Integrating Harmonious Entrepreneurship into the Curriculum: addressing the Sustainability[1] grand challenge.

Professor David A Kirby

Holder of The Queen's Award for Enterprise Promotion.

Co-Founder Harmonious Entrepreneurship Society and Former Vice President (Enterprise and Community Service), The British University in Egypt.

Kirbydavid1@gmail.com Orcid id 0000-0002-1179-6687

Dr Iman El-Kaffass

Independent Senior Consultant in Organisational Change and former Head of Capacity Development at the International Centre for Agricultural Research in Dry Areas (ICARDA)

Iman.el-kaffass@mail.mcgill.ca

Felicity Healey-Benson

Entrepreneurial Learning Champion, University of Wales Trinity St. David.
Co-Founder, The Harmonious Entrepreneurship Society

felicity.healey-benson@uwtsd.ac.uk

Introduction

Since the publication of the research of Birch (1979) in the USA showing that half of all gross job gains in the US between 1969 and 1976 were from new ventures, at a time when larger firms were downsizing, the Governments around the world have encouraged their education system to introduce entrepreneurship to the curriculum. Although there is no agreed definition of what entrepreneurship is in 2008, the European Commission (2008a, 7) suggested that

"the benefits of entrepreneurship education are not limited to start-ups, innovative ventures and new jobs" but to *"an individual's ability to turn ideas into action and is therefore a key competence for all, helping young people to be more creative and self-confident in whatever they undertake".*

Traditionally, however, programmes have focused on teaching students how to write a business plan (Cannavacciuola et al., 2006; Gailly, 2006) and while this remains a key objective of many programmes (Al-Dairi et al., 2012), there has developed, over the years, an on-going debate not just over whether entrepreneurship can be taught (Henry et. al., 2005) but over the nature and purpose of entrepreneurship education. Is it about new venture creation and equipping students with the functional skills to start a business or is it a much broader concept that recognises entrepreneurship as a way of thinking and behaving – about seeing opportunities and harnessing the resources to bring such opportunities to fruition, in the process bringing about change? (Kirby, 2006b; Fayolle and Gailly, 2008). Increasingly it is being recognised that effective entrepreneurship education should engage students with the various thinking styles and behaviours associated with the entrepreneur, not just with a set of business tools (Kirby, 2003) and it is this latter, broader concept that is being adopted and an appropriate definition might be: -

"Entrepreneurship is about seeing new opportunities and/or finding new, innovative solutions to problems, it is about harnessing the resources to bring them to fruition, and it is about instigating measurable change and improvement".

This would very much fit with Schumpeter's (1943) view of entrepreneurship as creative destruction - resulting from "new combinations" (innovations) that disturb the status quo. As such entrepreneurship might be expected to have the potential to address the sustainability challenge (Villar and Miralles, 2019) and is regarded by some as a panacea hypothesis. However, while entrepreneurship is a global phenomenon and is not new, there remains, as Hall et al. (2010, 440) acknowledge, *"considerable uncertainty regarding the nature of this role and how it will unfold".* Indeed, questions have been raised as to whether entrepreneurship is compatible with sustainability (Gawel, 2012).

Hence the purpose of this chapter is to analyse the problem, and not just propose a solution, but to explore how entrepreneurship and sustainability might be integrated into the curriculum in Higher Education in order to change mindsets and bring about the requisite change.

The Challenge

Essentially the challenge is two-fold, and it revolves around the way entrepreneurship is both taught and applied or implemented.

The Teaching Challenge

In order to equip students with the entrepreneurial mindset and skills required to bring about change and improvement, requires (Kirby, 2006; 2007) a move away from the narrow paradigm for entrepreneurship that equates it with new venture creation and the tools to start and run a business. If the education system is to develop more entrepreneurial attitudes and behaviours in its students, then in most institutions of Higher Education there needs to be a *"very significant transformation in not only what is taught but how it is taught"* (Kirby, 2006). Indeed, there needs to be a change in the purpose, content, process and place of learning (Kirby, 2007) and it is possible to agree with Chia (1996, 40), that what is needed is a *"deliberate strategy which privileges the weakening of thought processes so as to encourage and stimulate the entrepreneurial imagination"*.

How this is to be done is the subject of increasing debate and numerous volumes have been produced (Fayolle, 2007 and b; Fayolle and Klandt, 2006; Greene and Rice, 2007: West et al., 2009) to address the issue and provide exemplification. However, it is generally agreed that there needs to be a more experiential approach to learning and the creation of enterprising environments and approaches that enable entrepreneurial aptitudes (such as creativity, need for achievement, calculated risk-taking, autonomy, etc.) to be developed, alongside business acumen and understanding and the more traditional skills of the graduate student (critical thinking, communication, problem-solving, time management, etc.). This requires a change in not only what is taught, but the purpose of learning and pedagogy, as well as the development of right as well as the traditional left-brain analytical, objective thinking skills (Kirby, 2007). Developing the student's right brain thinking skills is important. Not only have successful entrepreneurs been found to have a right brain learning preference (Nieuwenhuizen, and Groenwald, 2004), but rather than being logical and results oriented, right-brain thinking is creative, lateral, imaginative, and emotional, resulting, through association, in more than one solution (de Bono, 1970). The two ways of thinking are complementary, and it is apparent that in order to develop entrepreneurial capability, both critical and creative thinking are needed. As with critical thinking, students can be trained to think creatively and to cope with ambiguity and uncertainty (Bragg and Bragg, 2005), but perhaps of most importance is the ability to maintain, at all times, an open and

enquiring mind. This should be the role of education but all too frequently, however, it is not.

However, in many institutions the introduction of entrepreneurship education has been resisted or confined solely to the study of Business Administration. There are several reasons for this, including the fact that many educators do not see the role of education as preparing young people for the world of work and have opposed entrepreneurship education in particular for this reason. However, there has been a further, possibly more fundamental, objection that has hindered its adoption. This has resulted from the fact that the whole enterprise agenda has been perceived as a right wing inspired initiative to promote capitalism (Erkkila, 2000), something that many educators are opposed to politically. Also, and perhaps even more fundamental, is the fact that the word 'Enterprise' is used in different ways, *"sometimes referring to an individual ability considered amenable to improvement, and at other times, to a form of economic activity, usually in small businesses"*(MacDonald and Coffield , 1991, 30). However even when it is clearly relating to the former many educators find it confusing as there is no tightly defined, agreed and unitary concept. Rather, according to MacDonald and Coffield (op. cit. 30) it comprises "a Farrago of 'Hurrah' words like 'creativity', 'initiative' and 'leadership'."

On top of this, universities are notoriously slow to change. They are not the most entrepreneurial of institutions and many university managers are concerned about the likely negative impact on their institution's research performance if their leading academics become involved in entrepreneurial activity. Thus although some of the leading research universities are among the most successful entrepreneurially, in terms of spin-outs (Etzkowitz,2003), for many in higher education the concept provokes *"an image of shady villainy, a fifth column gnawing away at the basic values that define a university, a wolf masquerading as a milch-cow"* (McNay , 2002, 20).

This is important as it has become recognized, increasingly, that entrepreneurial education itself will not be effective unless there is both a change in the teaching paradigm, as outlined above, and the educational institutions themselves become entrepreneurial. Not only are the traditional, passive methods of learning required to be changed but, as Jonathan Ortman (Senior Fellow at the Kauffman Foundation) has observed *"universities can only effectively become incubators of entrepreneurship and innovation if they themselves practice entrepreneurship.* While the concept of the Entrepreneurial University has emerged (Etkowitz, 2003) it is not widely developed despite the numerous measures that have been introduced to encourage universities to change. In the UK, for example, these have included,

Government funding incentives (Kirby, 2007), capacity building programmes (ncee.org), recognition schemes such as Entrepreneurial University Leaders Programme (www.eulp.co.uk) and The Times Higher Education Outstanding Entrepreneurial University of the Year Award (the-awards.co.uk). Elsewhere, international initiatives have included:-

- The International Accreditation Council for Entrepreneurial and Engaged Universities ([https://www.**aceeu.org**](https://www.aceeu.org)) intended not only to recognise and promote entrepreneurial and engaged universities, but to enable the necessary culture change to facilitate their formation.
- HEInnovate (www.heinnovate.eu), the EU/OECD tool that enables universities to evaluate themselves against eight key criteria.

As a result, the 2020 Report of the National Council for Entrepreneurship in Education in the UK indicates that the provision of enterprise education in the country's universities has increased in recent years so that "*90.5 per cent of institutions have credit-bearing entrepreneurship and enterprise courses within at least some degree programmes*". However, as the finding implies, the provision is not uniform either across universities or the country. This appears to be the case globally as, according to Potter (2008) there is a *"need to expand existing entrepreneurship efforts and introduce more creative and effective approaches, building on best practices highlighted from around the world"*.

The Implementation Challenge

Since they were first introduced, there has been a proliferation of Entrepreneurship Education programmes across the globe (Vesper and Gartner,1998), coupled with a broadening of the concept to include not just wealth and job creation (economic entrepreneurship), but issues to do with the environment (ecopreneurship), society (social entrepreneurship) and, most recently, people (humane entrepreneurship). While there are valuable and growing cases of eco[2] and social[3] entrepreneurship rarely do they address both environmental and social aspects[4] and the most recent "theory" of Humane Entrepreneurship, which focuses on the management of people within enterprises, *"presents a new perspective on how to create 40 million quality jobs each year and helps address global challenges"* (Kim, et. al., 2018,10). This has led Schaltegger et al. (2016, 5) to observe that *"while extant research on sustainable business models has often been rooted in ecological sustainability, other scholars have seen business models as tools for addressing social needs"*.

This disaggregated approach to entrepreneurship has meant that it has had relatively little impact on the sustainability challenge and has led some to question

whether entrepreneurship and sustainability are, indeed, compatible (Gawel, 2012). According to Kirby and El-Kaffas (2021, forthcoming) this results from the systemic nature of the problem. The planet is a system composed of interconnected sub-systems which means that any solution to the problem needs to adopt the principles of General Systems thinking (Von Bertalanfy, 2015). Thus, given this inter-connectivity and multi-faceted nature of the sustainability problem, any solution will need to adopt Ashby's (1968) Law of Requisite Variety. This implies that only variety can absorb variety - that it is not possible to address the problem by addressing just one facet. The solution must be equal to or greater than the number of factors involved.

As an example:

SEKEM Holding (Abouleish and Kirchgessner, 2005; Mair, and Seelos, 2006) is an Egyptian agricultural business that introduced biodynamic agriculture to Egypt and turned 70 acres of desert located 37 miles northeast of Cairo into a thriving, fertile oasis. Its 150 products, including organic foods, herbal teas, medicines, and organic cotton products, are produced by 10 companies, and sold nationally and internationally through 4 subsidiaries:

- ISIS Organic Food (vegetables, honey, dates, oils, beverages)
- Lotus Organic Herbs and Spices
- NatureTex Organic Textiles (Baby and children's wear, dolls, toy, home textiles)
- -PharmaAtos (pharmaceuticals)

It was founded in 1977 by Professor Ibrahim Abouleish (1937-2017), an Egyptian Pharmacologist, to help address the poverty encountered in Egypt and the parlous state of Egyptian agriculture. However, instead of focusing solely on business growth, he addressed the much broader interconnected issues, building a thriving rural community in which the profits generated by the Holding Company are used to fund social and cultural projects through the Co-operative of SEKEM Employees, which has responsibility for all aspects of the HR development of the workforce, and the SEKEM Development Foundation, which is responsible for all cultural matters and which receives 10% of all company profits.

In total the Holding company employs some 2000 people and has a network of over 3000 farmers who produce for the Group. To help meet its objectives of promoting sustainable agriculture it has trained some 477 Egyptian farmers in biodynamic agricultural methods which are applied on approximately 4600 acres of land. Since 2000 around 1000 students have graduated from the Company's Vocational Training Centre and in 2012 it opened a not-for-profit university that

specialises in sustainability and offers knowledge transfer opportunities to farmers, employees and the community. In addition, employees are entitled to reduced fees for the education of their children at SEKEM's Steiner or Waldorf schools[5], while free courses are provided for illiterate employees. Healthcare is available for employees in SEKEM Health Centres.

Professor Abouleish's vision was to create a comprehensive holistic business venture, based on a synthesis of the Islamic values of equitable business and social responsibility and the anthroposophy of Rudolf Steiner[6] that would promote sustainable agriculture and enable employees and farming communities to improve their living conditions, health, education, and quality of life. When the project was first launched, he planted 120,000 casaurina, eucalyptus and Persian lilac seedlings, engaged the internationally renowned Egyptian architect, Hassan Fathy, to design traditional adobe housing and engaged and housed the native Bedouin residents. Some 43 years later his vision has resulted in some 684 acres of desert being reclaimed and converted to agricultural use with a 90% reduction in artificial fertilisers and pesticides and a 30% increase in the production of Egyptian cotton.

In 2003 Dr Abouleish received the Right Livelihood Award (also known as the Alternative Nobel Prize) from the King and Queen of Sweden in recognition of his creation of a 21st century business model that provided a practical and exemplary solution to one of the challenges of the 21st century. Clearly the solution Dr Abouleish identified and adopted combined business, eco, humane and social entrepreneurship, and Kirby and El-Kaffass (2021) argue that this is the way entrepreneurs will need to operate in the future if the mistakes of earlier generations are not to be repeated. Given the interconnectivity of all elements in the economic system, it is inevitable that any change in the state of one element will require or bring about change, to a greater or lesser extent, in the other connected elements. Dr Abouleish recognised this as did the Right Livelihood Award Foundation. In its Award citation, the Foundation stated:

Sekem (Egypt) shows how a modern business can combine profitability and engagement in world markets with a humanistic and spiritual approach to people and respect for the natural environment. The Jury sees SEKEM as a business model for the 21st century in which commercial success is integrated with and promotes the social and cultural development of society through the 'economics of love'.''

Thus, the SEKEM initiative very much accords with the Harmony principles espoused by His Royal Highness The Prince of Wales (HRH The Prince of Wales, et al., 2012). The Prince argues that many of the modern challenges the world is facing are the result of disharmony with nature and contends that the solution lies in our ability to regain a balance with the world around us. It is not just nature and the

environment that is important but the physical well-being of the human population - its health, nutrition, living conditions, education, spirituality, etc.

The future of entrepreneurship is to see problems and opportunities more holistically and harmoniously, rather than as unrelated elements in what is a highly interconnected system. This has led Kirby and El-Kaffass (2021) to introduce the concept of Harmonious Entrepreneurship whereby entrepreneurship addresses the sustainability challenge by adopting a systems approach to the problem and applying the principles of harmony. The result is a more integrated, holistic business model that provides:-

"a vision for the future that is rooted in ethical innovation that results in change and improvement in economy and society while not harming or damaging people or the environment. Preferably, it improves and replenishes them and leads to development that is both long-term and sustainable".

The solution adopted by SEKEM is a harmonious business model that integrates or harmonises economic, eco, humane and social entrepreneurship – and it is contended that if entrepreneurship is to address the sustainability challenge its future is to see problems and opportunities more holistically and harmoniously, rather than as unrelated elements in what is a highly interconnected system. As Larsen (2000) has acknowledged, however,

"We are accustomed to thinking of business in terms of discrete units with clear boundaries between them. We forget that these boundaries exist primarily in our minds or as legal constructs."

For this change to occur, the research into SEKEM shows that entrepreneurs of the future will not only have to be highly rated on the five dimensions of Caird's General Enterprising Tendency Test (Caird, 1991) and possess all 19 of the characteristics or traits identified by Timmons et al. (1989) but possess additional attributes such as the ability to see opportunities, courage, self-belief, persuasiveness and networking capability. However, Villar and Miralles (2019) have concluded that sustainability entrepreneurs (as they call them) differ from more conventional entrepreneurs particularly in their desire to change the world and it is necessary, therefore, *"to acknowledge the orientation and motivation of the entrepreneur to include non-economic goals in the entrepreneurial ventures"* (op. cit., 106). Additionally, the SEKEM case demonstrates the entrepreneur's :-

- Ability to think strategically
- Interdisciplinary competence (including commercial awareness)
- Understanding of systems thinking and the inter-connectivity of the ecosystem

- Action orientation and practical capability
- Interest in recycling and saving waste
- Ability to motivate and empower others.
- Spirituality.

To educate students to become entrepreneurs capable of creating new harmonious models of business that address the Sustainability Challenge requires a change in both the content and pedagogy of learning as Lans et al (2014) and Ploum et al (2018) have demonstrated. It is necessary not just to develop in the participants the attitudes and competences of the harmonious entrepreneur or to educate them in how to launch and grow a harmonious venture, but to introduce them to such issues as sustainability and its importance, the concept of systems thinking, harmonious Entrepreneurship and the characteristics of the Harmonious Entrepreneur. Such topics have to be added to the traditional Entrepreneurial Education content/curriculum with the students developing their understanding and capability experientially and becoming "Pragmatist" and "Activist" learners as well as "Reflectors" and" Theorists" (Honey and Mumford, 1986).

Learning does need to be experiential, however, and rather than working individually and in isolation, it needs to take place, preferably, in multi-disciplinary teams. Not only does this educate the course participants in how to develop and manage an entrepreneurial team, but it creates a rich learning experience that enhances creativity, (Kirby, 2003). As Penaluna et al. (2014) have acknowledged students need to learn not only how to generate creative ideas but to sustain them. This requires the students to make lateral connections and engage in divergent thinking and the brain needs to be challenged to enable the student to express, ideational, expressional, and divergent fluency. They can do this by contextualizing the problem, using readily available materials, and linking different sources of information to help problem solve.

As an example, following an introduction to harmonious entrepreneurship and sustainability, the first stage in the process is to learn about team formation, including selecting a leader and identifying the different team roles each member will play. This stage involves various self-assessment exercises including the Durham University General Enterprising Tendency test (Caird,1991; 2006) and Belbin's 'Self-Perception Inventory' (Belbin, 1981).

In the second phase the focus is on creativity (Bragg and Bragg, 2005) and the teams begin to identify the Sustainability Challenge and their proposed entrepreneurial solution to the problem they have identified. This is often referred to as the ideation phase, a medical term referring to the forming of mental images.

During this stage they start to pass through the storming phase of Tuckman's (1965) 5 phases of team development. By the end of this stage, they have usually navigated the "Forming" and" Storming" phases and reached the "Norming" third phase before embarking on the "Performing" phase. This involves: -

- undertaking the requisite research to construct a rigorous, realistic plan for the venture to determine its feasibility and commercial viability

- identifying the resource needs of the venture including potential sources of funding

- raising finance and launching the venture.

Throughout this stage the teams, which are basically self-manage (Kirkman and Rosen, 1999), are monitored and mentored, required to network and keep records of their contacts, and encouraged to monitor on a "*feel wheel*" the periodic emotions of their members

Once this stage has been reached it is not the intention that the teams will pass into the "Adjourning" phase of Tuckman's cycle, but many teams do. Whether they break up or continue, the final stage is reflection – what has been learned, what skills have been acquired and what are the members' plans for the future? Wherever possible a variety of performance evaluations is used, including peer appraisal, presentations to expert panels, and formal assessment of the written components of the programme, particularly the business plan. Sometimes, particularly in accredited award-bearing programmes, this is not possible and more traditional assessment methods have to be adapted to measure the learning outcomes, requiring ingenuity on the part of programme leader.

The ventures that are launched have the opportunity to be further monitored and supported with the aid of a negotiated learning contract (Stephenson and Laycock, 1993) or agreement that becomes the action or learning plan for the next stage in the venture's development (Kirby, 2007, 34-43). It outlines what needs to be done or learned, and how and by when it will be, thereby giving the founder(s) ownership of the learning and ensuring it is relevant and timely.

While this is one example of the type of programme that is required, it is not the only one. Addressing the problem from the perspective of Sustainability educators, Hermann and Bossle (2020) recognize that research on education for sustainability has neglected to integrate entrepreneurial skills. Using content analysis, they then proceed to produce "*a program for entrepreneurial-oriented sustainability education, providing a description of the educational focus, teaching-learning approaches, main themes, and external collaboration*". The point to be

recognized, however, is that different teaching models can and should be developed to suit the local circumstances – there is no one size fits all. The key, however, is for the educator to feel free to experiment and try new approaches. Some will work, some might not but it is only through the creation of a learning community where all of the members (both staff and students) feel able to innovate that progress will be made.

Barriers to integration into the Curriculum

The intention is that this new approach to entrepreneurship and the sustainability challenge should be introduced into the curriculum not just for students of business administration or environmental studies but for all students, irrespective of discipline. As with entrepreneurship education, this will not be easy and will take time. Given the experience gained from introducing entrepreneurship into the curriculum, it might be expected that academics will argue that there is not room in the curriculum for such a study, they will point to the fact that promotion is based in most instances on research not teaching, that they are not trained and/or equipped to teach the subject and that it is not the purpose of Higher Education to do so. This resistance has to be acknowledged and overcome.

Unlike Entrepreneurship Education, Education for Sustainability is relatively new. Although recognized in the 19th century the problems of global warming were not taken seriously until the last quarter of the 20th century when the concept of corporate social responsibility was introduced in the USA (Aqudelo et al., 2019), together with the first training courses. However, the term "sustainability" was not defined until the publication of the UN's Brundtland Report in 1987. After that the first courses in sustainability began to emerge but it was not until May 2001 that the "Journal of Teacher Education and Training" (renamed Journal of Teacher Education for Sustainability in 2007) was introduced and 2003 before the first international sustainability educators conference was held in Latvia. So, it would seem that Higher Education has been similarly slow to respond, also, to the sustainability challenge, citing in the UK a crowded curriculum, irrelevance, limited staff awareness and expertise and limited institutional commitment as the main barriers (Dawe et al. 2005).

Again, as with entrepreneurship education, commitment is found to be growing and an "emerging imperative", though the response has again been patchy and not always based on the experiential learning approaches that are necessary to teach the subject effectively. This point has been recognised in Australia where it was found that the innovative pedagogies recommended for the effective teaching

of Sustainability were not practised, the academics preferring and utilising more traditional pedagogies such as lectures, and tutorials (Christie et al. 2013). In a later study examining the slow take up of Education for Sustainability in Australian universities, Christie et al. (2015) discovered that Australian academics are supportive of Education for Sustainability for all university students, but it needs to be *"framed within their disciplinary worldviews"*. By comparison in a UK study of the attitude of sustainability educators their attitude towards entrepreneurship was found to be mixed though predominantly negative, the educators not seeing the contribution entrepreneurship can make to sustainability (Wyness and Jones 2019). In contrast, a study of UK entrepreneurship educators (Wyness, et al., 2015) identified much good practice, but discovered that *"embedded sustainability practice was typically limited and it was more typically regarded as an 'add on' to traditional entrepreneurial teaching"*. However, as Christie and Higgins (2020) contend, such interdisciplinary learning opportunities need to be encouraged as they offer "a *holistic view of learning and teaching that creates opportunities to engage in deep questioning that provokes each of us to consider what it means to live well and how we may continue to do so while facing contemporary complex global challenges"*.

Overcoming the barriers

As Higgins and Thomas (2016) have recognized *"change in universities is commonly acknowledged as a complex process"*. However, given our knowledge and understanding of entrepreneurship in general and intrapreneurship, it should be possible to create the sort of environments in which harmonious enterprise can flourish. For example, cognitive theory (Ajzen, 1991) would suggest that for the changes to be made, it is necessary for "society" to have a favourable attitude towards such an objective, and for academics to believe that it is intrinsically rewarding, and they have the ability to do it. If these conditions can be created, within our universities, therefore, then it should be possible to harness the enterprise that exists within the academic community. Although academics have been found to be, perhaps somewhat surprisingly similar to entrepreneurs (Caird, 1991; Hay et al. 2003), there needs to be a culture that is supportive of enterprise, and they need to believe they have the ability to do it. Almost inevitably this will involve training in how to design, deliver and assess such programmes either as part of their induction programme or through national or even international programmes as occurred in the 1990s with Entrepreneurship (Urbano et al., 2008).

Intrapreneurship theory (Pinchot, 1995) suggests how a "favourable attitude" and a culture that is supportive of entrepreneurship might be developed and demonstrated within universities. On top of ensuring the academic staff has the

knowledge and skills to develop and deliver such programmes it stresses the importance of formulating and implementing a high-level strategy that demonstrates the university's intent, makes it clear that this form of behaviour is encouraged and rewarded, and creates and provides an environment that reduces the risks involved but encourages experimentation. To be effective, such a strategy needs to be endorsed by the university's governing body, incorporated into the strategy for the university, and importantly communicated to the staff. Ideally the academic staff should be involved in its formulation or, at the very least, consulted.

Theory also stresses the importance of senior management commitment and the need to identify and appoint champions within the organization. However, words are not sufficient. Not only do senior management need to model the behaviour they wish to promote but action on the part of the Government will probably be necessary. Government should make it clear to management that it wants its universities to engage in the enterprise-sustainability agenda by educating and training its "students" in how to address the challenge, as well as by conducting research into the issues. It should also stress, possibly through its funding regimes, that these changes should not be "bolt on" or short-term but core and permanent, applying to all aspects of the curriculum and all the activities of the institution. Linked to this will be the need to move to multi-disciplinary research and teaching, thereby breaking down the concept of the single disciplinary silos that tend to prevail in Higher Education.

While such intervention is necessary, universities should be free from close Government regulation and encouraged to interact with their local communities, addressing the economic, environmental, humane, and social sustainability challenges they are facing. Through their research and teaching they should find local solutions to local problems and should develop, as a consequence, special institutional identities. However, this would suggest the need to change, also, the way university research and teaching are evaluated, assessed, and ranked.

Conclusion

The aims of this chapter were to examine the issues involved in introducing entrepreneurship and sustainability to the curriculum in Higher Education. As HRH The Prince of Wales et al (2012) have recognized, *"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"*. A new approach to entrepreneurship and sustainability is required, and Kirby and El-Kaffass (2021-forthcoming) have proposed that it is necessary to recognise the systemic nature of

the problem and integrate not just the 4 main approaches to entrepreneurship (economic, eco, humane and social) but the principles of harmony to produce a new business model that is not just about making as much money as possible (Friedman, 1970) but about addressing Elkington's Triple Bottom Line of Profit-Planet-People.

The resultant model, Harmonious Entrepreneurship, is based on the actual case of SEKEM Holding in Egypt. It demonstrates that entrepreneurship and sustainability are compatible, and that entrepreneurship can impact positively on the sustainability challenge and can address the UN's 17 Sustainable Development Goals. This has been recognised subsequently in the "Terra Carta" a 10-point Sustainability charter intended to harness *"the transformative innovation and resources of the private sector"* (Terra Carta 2021). It was introduced by HRH The Prince of Wales at the One Planet Summit held in Paris on 11th January 2021 but though supported in practice, like Harmonious Entrepreneurship it is not widely accepted, yet, in academia. Like Harmonious Entrepreneurship, also, it recognises the need to ensure a skilled workforce and *"a cadre of leaders that are prepared to participate in a fair, inclusive, equitable and just transition towards a sustainable future".* The message could not be clearer. The workforce of the future needs to be educated about the sustainability challenge and equipped with the knowledge and entrepreneurial skills to bring about change and improvement through enterprise. The resistance to entrepreneurship education and education for sustainability has to be overcome as does the failure of academics to appreciate that the two have to be taught together and incorporated into all disciplines not just environmental science and business administration.

This clearly has implications for universities, their role in the country's economy and society and the way they are organised and managed. Entrepreneurship and Sustainability have to be incorporated into the core mission of the university, traditional subject boundaries have to be blurred and the product champions will have to be not just supported but recognised and rewarded. For this to happen Governments may have to intervene to make clear what is expected of the university sector with respect to the sustainability challenge, and while this may involve incentive funding, it should lead to long-term change and not be short-term, bolt on initiatives that end with the termination of the funding.

The Covid-19 pandemic has brought to the fore issues relating to sustainability and awareness of the need for a more sharing and caring economy and society (Ashan, 2020). At the same time, it has demonstrated the leading role that universities can play in addressing such issues (Universities UK, 2020) and illuminated the need for educated young people that can cope with uncertainty and find innovative solutions to contemporary problems. *Thus "The Covid-19 pandemic*

has not necessarily shown universities what they should do, but it has certainly shown universities what is possible" (O'Kane,2020) and hopefully this will have helped overcome the internal academic resistance to the   concept of the entrepreneurial university and the changes that are needed if universities are to address the sustainability challenge, change public attitudes and bring about the very necessary solutions to   help resolve *"the many environmental and social problems that now loom large on our horizon".*

As this is a completely new approach to the sustainability challenge there is clearly scope for further research. While the sort of paradigm changes required to achieve this have been recognized in entrepreneurship education for some time, their impact remains under investigation (Vanevenhoven and Liguori, 2013), while in sustainability education the concept of learning for sustainability *"as an integrated holistic concept is under-researched…and … further research is encouraged"* (Christie and Higgins, 2020). Further research is necessary also to explore and test the efficacy of the proposed approach in different socio-economic contexts and physical environments. Perhaps, however, the most urgent need is for action research since, as Tilley and Young (2009, 91) have acknowledged, there has been an *"explosion of sustainability rhetoric but far too little absolute progress in reducing (never mind improving) the environmental and social problems society faces today".*

At all times, though, it should be remembered that, as the late Nelson Mandella acknowledged, *"Education is the most powerful weapon which you can use for changing the world"*.

Notes

1. The 1987 World Commission on Environmental Development definition of sustainability is "development that meets the needs of the present without compromising the ability of future generations to meet their own needs".
2. Ecopreneurship may be defined as entrepreneurship that addresses and finds innovative sustainable solutions to environmental problems.
3. In Social Entrepreneurship the aim is not to create wealth but to find innovative solutions for community-based problems.
4. Under some definitions of social entrepreneurship, the environment is considered but usually the focus is on only one aspect of the problem, social or environmental.

5. These schools provide a holistic approach to education by developing the intellectual, artistic, and practical skills of their pupils.
6. As system of teaching and helping people to become as mentally and physically healthy as possible.
7. In 2004 the Schwab Foundation selected Dr Abouleish for their Outstanding Social Entrepreneur Award.

References

Abouleish, I., and Kirchgessner, M. (2005), Sekem: *A Sustainable Community in the Egyptian Desert*. Edinburgh: Floris Books

Ajzen, I (1991), The Theory of Planned Behavior. *Organisational Behavior and Human Decision Processes*, 50, 179-211.

Al-Dairi, A., McQuaid, R., and Adams, J. (2012), Entrepreneurship training to promote start-ups and innovation in Bahrain. In Ahmed, A., (Ed) *World Sustainable Development Outlook 2012: Change, innovate and lead for a Sustainable Future*. Brighton: World Association for Sustainable Development (WASD)

Aqudelo, M.A. L., Johannsdottir, L., and Davidsdottir, B. (2019), A literature Review of the history and evolution of corporate social responsibility. *International Journal of Corporate Social Responsibility*, 4(1),1-23.

Ashan, M. (2020), Entrepreneurship and ethics in the sharing economy: A critical perspective. *Journal of Business Ethics*. 161 (10), 19-33.

Ashby, W.R. (1968), Variety, constraint, and the law of requisite variety. In W. Buckley (Ed), *Modern systems research for the behavioural scientist*. Chicago iIl: Aldine Publishing Co.

Belbin, M. (1981), *Management Teams: Why they Succeed or fail*. Oxford: Butterworth-Heinemann.

Birch, D.L. (1979), The Job Generation Process. Massachusetts: MIT Program on Neighbourhood and Regional Change.

Bragg, M., and Bragg, A. (2005), *Developing new business ideas: A Step-by-step guide to creating new business ideas worth backing*. FT/Prentice Hall

Caird, S. (1991), The enterprising tendency of occupational groups. *International Small Business Journal*.9 (4),75-81.

Caird, S. (2006), Appendix: GET Test 2. In Mazzarol, T., (ed) *Entrepreneurship and Innovation: A Manager's Perspective*. Entrepreneurship Australia: Tilde University Press.

Cannavacciuola, L., Capaldo, G., Esposito, G., Iandoli, L., and Raffa, M. (2006), To support the emergence of academic entrepreneurs: the role of business plan competitions. In Fayolle, A., and Klandt, H., (Eds), *International Entrepreneurship: Issues and Newness.* Cheltenham: Edward Elgar

Chia, R. (1996), "Teaching paradigm shifting in management education: university business schools and the entrepreneurial imagination". *Journal of Management Studies,* 33, 4, 40.

Christie, B., and Higgins, P. (2020), *The educational outcome of learning for sustainability: a brief review of literature.* University of Edinburgh Moray School of Education: Outdoor and Environmental Education

Christie, B.A., Miller, K., Cooke, R., and White J.G. (2013) Environmental sustainability in higher education how do academics teach*? Environmental Education Research.* 19 (3), 385-414.

Christie, B.A., Miller, K., Cooke, R., and White J.G. (2015), Environmental sustainability in higher education; what do academics think? *Environmental Education Research. 21 (5), 655-686.*

Dawe, G.,Jucker, R., and Martin, S. (2005), Sustainable Development in higher Education: current Practice and future Developments: A report for the Higher Education Academy. York: Higher Education Academy.

De Bono, E. (1970), *Lateral Thinking: Creativity Step-by-Step*. New York: Harper and Row.

Elkington, J. (1999). *Cannibals with Forks: The Triple Bottom Line of 21st Century Business*. Capstone

Erkkila, K. (2000), Enterprise Education: Mapping the debates in the United States, United Kingdom and Finland. London: Garland publishing Inc.

Etzkowitz, H. (2003), Research groups as "quasi firms"; the invention of the entrepreneurial university. *Research Policy*, 32: 112

European Commission (2008), *Entrepreneurship in Higher Education, especially within non-business studies: Final Report of the Expert Group.* Brussels: The Commission

Fayolle, A. (2007a), *Handbook of Research in Entrepreneurship Education, Volume 1: A General Perspective.* Cheltenham: Edward Elgar Publishing Ltd.

Fayolle, A. (2007b), *Handbook of Research in Entrepreneurship Education, Volume 2: Contextual Perspectives.* Cheltenham: Edward Elgar Publishing Ltd

Fayolle A., and Gailly, B. (2008), From craft to science. *Journal of European Industrial Training.*32(7), 569-593.

Fayolle, A and Klandt, H. (2006), *International Entrepreneurship Education: Issues and Newness.* Cheltenham: Edward Elgar Publishing Ltd.

Friedman, M. (1970) The Social and Ethical Responsibility of Business is to increase its profits. *New York Times.* September 13. 122-126.

Gailly, B. (2006), Can you teach entrepreneurs to write their business plan? An empirical evaluation of business plan competitions. In Fayolle, A., and Klandt, H., (Eds), International Entrepreneurship: Issues and Newness. Cheltenham: Edward Elgar

Gawel, A. (2012), Entrepreneurship and sustainability: do they have anything in common? *Poznan University of Economics Review.* 12 (1) 5-16.

Greene, P.G., and Rice, M.P. (2007), *Entrepreneurship Education.* Cheltenham: Edward Elgar Publishing Ltd.

Hall, J.K, Daneke, G.A., and Lenox, M.J. (2010), Sustainable development and entrepreneurship: Past Contributions and future directions. *Journal of Business Venturing.* 25(5), 439-4.

Hay, D.B., Butt, F., Kirby, D.A. (2003), Academica as entrepreneurs in a UK University. In   Williams G. (Ed). *The Enterprising University: Reform, Excellence and Equity.* Buckingham; The Society for Research into Higher Education and Open University Press.

Henry C. Hill, F. Leitch C. (2005), Entrepreneurship Education and Training: can entrepreneurship be taught? Part II. Education + Training. 47 (3): 158-169.

Hermann, R.R., and Bossle, M.B. (2020), Bringing an entrepreneurial focus to sustainability education: a teaching framework based on content analysis. *Journal of Cleaner Production.* 246. 10th February

Higgins, B., and Thomas I., (2016), Education for sustainability in universities: challenges and opportunities for change. Journal of Environmental Education 32(1)91-108

HRH The Prince of Wales (2012), *Harmony: a new way of looking at our world*. London: HarperCollins.

Honey, P., and Mumford, A. (1986) *Using Your Learning Styles*. Maidenhead: Peter Honey

Kim, K., El-Tarabishy, A., and Bae, Z. (2018), Humane entrepreneurship: How focusing on people can drive a new era of wealth and quality job creation in a sustainable world. *Journal of Small Business Management*. 56(sup.1),10-29.

Kirby, D.A. (2003), *Entrepreneurship*. Maidenhead; McGraw-Hill.

Kirby, D.A. (2006), "Entrepreneurship Education: can business schools meet the challenge?" in A. Fayolle, and H. Klandt, (eds), *International Entrepreneurship Education: Issues and Newness,* Cheltenham: Edward Elgar Publishing Ltd.

Kirby, D.A. (2007), Changing the Entrepreneurship Education Paradigm in A. Fayolle, (ed), *Handbook of Research in Entrepreneurship Education, Volume 1: A General Perspective*. Cheltenham: Edward Elgar Publishing Ltd

Kirby, D.A. and El-Kaffass, I. (2021 - forthcoming), Harmonious entrepreneurship – a new approach to the challenge of global entrepreneurship[1.] *World Journal of Entrepreneurship, Management and Sustainable Development*. First online June.

Kirkman, B.L and Rosen, B. (1999), Beyond self-management. Antecedents and Consequences of Team Empowerment. *Academy of Management Journal*. 42, 58-74.

Lans, T., Blok, V., and Wesselink, R. (2014). Learning apart together: Towards an integrated framework for sustainable entrepreneurship competence in higher education. *Journal of Cleaner Production*. 62. 34-47.

Larsen, A. (2000), Sustainable innovation through an entrepreneurship lens. *Business Strategy and the Environment*. 9 (5) 304-317.

Mair, J., and Seelos, C. (2006). The SEKEM initiative: a holistic vision to develop people. In Perrini, F., (Ed), *The New Social Entrepreneurship: What Awaits Social Entrepreneurial Ventures?* Cheltenham: Edward Elgar

MacDonald, R., and Coffee, F. (1991), *Risky Business: Youth and the Enterprise Culture*. London: Routledge.

McNay I. (2002), The E-factors and Organisation Cultures in British Universities. In Williams G. (Ed). *The Enterprising University: Reform, Excellence and Equity*. Buckingham; The Society for Research into Higher Education and Open University Press.

NCEE (2020), *Unlocking Entrepreneurship in Education: University Heads of Enterprise Report 2020: an annual survey of enterprise in higher education*. Coventry: NCEE

Nieuwenhuizen, C., and Groenwald, D. (2004), *Entrepreneurship training and education needs as determined by the brain preference profiles of successful, established entrepreneurs*. Paper presented at the Internationalising Entrepreneurship Education and Training Conference (IntEnt 2004). Naples 5-7 July.

O'Kane, C. (2020), Universities' chance to practise what they teach. Newsroom Opinion Piece Accessed at https://www.newsroom.co.nz/ideasroom/2020/05/081156977/universities-chance-to-practise-what-they-teach.

Penaluna, K., Penaluna A., Jones, C., and Matlay, H. (2014), When did you last predict a good idea. Exploring the case of assessing creativity through learning outcomes, *Industry and Higher Education*. 28(6), 399-410.

Pinchot, G. (1985), *Intrapreneuring*. New York; Harper and Row.

Ploum, L., Blok, V., Lans, T., Omta, O. (2018), Towards a validated Competence Framework for Sustainable Entrepreneurship. *Organization & Environment*. 31(2) 113-132.

Potter, J. (2008), *Entrepreneurship and Higher Education*. Paris OECD.

Quality Assurance Agency (2018), *Enterprise and Entrepreneurship Education: Guidance for UK Higher Education Providers*. Gloucester: QAA.

Schaltegger, S., Hansen, E.G Ludeke-Freund, F. (2016), Business Models for Sustainability: Origins, Present Research and Future Avenues. *Organization & Environment*. 29 (1) 3-10.

Schumpeter, J.A. (1943), *Capitalism, Socialism and Democracy*. London, Allen and Unwin.

Stephenson, J., and Laycock, M. (1993), *Using Learning Contracts in Higher Education*. London; Kogan Page.

Terra Carta (2021)

https://www.sustainable-marketsorg/TerraCarta_summarium_Jan11th2021.pdf

Tilley, F. and Young, W. (2009), Sustainability Entrepreneurs – Could They Be the True Wealth Generators of the Future? *Greener Management International,* 55, 79-92.

Timmons, J.A. (1989), *The Entrepreneurial Mind.* Andover MA: Brick House Publishing.

Tuckmann, B.W. (1965), Development Sequence in Small Groups. *Psychological Bulletin.* 63, 384-399.

Universities UK (2020), *How Universities are helping fight COVID-19.* London: Universities UK.

Urbano, D., Aponte, M., and Toledano, N. (2008) Doctoral Education in entrepreneurship: a European case study. *Journal of Small Business and Enterprise Development.* 15(2) 336-34

Vanevenhoven, J., and Liquori, W. (2013), The Impact of Entrepreneurship Education: Introducing the Entrepreneurship Education Project. *Journal of Small Business Management.*51(3),315-328.

Vesper, K., and Gartner, W. (1998), *University Entrepreneurship Programs Worldwide.* Los Angeles: The University of South Carolina.

Villar, E.B., and Miralles, F. (2019), Sustainable Entrepreneurship in Response to Grand Challenges: What Do We Know and How Do We Move Forward? *DLSU Business and Economics Review.* 28(3), 102-111.

Von Bertalanffy, L. (2015), General Systems Theory: Foundations, Development, Applications. George Brazillier.

West, G.P, Gatewood, E.J., and Shaver, K.G. (2009), *Handbook of University-wide Entrepreneurship Education.* Cheltenham: Edward Elgar Publishing Ltd

Wyness,I., and Jones, P. (2020), Boundary Crossing ahead: Perspectives of entrepreneurship by sustainability educators in higher education. *Journal of Small Business and Entrepreneurship.*31(7), 1-18.

Wyness, L., Jones, P., and Klapper, R. (2015), sustainability: what the Entrepreneurship Educators Think Education + training, 57 (8/9),834-852.