

## **Sustainable human capital development through entrepreneurial education**

*A. Anwar Ismail\*, Aweng Eh Rak and Ibrahim Che Omar*

*Faculty of Agro Industry and Natural Resources, Universiti Malaysia Kelantan  
Locked Bag 36, Pengkalan Chepa, 16100 Kota Bharu*

### **Abstract**

With the increasing concern a decade ago on job competition and employment opportunities for graduates of local universities in the country, the Malaysian Ministry of Higher Education have rightly embark on a policy requiring all institutions of higher education embed in their teaching curricula elements of entrepreneurial education. Universities are seen as the training ground for producing and shaping the minds of future generations. Institutions of higher education also provide an important intellectual environment and create the social setting for students to interact, exchange and propound ideas not only for specific courses they have chosen to pursue but should also have a good mix with courses that contain commercial and entrepreneurial elements. Universities are expected and must play an additional role, over and above the mundane traditional research and teaching, by embedding into the curriculum entrepreneurial elements in their educational programmes. Entrepreneurial exposure and training should start right at the beginning as the students step into the university and the onus is on the higher education authorities to address the need for producing competent and techno-savvy graduates who are equally competent in entrepreneurial skills. Not only must graduates be conversant with these skills but they should also be imbued with the right attitude in handling as well as tackling community issues right at the grass root levels and hence community service programmes are part and parcel of this learning. But the question remained whether entrepreneurship education already introduced would be able to develop human capital sustainably as each institution has its own way of addressing and implementing this. An effective entrepreneurship education has to be formulated and the delivery system has to be standardized. There has been a perceptible shift in teaching and learning over the last decade towards this objective but in order to ensure the current practice meet the primary goal of eventually producing sustainable human capital with entrepreneurial attributes future curriculum in education should leverage on appropriate programmes and delivery system being drawn up to suit the new learning environment. Above all, the existing crop of educators, and the new ones recruited, ought to be transformed over a series of training and industry exposures from being ordinary teachers to one of entrepreneurial educators. Good programmes and delivery systems with sufficient numbers of entrepreneurial educators is not the panacea for the success of entrepreneurship education if the management and leadership itself is not entrepreneurial enough. This paper highlights the important elements of entrepreneurial education for sustainable human capital development in higher education in Malaysia with some programmes already implemented in Universiti Malaysia Kelantan.

**Keywords:** Entrepreneurial education, sustainable human capital development

---

\*Corresponding Author: [anwar@umk.edu.my](mailto:anwar@umk.edu.my)

## Introduction

The new millennium has brought about another dimension in university education in Malaysia where entrepreneurial elements in teaching and learning has to be given its due prominence. One of the Critical Agenda Project (CAP) of the Ministry of Higher Education was the formulation of the National Higher Education Plan. Every institution of higher learning, public or private, will have to make provision for entrepreneurial planning in either their academic programmes or extracurricular activities. This come in the wake of the announcement of the Minister of Higher Education who recommended that all institutions of higher learning (IPTA) establish an entrepreneurship center whose role would be dedicated to the success of entrepreneurial education so that graduates would be imbued with sufficient skills. Development of entrepreneurial skill must not only be sourced from higher learning institutions but also must be acquired at all levels of education (Bukola, 2011).

Many in the academia are still unclear of the actual meaning of the concept of entrepreneurship. It is more than just entrepreneurial business as assumed by many but actually it's about human capital development (Akpomi, 2009). Those who are fortified with entrepreneurial education would be a group of people ready to face any challenges and competition in all sphere of life and thereby making some significant contribution to job creation and ultimately to poverty alleviation (Isaacs *et al.*, 2007). Entrepreneurial education then has to be a new approach in teaching and learning focused towards developing new set of human capital suitably equipped with different capabilities and skills ready to face many uncertain challenges ahead. Consequently, entrepreneurial education is not targeted to only the tertiary level but has also been introduced now at the primary and secondary school levels as well. This shift in approach are to ensure that young people when leaving schools or universities are assured of better job opportunities, help to reduce unemployment level and when self-employed create more businesses and enterprises and thereby further develop the economy of the country.

Entrepreneurship education seeks to provide students with the knowledge, skills and motivation to encourage entrepreneurial success in a variety of settings. Variations of entrepreneurship education are offered at all levels of schooling from primary or secondary schools through graduate university programs. The result of this training process will see that graduates when they leave the universities will be those equipped with a different set of values, qualities and outlook all summed up into what is collectively known as the entrepreneurial attributes. In the teaching of science and technology, embedding entrepreneurship education into it is thought to be daunting but since these courses itself demand high creativity and innovation, the task in accomplishing this is not too difficult.

Anwar *et al.* (2010) has reported on the mechanism of merging of entrepreneurial knowledge with science and technology education in UMK while Lee *et al.* (2010) on the other hand had shed light on merging the field of engineering with entrepreneurship. Such coalescence of two different and diverse disciplines in the education system should be the driving force for preparing future graduates with the desired attributes ready to meet the present needs of discerning potential employers. Some studies have illustrated that the entire education system can be adjusted to accommodate the entrepreneurship approaches in the pedagogies of entrepreneurial teaching (Syed Muhammad, *et al.* (2010) and at the same time cultivate the required entrepreneurial skills through entrepreneurial teaching models (Alias and Sulaiman, 2010). With these push already taking place, the present education system will now be expected to produce new generation of students exhibiting entrepreneurial characteristics (Aweng, *et al.* 2010). However, in order to realize the sustainability in human capital development through entrepreneurial education, current practices ought to be relooked and strengthened with the introduction of new innovative approaches. The present academic structure, teaching pedagogies and the role of academic staff have to be reviewed to suit the current global trend in education. Over and above that, industry participation must be promoted in the teaching and learning process and at the same time increasing the learning support programmes. Practical experience and exposure by students through owning businesses on campus is also considered a necessary training for students to acquire confidence and skills thus enriching their entrepreneurial attribute. The development of generic skills during their long stay in the campus is another desired attribute that one should look at when dealing with human capital development. A proper mechanism or the right mode of assessment or criteria for soft skill must then be devised so that a profile of the student can be accurately described qualitatively. In addition, it may be important also at the macro level to include acculturation programmes on entrepreneurship to the university community as a whole while not forgetting that leadership transformation is needed to change the management mindset in entrepreneurial education.

This paper highlights the important elements of entrepreneurial education for sustainable human capital development in higher education in Malaysia.

### **Academic Structure**

Academic structure is one of the important elements for the success or failure of an entrepreneurship education. The type of degree programmes offered, the content of the syllabi, as well as classroom pedagogy must reflect the full force of entrepreneurship education. Even more specifically is that every module and course within each faculty of the university – whether it is in the field of business, the discipline of veterinary sciences, bio-industrial technology or the degree in Heritage Studies – must include the attributes of entrepreneurship as the backbone of its curriculum. In

the science and technology disciplines, the elements of entrepreneurship should be all encompassing for a majority of the courses particularly in the translation of knowledge for business activities. The knowledge gained in whatever course the students engaged in would be the basis for applying this knowledge to create new enterprises in the business world. The UMK initiated Student in Enterprise Programme (SIEP) can be a model for others to follow for hands-on training during semester breaks for students to learn actual business practices in real life situation. Industrial Training and Research Projects should be redirected more towards entrepreneurship or enterprise-related activities to give the students the exposure in a different environment so that the ultimate aim of inculcating the required entrepreneurial attributes is achieved.

It would be incumbent upon institutes of higher education to allot a minimum of 10% for all the courses of each programme input from industry where invited guest lecturers are brought in from the private sectors to teach and spend a couple of lectures sharing their experiences on their real-life situations or those with sound entrepreneurial practices and case studies of success stories by successful entrepreneurs.

The university must also play a role and be responsible in the context of its community involvement through 'social' entrepreneurship and set about forging strong and vibrant university-community partnerships. Social entrepreneurship is also seen as a form of university based corporate social responsibility (CSR) and should be infused as another core agenda of each university.

For activities of social entrepreneurship nature, students will find themselves engaging with the local community in their economic development programmes particularly those identified for poverty reduction of the hardcore poor. What the university will do is to work out an arrangement with the village elders on suitable programmes where the students will assist and teach the villagers on implementation and execution of a particular project identified in order to meet the two objectives set, namely to find ways to help the villagers improve their way of life in general, and secondly, putting into practice the learning experience obtained by the students by applying their knowledge and skills in the field. Of course, the impact on the well-being of the impoverished villagers will be accomplished over the course of several years and in this respect the students will have to propose programmes which will realistically and incrementally develop the villagers through diversification of income and wealth, adoption of better techniques for agricultural technology and even improved knowledge and understanding of livestock, aquaculture and farming.

The academic curriculum and structure must be so designed to take into account the University's mission to produce graduates imbued with entrepreneurial attributes and who are innovative and creative rather than those stereotyped as not being able to assimilate and adapt to work environment, inability to apply knowledge to real-life situations and their lack of confidence in communicating views and ideas.

### **Pedagogies**

The teaching of newly designed courses embedded with entrepreneurial elements demand the instructors or what are known as *entrepreneurial educators*, to be creative and innovative in the delivery systems. The key success of entrepreneurship education will depend strongly on the teaching pedagogy. The approach and style of teaching has to be shifted from that of conventional teaching to Student Centered Learning (SCL). SCL is an approach to education focusing on the needs of the students, rather than teachers or administrators. The pedagogy will pay attention on student needs, abilities, interests and learning styles with the teacher as the class facilitator. SCL requires students to be active, responsible participants in their own learning where they have to participate in discovery learning processes from autonomous viewpoint, consuming entire classroom construction and new understanding of the materials being learned in a proactive mode. Even that, SCL cannot be standing alone on its own, it has to be integrated in the curriculum, for several reasons, such as to strengthen student motivation, promote peer communication, reduce disruptive behaviour, build student-teacher relationship, promote discovery/active learning and is responsible for one's own learning. Student learning processes are greatly enhanced when they participated in deciding how they demonstrate their competencies in the acquisition of knowledge or performance of skills. Currently, there are a total of nine (9) SCL's that are being put into practice in UMK, namely Case Studies (CS), Outcome Based Learning (OBL), Problem Based Learning (PBL), Project Orientation Problem Based Learning (POPBL), Discussion Groups, Project Presentation, Study Visits and Group Work. However, not all the courses must employ all of them as different courses will have different emphasis and requirements and it would depend on the particular topic or body of knowledge to be taught and using one or more approaches may be adequate to achieve the objectives and learning outcomes expected of those courses (Ingleton, *et al.*, 2000)

Case Study is in-depth investigation of a single individual, group or event and may be descriptive or explanatory (Tellis, 1997), while Problem Based Learning (PBL) is a student centered instructional strategy in which students collaboratively solve problems and reflect their experiences. Project Orientation Problem Based Learning (POPBL) is an approach to instruction that focuses on

project the output of which is presented to the class. All of these approaches will train the students not only to understand the academic content of a particular course but also will enrich the students with entrepreneurial attributes and generic skills.

### **Transforming the role of academic staff**

It is imperative that for the students at large are to appreciate what entrepreneurship entails and imbibing the necessary skills, academic staffs must first be trained and sufficiently exposed to acquire the ability to master the teaching of entrepreneurial education. Only then will such lecturers develop the required attributes in entrepreneurship which will then influence them as to how best entrepreneurial education can be taught in classes. These so called *entrepreneurial educators* are consequently the result of transforming classical academic teachers who already have sufficient leadership attributes to undertake a major role in providing the need to fill the void in the nation's current drive for entrepreneurship education in local universities. This group of educators should be versatile in their teaching approach, moving away from the conventional classroom style methods but more than ready to involve and participate actively in non-academic activities down to community level doubling as social entrepreneurs when needed. With additional knowledge on entrepreneurship and renewed skills they acquired these transformed educators can also act as the agent for change for some of the social and economic programmes available in many regional development authorities in the country. The changing role of academicians in fact began to take place some years back when the Ministry of Higher Education stressed on the need for academic staff to undertake research and publish their work. Academicians are now binding themselves to the term "publish or perish". Again, the role of academicians underwent another turning point when they were told that involvement in community services was obligatory for any promotion exercise.

### **Industry participation**

Besides lectures, tutorials, practical classes, field work and industrial training, the curriculum also include sharing experiences with industry expertise and company CEOs on entrepreneurship and businesses in periodically held talks. The talks can be scheduled once in three months. The students are mainly the participants of these talks while a number of local entrepreneurs are invited to join in, so as to provide the platform for the students to interact and acquire first hand information from them. These experiences and exposures are expected to develop interest and inculcate entrepreneurial spirit among students and thereby understand at close quarters the long and winding road in the arena of entrepreneurship.

Industries should also be involved in conducting lectures with an industry or private sector input of at least 10% of the total number of lectures for a given course. Public universities should be encouraged to set a guideline of embedding active involvement of experts or talents from selected industries or business houses in their curriculum either through lectures or seminars so that they could share their experiences of translating knowledge to practices with the students. Their involvement in teaching and learning will undoubtedly provide insights to the students on the importance of knowledge economy in the ever challenging field of entrepreneurship.

In UMK the setting up of the AGE (Action Group for Entrepreneurship) Council comprising CEOs of companies and industries in various disciplines was a result of the need to formalize such an arrangement apart from mainly assisting the university in giving entrepreneurial advice and sharing experiences with the academic staff as well. The other roles of the Council include improving the academic content of teaching programmes where needed, enhancing the delivery systems of entrepreneurial education, implementing the agenda of social entrepreneurship and collaborating in research, innovation and product commercialization.

Industry attachment of academic staffs is one other facet of entrepreneurial training which should be in place primarily geared towards transforming them to take the additional role as entrepreneurial educators and putting them through the mill on short term basis will undoubtedly inculcate in them the necessary attributes required of an entrepreneur. Staffs that are selected for attachment will be those whose interests and expertise should be directly relevant to the industry or business and such attachment should not be a one-off exercise but held on a regular annual or biannual basis.

The involvement of industry does not end there but where the private sector will also have to play the important role of providing industrial training for grooming the students to face the realities of the business world.

### **Learning Support Programmes**

Established learning programmes of any university which aspires to train students to acquire entrepreneurial skills should further be supported by a short stint during semester breaks where for 10 - 14 days the emphasis is not merely on learning and experiencing a piece of the working world, but on how to help small and medium industries and enterprises improve and be more efficient in their businesses. In UMK, the strategy to complement the academic teaching courses with the required

entrepreneurial component was developed and the programme called *Students in Enterprise Programme* (SIEP) which really is an extension of a basic internship-cum-practical training aspect of all degree programmes and which carries two credit hours. The students are given the liberty to choose the industry, business or enterprise which they would like to be engaged in. They would then proceed to observe 'entrepreneurship-in-practice' in the actual business environments that are related to the courses taken. The observations they make among the enterprises must lead to the production and presentation of a proposal for how these businesses can expand, grow and be more profitable. The SIEP will take the students through the 'Foundation' phase, leading to a 'Specialization' stage culminating with a 'Realization' final year project. This programme, which is mandatory for every student is none other than an extension of 'problem-based' learning to our very own 'project-oriented-based' learning.

Talks and seminars specifically on entrepreneurship related to the course taken in the university and held over the weekends, at regular intervals, where speakers specifically identified are invited to deliberate on selected topics related to the course taken should help to strengthen further the desired attributes. These talks should be such that it provides students as an eye opener to the broad array of potential business opportunities out there that could be created. The success, albeit on a limited scale with UMK, of these talks on the students can be viewed from the feedback obtained from some enterprising students who would want to venture on a small scale business project while they are here in the university.

Besides that, programmes that will support the learning process should include amongst others Enterprise Saturday, Business Plan Competition, Entrepreneurship Forum and Exhibition to be thought out, initiated and carried through. Amongst themselves students within a faculty should not be left to their own devices. A Students Entrepreneurial Club (*Kelab Keusahawanan Pelajar*) should be set up by the students themselves, if none is yet established, with the primary objective of ensuring new intake of students coming on stream into the faculty to not only promote healthy social interactions with their seniors and familiarizing them with the learning environment but more importantly to mobilize them into preparing and getting involved directly with some retail business activities. Also through the club, the students on their own could organize and manage some small business enterprises like buying and selling of products produced by the Club's companies to fellow students and staff members. At some point later in its existence, club members can then be thinking of setting up a co-operative wing and the exposure and experience gained in managing the club's co-operative can be a plus point later in life should any one of them wish to venture to run a Cooperative Society. The Club



should not only restrict itself solely to business activities but the members should endeavour to organize student led activities like cultural shows, sports carnival, social and community work, etc which will inevitably enhance entrepreneurial attributes among these students. These kind of activities and programmes, with minimal guidance and supervision from faculty members, will in no small measure endowed the students with, not only leadership and management skills, but also instill in them self confidence and the spirit of teamwork.

### **Student-owned businesses**

The establishment of companies among students can be one of the indicators of the successful inculcation of entrepreneurial education. These businesses run by the students' management team should consist of students from all levels, Years 1 to 4, to ensure the sustainability and continuity of the companies. In situations where the students were seen to show interest and enthusiasm in wanting to excel in their respective businesses, the university or faculty has to initiate a business-credit and incubator programme for them to kick start their project. The students should work in small groups and ought to come up with a viable business proposals related to their academic programme taken in the respective university. The newly established companies will have to be monitored closely by the faculty particularly in the setting up of the infrastructures for the running of the company. Through the companies, students should be able to learn by going through a wide diversity of entrepreneurial experiences and acquire relevant generic skills. The university, on the other hand, should be prepared to allow some of the successful companies be brought together with the students when they leave the campus upon graduation.

Apart from the students-owned businesses, it is imperative that the university and/or faculty establish the right business ecosystem which should form the business arm for income generation. All the staffs must be encouraged to participate in business activities using whatever available expertise to organize short term courses or training particularly on technology transfer and commercialization, product development strategies, joint venture projects with the student companies, consultancy and contract research.

### **Acculturation of Entrepreneurship among the universities' communities**

Entrepreneurship is about the creation of human capital and therefore, the characteristics of the new generation of human capital must be a common determinant for success not only to students but the staff of the university. However, such traits will not be able to be taught, but must be acquired through continuous acculturation processes. Students and staff must be informed what are the elements

of entrepreneurship or the attributes of an entrepreneur which must be embedded in their daily chores. Concepts of innovativeness, creativity, risk taking, leadership qualities, brave diligent and many more must be practiced in their work which will enhance their work productivities, speed and quality. The whole university's community ought to be revolutionized to include entrepreneurial attributes in human capital development through continuous professional development programme for staff.

The process of acculturation cannot be accomplished by a staff or a small group of staff. The process needs a strong leadership who is able to put the resources into action, translate policy into practices and monitor outcomes for improvement.

### **Transformational leadership**

Becoming entrepreneurial needs quality leadership, being entrepreneurial is about acquiring leadership skills and delivery of entrepreneurial education need transformational leadership. Therefore, developing leadership qualities accentuated with entrepreneurial attributes can be regarded as a necessary attempt to add another dimension in the development of human capital. Such leadership qualities form an essential prerequisite for advancing and promoting quality education which universities stakeholders demand these days. The present style and quality of leadership has, therefore, to be transformed first to another plane to meet the expectation of the ever mindful students and discerning parents in the current global scenario where higher education play a vital role in nation building and the economic development of a country. Transformational leaders do not come around everyday and therefore the present group of people who are given the responsibilities as leaders must be ready to undertake great leaps in the paradigm shift in becoming leaders who will make differences. Even before entrepreneurial attributes can be introduced in developing human capital in general, prevailing leadership qualities in all areas of governance have to be looked at seriously for many of its shortcomings and dealt with urgently. Leadership qualities then have to be transformed first before any attempt at instilling entrepreneurial elements are introduced.

To start with academic leaders in the universities must be sufficiently knowledgeable in their own domain, research oriented and willing to push the frontier of knowledge a level higher, skilful in managing available resources and assets, display a high level of competency in discharging duties and can articulate reasonably well, creative always generate new ideas with innovative approaches, proactive and able to resolve conflicts when confronted, risk taking and wanting to make a difference but above all able to rise to the occasion when called upon (Ibrahim and Zainai, 2010). Self confidence,

good communication skills, being visionary, ready to make and accept changes, competitive spirit are some of the attributes that make a good leader.

## **Conclusion**

Entrepreneurship education is a new approach in imparting knowledge and knowhow to students. The transformation of the entire academic system has already started under the directive of the Ministry of Higher Education where the ultimate objective of the Ministry is to ensure that large population of graduates churned out by local universities are marketable to overcome the increasing perceived problem of graduate employability particularly in the private and business sectors. These set of students sufficiently molded during their 4-year stay in the campus would have developed the desired mindset and the right attitude equipped with entrepreneurial skills ready to plunge themselves into the ever challenging competitive world out there. The employability of such enterprising graduates would have in a big way address the increasing dilemma of local graduates not being able to get employment in both the public and private sectors merely on the strength of their degree certificates they hold as in the past. These graduates should be marketable in any profession they choose to work as they have readied themselves for the difficult times ahead.

## **References**

- AliasMasek and Sulaiman-Yamin, (2010). *Cultivating Entrepreneurial Skills: A Review of the Problem Based Learning Models*. Paper presented at the National Conference on Engineering Education and Entrepreneurship 2010. 25 - 26 September, 2010. Kelantan Trade Centre, Kota Bharu, Kelantan.
- Anwar Ismail, A., Kassim Buhiran and Aweng Eh Rak, (2010). *Merging Entrepreneurial Knowledge with Science and Technology - UMK Initiatives: A Drive to Prepare Employable Graduates*. Paper presented at the National Conference on Engineering Education and Entrepreneurship 2010. 25 - 26 September, 2010. Kelantan Trade Centre, Kota Bharu, Kelantan.
- Aweng Eh Rak, Wong Yee Ching, Nurul Syazana Abdul Halim and Yah Awg Nik, (2010). *Challenges in Inculcating Undergraduates with Entrepreneurial Characteristics*. Paper presented at the National Conference on Engineering Education and Entrepreneurship 2010. 25 - 26 September, 2010. Kelantan Trade Centre, Kota Bharu, Kelantan.

- Akpomi, M. E. (2009). Entrepreneurship Education (EE) for all Students in Higher Education Institutions (HEIs) in Nigeria: A Means to Sustainable Development. *Journal of Sustainable Development in Africa*. 11(1).
- Bukola, A. B. (2011). Entrepreneurship Education: An Imperative for Sustainable Development in Nigeria. *Journal of Emerging Trends in Educational Research and Policy Study*. 2(1): 26-29.
- Isaacs, E., Visser, K., Friedrich, C. and Brijlal, P. (2007). Entrepreneurship education and training at the Further Education and Training level in South Africa. *South Africa Journal of Education*. 27: 613-629.
- Ibrahim Che Omar and Zainai Mohamed, (2010). *Transformational Leadership: The Driving Force for Entrepreneurship*. Paper presented at the National Conference on Engineering Education and Entrepreneurship 2010. 25 -26 September, 2010. Kelantan Trade Centre, Kota Bharu, Kelantan.
- Ingleton, C., Killely, M., Cannon, R. and Rogers, T. (2000). *Leap into...Student-Centered Learning*. Centre for Learning and Professional Development. The University of Adelaide.
- Lee S. W., Faliq Adeeba Wan Ibrahim and Noor Janatun Naim, (2010). *The Transformation of Scientists to Entrepreneurs*. Paper presented at the National Conference on Engineering Education and Entrepreneurship 2010. 25 - 26 September, 2010. Kelantan Trade Centre, Kota Bharu, Kelantan.
- Syed Muhammad Al-Amsyar, Mohammad Khairul Azhar Abdul Razab and Noor Azlina Ibrahim, (2010). *Approaches in the Pedagogy of Entrepreneurial Teaching*. Paper presented at the National Conference on Engineering Education and Entrepreneurship 2010. 25 - 26 September, 2010. Kelantan Trade Centre, Kota Bharu, Kelantan.
- Tellis, W., (1997). Application of a Case Study Methodology. *The Quantitative Report*. 3(3): 1-17.