cent from 1980 to 3.6 million in 1989, suggesting that the UK had shifted from a 'dependency' culture to one of 'enterprise', and that there was emerging evidence of the importance of fast-growth firms to the economy (Storey & Greene, 2010).

The UK also witnessed a change in the way policy support was delivered, moving away from central to local and regional provision. Training and Enterprise Councils (TECs) were established in England and Wales to administer publicly-funded training programmes. Operating as private limited companies and administering a multi-million annual programme

of investment, the TECs reported directly to their regional government office (Stone & Watkins, 1999). The Northern Ireland equivalent at that time was the Local Enterprise Development Unit (LEDU), which had been created as part of the 1970-1975 Northern Ireland Development Plan.

Business Links were also established with a remit to address competitiveness for established SMEs, and subsequently, provide a single point of access[xxxiv]. Help was mostly in the form of 'soft' support (Greene, 2002) and directed mainly toward those businesses with the potential to survive and grow (Trade and Industry Select Committee Report 1996). The Small Firms Enterprise Development Initiative (SFEDI) was also established. Formerly known as the Small Firms Lead Body, SFEDI's remit was to develop nationally recognised standards of competence for Britain's 3.5 million small businesses, including standards for those providing support services to the sector.

Around this time, available evidence suggested that the entrepreneurs who were most likely to survive the new venture creation/quality start-up process were those with degrees and those with access to financial capital (Bates, 1990). While it was acknowledged that graduates would be less likely to enter self-employment, especially immediately following graduation, it was anticipated that they could potentially lead growing firms (Burke, et al., 2001). This realisation sparked the development of more entrepreneurship education of all kinds, including management development for SME owners, academic degrees focusing on new venture creation, and practical enterprise training programmes focused on technology-based start-ups, and much provision was delivered through university incubators or tech transfer offices.

Entrepreneurship education witnessed its first period of unprecedented growth internationally (Robinson & Haynes, 1991) and was now predicted to be a *'growth industry'* worldwide (Katz & Greene, 1996). Findings from a longitudinal study of entrepreneurship education in the UK during the mid-late 1990s showed that all universities provided at least some type of small business and entrepreneurship education course (Matlay & Carey, 2007). In addition, a study by Levie (1999) that surveyed 133 Higher Education Institutions (HEIs) revealed increases in entrepreneurship education courses of 23% between 1997/98 and 1998/99. Twenty-seven HEIs reported having courses attended by non-business students (20%), evidencing the wider appeal of entrepreneurship and the beginning of its expansion beyond the business school.

Levie (1999) notes that two main categories of entrepreneurship education had emerged: programmes *for* entrepreneurship, and programmes about entrepreneurship. These programmes were typically taught and assessed differently and had different types of educators. Educators in the "for" category tended to be more connected with real entrepreneurial activity, spurring their students toward *'near entrepreneurial experience'* (Ohe, 1996) via business plan preparation and interaction with successful entrepreneurs. Educators in the "about" category often taught in a traditional manner, through lectures, textbooks and essays. This latter category focused more on the theoretical aspects of entrepreneurship and were, not surprisingly, assessed via written essays and terminal exams (Levie, 1999). At the international level, the 1990s witnessed a notable educational shift from module concentrations and majors in entrepreneurship education to full degree programmes

(McMullan & Gillin, 2001). Furthermore, within the broader entrepreneurship education landscape, the emergence of theoretical models such as triple helix (Etzkowitz & Leydesdorff, 1995) and the concept of the entrepreneurial university (Etzkowitz, 1983; Clarke, 1998) spurred an increase in the number of academic chairs, PhDs and centres focused on entrepreneurship globally (Blackburn & Smallbone, 2008; Finkle & Deeds, 2001; Katz et al., 1994).

Gibb (1996) noted the growing recognition that highly-qualified, clever and ambitious young people could be attracted into direct enterprise creation, or oriented toward careers in independent small business management, as opposed to roles in large organisations. There was also the notion that many MBA students ended up running their own business. This prompted the growth of courses on entrepreneurship, self-employment and indigenous business creation within MBA programmes, thus creating a new and broader role for business schools, one that envisioned entrepreneurship as a critical management competence and beyond the prerogative of the SME owner-manager (Gibb, 1996: 320). Consistent with Levie (1999), Gibb (1995) observed a shift in the way these different types of entrepreneurship programmes were taught. Entrepreneurship educators were moving away from conventional approaches that focused on content and emphasised *'know what'*, toward more enterprising approaches that incorporated participant-led learning and focused on '*know how'* and '*know who'*, embracing learning from mistakes (Gibb, 1995: 315).

In parallel with such tangible educational developments, academic scholarship on entrepreneurship education also expanded, witnessing a consolidation, institutionalisation and increasing legitimisation. New entrepreneurship-focused UK-based journals were launched, including the Journal of Small Business and Enterprise Development (1994), the International Journal of Entrepreneurial Behaviour and Research (1995), and Venture Capital (1999). The literature began to evidence increasing reference to 'entrepreneurship', as distinct from 'small business' (Blackburn & Smallbone, 2008). It finally seemed that the field of small business and entrepreneurship was *"coming of age",* no longer perceived as a *"deviant"* form of academic behaviour, it was now recognised as a legitimate discipline alongside other applied business subjects (Stone & Watkins, 1999)[xxxv]. Building on studies from the previous decade[xxxvi] the focus in the 1990s shifted slightly to that of trying to 'pick winners' (Caird, 1991) a strategy that could be beneficial to enterprise agencies and the programmes they funded.

The need to evaluate entrepreneurship education was well documented during the 1980s and this continued into the 1990s (Curran & Stanworth, 1989; Cox, 1996). The effectiveness literature was often dominated by in-depth programme evaluations, conducted using various frameworks and applied either on a single case or via multiple case comparisons (Garavan & Ó Cinnéide, 1994; Jennings & Hawley, 1996)[xxxvii]. Criteria from these studies provided a useful starting point for universities to begin assessing the quality and effectiveness of provision[xxxviii]. Challenges generally associated with determining and measuring effectiveness predominated the entrepreneurship education research during the 1990s, including those relating to cost-benefit analysis (Gibb, 1996), identifying appropriate output measures and determining causality (Wyckham, 1989). It was suggested that other effectiveness variables could include enhanced graduate earnings, start-up rates and growth in programme success regarding increased enrolment numbers and international recognition

(McMullan & Gillan, 2001). There were thus calls for longitudinal studies that evaluated the impact of entrepreneurship education and training over time (Fleming, 1996; Garavan & Ó Cinnéide, 1994). Collectively, his body of literature laid the foundation for a much more critical stance on entrepreneurship education evaluation subsequently witnessed in the new millennium.

In the 1990s we thus see a rising strand of educational practices focused on 'growing small businesses' and see expansion in the 'evaluation of programmes', which spurs future research on entrepreneurship education.

University-wide Entrepreneurship Education (c. 1997-2010)

On 2nd May 1997 the Labour Party won the general election, Tony Blair became prime minister and Gordon Brown, was appointed the chancellor of the exchequer. In the UK, for many areas of policy this was a watershed moment, and it impacts the trajectory of entrepreneurship education. One of the first decisions was to grant devolution to Scotland, Wales and Northern Ireland. In 1997 referendums were passed in Scotland and Wales. The Scotland Act and the Government of Wales Act were passed in 1998, following which the Scottish Parliament and Welsh Assembly were created. In North Ireland, the Belfast Agreement was signed (1998) and it resulted in the founding of a Northern Ireland Assembly. In all three cases aspects of educational policy were devolved to the individual assemblies and decisions about educational policy begin to diverge across the UK as individual countries start to make decisions for their own educational systems. For example, Wales begins to focus on entrepreneurship education across the entire school system[xl], while policy in elementary and secondary education in England lagged[xli]. Consequently, the history of entrepreneurship education in the countries of the UK from this point forward is shared but divergent.

In England a similar process began with the establishment of regional development agencies from 1998 (RDAs), which were intended to become English regional assemblies. Despite the failure of English devolution (in 2004) nine RDAs[xlii] were established and aimed to support their region's development[xliii]. Though educational policy was not devolved in England each region begins to develop its own funding mechanisms that support entrepreneurship education (Price, 2004). For example, the North West Regional Development Agency (NWDA) worked with its universities to support innovative programmes for high growth entrepreneurs (Rose et al., 2013) while the South East England Development Agency (SEEDA) supported a regional network of entrepreneurship educators across the region's universities (Higher Education Enterprise Group - HEEG) and provided grants for courses and programmes (Watkins & Stone, 1999). Divergence in approach occurs across the English regions as different RDAs apply their funds to different objectives[lxiv]. Divergence, however, is also supported by communication and collaboration between the RDAs[lxv].

Another major initiative was the UK's National Committee of Inquiry into Higher Education (commonly called the Dearing Report). The inquiry published a series of reports in 1997, making 93 recommendations about funding, expansion and academic standards for the UK's

universities and introduced tuition fees and student loans. As Levie (1999) highlights this was a significant event for entrepreneurship education as the report clearly favoured expanding the provision of entrepreneurship education, *"We recommend to higher education institutions that they consider the scope for encouraging entrepreneurship through innovative approaches to programme design and through specialist postgraduate programmes."* (Recommendation 40). The committee was also careful to make a distinction between prior approaches to entrepreneurship education that were for 'small business management' and the 'new' (or not so new) form of education that should be for 'venture creation' (Levie, 1999). This was soon followed by the 1998 White Paper on Competitiveness that also recommended more entrepreneurship education in universities and the Office of Science and Technology's Science Enterprise Challenge, that aimed to embed entrepreneurship education in science and engineering.

Another contextual factor of importance was the relationship between Gordon Brown, then chancellor, and Carl Schramm, the President of the US Kauffman Foundation. They had conversations throughout that influenced a two-way interchange of forms of entrepreneurship education between the US and the UK. For example, the UK's policy shift away from 'small business and growth' and 'enterprise skills' back towards 'venture creation' seems largely driven by US perspectives on entrepreneurship education in the 1990s. The UK's efforts to expand university wide entrepreneurship education via the Science Enterprise Challenge (2001) and Centres for Excellence in Teaching and Learning of Enterprise (2005) seem to play a role in the development of the Kauffman Foundation's 'Campuses Initiative' in the US (from 2003-2006), while the National Council for Graduate Entrepreneurship's (NCGE) founding in the UK (in 2004) modeled the Kauffman Foundation. Likewise, National Enterprise Week (2004) in the UK, spawns Entrepreneurship Week USA (2007) and the two merge to start Global Entrepreneurship Week in 2008.

The period thus sees three developments. First, a significant burst of growth within the curriculum and the launch of more extra-curricular activities. Secondly, it sees much more emphasis placed on 'venture creation' and finally provision begins to shift away from business schools to become a more 'university-wide' effort.

The burst of activity is illustrated in the available data. Matlay & Carey (2007) note a rapid increase, with most universities in their sample reporting designated entrepreneurship courses and an increase in cross-campus provision by 2004. Price et al. (2004) noted a 'groundswell' of activity supporting graduate startups following the Dearing Report[xlvi]. The NCGE's (Hannon et al., 2006) mapping study of English universities reported that 7% of all university students engage in some form of enterprise education. The study documented 889 enterprise unique courses, with 64% provided at the undergraduate level. At this point full programmes, were less evident than in the US (Katz, 2003; Kuratko, 2005) and provision continues to be dominated by business schools (64%), while growing in other disciplines[xlvii].

This growth in the curriculum is mirrored by growth in extra-curricular opportunities. The NCGE (Hannon et al., 2006), for example, report that 87,860 students were engaged in non-accredited activity. We see during this period a significant expansion of the availability of entrepreneurship clubs at universities (Price, 2004). Students in Free Enterprise (SIFE, now

Enactus) enter the UK for the first time (2002). Entrepreneurship clubs get started[xlviii] and they form the Association of Student Entrepreneurs (ASE), which gains government funding and becomes the National Association of College and University Entrepreneurs (NACUE) in 2008. Events, awards, mentoring programmes, summer schools, business plan competitions and student internships, all see a level of vibrancy that goes beyond the prior phases and attempts begin to elevate the importance of these efforts. For example, the Queen's Awards for Enterprise Promotion (2004) and the Times Higher Education Entrepreneurial University ofthe Year Award (2008) begin.

Rather than trying to provide training for 'small business management' as in '70s, or the development of 'enterprise skills' as in the '80s or 'for small business growth' as in the '90s, the social imaginaries of entrepreneurship education are more firmly focused on trying to engage students in venture creation via graduate entrepreneurship and thereby increase job generation. This focus influenced a tendency (in the late 1990s and 2000s) in funding mechanisms that moved entrepreneurship education out of the business school into other disciplines and across campus, recognizing that students in science, engineering and technology might be better candidates for venture creation efforts (Levie, 1999; Hannon et al., 2006).

Trends toward university-wide entrepreneurship education were best illustrated by the Science Enterprise Challenge (SEC). SEC was a £25millon competition created by the UK Treasury via the Office of Science and Technology in 1998 to create eight institutes of enterprise that would boost the teaching of entrepreneurship in science and engineering (Levie, 1999). According to Lord Sainsbury the competition created Science Enterprise Challenge Centres (SECs) with the aim that they become 'catalysts for change in UK universities' so that universities more directly contribute to the UK economy via technology-based, graduate spinoffs (Price, 2004). The concept looked back to the early civic universities and their contribution to academic entrepreneurship and the industrial revolution, while again seeking to emulate the US and in particular the Massachusetts Institute of Technology (MIT). Eight centres were granted in 1999 and this grew to fourteen SECs[xlix]. Most SECs were collabourations between universities. For example, the Northern Ireland Centre of Enterprise included the University of Ulster, Queen's University and Loughry College, while the White Rose Centre for Enterprise included the universities of Leeds, Sheffield and York.

Price (2004) estimated that over 60 universities were involved in the network (UK Science Enterprise Centres UKSEC which became Enterprise Educators UK in 2007). UKSEC reported in 2003 that 45,000 students had been impacted, 1000 graduate start-ups had been created, 760 licenses and £5.2million sales revenue generated (Price, 2004). The network thus had a direct impact on expanding the teaching of entrepreneurship, developing it beyond business schools and 'embedding' it into science and engineering programmes[l]. UKSECs also began to see efforts to grow provision from individual classes into full programmes[li]. As UKSECs gained momentum in universities across the UK, university-wide entrepreneurship education expands further and enters a wider range of disciplines[lii].

During this phase we see considerable growth of activity in entrepreneurship education that becomes more like the US focus on 'venture creation'. In addition, there is a considerable

interchange of ideas and models between the US and the UK (and Europe). We also see a shift to university-wide provision that takes entrepreneurship education outside of business schools. Simultaneously, devolution of education policy and funding, increases diversification and differences across the UK's countries and regions, regarding how they conceptualise support entrepreneurship education. There is another deeper social imaginary strand occurring. Unlike the civic university era where 'sons of entrepreneurs' are being taught science and engineering to help develop their industrial enterprises, we see the reverse now, and scientists and engineers are learning entrepreneurship, so that there is more likelihood they will create a venture from their technological knowhow.

Enterprise Mindsets and Competences (c. 2010-2020)

The period from 2010 sees a shift of emphasis in favour of the entrepreneurial mind and mindset, with something of a movement away from venture creation, although this strand continues. There is a clear revival of the 'skills agenda' with a focus on employability, defined by Yorke and Knight (2006: 567) as: *"a set of achievements – skills, understanding and personal attributes – that make individuals more likely to gain employment and be successful in their chosen occupations, which benefits themselves, the workforce, the community and the economy"*. Rae et al (2012) reported this objective as further increasing student activity in enterprise and highlighted that universities were dealing with a turbulent, changing world, including significant changes to funding due to the Browne Review of Higher Education, which changed the system of funding for universities[i]. *'Creating one's own job'*, and taking greater personal responsibility for one's career, was a challenge from the 1970s and early 1980s that resurfaces for undergraduates in the 2010s.

Neither the private nor the public sector were thought to provide sufficient employment opportunities to arrest underemployment trends (Yorke and Knight, 2006), which reinforced the notion that all undergraduates could benefit from the knowledge and skills necessary for venture creation and self-employment (Gibb, 2005; Gibb et al., 2009). Rae et al. (2012) illustrate the continued acceleration of growth in the provision of entrepreneurship education despite concerns regarding funding constraints caused by reductions to higher education's budget implemented by the new Coalition (Conservative-Liberal) government. Entrepreneurship also began to appear extensively on television via programmes like the Apprentice and Dragon's Den[liv], which regularly feature graduate entrepreneurs and are watched by students.

Supported by a stream of new national awards, universities begin to add terminology about being entrepreneurial to their missions and strategies; whilst their declared intent and direction of travel might be similar, their emphases and approaches differ and follow different stands of entrepreneurship education practice. Increasing numbers of extra-curricular activities are created and more staff are engaged in enterprise education support activities. These, however, often remain voluntary for students and are rarely credit-bearing. In parallel, academic research in entrepreneurship education accelerates, fueled by the continuing strength of ISBE and EEUK, alongside other international organizations and conferences (e.g., USASBE, ICSB and 3E ECSB)[lv].

A distinction between enterprise and entrepreneurship education begins to formally emerge, describing two of the strands of entrepreneurship education (Rae et al., 2012). The emphasis in enterprise education is on skills, knowledge and attributes, for finding creative and innovative solutions to problems. This has universal relevance and applicability (i.e., 'enterprise skills'). Entrepreneurship education, in contrast, embraces the skills, knowledge and techniques used in being an entrepreneur (i.e., 'venture creation' and/or 'small business management'). The Quality Assurance Agency (QAA) also emphasise this distinction (in 2012 and 2018) and adopts the same enterprise/entrepreneurship language emphasizing the relevance of entrepreneurial behaviour in various walks of life.

First initiated in the early 2000s (Kirby, 2004) by 2010, the shift of emphasis away from business schools continued, with a larger number of universities launching 'university-wide' entrepreneurship education efforts (Rae et al., 2012). In some cases, entrepreneurship education has gained a strong foothold in other disciplines (e.g., arts and design; engineering; computing and pharmacy). This continued 'university-wide' shift has also seen a move towards the recruitment of more support staff in enterprise centres who manage opportunities outside of the curriculum (e.g., in university careers centres or university-wide enterprise centres).

During the 2010s entrepreneurship education has also been guided by new frameworks and additional awards. The Small Business Charter Award, led by Lord Young, backed by the UK government, and championed by the Chartered Association of Business Schools, was introduced in 2014[lvi]. It has now been awarded to over 60 universities. University activities supporting student entrepreneurship and local small businesses is assessed with an emphasis on its impact on local economies. Similarly, in 2014 the Duke of York championed new Young Entrepreneur Awards with a scheme that started in Yorkshire before expanding regionally. This was a natural development from an earlier recognition award for community initiatives and social enterprises, not linked to higher education, that the duke started in 1998. The Young Entrepreneurs scheme was followed in 2016 by another new Duke of York award for university entrepreneurship within the umbrella of the National Business Awards[lvii]. This award sat alongside the Times Higher Education Entrepreneurial University of the Year award, which started in 2008[lviii]. Another award was created in 2015, the Guardian University Entrepreneurship Award. These awards acknowledge that there are many ways in which a university can demonstrate it is being entrepreneurial.

There was also a shift towards 'entrepreneurial competences', for example, EntreComp a new reference framework was established by the European Commission in 2016. It identified fifteen competences in three areas relating to ideas, resourcing and actioning. The framework focused on fostering an 'entrepreneurial mindset'. Alongside this the UK's QAA published their Guidance on Enterprise and Entrepreneurship Education (2012 and 2018). They separated learning in the curriculum from learning beyond the curriculum; and they divided competences into four groups: enterprise awareness; entrepreneurial mindset; entrepreneurial capability; and entrepreneurial effectiveness. As with efforts earlier in the decade employability was the driver behind the establishment of these framework. In 2019, a third competency framework was created by Advance HE[lix] and competency frameworks have been created by others in the US (Morris et al., 2013; Vidal et al., 2021).

Universities worldwide have begun to provide more, and different, opportunities designed to enhance 'entrepreneurial mindsets and competences' (Schindehutte and Morris, 2016), allowing collaboration and shared learning. These opportunities include many of the former types, which have gained increase currency (e.g., workshops; weekends; boot camps; summer schools; idea pitching and business plan competitions; internships; and incubation support). In the UK placement years, used as an opportunity to start and trial a business, became a more common form of opportunity, allowing students to start businesses while gaining credit for their degree, directly expanding their entrepreneurial competences.

Underlying this distinction between 'enterprise education' and 'entrepreneurship education' is the dilemma of balancing depth (i.e., immersion in entrepreneurship for a limited number of committed students) with breadth (i.e., reaching as many students as possible, but maybe only with a very light touch). This challenge is often highlighted in the low penetration of venture creation programmes (Lackéus and Middleton, 2015) where students are involved in setting up a real business as an integral part of their degree. Programmes exist in other parts of the world, with an emphasis on the post-graduate level and product inventions from engineering or science faculties, but the UK has seen an unusually low number of these programmes so far[lx]. Other forms of experiential learning have, however, continued to expand in both variety and volume (Macht, 2016).

In summary, the 2010s saw a continuation of prior trends. University-wide entrepreneurship education efforts have continued to expand and institutional efforts to become 'entrepreneurial universities' have deepened. As a strand, 'entrepreneurial mindsets and competences' might be considered a re-emergence of the 1980s focus on 'enterprise skills'. It is also clear that the increasing use of taxonomies and typologies in entrepreneurship education recognises the simultaneous existence of multiple strands that have different underlying 'social imaginaries' (Levie, 1999 Gibb, 1996; Rae et al. 2012; QAA 2018). We often experience this as professionals, when we talk with colleagues seemingly at cross purposes, not quite talking about the same thing. Next, we explore how the historical strands are interwoven and connected in our communities of practice.

DISCUSSION

As presented, our analytically structured history of entrepreneurship education in the UK, has been illuminating for our own understanding. We first thought of it as a series of phases that build one on the other. As we conducted our research and drafted our respective pieces, we realised that this was incorrect. A better analogy is of a rope, with many strands, some longer than others, and some borrowed. These strands start at different points in time, are long and short, but get interwoven with other strands as they begin and gain prominence. At certain points in time some strands are more visible and thicker-stronger than others, while some shrink, and get weaker, but stay entwined within the rope.

The first that emerges is a *'science and technology'* strand. The English civic university movement in the 1860s-1890s was predicated on the view that 'sons of industrialists', inheriting family businesses, needed a technical education to manage the scientifically

complex industrial enterprises of the industrial revolution (Jones, 2019; Sanderson, 1972; Wadhwani & Viebig, 2021). Though old, this strand does not disappear. It guides conversations about 'vocationalism' (Pratt, 1997), focuses attention on the importance of education that is 'useful' for economic development (Brown et al., 1996; Tiratsoo, 1998) and underpins views about the importance of science and technology in entrepreneurial activity. It also morphs and reappears in the 2000s, as demands grow for universities to educate scientists and engineers in entrepreneurship, ultimately reemerging as the *'university-wide'* strand, that is represented by the 'in' or 'embedded' form of entrepreneurship education. We suggest that this strand underlies views that universities should become more 'entrepreneurial', to create academic and graduate spinouts and to link research to its industrial application (Sanderson, 1972). These conceptions appear to have their roots in the UK's success during the industrial revolution and perhaps look backwards to when Scottish universities (in the early 19th century) and the English civic universities (in the late 19th century) played an outsized role in the rise of scientific and engineering-based ventures that contributed to the industrial revolution.

The second that emerges is a *'for commerce'* strand (Wadhwani & Viebig, 2021). This strand starts in the US (in the 1820s) and only makes its way to the UK in the 1890s (Sanderson, 1972). It eventually morphs, through industrial administration, into business education as we know it today. All the business disciplines that are created along its path (e.g., accountancy; finance; management science; industrial relations; marketing and organisational behaviour etc.) continue to contribute to entrepreneurship education today and this strand explains our deep origins in business schools. In the UK it is accompanied by ongoing suspicion between universities and industry that delayed its adoption and growth, when compared to the US and Germany (Tiratsoo, 1998). In the 1970s, post the Bolton report, we see this strand converted into the *'small business management education'* strand. Practice begins to acknowledge that management of small businesses is categorically different from managing large enterprises but pedagogically it adopts practices from existing business disciplines and predominately creates an 'about' form of education (Gibb, 2005). This strand grows in strength and becomes a significant contributor to how we practice entrepreneurship education in the UK (from 1970 to the mid-1990s).

As we move into the 1980s a new '*enterprise skills'* strand begins. It is predicated on the idea that change to the UK's entrepreneurial culture is necessary to address unemployment and that it can be achieved via enterprise education (Grant, 1986). The strand broadens the scope of practice, aiming to enhance awareness and skills in enterprise for a wider population and consequently radically expands provision across the UK via programmes like the Enterprise in Higher Education Initiative. Practice borrows the 'vocationalism' of other strands and pedagogy becomes more focused on 'for' forms of entrepreneurship education, designed to enhance the development of skills, competencies and mindsets. As this strand has a strong 'employability' and 'self-employment' focus it is not surprising that it remerges in the 2010s focusing on '*entrepreneurial mindsets and competencies*', to address the underemployment of graduates. Our view is that this strand originates in the UK (in the 1980s) and is adopted elsewhere, particularly in Europe, as policymakers aim to enact cultural change in their societies by investing in enterprise education.

The final interwoven strand in our rope is 'venture creation'. Borrowed from the US (in the 1980s and 1990s) this strand led to practice more narrowly focused on the startup process and aimed to help students and graduates launch ventures. In the 1990s, this strand seems to partially split with an '*entrepreneurial growth*' sub-strand, which focuses educational practices (e.g., the Goldman Sachs' Programme) on growing ventures, and which is typically executive education. Both these forms pedagogically take on a more deliberate 'learning by doing' emphasis (e.g., action and experiential learning), which pedagogically appear to apply 'through' types of entrepreneurship education. Many of these forms have their origins in venture creation and growth practice and adopt techniques from incubators, accelerators and other stakeholders. A prime example being techniques, such as lean launch and the business model canvas, that have been widely adopted by educators recently.

We contend that this is where we are today. An interwoven rope of different strands of entrepreneurship education that have different histories, applying varying social imaginaries. Each strand has its place and value, but they are conceptually and pedagogically different. Others have noticed this variety: Levie (1999) in his distinction between 'about' and 'for' forms; Gibb (2005) when he compares 'know what' approaches with 'know-how' and 'know-who'; and the QAA (2018) in their distinction between 'enterprise education' and 'entrepreneurship education'. These strands explain why, as educators, we sometimes have a feeling of talking at cross-purposes with others. We are not all doing the same thing and universities/programmes place different emphasis on different combinations of strands, relevant to their context and time-period.

We also observe the importance of political discourse, educational policy and funding. It is evident across the historical record that concerns about industrial competitiveness, expressed broadly in society at the time, have led to changes in educational policies, which have subsequently funded the growth and development of each strand of entrepreneurship education. This is not always the case. Sometimes practices 'bubble-up' from entrepreneurship in practice. The flux in policy, as governments come and go, also seems to explain changes of emphasis between strands, and the occasional morphing and splitting, which occurs throughout this history. So, given this picture, how does entrepreneurship education develop going forward?

CONCLUSION

For the first time our paper presents a comprehensive, structured and analytical review of the history of entrepreneurship education in the United Kingdom (1860-2020). As we discussed, this history can be viewed as a series of interwoven strands, that have emerged and have become enwrapped within our practices over time. We recognise our work has limitations. By providing a broad picture, we were unable to go into depth on specific aspects, and there are many topics that warrant further attention and more detail. As we undertook a broad review, we were largely able to construct the narrative from published works and firsthand accounts. Consequently, researchers have the opportunity delve into other data, such as archival sources, letters and correspondence, to test our observations. In taking a comprehensive account we also recognize the risk of missing aspects, such as details that others feel are

relevant and important. We contend that our work is a valuable contribution and a starting point, allowing other researchers to build on the observations we present.

In closing we would like to briefly consider the future of entrepreneurship education. Since its inception in the UK entrepreneurship education has grown and expanded from business into other disciplines. Throughout this history there has been one constant, and this is entrepreneurship education's concentration on contributing to economic competitiveness. The focus has been on economic development, wealth creation and innovation, but as Schumacher recognised *"infinite growth of material consumption in a finite world is an impossibility"*. Awareness of this, and the connected global sustainability challenge, has been heightened during Covid 19, and the statement of the UN Secretary General at COP27 in November 2022 that *"we're on a highway to climate hell and our foot is still on the accelerator".* It is not just the climate that is affected however, it is the impact on people, illustrating a need for more caring, sharing societies (Ashan, 2020).

Entrepreneurship education has the capability to help us address this global sustainability challenge but despite the introduction of 'ecopreneurship', 'humane entrepreneurship', 'social entrepreneurship' and 'sustainopreneurship', it has not achieved much impact yet. Accordingly, it is time, as Vyarkarnam (2016) suggested, for entrepreneurship education to be *"meaningful"*[lxi]. When considering the sustainability challenge and why entrepreneurship has failed it can be concluded that it is because the focus has been on shareholder satisfaction and *"making as much money as possible"*(Friedman, 1970), coupled with the failure to recognise that the planet is a system composed of interconnected subsystems. In accordance with systems thinking (Von Bertalanffy, 2015) it is impossible to address the sustainability challenge one issue at a time. Rather it is necessary to provide a 'holistic systemic solution' (Ashby, 1968). We, therefore, argue for a new strand of *'Harmonious Entrepreneurship Education',* designed to integrate the economic, eco, humane and social aspects of entrepreneurship and to produce solutions to problems that recognise the triple bottom line of people, planet and profit, and that they need to be in harmony. Such a model has implications for the conduct of entrepreneurship education. Forms of harmonious entrepreneurship are yet to be researched and taught, and greater focus must be given to business ethics, sustainability, systems thinking, the principles of harmony, (etc.) within entrepreneurship education (Kirby 2022). Whether such a solution is adopted or not it is clear that *"the many environmental and social problems that now loom large on our horizon cannot be solved by carrying on with the very approach that has caused them"* as HRH The (Former) Prince of Wales et. al. (2012: 3).

Entrepreneurship education in the UK is *"on the cusp of a new era"* (Rae, 2010) and we call on our colleagues to begin building this era. A more meaningful entrepreneurship education is emerging, one that embraces both social and eco justice, and entrepreneurship educators will need to act as entrepreneurs (Rae, 2010), to help to reconceptualise the strands of the past to apply them to solve the challenges of the future.

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APPENDIX

Appendix A – A Chronology of Entrepreneurship Education in the UK

DATE	EVENT
1846	Manchester University, the first of the civic universities, is founded as Owens College when John Owens dies and leaves £100,000 for a college to teach learning and sciences that would be useful to business.
1856-1862	Limited Liability Acts lead to the rise of accountancy and the need for formal accountancy training.
1860s-1880s	The civic universities are founded in major industrial English cities, to provide science and technical education to the sons of merchants and industrialists expected to inherit family businesses.
1890s	Economics is revitalised as a discipline alongside technical studies, useful for training sons of industrialists. Marshall at Cambridge University and Hewins at London School of Economics focus economics more closely on the applied needs of business. Other universities follow including Oxford, Manchester, Leeds, Bristol, Newcastle, Cardiff and Glasgow.
1894	Arthur Chamberlain, on behalf of the Birmingham Chamber of Commerce, leads a deputation to the US to examine university education for business as the Chamber proposes a faculty of commerce for the new University of Birmingham.
1902	Birmingham University founds the first Faculty of Commerce. The chair of the department Ashley returns from Harvard University to help the department 'produce intelligent captains of industry'. Birmingham University appoints the first professor of accounting.

1902-1905	Other universities follow Cambridge and LSE in creating more applied economics programmes designed to train industry leaders including Oxford; Manchester; Leeds; Bristol; Newcastle; Cardiff and Glasgow.
1905-1914	There is an increasing shift from applied economics to commerce largely influenced by Ashley at Birmingham. The first B.COMM diplomas are offered including courses in languages, banking and accountancy, commercial geography, railway economics, insurance, public finance, statistics, law, transport, and commercial correspondence.
1914	Industrial psychology starts as a subject designed to consider Labour unrest.
1919	Bachelor of Commerce degrees launched at Aberdeen, Edinburgh and Leeds.
	Manchester goes further in developing applied business education and forms the Department of Industrial Administration.
1920s	Due to generational population decline during World War I (850,000 or 2% of population), human talent in industry was depleted and the rise of a graduate managerial class begins. Educational provision shifted from entrepreneurs and the sons of entrepreneurs (second and third generational family businesses) to a focus on managers for larger businesses.
1926	Dr James A. Bowie becomes the Director of the Department of Industrial Administration at the University of Manchester and develops courses with more of a vocational emphasis (criticising the design of commerce) including industrial finance, costing, business statistics, the study of wages systems and factory law. He pioneers the case study teaching method in Britain.

1929-1930	Industrial administration gains a foothold at the London School of Economics.
1931	Macmillan Committee first notes the disparity of funding availability for small businesses in the UK.
1939	Edinburgh founds the Jane Findlay Thomson Commercial Laboratory for commerce students to 'provide students with an intimate working knowledge of all up to date working machinery' and the B.COMM is revised to include practical work.
1946	The Administrative Staff College at Henley is started (later becomes Henley Management College in 1991).
1948	British Institute of Management is formed and a committee is set up under the chairmanship of Lyndall Urwick to look specifically into the question of management education in Britain.
1946-1957	The Barlow Report of Scientific Manpower recommends the doubling of scientists and technologists in the 1940s and 1950s, which leads to the first phase of university expansion. The civic universities grow and several university colleges become universities (including Nottingham; Southampton; Hull; Exeter; and Leicester). Managerial science begins to emerge as a discipline using mathematics to understand production and logistics challenges.
1953	The modern revival of industrial management education in universities begins with a US government grant of $9m of Marshall aid to promote productivity in UK industry. Part goes into education and the Leverhulme Trust uses it to provide temporary lectureships for those with management experience to teach in universities.
1954	The conversion of the Bonar Law Memorial College for the building of Tory intellectuals, to Ashridge College occurs, and becomes the first British School of Management.

	Edith Penrose's classic 'The Theory of the Growth of the Firm' is published and makes important observations about venture creation and small business management.
1960-1965	Following the UK Government's Robbins Report the largest expansion of the university sector occurs since the establishment of the civics. 'New' universities were built (Keele, Sussex, York, Canterbury, Lancaster, East Anglia and Warwick). In Scotland Strathclyde was chartered with a specific focus on industrial collaboration. Stirling was chartered and Dundee was separated from St Andrews. In Northern Ireland a university at Coleraine (Ulster University) was started.
1962	Sir Walter Salomon founded Young Enterprise in the 1962/1963 academic year for secondary/high schools, based on the American Junior Achievement programme.
1963	UK Government's Franks Report concludes that business education in the United Kingdom is behind competitors and recommends the establishment of two new business schools in existing universities.
	Kings College Newcastle separates from the University of Durham and becomes the University of Newcastle-upon-Tyne.
1964	Upon its foundation, Lancaster University immediately begins to establish links with industry via its 'Enterprise Lancaster' project. They launch a chair in marketing, given by the Institute of Marketing (the first in Britain), add the Wolfson Chair of Financial Control and a chair in organisational behaviour (in 1969).
	Industry Training Boards are founded as independent entities within government to support training and education relevant to specific industries.

1965	Upon its foundation, Warwick University determines to have a close relationship with industry. The Institute of Directors finance a chair in business studies, Pressed Steel Fisher finance one in industrial relations, Barclays one in management information systems and the university forms the Centre for Industrial and Business Studies.
	LSE and Imperial College (London Business School) are chosen to host the first new business school proposed by the Franks Report, while Manchester is chosen as the second host. They are founded to address postgraduate and post experience management education. Other institutions follow and expand postgraduate and postexperience management education.
1966	A second wave of higher education expansion occurs as thirty technical colleges become Polytechnics, to concentrate on advanced study for applied subjects. Polytechnics begin sandwich degrees, with students partly in the university and party in industry.
1966-1969	UK Board of Trade studies begin to examine the impact of small businesses on the economy. Pressure builds from the UK small business community for the government to focus more on supporting small businesses. Pamphlet written by Bernard Weatherill MP and John Cope 'A Policy for Small Business' raises awareness in Parliament and helps lead to the establishment of the Bolton Committee of Inquiry.
1971	Bolton Committee, exploring the role of small businesses in the UK economy, concludes its work and publishes the Bolton Report. It is a watershed moment for the treatment of small businesses in the UK. It brings the consideration of small businesses into discussions of economic growth, shapes the definition of small firms and pioneers research on small businesses.

	First small business classes are offered. Durham University Small Business Centre offered its first class a Small Business option module in the MSc. in Management Studies programme and Manchester Business School (MBS) introduced, as a small-scale option, an introductory course on entrepreneurship in the MBA. Around the same time Sheffield Polytechnic, London Business School, and the Cranfield Institute of Technology begin small business classes.
	Small Business Centre at Durham University is founded by Allan Gibb
1973	Manpower Services Commission (MSC) is started with a remit to co-ordinate employment and training services in the UK through a ten-member commission drawn from industry, trade unions, local authorities and education interests.
	Stanworth and Curran published their book 'Management Motivation in the Smaller Business'
1974	Small Business Association was formed to lobby on behalf of small firms
1975	The first chair in small business research is established at Cranfield University
	The first UK small firm's advisory services are founded (Enterprise North)
	Teaching Company Scheme (TCS) was started, aiming to create research collaborations between small businesses and universities (now Knowledge Transfer Partnerships).
1977	National Small Business Management Teachers Programme for University and College staff started at London Business School.

	Launch of the New Enterprise Programme a 16-week action focused programme for new businesses with scale potential. Started initially at Durham and Manchester Business Schools and subsequently led from at London, Glasgow and Warwick Business Schools.
	UK Small Business Management Teachers Association begins (renames several times; UK Enterprise Management and Research Association, later Institute of Small Business Affairs, followed by Institute of Small Business and Entrepreneurship). The association starts by holding informal meetings of teachers interested in small business management.
	Small Firms Counselling service set up as a response to the Bolton Report
	The MSC policy team produce a report 'Young People and Work' that leads to the creation of the Youth Opportunities Programme (YOP) and the Job Creation Programme (JCP) designed to help address the employment problems facing the young.
1978	First UK Small Business Policy Research Conference at Durham SBC is held jointly with Terry Webb of Ashridge College.
1979	UK Business Competition launched, 'Build Your Own Business'. Sponsored by Shell UK in partnership with Durham University's SBC and Enterprise North with cash awards and all applicants offered assistance.
1980	Manpower Services Commission Training Division begins courses designed for venture startups
	The New Enterprise Programme, Firmstart and Teamstart are provided via British Business Schools. Programmes are designed to help unemployed people start businesses or become self-employed.

	140 leading academics signed an RSA manifesto entitled Education for Capability, led by Charles Handy, introduced an accreditation programme.
	The Enterprise in Higher Education Initiative starts. Grants were offered to universities to bring enterprise skills into courses, designed to create a positive view of enterprise.
	Young Enterprise's Company Competition begins. Young Enterprise companies submit reports to judges who selected the best from each region. Six regional winners are invited to attend the National Finals in London.
1981	London Enterprise Programme starts, a series of training courses involving the Polytechnic of Central London (now the University of Westminster), ranging from one-day business ideas courses for start-ups to full-time weekend courses for growth businesses.
	The first national small firms conference is held in London, aimed at addressing many Bolton-related issues and monitoring development of knowledge of the UK small firm sector in the post-Bolton decade. The proceedings and key papers are edited by Stanworth as, Bolton 10 Years On.
	The first UK edited journal the 'European Small Business Journal' is launched and then renamed to the International Small Business Journal, first published in 1982 by Sage.
1982	Shell LiveWire is started in Scotland, launched in the Strathclyde area it was a competitive award for young entrepreneurs.
1983	The Small Business Research Trust (SBRT) is founded under Sir Charles Villiers, (Honorary Chairman and Trustee), along with Stan Mendham, Forum of Private Business (Vice Chairman and Trustee).

1984	Storey publishes his book 'Understanding the Small Business Sector'.
	The Quarterly Survey of Small Business in Britain was launched. Graham Bannock leads the first regular UK survey of small firms.
1986	The Shell Technology Enterprise Programme (STEP) provides graduates with funding for internships in small businesses, including an annual award for UK's most enterprising student.
1988	UK ESRC with the private sector established a comprehensive small business research programme (ESRC Small Business Initiative). The programme helps establish three centres for small business research at Kingston, Cambridge and Sussex universities.
1989	Researchers formally organised into the UK Enterprise Management and Research Association (UKEMRA).
	The Entrepreneurship and Regional Development journal is first published by Taylor and Francis.
	Small Business Research Trust (SBRT) relocated to the Open University's Business School.
1990	Quasi-privatization of the work of the Training Agency leads to the formation of Training and Enterprise Councils (TECs) and their Scottish equivalent, Local Enterprise Companies (LECs). Largely autonomous TECs and LECs tend towards working with the private-sector consultants rather than universities.
1992	Business Link a government-funded business advice and guidance service begins. An online portal managed by HM Revenue and Customs (HMRC) and a national telephone helpline. The service's network of local and regional advisors were employed to assist small businesses.

	UKEMRA becomes the Institute of Small Business Affairs.
1994	Journal of Small Business and Enterprise Development was first published by Emerald.
1995	International Journal of Entrepreneurial Behavior and Research was first published by Emerald.
1997	The Labour Government approves devolution for Scotland, Wales and Northern Ireland and the UK higher education systems begin to diverge in some respects.
	The UK National Committee of Inquiry into Higher Education (The Dearing Report). This was a very detailed investigation with 98 recommendations including a recommendation that Universities should "consider the scope for encouraging entrepreneurship through innovative approaches to programme design".
1998	Regional development agencies (RDAs) are founded. Nine non-departmental public bodies are established for the purpose of development, primarily economic, of England's regions.
1999	Levie surveys universities about entrepreneurship education. 133 HEIs respond (96% response rate). 27 reported having courses attended by non-business students (25%). Sees two types of classes 'about' and 'for' entrepreneurship. Report shows increase of 23% overall between 1997/98 and 1998/99. Saw a use of mostly of part-time and adjunct educator labour.
2001	Enterprise Educators UK founded following the establishment of UK Science Enterprise Centres (UKSEC). The catalyst for the development of UKSEC was Science Enterprise Challenge (SEC) funding provided by the UK Department for Trade and Industry (DTI) that established 13 Science

	Enterprise Centres and consortia.
	Launch of E-College Wales, providing a full undergraduate enterprise degree to part-time and full-time remote students across Wales. £5.4m of European Social Fund, led by University of Glamorgan in association with FE Colleges.
2002	Students in Free Enterprise (SIFE and later Enactus) enters the UK.
2003	Teaching Company Schemes are relaunched as Knowledge Transfer Partnerships.
	Lambert Review of Business-University Collaboration highlights the importance of developing, within students (particularly science students), appropriate enterprise-related skills to allow them to exploit their innovations and develop the commercial potential of their work.
2004	Matlay & Carey report the provision of entrepreneurship education continuing to increase. By the end of the 2004, the majority of universities claimed to be providing designated entrepreneurship education at both undergraduate and postgraduate levels. Older universities increase their provision. Most provision is delivered by business schools in the late 1990s but is more likely to be university wide by the mid-2000s.
	UKSEC/EEUK expands discipline areas beyond science and technology extending enterprise and entrepreneurship education across disciplines and beyond the curriculum into extra-curricular activities in partner schools.
	National Council for Graduate Entrepreneurship (NCGE) is started. NCGE was focused on expanding provision of entrepreneurship education across UK universities but also began to focus on supporting students as they transitioned into graduate startups.

	NCGE Mapping study conducted in England. 123 of 131 English universities reported. 7% of all HE students are engaged in some form of enterprise activity. A total of 889 enterprise programme/modules are offered, 64% of provision is reported at the UG level. Two thirds of the enterprise education activities were individual modules. Full programmes were at a lower level. Business Schools (64%) predominantly led entrepreneurship provision, followed by Engineering (9%) and Art & Design (8%). Total student engagement is 87,860 in non-accredited activities.
	The Institute of Small Business Affairs (ISBA) renames to the Institute of Small Business and Entrepreneurship (ISBE) in recognition of the increasing role of entrepreneurship in research and teaching.
	National Enterprise Week is founded (subsequently Global Entrepreneurship Week, GEW). A campaign to connect youth, women, homeworkers and people from ethnic minorities to entrepreneurial opportunities. It was founded by the British Chambers of Commerce, the Confederation of British Industry, the Institute of Directors, and the Federation of Small Businesses.
	Queen's Awards for Enterprise Promotion, recognising the work of academics who support entrepreneurship begin.
2005	UKSEC becomes a member organisation.
	Centres for Excellence in Teaching and Learning are launched by the Higher Education Funding Council for England initiative of which three focus on enterprise (CETLEs), White Rose CETLE (Sheffield, Leeds, York), Leeds Metropolitan and Sheffield Hallam University. CETLEs enable students to develop enterprise skills so that they are equipped to make an impact in the future as social entrepreneurs, enterprising employees and successful business owners.

	Each university with a CETLE builds physical space for entrepreneurship (an Enterprise Zone).
2006	The Conference on "Entrepreneurship Education in Europe: Fostering Entrepreneurial Mindsets through Education and Learning" is held in Oslo on 26-27 October 2006. A follow-up to the Communication on the same topic adopted by the European Commission in February 2006 and leads to the Oslo Accord.
2007	UKSEC becomes Enterprise Educators UK (EEUK).
2008	National Association of College and University Entrepreneurs (NACUE) was started to support student-led enterprise societies across the UK. Formed by 12 enterprise society presidents who were playing a leading role in the development of student entrepreneurship at their institutions. They aimed to create an association to create something bigger for the benefit of their societies.
	Peter Jones Academies founded (formerly known as the National Enterprise Academy) was founded by Peter Jones, a successful entrepreneur and star of TV show Dragons' Den to make learning about business a more practical experience for high school students. The charity delivers enterprise education through their Foundation for Enterprise (FFE).
	Times Higher Education Entrepreneurial University of the Year award begins. University of Nottingham is the first winner. The award recognises institutions that have embedded entrepreneurial activity into the fabric of their institution across campus, fosters enterprising thinking among members of its community and delivers significant entrepreneurial impact.
	Global Entrepreneurship Week emerges from a combining of Enterprise Week UK and Entrepreneurship Week USA (started in 2007).

2010	Browne Review of Higher Education funding and student finance, recommends changes to the system funding higher education including removing the cap on fees universities can charge. Public funding for enterprise-related activities was reduced (Rae et al., 2012).
	Enterprise Manifesto by Enterprise Educators UK (2010) and subsequently a Concordat agreement submitted to the Coalition Government.
	IEEC Concordat published, helping the QAA and EEUK to advocate for expanded entrepreneurship education: https://ieec.co.uk/previous-conferences/action-in-enterprise-education/ieec2010-concordat/
2012	National Council for Graduate Entrepreneurship changes focus and rebrands as National Council for Entrepreneurship Education (NCEE).
	Quality Assurance Agency (QAA) Guidelines for Enterprise and Entrepreneurship published, reflecting current thinking in enterprise and entrepreneurship education in the UK. It is intended to focus on best practice to inform, enhance and promote the development of enterprise and entrepreneurship education in UK universities.
	The Wilson review on higher education and industry collaboration is published and highlights the role of universities in promoting entrepreneurship and developing enterprising skills. (Rae et al., 2012).
	Rae et al. publish their English survey of enterprise and entrepreneurship education. They show student engagement growing significantly from the NCGE survey in 2004, continue to see a growth towards university-wide embedded practice and observe a decline in funding availability.

2014	Small Business Charter is created by a Lord Young and Association of Business Schools initiative. Focused on why UK Business Schools weren't doing enough to support UK small businesses. Review concludes that there is support but that it is not recognized and proposes 'Gold, Silver, & Bronze' awards to recognise UK business school involvement with small firms
2015	National Business Awards, The Duke of York Award for University Entrepreneurship created. University of Leeds is the first winner.
	Guardian University Entrepreneurship Award created to recognise university initiatives to support student startup. Cardiff Metropolitan University is the first winner.
2016	EntreComp was developed by the European Commission and determined the competences required for EE. Developed out of academic and grey literature, it creates a benchmark framework with different levels of mastery from novice to experienced entrepreneur. The initiative took a broad stakeholder/interdisciplinary approach – based on four influential taxonomies. Two of these came from the UK, the QAA and the Welsh ACRO Model of Attitude, Creativity, Relationships and Organisation.
	Creative Enterprising Contributors' influenced the development of enterprise education in Welsh schools:https://www.gov.wales/sites/default/files/publications/2018-03/successful-futures.pdf
2018	Second edition of QAA guidelines for entrepreneurship and enterprise education published.
2019	Advance HE Framework for Embedding Enterprise and Entrepreneurship Education is published. The framework is designed to inform and support educators.

2022	QAA Subject areas required to include enterprise and entrepreneurship. 'Subject Benchmark Statements are revised on 5-year cycles: https://www.qaa.ac.uk/the-quality-code/subject-benchmark-statements#
2024	Updated Advance HE Framework published.

NOTES

[i] Referencing D. H. Aldcroft, 'The Entrepreneur in the British Economy 1870-1914, EcHR, 2nd series, XVIII, no. 1, 1964.

[ii] Oxford was founded in 1096 and Cambridge in 1209

[iii] Lampeter the first university in Wales was founded in 1822 by the Church in Wales, using the same model, as did Durham University (founded in 1832) and Queen's University, Belfast (founded in 1845).

[iv] Scottish universities of the time offered an exception through their work on medicine, medical education and eventually chemistry. Sanderson (1972) argues that even the new 19th Century universities of London and Durham, did not have an impact on improving the links between industry and universities at the time.

[v] Other examples of institutions leading 'practical education' at the time included the Royal Institution, the Royal College of Chemistry, and the Government School of Mines and Science Applied to the Arts.

[vi] Interestingly, J.S. Mill was one of the staunchest defenders of the traditional liberal educational ideal stating, "*There is a tolerably general agreement about what a university is not. It is not a place of professional education.*" While Rashdall, researching the medieval university, pointed out that the university had always been concerned with professional training and became an advocate for vocationalism amongst the new civics (Sanderson, 1972).

[vii] While four other university colleges did not achieve independent status immediately (Reading; Nottingham; Southampton; Exeter), they took on a similar character.

[viii] The trend was partly driven by the rise of medical schools but also because of civic competition between large Victorian cities.

[ix] In contrast, the new Welsh universities (Aberystwyth; Bangor and Cardiff) tended to follow the liberal arts and canon law traditions of Oxbridge and the Scottish universities (Edinburgh; Glasgow; Aberdeen; St. Andrews; and Dundee), despite continuing to produce academic entrepreneurs, lost their industrial leadership edge and somewhat stagnated, due to their broader focus on a 'democratic university education' versus the more 'scientific-technology focus' of the English civics (Sanderson, 1972).

[x] It should be noted that these universities tended to educate 'sons of industrialists' in engineering and science and daughters of the middle class in liberal arts during the day, while also educating working class factory operators (etc.) in the evenings.

[xi] Under the leadership of Hewins and Marshall respectively

[xii] A common experience for business education that reoccurs throughout its history in the UK (Ivory et al., 2006)

[xiii] A chair of economics was started at Manchester (1898) and Leeds (1902), UCL established a small group in economics (1903) and departments of economics were started in Bristol (1907) and Newcastle (1912) and phasing was similar in Scotland and Wales.

[xiv] As do Newcastle in 1912

[xv] Led by Dr. James A. Bowie

[xvi] Including accounting, business statistics, commercial law, marketing, finance and factory organisation and control. During this period industrial psychology and business statistics subjects begin to be taught for the first time

[xvii] Nottingham (1948), Southampton (1952), Hull (1954), Exeter (1955), Leicester (1957)

[xviii] 1) A trend to staying in sixth form. 2) A bulge of those children born in the aftermath of the war who were to come of age to enter universities in the late 1960s. 3) A desire to address the imbalance of the different classes getting into universities. 4) An aim to address the British higher education gap relative to other nations. 5) A desire to improve connections between higher education and economic growth that seemed to justify an expansion.

6) Time was ripe politically with both parties favourable towards an expansion of science and higher education (Sanderson, 1972).

[xix] Including Sussex, York, Canterbury, Lancaster, East Anglia and Warwick in England

[xx] Lancaster started the first chair of marketing and gained sponsored chairs in systems engineering, financial control, commercial systems and organisational behaviour and new faculty are recruited from industry.

[xxi] And gained sponsored chairs in business studies, industrial relations, and information systems. It formed a Centre for Industrial and Business Studies that became a leading centre of management education (Sanderson, 1972)

[xxii] The first entrepreneurship course, the Management of New Enterprises, was taught at Harvard Business School in 1947.

[xxiii] Lancaster; London; Manchester & Warwick

[xxiv] To the extent that no definition of a small business existed prior to the Bolton committee's report

[xxv] As it was believed that undergraduates would find the topic uninteresting or that it would not meet their needs

[xxvi] This required a change in the Law as under the prevailing legislation the Manpower Services Commission was prevented from funding courses that would benefit an individual employer.

[xxvii] Initially at started at both Durham and Manchester

[xxviii] In 1983 he was appointed Professor of Small Business in the University of Durham and among his many awards he was a recipient in 2009 of The Queen's Lifetime Achievement Award for Enterprise Promotion and was the first holder of the Sten K. Johnson Centre for Entrepreneurship European Entrepreneurship Education Laureate in 2012. He was also a holder of the OBE (Order of the British Empire) for his services to the small business community.

[xxix] Its remit was the indigenous development of businesses in the region and its aim was to provide a: resource for the development of managers and owner managers of small companies; source of advice/assistance to small firms; centre for research into the needs of small business; and source of encouragement to business graduates to become involved with small firms.

[xxx] At the 1981 Conservative Party Conference the Rt. Hon. Norman Tebbit, Secretary of State for Employment, announced "I grew up in the 1930s with an unemployed father. He didn't riot; he got on his bike and looked for work and kept looking 'til he found it".

[xxxi] Creativity, Communication and Co-operation/Collaboration.

[xxxii] The Education for Capability Award for the Graduate Enterprise in Wales programme recognised the way the programme "developed the personal competence and confidence of its participants and the way such a high proportion of those participants turned their academic knowledge and skills into successful products and businesses of their own".

[xxxiii] At Cambridge, Kingston and Sussex universities.

[xxxiv] The Business Links initiative started with a pilot of around twenty-five Links for one year, and this was expanded to over 70 covering all of England.

[xxxv] Topics attracting attention included debate about structured intervention (Storey, 1994; Hisrich & Peters, 1998; Frank & Landström, 1997); categorising entrepreneurship education and training programmes (Garavan & Ó Cinnéide, 1994); reviewing curricula designs; pedagogical approaches (Davies & Gibb, 1991; Shepherd & Douglas, 1996); determining and measuring the effectiveness of entrepreneurship education; plotting entrepreneurship education trajectories to identify future challenges, and creating the necessary support structure for entrepreneurship education (McMullan & Long, 1987).

[xxxvi] That explored the various influences on entrepreneurship and the identification of successful entrepreneurial characteristics

[xxxvii] One study focused on the ranking of academic entrepreneurship programmes (Vesper & Gartner, 1997), and identified seven key criteria used by Canadian and US universities: faculty

publications, impact on community, alumni exploits, innovations, alumni start-up and outreach to scholars.

[xxxviii] Several flaws in the evaluation process were identified; these included the lack of specific evaluative criteria, lack of weighting mechanisms against the evaluative variables and lack of clarity around evaluators' qualification to perform the evaluation (e.g., their knowledge of other entrepreneurship programmes).

[xxxix] A stance that would prompt evaluators to reflect on the specific aims and objectives of programmes and determine primarily whether or not these had been met, incorporate both qualitative and quantitative measures, include both objective and subjective assessments, employ control groups and account for potential bias (Storey, 2000; McMullan et al., 2001; Henry et al., 2004).

[xl] For example, in 2001 there is the launch of E-College Wales, which provided a full undergraduate enterprise degree to part-time and full-time remote students across Wales. £5.4m of European Social Fund, led by University of Glamorgan in association with FE Colleges.

[xli] https://hwb.gov.wales/api/storage/f0e3f1ea-a6ff-46c2-89f3-7617178e1f88/learning-and-progression.pdf

[xlii] East of England Development Agency (EEDA); East Midlands Development Agency (EMDA); London Development Agency (LDA); One NorthEast (ONE); Northwest Regional Development Agency; South West of England Regional Development Agency; South East England Development Agency; Advantage West Midland; and Yorkshire Forward.

[xliii] These were subsequently abolished in 2010

[xliv] In some regions universities apply RDA support as match funding for European Regional Development Funding (ERDF) projects.

[xlv] For example, SEEDA had the responsibility for coordinating enterprise education nationally within the RDA network and promoted and coordinated enterprise education across many universities both in the Southeast of England and elsewhere (via HEEG). The Higher Education Enterprise Group separated from SEEDA in 2006 and continued after the demise of the RDAs (in 2010). It provided a network of academic leaders and educators who were dedicated to increasing the capacity and capabilities of universities throughout the South East of England and it aimed to accelerate the number of enterprising students and graduate business startups.

[xlvi] And noted the role of Business Links, RDAs, Science Enterprise Challenge Centres, associations, enterprise support programmes (e.g., Shell Live Wire; Graduate Enterprise; STEP and MicroSTEP), student groups (Association of Collegiate Entrepreneurs), incubators and other organizations (like National Endowment for Science, Technology and the Arts).

[xlvii] Engineering (9%) and Art & Design (8%)

[xlviii] At Cambridge, Oxford, Strathclyde, Sheffield, Nottingham, Liverpool, Lancaster and Warwick

[xlix] The Scottish Institute of Enterprise; North East Centre for Scientific Enterprise, Northern Ireland Centre for Enterprise, Manchester SEC, University of Liverpool SEC, White Rose Centre for Enterprise, University of Nottingham Institute for Enterprise and Innovation; Mercia Institute of Enterprise; Cambridge Enterprise; Oxford Science Enterprise Centre; Wessex Enterprise Centre; Centre for Scientific Enterprise Ltd.; SIFONEC; and Imperial College Entrepreneurship Centre.

[l] As illustrated by Manchester SEC's Master in Enterprise qualification (among others)

[li] Another example of this focus on venture creation is the SETsquared partnership that was established under the Science Enterprise Challenge programme. SETsquared stood for the South East England Technology Triangle and was a partnership between Bath, Bristol, Southampton and Surrey universities. It set up pre-incubators on the four campuses, which were designed to be teaching laboratories for graduate-led science and engineering ventures (Kirby, 2004).

[lii] The university-wide agenda is further accelerated by the Centres for Excellence in the Teaching and Learning of Enterprise (CETLEs) that follow the Science Enterprise Challenge programme in 2005. These were launched as an initiative to improve teaching innovation infrastructure and

programmes in universities. Three enterprise-focused programmes were awarded and each builds physical facilities dedicated to entrepreneurship education on the various campuses.

[liii] Which also leads to an Enterprise Manifesto by Enterprise Educators UK (2010) and subsequently a Concordat agreement submitted to the Coalition Government designed to protect funding for enterprise education.

[liv] For example, in 2012, Richard Reed, one of three founders of Innocent Smoothies, used his own money to invest in start-up businesses through the vehicle of a new BBC3 programme, Be Your Own Boss. This initiative attracted graduates who were running their own business whilst at university and in need of funding.

[lv] In 2000 the UK hosted RENT X111 at Middlesex University and the annual Internationalising Entrepreneurship Education and Training (IntEnt) Conference at Surrey in 2005.

[lvi] More recently the Knowledge Exchange Framework (KEF) was introduced (2020) and has a parallel agenda.

[lvii] The first winner was the University of Leeds.

[lviii] The criteria for the Times Higher university-level award encompassed culture and mindset, vision and strategy, activities and impact. Assessment panels could opt to reward outstanding strengths in any one of these, such that year-on-year different contributions were able to be recognised.

[lix] A member-led charity established to help higher education institutions improve their effectiveness for staff, students and society.

[lx] Whilst such courses might be popular with the students who choose them, the potential numbers interested, and thus the cost-benefit trade-off for a Business School, has not (so far) made them an attractive proposition.

[lxi] In his keynote address at the Enterprise Educators UK annual conference in Swansea in October, 2022 he repeated this and also called for entrepreneurship to abandon the doctrine of profit maximisation, a point made similarly by Kirby and colleagues (2021 and 2022).