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Riding the Practice of Technopreneur Development: Innovative Entrepreneurial Teaching and Learning in Institutes of Higher Learning

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Abstract: Institutes of Higher Learning (IHLs) propose wide range of approaches in teaching entrepreneurship. However, it still remains a challenge to teach entrepreneurship across different inter-disciplinary fields. As discussed by many researchers, entrepreneurship educators have attempt to teach entrepreneurship without really understand what it is or what the proper goals of teaching should be. This paper aims to explore the innovative entrepreneurial teaching and learning (ETL) in order to answer Three (3) research questions i.e. How to foster the entrepreneurial culture towards innovative ETL?; What entrepreneurship knowledge is most worth in developing technopreneurs in IHLs?; and how should it be taught? Qualitative method strategy was employed in gathering data. The analysis thus aims at identifying models, programs and new initiatives that exist under the broad heading of ETL and at driving success factors implementation processes associated with best practice initiatives in ETL. The study moved from blending the theoretical and empirical study of innovative ETL programs to semi structured interview among the prominent real industrial players and key informers of entrepreneur development centers. The IHLs may utilize the research outcome in developing innovative ETL in their organization.

Keywords: Technopreneurship, Entrepreneurial Teaching and Learning, Entrepreneurial Education, Practical Approach.

I. BACKGROUND OF THE RESEARCH CONTEXT

Entrepreneurship and innovation are increasingly recognized as important drivers of economic growth and as a critical driver of job creation (Fritsch 2004; Acs and Armington 2006; Hermes and Lensink 2007; Karlan and Valdivia 2011). Most of the university centers for entrepreneurship have focused on three

major areas, i.e.: entrepreneurship education; outreach activities with entrepreneurs; and entrepreneurial research (Kuratko, 2004). Entrepreneurship education and development seeks to propose young generation to be responsible as well as enterprising individuals, who became entrepreneurs that contribute to economic development and sustainable communities (Raposo & Paco, 2011). Within on-going debate about the extent to which entrepreneurship can be learned, the literature indicates that aspects of it indeed can (Henry, Hill, and Leitch, 2005; Kuratko, 2005). Though, Haase and Lautenschlager (2011), underscore a series of argument to the contrary, suggesting that certain aspects cannot be learned. This point of view is allied to Akola and Heinonen (2007) standpoint that creativity and innovative thinking is not teachable, except through practical experience; while the latter business and management skills can be taught. According to Monitor Consulting Group (2012), one of the key success factors for entrepreneurship education is effective development of the entrepreneurial ecosystem, in which multiple stakeholders play a role in facilitating entrepreneurship. However, entrepreneurship educators have been attempted to teach entrepreneurship without really understanding what it is or what the proper goals of teaching should be (Duening & Stock, 2013). Relatively little is known about effective teaching approaches and corresponding learning outcomes (Haase and Lautenschlager, 2011). There are many theories and models emphasis on conventional entrepreneurship development (Foo and Foo, 2000), yet less focus of research on the entrepreneurial education for technical students. Though several theories and model on spin-off and high-tech start-up are proposed, however academic entrepreneurship criticisms still reveal on too academic in term of implementation, lack of practical knowledge, and inadequate commercialization activities and commitment (Litan et al., 2007 from Goldstein, 2010; Nelson as cited in Goldstein, 2010). This paper aims to contribute to a better understanding of fostering the entrepreneurial culture towards innovative ETL; the entrepreneurial competencies that explain the most worth entrepreneurship knowledge for developing technopreneurs in IHLs; and the ETL execution on how entrepreneurial knowledge should be delivered to the students. With the change in entrepreneurship education, this paper explores the innovative ETL approaches by taking consideration to all points of view from previous literatures on the debate about the extent to which entrepreneurship can taught and the contrary argument as well as effective development of the entrepreneurial ecosystem and innovative teaching and learning key factors. To achieve these objectives, multiple sources of evidence were used: the Resource-Based View (RBV) is adopted to analyse the current practice of innovative ETL which generate the competitive advantages in the context of technopreneur development in IHLs; and semi structured interviews of an open-ended nature (Yin, 1989, p. 89) to the prominent real industrial players and key informers of entrepreneur development centers. Interviews were critical to understand which were the most important factor and episode that should be focused on, in order to explain the current practice of innovative ETL, but documentation was the vastest source of data for the study.

II. THE CONCEPTUAL FRAMEWORK OF ENTREPRENEURIAL TEACHING AND LEARNING IN THE CURRENT PRACTICE

Entrepreneurial mindsets and entrepreneurial capabilities have been highlight as importance as cultivating entrepreneurial culture for innovative teaching and learning in many entrepreneurship development and education programs (Valerio *et al.*, 2012; *IEEC Concordat,* 2010; FHEQ, 2008). Academia and individual academic institutions are the primary source of new knowledge production and innovation (Brennan and Pauric, 2006). However, *"There are many challenges for us as entrepreneurship educators if we truly want to do the best*

job that we can in educating entrepreneurs…yet there is very little known about entrepreneurship education from a research perspective" (Klandt and Muller-Bolling, 1993, p.7). There are a wide range of approaches to teach entrepreneurship, focusing on personality traits, entrepreneurial behavior or environmental factors, with varying degrees of apparent effectiveness (Kuratko, 2011; Lautenschlager and Haase 2011; Streeter, Kher and Jacquette 2011; Vetrivel, 2011). Entrepreneurial education must include skill building courses in negotiation, leadership, new product development, creative thinking and exposure to technological innovation (O'Shea *et al.*, 2007; Kuratko and Hodgetts, 2006; McMullen and Long, 1987; Vesper and McMullen, 1988).

Creating an entrepreneurial cultures toward commercialization of knowledge and entrepreneurship education has become an important advantage and has been given high priority upon new venture creation opportunities (Markman et al., 2005; D'Cruz, Shaikh, and Shaw, 2006; MIT-Sloan, 2007; Basu, 2006; and Lockett & Wright, 2005). Entrepreneurial culture is a value (Mueller, 2004; and Morris and Schindehutte's, 2005), a behavior (Atherton, 2004) and a crucial factor of the installation of an entrepreneurial spirit (Kuratko *et al.,* 1993). Thus, a big part of driving an entrepreneurial culture is creating the environment where people can act like entrepreneurs. Yet, criticisms levelled at entrepreneurial academics are that too academic in developing entrepreneurs might actually lack of practical knowledge (Litan *et al.,* 2007 from Goldstein, 2010), and might lessen commercialization activities and commitment (Nelson as cited in Goldstein, 2010) that hinder a big portion of entrepreneurial opportunities and high-tech start-up in IHL. According to Hynes (1996), various studies suggest that the entrepreneurial role can be culturally and experientially acquired, and therefore influenced by education and training. It is often perceived as the prerequisite for training as it provides the basic skills and ability. Hynes also note that to understand training and education, it is important to examine the factors which are similar or common to both. Both activities are concerned with learning and contribute to the progression of the individual or the organization. For Hynes, entrepreneurial education incorporates both informal and formal methods, where the methods used, content, and delivery modes will vary depending on the student group. Yet Hynes added that entrepreneurship education needs to avoid the mechanistic approach of business teaching, which often conveys the image of business as being about systems or techniques, and ignores the motivation and personal competency components which are essential for enterprise development. Meanwhile, skills and knowledge as developed through training and education are one of the few areas where a country can engineer a competitive advantage (Kennedy, 1993). A number of commentators have noted the importance of entrepreneurship training in improving the quantity and quality of future entrepreneurs (Hynes, 1996; Garavan and O'Cinneide, 1994).

Based on the empirical study and documentation reviews, there are Five (5) reputable entrepreneurial education and development programs that have been selected as the benchmark models in order to propose the framework for innovative ETL. Babson College in Wellesley, Massachusetts, USA, is recognized internationally as one of the leader in entrepreneurial management education. Babson College defines entrepreneurship as a way of thinking and acting. It emphasis on a holistic and integrative learning approach, that converts entrepreneurship into a lifestyle for all students in the campus. Instead of concentrating on making business idea generation as main focus in developing entrepreneurs, Babson College focuses on the entrepreneurial mind-set and spirit development among every student, and the concept applies in every class and curricula activities (The Undergraduate Curriculum at a Glance, 2015). Babson College follows

the life cycle of creating a new business and introduced fundamental management concepts within the context of entrepreneurial thinking. Throughout the program, students are encouraged to examine real business problems, participate in practical business training and competitions as well as gaining real entrepreneurial experiences by visiting and making presentation to local companies as part of the exercise to develop their innovation and entrepreneurial capabilities. The program focuses on developing competencies and skills such as holistic thinking, creative, action oriented, risk taking, passion, team work, and communication (Babson Entrepreneurship Program, 2015; &Modules for Entrepreneurship Educators, 2015).

Cambridge PGDE program focuses its entrepreneurial development via learning by practice. The Cambridge PGDE program divides entrepreneur development into Five (5) stages by placing the critical understanding and creating entrepreneurship awareness as the first step of the process, followed by opportunity recognition and business idea generation. After completing the detail analyses involved in investigating an idea as potential entrepreneurial venture as well as learning the key business concepts involved in assessing the marketability and viability of an innovative idea or product, the students are encouraged to develop a full, robust business case and a detailed financial plan for a business opportunity. Students also are encouraged to gain advanced personal skills such as entrepreneurial leadership and team building during the third stage. Next, students are groomed on managing the early stage venture. At this stage, students are prepared with the foundations for a successful entrepreneurial venture by considering the impact and influence of regulatory frameworks, legal requirements, human resource strategies, business partnerships, stakeholders and their interests. At the final stage, the programme focuses on continuous support for their students that look forward to the growth of their venture (PGDE, 2012; & 2016).

Renmin University Entrepreneurship Programme goal focuses on cultivating innovation, creativeness, and entrepreneurship in students. The university enhances the students' overall ability and quality as well as emphasizes on raising students' entrepreneurship awareness, building a sound knowledge by introducing new education mode in China that stands in contrast to an examination-oriented education (Innovative Experimental District for Talent development in Chinese, 2008). Renmin University also calls for a reform of instructional activities by adding several entrepreneurship related subjects i.e. Entrepreneurial Spirit, Venture Investment and Enterprise Management in all courses. Accordingly, the university unified classroom instruction with extracurricular learning by encouraging more engagements from students, as well as interaction between educators and students to engage themselves in social courses, charities, entrepreneurship education seminars, National Entrepreneurship Forum, Visa Entrepreneurs Classroom, peer learning activities and various competition activities e.g. Star of Management Competition with prestigious entrepreneurs as the judges (RUC, 2016; and EET, 2015).

Massachusetts Institute of Technology (MIT)'s ambitious entrepreneurship educational program rests upon three principles: (1) *Mens et Manus* (Mind and Hand, (2) teams, not individuals, and (3) cross-disciplinary collaboration. Based on the concept of "Mind and Hand", that link theory and practice, the entrepreneurship curriculum in MIT focuses on turning ideas to action and bringing invention to the marketplace. The spirit of spinning theory into practice manifests in the co-mingling of academicians with practitioners that co-teaches entrepreneurship subjects to deliver courses. They are matched by experienced and successful entrepreneurs and investors who bring their "practice" into the classroom. Next, team-based approach to student learning and activities has therefore been adopted throughout most of MIT curriculum design. To

promote continues success of innovative ETL, MIT has cultivate the entrepreneurial culture in all courses. MIT believed teams of co-founders from complementary or different disciplines (e.g., engineering and management) did far better in creating and developing strong roots for later achievement. This was evidenced by most successful start-ups were co-founded by technologists and individuals who had marketing or sales experience. This design concept was implemented in MIT first effort by linking MIT faculty research to student learning, the collaborative Innovation Teams (i-Teams) course. Mixed teams of students drawn from the MIT Sloan School of Management and the School of Engineering undertook semester-long commercialization projects involving early-stage faculty studies (Edward, Fiona and Daniel, 2015; & Edward, 2011; Edward and Charles 2009).

Young Entrepreneur Program (YEP) is implemented in County Kerry in Ireland. As a non-profit organization YEP mission is to help identify, inform, recognize and train Kerry's next generation of business leaders. YEP offer a unique opportunity for young generation to explore and develop their entrepreneurial talents in an innovative way. YEP believes that educators with strong entrepreneurial mind-set and full of passion will put all of their effort in developing young generation to become successful entrepreneurs. The program emphasis on fostering entrepreneurship culture, developing their entrepreneurial mind-set, entrepreneurial spirit, and enrich experience among generation to better prepare them for the freedom and joy of entrepreneurship activities. For the reason, YEP placed their students under the guidance of their educator, who received educator training on all aspects of entrepreneurship, as well as dedicated business mentors for the duration of the program. Additionally, YEP works closely with Institute of Technology Tralee (ITT), Shannon Developments Kerry Technology Park and the Tom Crean Centre to develop a joint program. Via the joint program, YEP formed the Blue Sky Day that consolidates the entrepreneurs, intrapreneurs, and policy makers to share their insights on entrepreneurship development. YEP also focus on Business Boot Camp as one of the important part of their activities. Via the Business Boot Camp, students are aimed to develop sense of independence, creativity, initiative, self-confidence, leadership, team spirit, assiduity, responsibility, solidarity, and perseverance and management skills. During the process, industries mentors and educators act as coach, while the students discuss their journeys to a successful business, key tips to winning business pitch and obstacles they have faced. Within the boot camp the students were given opportunities to their first experience of pitching a business idea to a panel outside their study areas (YEP, 2014; & 2016). Based on the empirical study and documentation reviews, each program implements slightly different approaches yet emphasize on comparable key focus activities e.g. cultivate the entrepreneurial culture in all courses, develop the entrepreneurial mind-sets and the importance of real practice as well as train the students to be responsible for their own learning processes while the educators and mentors act as a coach throughout the teaching and learning practices. Accordingly, apart from business and management technical knowledge, all selected benchmark models highlight the important of each educator to have entrepreneurial mind-set and strong entrepreneurial spirit and passion as fundamental to be part of their members. Based on pattern matching analysis of the theoretical and empirical study, the conceptual framework for innovative ETL is proposed Figure1.

III. RESEARCH METHODOLOGY

Qualitative method strategy was employed in gathering data to meet the objectives. Therefore, the results of this study do not intend to provide any statistical evidence, but rather a global picture of the current

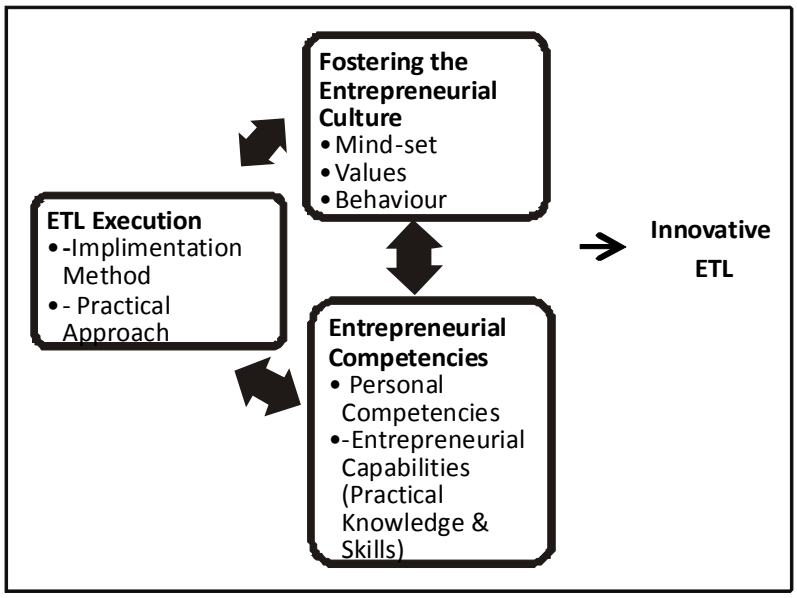

Figure 1: Conceptual framework for innovative entrepreneurial teaching and learning

situation concerning innovative ETL. The researchers move from blending the theoretical and empirical study of innovative ETL programs to semi structured interview among the prominent real industrial players and key informer of entrepreneur development centers. Thus, the early stage of the of the study focuses on identifying models, programs and new initiatives that exist under the broad heading of entrepreneurship teaching and learning activities as well as deriving success factors in the implementation processes associated with best practice initiatives in entrepreneurship education. Five (5) reputable entrepreneurial education and development programs that have been selected as the benchmark models i.e. Babson College Entrepreneur Development Program, Cambridge Post Graduate Diploma in Entrepreneurship Program, Renmin University Entrepreneurship Program, Massachusetts Institute of Technology and Young Entrepreneurs Program. The justification of selecting these Five (5) models was based on popularity of their models in developing entrepreneurship via innovative ETL program. The models demonstrate new initiatives in implementing concept and practical approach and proved the result of their program with numbers of their successful entrepreneurs. By reviewing the models, the study thus sheds light on the landscape of ETL and contributes to the identification of characteristics of successful innovative ETL that lead to the development of research conceptual framework for the study. Next, with the accumulated data from the exploration of documents, the researchers have developed a set of semi structured interview form and pursue the semi structured interview among the key informers. The samples were chosen based on judgment sampling. Thirty-eight (38) respondents were selected for the study which consists Fifteen (15) technopreneurs who have successfully graduated from Master of Sciences in Technopreneurship in Malaysian IHLs; Ten (10) key informers of entrepreneur development centers; and Thirteen (13) industrial players which are also the Universiti Utara Malaysia Bachelor of Entrepreneurship (2u2i) focus group members. The data from both documents review and semi structured interviews have been collected and analyze in October, 2016.

IV. FINDING AND DISCUSSION

The finding from the interviews highlighted all attributes mentioned in the conceptual framework as important attributes for innovative entrepreneurial education in the university. On top of that several attributes have been added for all categories of "fostering the entrepreneurial culture" i.e. lead by example, develop social capital, setting up student-run events and creative industry exhibition; "most worth knowledge" i.e. high quality creative works, social entrepreneurial skills, marketing and resilience; and "how should it be taught" i.e. train students to be responsible for their own learning processes, focus and understand the vision and mission, talent-based learning, flexible learning paths, professional practice, reflection and portfolio, and suitable entrepreneurial projects in classroom with tried-and-true approach. The detail attributes of each category and dimensions are explained in descending order in Table 1, Table 2 and Table 3.

Table 1
Fostering the Entrepreneurial Culture towards Innovative Entrepreneurial Teaching and Learning
Entrepreneurial Culture
***Total number of respondent, n*=38**

Entrepreneurial Mind-set		*Entrepreneurial Values*		*Entrepreneurial Behavior*	
Attributes	*n*	*Attributes*	*n*	*Attributes*	*n*
Fostering entrepreneurial mind-set among student and educators	38	Enhances the students' overall ability and quality	38	Creating entrepreneurship awareness	38
Entrepreneurial spirit	38	Lead by example	36	Cultivate innovation, creativeness, and entrepreneurship in all courses.	38
Holistic thinking	36	Encouragement Team working	36	Converts entrepreneurship into a lifestyle for all students	37
		Enrich experience among generation	36	Create startup culture	35
		Reward	35	Examine real business problems	35
		Social capital	35	student events and creative industry exhibition	35
		Empowerment	35	Intrapreneurship	34
				Practical business competitions	34
				Real experiences by visiting and making presentation to local companies	34
				Encourage students engagements	34
				Commercialization	34

Throughout the semi structured interviews among the technopreneurs and key informers, the researchers realized entrepreneurial culture become a very interesting issue in innovative ETL for technopreneurs in IHLs. Overall the respondents' highlighted entrepreneurial culture has become an important advantage in increasing the entrepreneurial competitiveness in the fast moving and competitive technology industry. The finding also underlined that all Three (3) dimensions of entrepreneurial culture i.e. mind-set, values and behavior; the term applies not only to individuals, but also teams and the entire organizational cultures. Fostering entrepreneurial mind-set and entrepreneurial spirit among student and educators; enhances the students' overall ability and quality; and create the entrepreneurial awareness by cultivate innovation, creativeness, and entrepreneurship in all courses are found as the main drivers of entrepreneurial culture to create the environment for students and educators act like entrepreneurs. The finding also highlighted that entrepreneurial values i.e. lead by example, team work encouragement, enrich experience, reward, and social capital value would foster the environment of which lead the students to empower themselves to create the positive change. Collective outcome also emphasized on create startup culture, examine real business problems, set up student events and creative industry exhibition, intrapreneurship, business competitions, real entrepreneurial experiences by visiting and making presentation to local companies, encourage more engagements from students, and bringing invention to the marketplace or commercialization are among the continues effort to foster the entrepreneurial culture for innovative ETL.

Besides, findings in Table 2 highlights Seventeen (17) attributes from personal competencies dimension and Nine (9) attributes from practical knowledge for entrepreneurial competencies as the most worth entrepreneurship knowledge to be taught. Self-efficacy, as well as opportunity recognition, and Innovation and entrepreneurial capabilities are the main keys concern of entrepreneurship skills for the teaching and learning activities. This finding fills up the gap between the researches outcome of many previous researchers (Hatak & Reiner, 2011; Hytti, 2011; Lindner, 2011; Corduras *et al.,* 2010; Koch-Polagnoli, 2010; World Bank, 2010; Nichter and Goldmark 2009; Volkmann *et. al.,* 2009; and Pittaway, 2005; Haase and Lautenschläger, 2011; and Heinonen, 2009).

The outcomes of the research in Table 3 also classify the innovative entrepreneurship teaching and learning execution into two main dimensions i.e. implementation concept and practical approach. There are Eleven (11) attributes of implementation concept and Sixteen (16) attributes of practical approach that need to be focused by the IHL. Correspondingly, educate the educators is the most important practice needs to be taken in process of cultivating the entrepreneurial mind set and fostering the entrepreneurship culture in all program. Total key industrial players believes the Three (3) principles applied in MIT entrepreneurship development program i.e. "mind in hand" concept that links theory and practice; team based learning; and mix teams of different disciplines are prominent approaches that need to be considered by other entrepreneurship development center. Next, learning and teaching process should emphasis on grooming students to focus and understand the vision and mission of their study. The involvement of industrial experts should be considered as the major concern in the teaching process, while both educators and industrial experts should act as a coach throughout the teaching and learning practices. Students should be trained to be responsible for their own learning process, and adapt professional practice, reflection and portfolio. Accordingly, to ensure the knowledge that they have acquired in their courses are more meaningful, students also need to lead with tried-and-true approach in undertaking any project, focus on compe-tence

Table 2
The Most Worth Knowledge in Innovative Entrepreneurial Teaching and Learning

Innovative ETL	*Personal Competencies*		*Entrepreneurial Capabilities (practical knowledge & skills)*	
Entrepreneurial Competencies ***Total number of respondent, n* = 38**				
	Attributes	*n*	*Attributes*	*n*
The important entrepreneurship knowledge attributes in descending order	Self-efficacy	38	Marketing	38
	Entrepreneurial spirit	38	Opportunity recognition	38
	Self-confidence	37	Innovation and entrepreneurial capabilities	38
	Entrepreneurial passion	36	Effective communication	37
	Entrepreneurial awareness	36	Social entrepreneurial skills	37
	Initiative	36	High quality creative works	37
	Responsibility	36	Business management	36
	Independence	36	Financial planning	36
	Creative thinking	36	Winning business pitch	36
	Leadership	36		
	Risk taking,	36		
	Holistic thinking	36		
	Sense of assiduity	35		
	Resilience	35		
	Teamwork	34		
	Team spirit @ solidarity	34		
	Perseverance	34		

and talent-based learning, professional practice, teamwork, reflection and portfolio, flexible learning paths for both indoor and outdoor teaching and learning activities. Rather than classroom teaching and learning approach, booth camp is suggested as one of the best approach in developing and grooming students to become entrepreneurs. On top of that, to encourage and enhance innovative approaches in teaching and learning methods and practices, the IHLs are required to embed experiential learning such as situated learning experiences by setting up student-run events and exhibition, setting up a real business company and also perform business pitch to introduce and sell their business ideas. These activities will develop the students' with all personal competencies and practical knowledge as mentioned in Table 2 i.e. sense of independence, creativity, initiative, self-confidence, leadership, team spirit, assiduity, responsibility, solidarity, perseverance and management skills. These key ingredients will reflect on student's experience in terms of their own knowledge of entrepreneurial learning and probe the unique mind-set that drives success in entrepreneurial start-up. The outcome of the study fills up the gaps and completed the previous research as mentioned in the early section.

Table 3
How Entrepreneurship Knowledge Should Be Delivered

Innovative ETL Execution
Total number of respondent, n=38

Implementation Method	*n*	*Practical Approach*	*n*
Mind in hand/link theory & practice	38	Examine real business problems	38
Implement innovation,	38	Student-run events	
creativeness, and entrepreneurship in all classes & curricula	38	Creative industry exhibition	38
Bring in the industrial expert as mentor to foster entrepreneurship culture	38	Suitable entrepreneurial projects in classroom	38
Action oriented	38	Practical business training	36
Real practice & experiences		Seminar, forum, charities & competition with prestigious entrepreneurs as the judges.	
Stands in contrast to exam-oriented education	37	Groom manage early stage venture	36
Freedom & joy entrepreneurial activities	36	Team-based approach to student learning and activities	35
Train students to be responsible for their own learning processes	36	Groom students to focus and understand the vision and mission	35
Professional practice, reflection and portfolio	34	Industries' mentors and educators act as coach	35
Talent-based learning	33	Students team based	34
Flexible learning paths	33	Mix teams of different discipline	34
		Boot Camp	34
		Peer learning activities	34
		Boost interaction: educators & students	34
		Continues support	34

V. CONCLUSION

With on-going debate about the extent to which entrepreneurship can be learned and taught, there will be a still remains of challenge to teach entrepreneurship across different inter-disciplinary. However, outstanding entrepreneur development institutions and programs i.e. MIT, Cambridge PGDE, Babson College, Renmin University and YEP Ireland have proved the success story of their innovative ETL program. The outcome of the study on those programs and finding from semi structured interview with the technopreneurs and key informers suggested that innovative ETL comprise Three (3) mains factors including of fostering entrepreneurial culture, clearly identify and justify the most worth knowledge required for innovative ETL, and the execution the ETL which is focusing on how the entrepreneurial knowledge should be delivered to the students.

The findings highlighted that fostering an entrepreneurial culture requires continuous effort. To ensure the innovativeness of ETL, the IHLs should strive for entrepreneurial culture by fostering entrepreneurial mind-set, embrace values by enhances the students' overall qualities and promote entrepreneurial behavior by cultivate innovation, creativeness, and entrepreneurship in all courses, as well as converts entrepreneurship

into a lifestyle for all students and educators in the campus. These factors are the main drivers of entrepreneurial culture to create the environment for students and educators to act like entrepreneurs. Thus, the entrepreneurial culture must be nurtured and deliberately cultivated through concerted action in the whole process of ETL, so that the students be able to empower themselves to create the positive change.

The second finding of innovative ETL shows that developing entrepreneurial competencies among the students is the goal of entrepreneurial education that lead the students to the ability to perform the new venture creation and entrepreneurial competitive activities. This finding aligns to the literature on entrepreneurial competencies (Sánchez, 2011; and Fisher *et al.,* 2008). In this research context, entrepreneurial competencies comprise of (1) personal competencies such as self-efficacy, self-confidence, entrepreneurial spirit and passion, entrepreneurial awareness and other personal competencies as mentioned in Table 2 ; and (2) entrepreneurial capabilities encompassing of entrepreneurial practical knowledge and skills i.e. marketing, innovation and entrepreneurial capabilities, opportunity recognition, effective communication, social entrepreneurial skills, high quality creative works, business management, financial planning and skills for the winning of business pitch. The result also demonstrations marketing is the most important knowledge and skills of entrepreneurial competencies. This finding shows that educators should encourage and guide students to learn how to discover what their market really is.

To end, the study on innovative ETL execution deliberated how the entrepreneurial culture should be instigated and how entrepreneurial competencies should be delivered to the students. This result is concluded into Two (2) dimensions encompassing of implementation method and practical approaches. It is suggested the educators should advocate the link of theory and practice, apply action oriented by implement innovation, creativeness, and entrepreneurship in all classes, and bring in the industrial expert as mentor to foster entrepreneurship culture as their implementation method. Accordingly, innovative practical approaches should be applied in order to foster the entrepreneurial culture and promote the entrepreneurial competencies. Suitable entrepreneurial projects in classroom; practical business training; creative industry exhibition, charities and competition with prestigious entrepreneurs as the judges; groom manage early stage venture; and team-based approach for student learning and activities must be implemented within curriculum structure to allow the students to examine real business problems. The findings of this research hope to offer a guideline to the entrepreneur development organization in order to design their innovative ETL and also to assist entrepreneurship educators to understand the goals of their teaching. The finding of the study has been considered as valuable input for designing new model for Bachelor in Entrepreneurship 2U2I and a business hub in Universiti Utara Malaysia.

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