

A CONTEMPORARY APPROACH TO ENTREPRENEURSHIP EDUCATION AND TRAINING



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ABSTRACT

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The higher learning institutions (HEIs) should constantly strives to strengthen and enhance efforts to promote the inculcation of entrepreneurship values among the students. Indeed the HEIs should be a catalyst for long-term development of an entrepreneurial culture and assist in providing a conducive entrepreneurship ecosystem. Besides, HEIs encouraged to act as a bridge between academics, industry, entrepreneurs and relevant agencies and be able to coordinate the development of entrepreneurship education aligned with national policies. HEIs entrusted to look at entrepreneurship in a holistic manner so they can contribute to the desired human capital development as well as nation building. In this vein, innovative entrepreneurship education model is timely and that requires a strong research initiative. In this article we have proposed innovative entrepreneurship education model and measurement tool that fits different types of institutional settings. The entrepreneurship framework highlights the practice and reliable ways of assessing the innovative entrepreneurship building success.

Contribution/ Originality: This study is one of very few studies which have investigated the innovative entrepreneurship education frameworks and provides practical resolutions to advance the offering of entrepreneurship education at the higher learning institutions.

1. INTRODUCTION

In the last two decades, various programmes and initiatives were undertaken by the HEIs to expand entrepreneurial education. In this regards, the entrepreneurial activity should not be studied as a separate activity from teaching and research and the HEIs should have a different mission to encourage new trend of developments. To this end, in response to the economic difficulties in different parts of the world, HEIs provide support to students by stimulating their interest towards embracing an enterprising discipline. This is done through its innovative entrepreneurship education, where it has intrinsically invested significantly in developing graduates who are responsive to the needs of the modern industries.

The importance of innovation in entrepreneurship is a key value for the longevity of a business. The new breed of enterprising youths will not only contribute to business growth, profitability and wealth creation but will also impact the external environment and economy as a whole by increasing productivity, improving best practices, creating new industries and enhancing international competitiveness and contributing to the growth and development of a knowledge-based economy and society. Without doubt, innovative oriented education programmes have an important role to play in improving the entrepreneurial key competence of entrepreneurs. There is a need to stimulate the entrepreneurial mind-sets of young entrepreneurs and to create a more favourable societal climate for entrepreneurship. HEIs are a source of key assets for an innovation-led economy. They provide skilled people and valuable researchable ideas. They attract other key economic development resources, such as educated people, firms and venture capitalists. HEIs which have been successful in teaching and research have vast untapped resources for nurturing and establishing innovative start-ups and innovation-based ventures. Through innovative entrepreneurship programme, the HEIs becomes the agent of industrial innovation, technological development, economic development and social development especially in the context of growing knowledge-based economy.

Top management of HEIs should do their best to enhance academic researcher's commitment and encourage an innovative entrepreneurship performance via creating an appropriate entrepreneurship atmosphere to achieve those ends. Entrepreneurship advocates in general assert that HEIs lack specific policies oriented towards the success of its entrepreneurship programmes, the start-up and growth of innovative high-growth and technology-based enterprises and that the nation will lose competitive advantage if these are not put in place (Regina and Grahame, 2007).

Although HEIs can point to any number of good examples of programmes and initiatives, these are generally not the outcome of a cohesive integrated higher education entrepreneurship policy framework. One might observe that HEIs have policies for entrepreneurship, but not skewed towards innovative entrepreneurship (Shima and Thomas, 2009). Researchers argue that a 'stand-alone' entrepreneurship policy may be an appropriate approach in an environment that already has a strong culture of entrepreneurship. In an environment where there are cultural, regulatory, structural and other barriers to general entrepreneurship, there may be an economic cost to focus primarily on technology-based innovative entrepreneurship (McGrath, 1999; Rae, 1999; Jongbloed *et al.*, 2008).

Grooming young talents is essential for national capacity building which requires experiential opportunity through Start Up companies in real world situations. This is vital to ensure the students and academia are engaged and focused in understanding the real business environment that is dynamic in nature. The entrepreneurial ecosystem involves developing human capital and critical talent, establishing awareness and outreach programs, setting up public and private partnerships, and involving multiple sources of innovation. The development of such ecosystem that is growth generating is important to ensure that capacity building for innovative entrepreneurship programmes is materialized. Ultimately, the researchers propose that policies in favour of innovative entrepreneurship as a target approach should be considered in the context of a holistic entrepreneurship policy framework which addresses all the other issues, such as societal support for an entrepreneurship culture, promotion of entrepreneurship, entrepreneurship education in school and higher education, general administrative, regulatory and legislative barriers to business entry, flexible labour markets and business support measures for the development of nascent entrepreneurs in their pursuit of any manner of business idea (Etzkowitz and Klofsten, 2005; Rothaermel *et al.*, 2007; Goldsten, 2008; Pilbeam, 2008; PACEC, 2009). In this article, we have identify reliable ways of assessing the innovative entrepreneurship building success in higher education system in respect of its impact on the entrepreneurship programmes, the entrepreneurial intention, impact to society, economy, and human capital development. We propose a dynamic model for innovative entrepreneurship education that fits different types of institutional settings. The assessment index to score entrepreneurship programme effectiveness which includes both 'hard' and 'soft' factors provided in this article.

2. ENTREPRENEURSHIP EDUCATION FRAMEWORK

Foundation courses in entrepreneurship should be offered to all undergraduate students during their first year at the higher education institutions (HEIs) to influence their mind-set right from the beginning and create an awareness, understanding and capacity of an alternative career option as an entrepreneur. The exposure during the early stages of university or college life provides students a platform to build depth and capability in preparation for an entrepreneurial career at the point of graduation. The courses should be offered within the curriculum of undergraduate studies. The introductory courses in entrepreneurship are obligatory and it should be designed to suit different need of students (Science and Technology fields and Social Sciences fields). The course context should not dominantly that of business nature with the pedagogical range used is narrow and over-focused upon business cases when they are applied to non-business situations. Students, who are seriously planning to be entrepreneur and keen to explore new venture creation, should be supported. Advanced entrepreneurship courses should be offered but not included as part of their undergraduate curriculum. The courses should be offered during the weekends so that it do not interrupt the other undergraduate programme curriculum. This group of students must be nurtured by well-designed pedagogies and exposure to real life business or ‘hands on’ experience. Indeed the initiative to nurture entrepreneurship spirit should not just stop at the faculty level through a compulsory entrepreneurship courses. The introductory courses of entrepreneurship should be reflected in the advanced courses. This is to ensure that the nurturing of entrepreneurial spirits among the younger generation could sustain over a longer term. This role should be performed by a “Centre of Entrepreneurship” within the institution that focuses primarily on “learning by doing” approaches. Students who have successfully completed the advanced course should be awarded with extra professional certificates in recognition of their efforts. In the event students intend to be employed by any organisation, the extra certificate besides their bachelor’s degree will be an added advantage for them to compete for employment in the open labour market. Centre of Entrepreneurship / Entrepreneurship Institute should take the lead role in advancing students entrepreneurial competence. Four steps recommended at this stage which will help students determine their suitability for advanced entrepreneurship.

Step 1: Project Selection

Step 2: Project Planning

Step 3: Project Implementation

Step 4: Project Evaluation

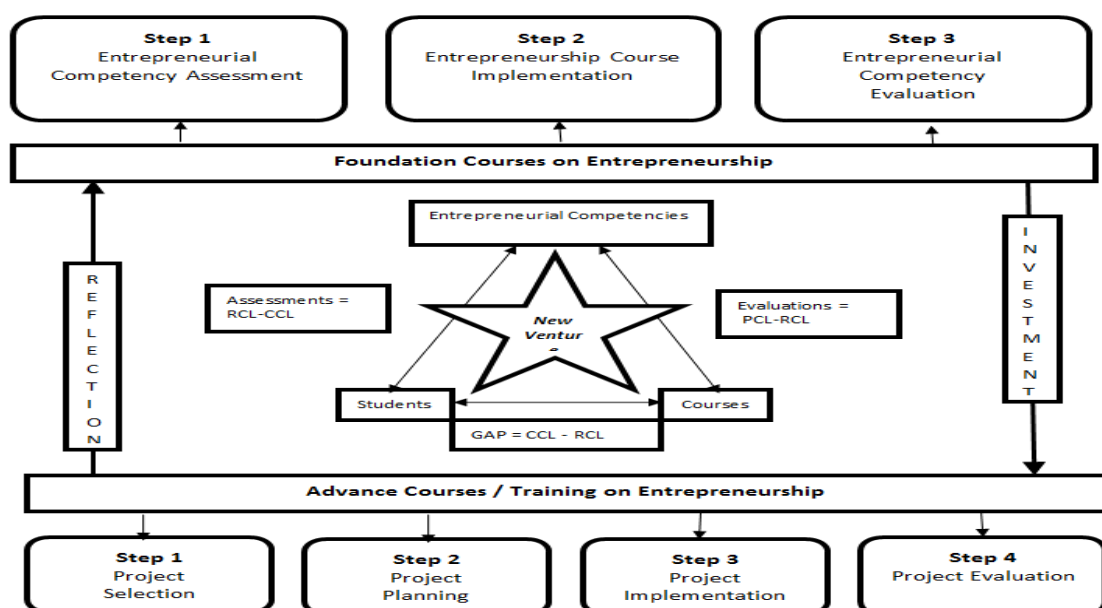


Figure-1. Entrepreneurship Education Framework

Source: Kumar et al. (2014)

Phase-1. Foundation Courses on Entrepreneurship

The focus of foundation level courses is on educating for entrepreneurship (assisting students to develop the necessary competences) and not solely *about* entrepreneurship (imparting knowledge). Three basic steps are recommended to teach entrepreneurship courses and to gauge students' readiness to be entrepreneur: Step 1 : Entrepreneurship Competency Assessment (Profiling of students); Step 2 : Entrepreneurship Course Implementation (Delivery of the courses); and Step 3 : Entrepreneurship Competency Evaluation (Readiness for business start-ups). We have elaborated the steps in following sub-sections.

Step-1. Entrepreneurial Competency Assessments

- **Entrepreneurship Competencies**

Students might have been exposed to the basis of entrepreneurship and various facets of business ownership at the primary and secondary levels of school education. Students will also have experienced certain forms of enterprise at school, college, or elsewhere as they mature. It is the role of educators to encourage students to reflect critically on their prior learning and experiences in entrepreneurship. Diagnostic assessment can help determine the previous skills of students who are new to enterprise education in particular and those who are not from business and management fields. Both students of entrepreneurship and faculty will find enormous value in this best practice. The assessment enables educators and students to:

- Assess current understanding of entrepreneurship,
- Understand current state of entrepreneurship proficiency,
- Understand abilities and learning plan,
- Determine the degree of learning upon completion of the targeted learning outcome,
- Measure on-going progress and achievement in their engagement with the course.
- Understand students composition,
- Adjust teaching strategy appropriately to the needs of students and classes,

In the actual world of business, entrepreneurs are required to exhibit a range of competencies in order to perform a set of duties. The entrepreneurs' competency profile that is well documented in the literature and discussed earlier in this report will be used to generate required competency levels (RCL) for successful venture creation. Knowing and developing skills and competencies are key to success. These skills and competencies are core to every entrepreneurship program. The "Entrepreneurship Skill and Competency Assessment" promotes the design, development and maintenance of a quality entrepreneurship curriculum. Students and faculty must work together to maximize the effectiveness of this assessment.

- **Assessment**

Once the RCL identified, the next obvious step is to compare the students against the requirements of skills, knowledge and attitude for successful venture creation. This process is called as "Assessment". There are different techniques of assessment practiced such as review, tests, simulations, check lists, and so forth. The technique used is decided after consideration of the field of studies and other situational factors in HEIs. The entrepreneurship competency assessment promotes the design, development and maintenance of a quality entrepreneurship curriculum. Instructors work synergistically through the use of this assessment profile.

- **Students**

After completion of assessments, each student is rated on how well they demonstrate competencies required to be successful entrepreneur. At this stage, the lecturer should be able to gauge Students' current competency level (CCL) against the list of RCL.

- **Gap Analysis**

As illustrated in the framework, the difference between current students' entrepreneurial competency and required competencies to be successful entrepreneurs reveals competency gaps. With the identification of competency gaps for entrepreneurship, the entrepreneurship instructor should be able to administer the teaching-learning techniques. Assessments must align directly to the expectation established by the instructional objective. Having the right entrepreneurial competence is extremely useful and it enables success in entrepreneurship. Possessing the necessary knowledge, skills, attitude are valuable ingredients in achieving success.

Step-2. Entrepreneurship Course Implementation

The completion of initial entrepreneurship profiling exercise helps the instructors to put forward various interactive activities within the course to narrow down the competency gaps while increasing the students' attentiveness toward the course being taught. It is common that objectives, contents and methods of teaching differ according to the level of education. At the undergraduate level the focus of entrepreneurship courses are to instill generic competencies of entrepreneurship and to stimulate interest in self-employment and new venture creation. The entrepreneurship courses delivered in the HEIs should be differentiated in terms of the contents of teaching and means of delivering to facilitate students in science and technology as well as social sciences fields. This is a good attempt for the reasons that majority of students in non-business studies do not have an extensive knowledge of business subjects, thus the best way of motivating students is by presenting examples from the relevant technical area. Entrepreneurship within science and technology studies is especially concerned with exploiting intellectual property, creating spin-off companies and venturing, and issues such as functional management techniques; commercialization; patenting; financing and internationalising high-tech ventures. Entrepreneurship within business and social sciences studies focuses on business start-up and new venture creation, and on the management and new venture growth.

The teaching should be tailored to the specific needs of different field of studies. For instance, students in the field of science and technology will be attracted by cases of "technology entrepreneurship", and not by entrepreneurship in general. The entrepreneurship courses offered by HEIs should be carefully constructed in order to address generic and specific entrepreneurship competencies. It is strongly recommended that the entrepreneurship education extended beyond knowledge acquisition to a wide range of emotional, intellectual, social, and practical skills. Specifically the courses offered not only relate to start-ups, but also include aspects of intrapreneurship and encouraging enterprising individuals across the journey of work-life. Table 1 provides a good sample of entrepreneurship contents from Universiti Teknologi MARA (UiTM), one of the pioneer university focused on entrepreneurship education in Malaysia.

We have studied the course descriptions and the synopses of Babson College Course Catalog (# 1 Rank in Entrepreneurship Programs) and University of Southern California Curriculum (# 3 Rank in Entrepreneurship Programs) and found that the course outlines of the two UiTM entrepreneurship courses as in Table 1 contains good array of critical elements of entrepreneurship education that are not limited to start-ups and innovative ventures but also on student's ability to turn ideas into action. The key competence (entrepreneurial capacities) taught in the courses helped young students and graduates to be more creative and innovative in whatever they undertake.

Table-1. Entrepreneurship Course Outlines

Principles Of Entrepreneurship		Technology Entrepreneurship	
Course Outcomes		Course Outcomes	
At the end of the course the students should be able to :-		At the end of the course the students should be able to :	
1. Understand the key concepts of entrepreneurship		1. Explain and demonstrate the concept of technology entrepreneurship.	
2. Describe and discuss the key concepts of creativity and innovation, risk taking and other key dimensions of entrepreneurship		2. Apply knowledge and skills in identification of technological-based business opportunity.	
3. Able to detect viable entrepreneurial opportunity as well as various approaches to new venture creation		3. Evaluate and translate cutting edge technology into marketable products.	
		4. Develop a feasibility study of technology-based business idea.	
SYLLABUS CONTENT		SYLLABUS CONTENT	
1.	Entrepreneurship & the Individual Entrepreneur Mindset	1.	Introduction to Technology Entrepreneurship
2.	Entrepreneurial Management	2.	Creativity and Innovation in Technology
3.	Generating & Exploiting New Entry Strategies	3.	Opportunity Analysis
4.	Creativity, Innovation & the Business Opportunity	4.	Technology Revolution (New Product Development)
5.	Assessing the Entrepreneurship Environment	5.	Feasibility Studies
6.	Starting a New Venture	6.	Intellectual Properties
7.	Preparation of Business Plan	7.	Commercialization of New Technology
8.	Financing the New Venture	8.	Financing of Technology Venture
9.	Managing Early Growth of the New Venture	9.	Managing Growth
10.	Harvesting & Exiting a Business Venture	10.	Divestiture/Harvest Strategy
11.	Contemporary Issues in Entrepreneurship	11.	Technology Based Business Project/Blueprint

Source: Kumar *et al.* (2014)

Generally, entrepreneurship courses offer students the tools to think creatively, be an effective problem solver, analyse a business idea objectively, and communicate, network, lead, and evaluate any given project. Nevertheless, in some circumstances students might remarked that they feel less confident about setting up their own business. This clearly shows that the teaching-learning of entrepreneurship courses lacks stimulus or activities that can change mindsets. As mindsets take shape at an early age, entrepreneurship is something that should be fostered to have balanced number of students to choose self-employment as a choice in comparison with paid-employment. We noticed that the social entrepreneurship and family business aspects are lacking and therefore it is recommended that these elements appears more often in the syllabus to increase students participation in volunteerism and social activities which is important for society. The introduction to social entrepreneurship should cover the analysis of social enterprise models from micro-finance to job development. This unit should analyze in detail the basic issues regarding the differences between socially responsible companies, for-profit, and non-profit-run enterprises. The students should be exposed to many institutions that supports entrepreneurs and social entrepreneurship. It is imperative that social entrepreneurship is incorporated within both teaching, experiential learning and enterprise support initiatives to ensure that students and graduates contribute to the national social agendas.

Step-3. Entrepreneurial Competencies Evaluations

Teaching, learning and assessment should be constructively aligned. Assessment methods should allow students to demonstrate the attainment of specified learning outcomes. In all cases, assessment should be valid and reliable, supported by clear, published criteria for marking and grading, so that students understand clearly what is expected of them, especially when flexibility and adaptability are the key outcomes. Assessment should be accompanied by a clear and timely feedback. Entrepreneurship course assessments can be formative as part of the instructional process or summative at the conclusion of instruction to demonstrate entrepreneurial competency.

Prior to the end of the entrepreneurship courses (final week of the course plan), students must be evaluated to gauge competency gains from the course taught by respective educators in different fields – science and technology; and social sciences. Increased entrepreneurial competency levels of students and subsequently their intention to embark on new venture creation need to be profiled. Evaluation must therefore be adapted to the objective and to the entrepreneurial competencies to be developed. The quality of the courses needs to be assessed according to the objectives fixed. Ideally, planning the evaluation work is a process that starts with the course design. In this case, the evaluation of the course quality should be related to the pedagogies and the various methods used. Since the entrepreneurship courses aims to develop the entrepreneurial intention of students, the programme quality can be gauged through a advanced questionnaire assigned to students to understand their perceptions of entrepreneurship, their self confidence to engage in an entrepreneurial activity and their perceptions of their capacity to detect opportunities and to exploit them.

The high absorption of entrepreneurial competency gives a good indication that the courses achieve its intended learning outcome. The final profile of students must be compared with the earlier profile to assess the effectiveness of the course in boosting students' awareness and intention to choose self-employment as their career option. One of the indicators on the success of the courses are the number of students who are looking forward to join advanced level training to enhance their entrepreneurial competence. At the end of the entrepreneurship courses, students on the basis of what they discover about themselves can seek personal challenges after taking into account their limitations. They should be able to discover the extent to which they are willing to put their learning into practice in their daily life and, eventually, in starting up a business or as an intrapreneur working for an organization. If the students find themselves suitable for entrepreneurship, then they should be guided and supported with advance entrepreneurial mechanisms. At this stage, the students with the assistance of educators are able to determine the future needs of entrepreneurs after completing courses as a mean to prepare themselves to take the role of entrepreneur. The advance courses need to be taught by the "centre of entrepreneurship" whereby the teaching-learning methodology should be "learning by doing". We reemphasize [Gibb \(2005\)](#) testimonial that entrepreneurial behaviours, skills and attributes, nurtured by well-designed pedagogies and exposure to experience are essential components of being able to 'feel' what it is like to be entrepreneurial and are arguably key to the creation of entrepreneurial values through learning. Some of the key indicators that determine the suitability for entrepreneurship are as following:

- Students make connections between his/her entrepreneurial learning experiences and the requirements of entrepreneurship
- Students make connections between his/her entrepreneurial profile and the type of involvement he/she is well-matched for
- Students set personal challenges (entrepreneur or intrapreneur working for an organization?)
- Decision to take advance entrepreneurship courses / training

Phase-2. Advanced Entrepreneurship Courses / Training

Foundation courses in entrepreneurship must enhance the intention of students to become entrepreneurs and these courses must be offered within the program of study. Advanced courses should be offered to students

/graduates who are ready to setup their own ventures. The advanced level courses must provide students with 'hands on' experience. The pedagogy itself should contain entrepreneurial and enterprising experiences and opportunities. Just knowledge about entrepreneurship is not an adequate basis for enhancing entrepreneurial behaviours, and to sustain the entrepreneurial spirit of young people. Besides the content or pedagogy, the whole action learning that is close to real business life must be well embedded in the advance level courses.

In the advanced courses of entrepreneurship, the emphasis is on creating an opportunity for students to feel entrepreneurial that requires a teaching methodology which creates opportunities for students to "learning by doing". This approach creates very real challenges as entrepreneurial learning can be seen as a process of "learning from mistakes" and incremental perfection, something that is hard to accommodate within traditional academic curriculum. For this reasons, the role of "centre of entrepreneurship" has been put forward to champion the advance need of entrepreneurship competence. Longer teaching-learning timeframe required at the second phase, for students/graduates experience the real business. At this stage, students can take time to explore business ideas and a variety of ways to plan the business. Although, it is still only an educational experience, students must gain a greater depth and breadth of knowledge than they may have from previous basic entrepreneurship courses. This stage encourages students to create a unique business idea and carry the decision-making process through a complete business plan. The best programs enable students to experience the operation of a business as well. The outcome is for students to learn how it might be possible to become an entrepreneur and to practice the processes of creating and running a business. The ultimate objective at this stage is to learn how to engage in start-up activities. The evaluation can be based on students' performance in developing and presenting a business plan and their capacity to sell their project. Contact time for this course will be split between in-class sessions and out-of-class individual meetings with the instructor. Implementation of an entrepreneurial project is the major task at this stage of learning.

Table-2. Steps in Developing an Entrepreneurial Project

Steps	Action
Step 1: Project Selection	<ul style="list-style-type: none"> • Determines a community need on which a consensus has been reached among team members. • Considers a range of possible projects to meet this need • Considers each team member's interests, aptitudes and personal challenges • Agrees on an innovative and realistic response
Step 2: Project Planning	<ul style="list-style-type: none"> • Plans the tasks to be carried out • Determines the responsibilities of each team member • Specifies the necessary resources • Finds partners • Draws up a schedule for carrying out the project • Formulates entrepreneurial indicators • Anticipates difficulties • Plans strategies to deal with difficulties • Plans an ongoing regulation process
Step 3: Project Implementation	<ul style="list-style-type: none"> • Uses the appropriate resources • Adheres to the project schedule • Resolves difficulties as they arise • Reworks the project if necessary • Adapts his/her interactions
Step 4: Project Evaluation	<ul style="list-style-type: none"> • Examines activities carried out in light of the indicators retained • Explains the results obtained • Recognizes what can be reapplied from past experiences

Reference: Québec (2006)

Table 2 outlines a process that students can apply in developing a suitable project. Entrepreneurial project gives students an opportunity to develop and sustain entrepreneurial spirit. In addition to the knowledge that students have acquired in their basic courses, students are able to:

- Assesses his/her ability to take action
- Defines his/her areas of interest
- Recognizes his/her strengths and limitations
- Observes the effect of his/her experience on his/her type of entrepreneurial involvement
- Determines areas for improvement
- Develop their entrepreneurial profile

3. OUTCOMES: ENTREPRENEURIAL COMPETENCE AND NEW VENTURE CREATION

After evaluations, the framework must be systematically repeated for the future students to become fully competent. The framework is consciously built with development of students' entrepreneurial competencies rather than for punishing them for entrepreneurial incompetence and not choosing self-employment as their priority. Thus, continuous application and development of the framework results in improved students' entrepreneurial competence. Students who undertake an advanced entrepreneurship courses/training should have learned to deal with the differences between theory and actual entrepreneurship experiences. They should be able to analyze their strength and weaknesses, successes and mistakes in order to learn lessons that can be useful to them in future start-ups. Such reflection will also help them to boost their entrepreneurial profile and clarify their suitability with regards to new venture creation. The continuous feedback and reflection from students and entrepreneurship educators help in further teaching-learning methodologies of entrepreneurship courses. The strong bond between the fundamental entrepreneurship courses educators and the 'centre of entrepreneurship' is crucial to bring about constructive development in entrepreneurship courses at both the entities.

Students who seek to get involved in voluntary entrepreneurship initiatives should be backed by the institution or facilitating organisations. All students should be exposed to the opportunity of acquiring entrepreneurship-related teaching and experiences. This is important to get the students / graduates closer to the volunteerism mindsets. It is essential to avoid important knowledge or skills being held by only a few people, because in their absence the experiences could be lost to the community. The centre of entrepreneurship, must build an efficient ways of sharing knowledge across the HEI and by this the return on investment on entrepreneurship education is made clearer while its value and effectiveness are likely to be maximized. The best ways of sharing new ideas and information with current students and instructors is to have weekly forum where entrepreneurial students and lecturers will be requested to share ideas and best practice. Holding innovation workshops or brainstorming sessions also encourages others to think of ways in which the business could be successfully formed improved in growth. The information and communication technology could be used to create knowledge bank containing useful information and instructions on how to carry out key tasks on new venture creation. The local cases (experiences of students on new ventures) should be made available to all students regardless of their discipline of studies. Dissemination of such practical information on intranet is ideal as it will encourage continuous dialogue and inquiry culture and in which unremitting flow of information to boost more actual participation of innovative entrepreneurs. A series of short case studies, highlighting small scale and large scale successes, and importantly failures, should be developed to assist in enabling less confident students to identify with successful students /graduates and raise awareness of support mechanisms in a relaxed way. Without the requisite entrepreneurial behaviours, skills and attributes nurtured by well-designed pedagogies and exposure to experience, the goal of achieving a high value added high productivity economy among any community will remain elusive.

Table-3. Indicators for Measuring Entrepreneurship Education

Indicators	Measures
Input	<p>Common understanding by all stakeholders on the following:</p> <ul style="list-style-type: none"> • Course aims, objectives and learning outcomes • Course design and teaching-learning methods • Assessment of students • Course monitoring and review
Operations	<ul style="list-style-type: none"> • Entrepreneurship courses integrated into the curriculum of studies • Advance entrepreneurship courses / training conducted outside the curriculum of studies • Percentage of entrepreneurship educators receiving in-house and external training (teaching methodologies) • Number of entrepreneurship education activity carried out within the institute, local or regional levels • Institution engagement with the local business community
Output	<ul style="list-style-type: none"> • % of businesses who are involved with enterprise activity • % of students receiving advance entrepreneurship education at 'Centre of Entrepreneurship' established within the institute • % of students receiving entrepreneurship education in different programme of studies (Clusters : Science & Technology, Social Sciences & Humanities , Business Management) • % of students receiving entrepreneurship education as part of compulsory studies. • % of educators qualified to teach entrepreneurship courses
Outcomes	<ul style="list-style-type: none"> • % of students exhibiting entrepreneurial competences • % of students who became interested in becoming an entrepreneur due to entrepreneurship courses / training • % of students engaging in entrepreneurial activity • % of students considering self-employment as a career option • % of students who are offered industrial attachment (work based learning) • % of students gaining advance level qualification in entrepreneurship • Start- ups as proportion of students • Ratio of male to female engagement with advance entrepreneurship courses/training • % of working age (18 – 64) alumni (graduates) and students who are seeking to establish a business within 3 years • % of graduates and students who believe they have the skills/ knowledge required to start up a business • % of working age alumni (18 – 64) and students successfully completed the advance entrepreneurship courses / training.
Impact on the : <ul style="list-style-type: none"> • entrepreneurship key competence • intentions towards entrepreneurship • individual's employability • society and economy 	<ul style="list-style-type: none"> • % of graduates and current students who would rather be self-employed • % of students who start up a business after 3 years of entrepreneurship courses / training completion • % of young students / graduates (under 30) who have started their own business • % of new patents issued as an outcome of attending entrepreneurship courses / training • % of students employed within six months of their graduation (type of job/profession) • % of students and graduates able to use their creativity and new ideas • % of graduates receiving high level of job satisfaction and enjoy greater annual income • % of students and graduates involve in voluntary and non-commercial work • Types and rate of new firm formation (includes innovation capability, business growth and employment creation and annual income generated)

Source: Kumar *et al.* (2014)

4. WAY FORWARD

Table 3 provides the common indicators which could be used to measure the impact of entrepreneurship education. A proper tracking system with the aid of technology must be established to record the continuous contributions of entrepreneurship education at the individual level. Indeed the institution will be able to gauge 'returns on entrepreneurship education investments'. Policy makers and other stakeholders will be able to receive immediate, data-driven feedback on students and graduates entrepreneurial engagement.

5. CONCLUSION

Academic scholars continuously debate on the entrepreneurship education curriculum and the teaching-learning approaches. Some argue that entrepreneurship education should mainly focus on practical elements with less conventional classroom approaches that overload theoretical and conceptual contents to the students. Nevertheless, it is absolutely essential to employ methods such as lectures, assignments, class discussion, guest speakers, video clips, individual coaching, role plays, team teaching and teamwork in teaching entrepreneurship. If these methods are used then the intention to disseminate knowledge and groom potential skills of entrepreneurship can be successful. Certain entrepreneurship competencies are believed to be best absorbed when students are engaged in the actual process of inventing new business. The entrepreneurship curricula of the top business schools such as Babson College, Stanford School of Business, MIT Sloan School of Management, The London Business School and the Judge Business School, University of Cambridge embody their entrepreneurship curriculum with action learning mode whereby more teaching-learning activities occur outside the classroom such as internships with start-ups, creating and running small ventures on campus and working on small consulting jobs and so forth aimed to bring students closer to real entrepreneurs. Indeed these universities claim that many students become entrepreneurs immediately after graduation. Thus, considering the overarching issues on entrepreneurship education, two fundamental questions are put forward: (1) How effective are the entrepreneurship courses conducted by HEIs? (2) How can the structures, strategies, systems, leadership and culture be improved to inculcate entrepreneurship among students of HEIs? The HEIs should constantly strives to embed creativity, innovation and entrepreneurship into education and implement strategies to unleash entrepreneurial and innovative capabilities among the students. More specifically HEIs is encouraged to enhance knowledge and expertise of students in all fields of study through professional programmes, research work, and community service based on moral values and professional ethics. We have proposed a dynamic model for innovative entrepreneurship education to facilitate HEIs to achieve the desired entrepreneurship education agenda. We encourage the HEIs to use the assessment index to score entrepreneurship programme effectiveness which includes both 'hard' and 'soft' factors.

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