

Instilling Entrepreneurial Mind-Set through Entrepreneurship Education: A Systematic Review of Literature

Mathushan P.

Department of Economics and Management, Vavuniya Campus of the University of Jaffna,
Sri Lanka

mathush92@gmail.com

Abstract

Entrepreneurship has never been more significant than at the present moment, when economies across the world encounter the challenges of economic growth, connecting the inequality gap and solving social problems. Society necessitates individuals equipped with entrepreneurial and innovative skills, attitudes and behavior. Education is one way the government can grasp to create an environment for entrepreneurship. Entrepreneurship education has generated considerable interest in recent decades. More so, entrepreneurship education fosters entrepreneurial mind-sets, behaviors and capabilities in young people enabling them to create and lead new organizations and entrepreneurship educators are hence looking for pedagogies that enable students to be exposed to multiple experiences in entrepreneurial decision-making. However, the argument on the pedagogy of entrepreneurship education still remains agnostic. The finest outcomes in entrepreneurship education are achieved when students are exposed to action-oriented experiential learning that encourages problem-solving, creativity and peer evaluation. Building upon insights from existing literature, the findings suggest that, by embracing game-based learning model for entrepreneurship education, and design thinking approach in entrepreneurship education can foster entrepreneurial mind-set. Notably, business simulation games can play in the development of entrepreneurial capabilities in undergraduate students.

Keywords: Business startups, Entrepreneurial competences, Performance, Self-employment, Knowledge, Skills, Abilities

Introduction

An entrepreneurial culture is a thrust for sustainable economic renewal and development, for the generation of new jobs and eventually for promotions in human welfare [Kengatharan, 2012, Volkmann & Tokarski, 2009]. Societies need individuals with entrepreneurial mind-set, innovative skills and attitudes. In recent years the evolving body of academic research has addressed the effectiveness of entrepreneurship education to inspire students for self-employment and generating an entrepreneurial culture amongst them [Lekoko *et al.*, 2012]. Ideally, education is one way the government can commit to create a positive environment for entrepreneurship. The introduction of entrepreneurship education has a revolutionary character, since it adds to the traditional vocational training of employees and academics, the entrepreneurial culture, more appropriate to the new formats of labor relations resulting from the restructuring of the world economy [Almeida & Buzáy, 2019].

Entrepreneurship subject which generally embraces an exploration of starting and developing a business is often thought to be a likely subject for students in business management discipline. There is an evolving concern that students do not have sufficient entrepreneurial skills and competencies to startup business particularly running small and medium enterprise (SME). Students anticipate themselves as merely job seekers not job generators. Arbaugh *et al.* (2010) believes that the process of teaching entrepreneurship needs to be highly interactive and immersive to develop entrepreneurial skills in students.

Extension of entrepreneurship education encapsulates the confidence that entrepreneurship can be teachable and entrepreneurs can be developed [Erikson, 2003]. Entrepreneurship education positively influenced students' learning outcomes [Rideout & Gray, 2013]. This underpins the requirement for universities to launch entrepreneurship education which should incorporate entrepreneurial mind-set and competencies to business management and non-business management

discipline students. Furthermore, entrepreneurship education that incorporates factors that foster creativity, innovation, self-confidence, leadership and a positive attitude towards entrepreneurship in the formative years of a learner's education are lacking [Timmons & Spinelli, 2007]. Reaping the entrepreneurial mind-set in education that aims to teach entrepreneurship as a method that requires practice. It is broadly recognized that entrepreneurship is a vital factor for the formation of generating job opportunities, economic growth and to elicit the strength of academic institutions. Thus, entrepreneurship can be classified as an investment and is vitally important for a nation to prosper in the economy. Therefore, the underlying purpose of this article is to investigate and discuss the role of entrepreneurial education for promoting entrepreneurial mind-set among students. The paper is structured as follows, addressing the research gap, introduction to entrepreneurship education and interdiction to entrepreneurial mind-set, introducing methodologies for entrepreneurship education eventually it presents the conclusion and recommendations.

In fact, Policy formulators and economic experts have highlighted that entrepreneurship poses a vital role in eliciting economic growth and innovation [Fayolle & Gailly, 2012, Kengatharan, 2013]. Secundo *et al.* (2015) epitomized that country development in the knowledge-driven economy is not determined by the generation of fresh knowledge literally by the ability to turn the knowledge into new products, and processes that stimulate economic prosperity. Research findings epitomize that entrepreneurship can be achieved through education. However, the research on the effects of entrepreneurship education still has huge gaps [Young, 1997]. Accordingly, over the decades, entrepreneurship education programs have encountered a rapid and global revelation within higher education [Fayolle & Gailly, 2012]. Notwithstanding, most entrepreneurship studies are conducted in developed country contexts, and their findings may not be generalizable elsewhere [Solomon, 2007]. Paradoxically, the consequences originating from entrepreneurship education are still poorly understood. Other studies found evidence that the effects are negative [Oosterbeek, 2010]. Gorman *et al.* (1997) found that research about the effects of entrepreneurship education is still in its infancy stage.

There is still inconsistent and reasonable model of matching which type of entrepreneurship education yields which outcomes since paradigms of entrepreneurship education are diversified ranging from a causal and linear understanding of planning, through an approach which focuses on students' mindsets, to a process-related entrepreneurial and methodical approach [Rasmussen & Fritzmer, 2016]. Therefore, reaping an entrepreneurial mind-set in human capital is becoming a vital challenge.

Methods

The present study relies on the critical review of existing literature and empirical findings. Exploiting search strategies, 190 research articles were identified with regard to the concepts of entrepreneurship education and entrepreneurial mind-set. Despite, in accordance with antecedent studies, henceforth criteria were harnessed in choosing the article [Kengatharan, 2015]: (a) a peer-reviewed journal published between 1990 and the present; and (b) full text published in English. The full papers were garnered from reputed databases such as Wiley Online Library, Emerald Insight, Sage Journals, ProQuest business, Business Source Premier (EBSCOhost), Expanded Academic (Gale), Science Direct (Elsevier), ISI Web Science, the Sloan Work and Family Research Network at Boston College, and Google Scholar where a tremendous range of articles were recognized worthwhile for the aforesaid concepts. The papers were screened in the following way. Articles that seemed more than once were denied to one entry, and those that didn't deal with university entrepreneurship and entrepreneurial competencies together were eliminated.

Entrepreneurship Education

Entrepreneurship is not a new phenomenon; it has grasped increasing attention over the past decades. Today entrepreneurship is considered the essential lever to cope with the new competitive landscape [Hitt & Reed, 2000]. Parallel to the evolution of the field of entrepreneurship we can note an increasing interest in the development of educational programs to encourage and foster entrepreneurship [Solomon, 2007]. Entrepreneurship education was pioneered by Shigeru Fijii, who started teaching in this field in 1938 at Kobe University (Japan). In 1947 Myles Mace first introduced the course in entrepreneurship in the USA at Harvard Business School [Katz, 2008].

Intriguingly, the first entrepreneurship course was held in 1947 at Harvard University, countless courses and programs have been developed and implemented throughout the world. literature Reviews on entrepreneurship education and of particular entrepreneurship programs [Ronstadt *et al.*, 1988] give evidence that these programs encourage entrepreneurs to start a business.

Indeed, it is a relatively new and emerging discipline that is entering its adolescence at colleges and universities, at least in the US. The past 20 years have witnessed an enormous growth in the number of small business management and entrepreneurship courses at different educational institutions. A great number of programs are broadly termed as enterprise or entrepreneurship education, which have been carried out in schools and higher educational institutions throughout the world [Alberti *et al.*, 2004]. As opined by Solesvik *et al.* (2013) university entrepreneurship education is expected to promote students to enquire about entrepreneurial mind-sets that enhance the supply of new firms by producing graduates [Hannon, 2013]. Several prior studies found a positive impact of entrepreneurship education courses or programs at universities on perceived attractiveness and feasibility of new venture initiation or even on actual startup activity [Fayolle & Gailly, 2012, Souitaris *et al.*, 2007]. Indeed, the traditional Higher Education Institutions prototypes are viewed as department-led, generally in the form of a Business School model [Gibb, 2008]. Entrepreneurship education is frequently positioned in one department, with rudiments of outreach to other departments. This Business School approach evolved from the venture creation/business startup era of the late 1990s. It caters for a target audience of business and management students with an emphasis on business planning and start-up skills, and has been accused of being too narrow in overall depth and approach. Progressively, the emphasis is shifting from teaching content “about” entrepreneurship, to developing “experiential” modes of learning and preparing graduates “for” and “in” enterprise scenarios [Tautila, 2010], through simulation and emulation of professional communities of practice. Curriculum and extracurricular activity are two basic sources of learning experiences in an entrepreneurship education program, but their effect is unequal. Peterman (2003) argue that formal curriculum does not stimulate entrepreneurial

intention, on the contrary, it reduces tolerance for ambiguity.

A rudimentary question within entrepreneurial education that never seems to go out of fashion is “Can entrepreneurship be taught?” It has been a rapidly growing entrepreneurship education since mid-1990 as an emergence of new economic direction by which knowledge has become a prerequisite resource for economic activities [Yu Chenh *et al.*, 2009]. Entrepreneurship education is distinctive in that it requires a “generalists” approach versus the more traditional specialized business education programs [Hills, 1988]. Despite the increasing number of activities and courses, there is still much discussion about the scope, objectives and methodologies that should be addressed in entrepreneurship education [Fayolle & Gailly, 2012].

Entrepreneurship education literally focuses on accelerating entrepreneurial culture and it assists entrepreneurs to recognize and pursue opportunities. Charney & Libecap (2000) found that entrepreneurship graduates are more likely to start new businesses, have annual incomes that are higher, own more assets, and are more satisfied with their jobs. Further it is not limited to inspiring startups, innovative and new business. Entrepreneurship is a competency for everyone, stimulating youth individuals to become creative and self-confident in whatever they pursue [Gautam & Singh, 2015]. Gartner & Vesper (1994) evaluate the effectiveness and failure of entrepreneurship education experimentation in various countries and manifest a significant diversity of programs offered. Entrepreneurship education should be “geared toward creativity, multi-disciplinary, process-oriented approaches, and theory-based practical application [Plaschka & Welch, 1990]. Thus, Entrepreneurship educators must find an enterprise culture which promotes entrepreneurial skills [Gibb, 2008]. Entrepreneurship studies that have entrepreneurial facets should advance skill building in the following areas: negotiation, new product development, technological innovation, opportunity recognition, new market entry, the legal requirements of new businesses, and the ability to create a linkage from vision to action [Johannisson, 1991, McMullan & Long, 1987].

Entrepreneurial Mind-set

The concept of mindset instigates from the cognitive psychology fields. Shepherd Douglas (1997) define EM as an 'ability and willingness of individuals to rapidly sense, act, and mobilize in response to a judgment decision under uncertainty about a possible opportunity for gain'. McGrath & MacMillan (2000) firstly defined entrepreneurial mindset as 'the ability to rapidly sense, act, and mobilize, even under highly uncertain conditions' Mindsets are not innate; they can be influenced and learned by an individual's prior knowledge and the interaction with current environment [Mathisen & Arnulf, 2012]. Entrepreneurial mindset described by scholars as the ability to sense, act, and mobilize under uncertain conditions. Scholars have suggested that "the successful future strategists will exploit an entrepreneurial mindset and the ability to rapidly sense, act, and mobilize, even under uncertain conditions [Bolk *et al.*, 2003].

Entrepreneurial mind-set has been comprehended in terms of traits, skills and knowledge. Prerequisite skills for successful entrepreneurs might encapsulate oral presentation, skills, interpersonal skills, and the capability to formulate and execute a solid business plan [Ronstadt, 1985]. Personal qualities such as outgoing personality, leadership skills, self-reliant, innovativeness and the ability to engage in risk-taking [Martin & Staines, 1994] and behavioral qualities such like a huge picture perspective, recognizing business opportunities, commitment, seeing need for control, having the conscious mind of what is right, deal with uncertainty, using contacts and connections and embracing competence considered as entrepreneurial competencies [Mitton, 1989]. The ability to be dynamic, flexible, and self-regulating in one's cognitions given dynamic and uncertain task environments [Haynie *et al.*, 2010].

Other definitions of entrepreneurial mindset existing in the literature vary but the common point of them is that entrepreneurial mindset is a way of thinking or an ability to capture entrepreneurial opportunities in an uncertain situation. As opined by Mitchelmore & Rowley (2010) entrepreneurship competency, develop skills and ability clusters which were identical to those in management and leadership theory. Notwithstanding, two new skills appeared; opportunity and self-management studies [Chandler & Jansen, 1992, Herron &

Robinson Jr., 1993]. Declarative entrepreneurship knowledge, procedural entrepreneurship knowledge, knowledge about oneself as entrepreneurial skills, marketing skills, resource skills, opportunity skills, interpersonal skills, learning skills, strategic skills, marketing, strategy, resource acquisition, opportunity identification/creation, learning skills, interpersonal skills, leadership skills, collaborative skills, creativity.

Mitchelmore & Rowley (2010) developed a competency model that represent the following competencies.

Cognitive and non-cognitive mind-set encapsulates resource acquisition skills, opportunity identification/creation, learning skills, market niche/product innovation, idea generation, environmental scanning, recognizing and envisioning taking advantage of opportunities, and formulating strategies for taking advantage of opportunities. Moreover, there are many scholars made a consideration on these competencies [Chandler & Jansen, 1992, Maresch *et al.*, 2016, Man & Lau, 2000, Volkmann & Tokarski, 2009].

Business and management mind-set incorporates development of the management system necessary for the long term, functioning of the organization, acquisition and development of resources required to operate the firm, business operational skills, Previous involvement with start-ups, managerial experience, familiarity with industry, financial and budgeting skills, previous experience, management style, marketing skills, technical skills, Industry skills, business plan preparation, goal setting skills, and management skills [Chandler & Hanks, 1994, Man & Lau, 2000, McGregor & Tweed, 2001].

Human relations mind-set encompasses the ability to develop organizational culture, delegation skills, motivate individual and in groups, hiring skills, human relations skills, and Leadership skills [Brinckmann & Hoegl, 2011, Herron & Robinson Jr., 1993].

Conceptual and relationship mind-set comprises conceptual competencies, organizational skills, interpersonal skills, the ability to manage customers, mental ability to coordinate activities, written and oral communication skills, decision making skills, analytical skills, logical thinking skills, deal-making skills and commitment competencies [Man & Lau, 2000].

It has been recognized that four components of an entrepreneurial mindset: alertness to opportunity, risk propensity, ambiguity tolerance, and dispositional optimism [Cui *et al.*, 2019]. Entrepreneurial mindset can be improved through training and can be considered as a mind habit that requires learning to shape [Schmidt & Ford, 2003].

Conceptual linkage of entrepreneurship education and entrepreneurial mind-set

In the last few years, research in entrepreneurship has begun to look at the education issue more deeply but still in a very fragmented way. Young (1997) suggests that there are two sets of reasons why students may want to study entrepreneurship: first, they may want to start up their own business; second, they may wish to acquire knowledge which will be helpful in their careers in larger organizations. Alberti *et al.* (2004) highlight that entrepreneurship education is crucial for enhancing entrepreneurial skills, attitudes, and behaviors that foster economic growth of the country. Further entrepreneurship education in universities has a positive impact on attitude towards entrepreneurship and turns foster entrepreneurship as a meaningful and respectable career prospect for graduates [Galloway & Brown, 2002].

Notwithstanding, Souitaris *et al.* (2007) revealed that extracurricular activities like guest speakers, business plan competitions, and entrepreneurship incubator projects are incentives to the motivation of entrepreneurship. It has been found that curricular and extra-curricular education have an unbalanced impact on university students, and that formal courses and extracurricular activities have moderate roles in the formation of entrepreneurial intention and other competences [Arranz *et al.*, 2017]. More so, entrepreneurship programs offer social interactions with other participants, lecturers, and mentors, participants enhance perceptions that entrepreneurship is also a socially desirable career path [Smith & Woodworth, 2012]. Entrepreneurship education takes many different forms including curricular courses and extracurricular activities and serves different purposes in undergraduate level. Cui *et al.* (2019) recommended that entrepreneurial knowledge can be acquired through theoretical-oriented activities like successful entrepreneur's speech, face-to-face communication with an en-

trepreneur, conferences or workshops related to entrepreneurship, entrepreneurial spirit and values transmitted by the university or colleges, and entrepreneurial skills and competencies can be obtained through practical-oriented activities such as entrepreneurship club, entrepreneurship design competition, enterprise visit or internship, business simulations or games, entrepreneurial incubation project, and entrepreneurial activity of resourcing or networking.

Notwithstanding its claimed significance, the EM research is still embryonic [Krueger, 2017]. Existing findings on EE impact have mainly addressed EI and very few studies have examined the EE-EM link. Furthermore, it is vague how EM evolves throughout education. Intriguingly, emotional factors are fundamental for the construction of EM because affective events pose a pivotal role in entrepreneurial learning and because different educational designs can trigger affective events, which successively endorse entrepreneurial competences [Lack us, 2014]. Nevertheless, emotional constructs are infrequent in EE research [Kyro, 2008]. A possible emotional mediator between EE and EM is entrepreneurial inspiration [Souitaris *et al.*, 2007], a gap for EE researchers seeking the emotional drivers of EM.

The goal of most research on entrepreneurship education is to investigate the impact of entrepreneurship educational programs on individuals' intention to act entrepreneurially and the performance of the businesses created by these students subsequent to these educational programs [Patzelt, 2014]. Entrepreneurship education must furnish future entrepreneurs with the vital skills to address the need to accelerate economic development through creating new ideas and changing over those ideas into feasible and profitable businesses. Entrepreneurship education must foster entrepreneurs with the necessary skills to meet the need to generate economic development through creating new business ideas and transforming those ideas into profitable business. Entrepreneurship education incorporates all processes proposing to encourage entrepreneurial mindset, attitudes and skills and considering a wide range of elements like idea generation, creation, growth and innovation [Fayolle & Gailly, 2012]. Students have bit or no opportunity to experience entrepreneurship practically since the programs focus more on the theoretical transfer of

entrepreneurship knowledge than on the practical aspect [Lekoko *et al.*, 2012]. Therefore, universities should teach students theory to supplement practical learning experience.

As cited by Solomon (2007) the actuality of entrepreneurship is the ability to visualize and develop business venture through resources from functional disciplines and ability to deal with risk and uncertainty involved in a business [Shepherd Douglas, 1997]. The positive relationship between education and business startups has been acknowledged by international literature from various viewpoint and approaches [Niyonkuru, 2005], moreover, according to researcher's point there is a viability to enhance entrepreneurial ability through education.

The fundamental purpose of education on entrepreneurship in universities is to enable the students to formulate and implement their own business with less involvement of others as soon they finish their degrees instead of waiting for the employment opportunities for a long period of time. In general, universities aim to provide an opportunity for students to acquire comprehensive knowledge and understanding about entrepreneurial mindset and orientation, sharpen students' knowledge, abilities, attitudes and competencies through entrepreneurship education, provide vast insights about formulating plans (business plan), business startups, creativity, innovation, enhance self-efficiency among students consequently, fostering advertence on entrepreneurship as a career option, make students to exploit analytical skills by utilizing real business information and situations to solve problems and make decisions, encourage students to utilize creative thought processes to solve business issues. In this sense, serious games emerge as a pertinent approach to developing entrepreneurial skills. Indeed, there is much argument about the role of education, skills and personal development within the overall sphere of enterprise and HE entrepreneurship. The discourse is driven by political and economic burdens concerning the ability of Higher Education Institutes (HEIs) to develop well rounded graduates that "fit" within a twenty-first century global economy [Gibb, 2008].

Taatila (2010) highlighted that key attributes of an entrepreneurial mind-set encompass perseverance, trust, determination, risk management, a positive attitude towards change, tolerance

of uncertainties, initiative, the need to achieve, understanding of timeframes, creativity, an understanding of the big picture. Evolving ideas relating to entrepreneurial education are much wider than just teaching students how to develop new business plans, or create and manage business start-ups (traditional entrepreneurship education). Conversely, our argument also embraces the emphasis on pedagogical developments in experiential learning, the development of the teacher-learner experience, wider life skills and good citizenship, as vital parts of the "enterprise education" perspective [Draycott & Rae, 2011, Jones & Iredale, 2010]. Policy makers believe that increased levels of entrepreneurship can be grasped through education [EU, 2006] and especially entrepreneurship education. However, in Sri Lanka context this might not be the anticipated level. Crayford *et al.* (2012) epitomize that it is a portion of a rising ambition for education providers, students and community stakeholders to develop entrepreneurial learning opportunities based on a relational view and input from a wider variety of sources than the past. Notwithstanding, there is also a strong emphasis on moving creative ideas into action which encompasses soldier community relations and employer partnerships as part of entrepreneurial learning and strategy-making.

EM fosters individuals to conceive and act entrepreneurially because it reinforces successful forthcoming strategies [Covin, 2006]. In general, the foundation of EM lies in cognitive adaptability which is pivotal to reap required outcomes following entrepreneurial action. EM is narrowly associated recognition of opportunity, which deceives at the core of entrepreneurship and defines entrepreneurial success. Connecting the association between EE and EM would thus contribute to a deeper understanding on the scope and extent of EE impact. One of the crucial tasks is to confirm whether EE can absolutely impact the reaping students' EM [Maresch *et al.*, 2016].

Conclusion and Recommendations

Drawing on the conceptual insights, findings of the study suggests that, typically, schools and universities should promote entrepreneurship education as a career option and enforce entrepreneurship expertise and experiences among students, undergraduates, and master's degree students. Lucidly, the transforming academic

culture is a generic hazard, which encapsulates the entrepreneurial thinking, fear of start-ups, traditional teaching methodologies and so forth. More specifically, the emergence of ICT has a significant impact on developing entrepreneurial mind-set among students and graduates. Thus, schools and universities can foster in expanding entrepreneurial culture through ICT platforms.

An individual Entrepreneurial Mindset should encapsulate action-orientation, innovativeness (presumably discontinuous), resilience to adversity/optimism, persistence at goal-directed behaviors, domain-specific self-efficacy (possibly general self-efficacy), role identity (mental prototypes), entrepreneurial intensity, tolerance for ambiguity and uncertainty, risk-aversion (lower), future orientation (ability to delay gratification?), entrepreneurial behaviors (not just launching a venture), entrepreneurial intentions, value creation (versus opportunism), market orientation [Krueger, 2017]. Thus, there should be a course module which encapsulates developing entrepreneurial mind-set to foster the entrepreneurial thrust among the students.

Anchored in the theoretical and empirical evidence, the study confirms the needs well thought out of university entrepreneurship for developing entrepreneurial competencies.

Entrepreneurship courses should be implemented with the comprehensive understanding about the type of graduates the trainer purposes to produce. Moreover, outreach projects should be in place to affirm with the level of a desired role to the local entrepreneurial atmosphere. They identified that there has been a shift from a startup view to an attitude -changing perspective of entrepreneurship education. This entrepreneurial education has become imperative accompanied with the demand with the students searching business education that can offer the essential skills to succeed in an exponentially growing and complex management environment. Therefore, incorporating entrepreneurial competencies in entrepreneurship education in universities help students to enhance and practice new skills corresponding with entrepreneurship and new business startups and eventually, that would foster entrepreneurial spirit and growth.

Therefore, the emerging generation of entrepreneurship educators must avoid the paradigm

paralysis that has consumed so many business disciplines. Cui *et al.* (2019) opined that entrepreneurship education poses many different methods comprising curricular courses and extracurricular activities and serves different purposes in undergraduate level. Johannisson (1991) identified five elements in entrepreneurial learning: know-why, know what, know-how, know-who and know-when and suggested a basic distinction between theoretical-oriented learning (e.g. 'know what', 'know-why') and practical-oriented learning (e.g. 'know-how', 'know-who') in entrepreneurship education.

Entrepreneurial learning has been described as the process of learning to discover and exploit opportunities [Draycott & Rae, 2011] and can be considered a form of action learning. A number of authors argue that action learning is an effective pedagogic approach in developing and improving new ventures [Stewart & Hitt, 2012] or at least using experiential learning to develop entrepreneurial traits.

In further, universities can provide an ideal environment for training and development of entrepreneurial competencies and core skills thus, students can reinforce their generic skills such like proactive thinking, creativity and innovation, critical thinking, analytical skills, conceptual skills, interpersonal skills, decision making skills and so forth that dramatically impact on business startup. Lucidly, entrepreneurship training needs a non-traditional approach whereby students must learn to embrace the challenges of operating in a business environment that favors creativity and risk taking. Moreover, technical training to acquire technical competencies, presentation, discussions and highly interactive classroom sessions can be conducted to develop a special training record book that can be maintained to keep training records and progress of the students is reviewed continuously. Students are referred to various surveys in order to get first hand experiences on business and business startups. A lecturer can be appointed for every student for mentoring. Make students responsible to meet the mentor regularly.

Leadership in entrepreneurial venturing success raised many questions on the specific competencies that enable individuals to lead entrepreneurial activities. Therefore, developing leadership skill for entrepreneurs can be taken into account. Eventually, not only must students be exposed

to a business education that emphasizes multi-disciplinary skills but they must participate in an “entrepreneurial experience. The students can put on their course knowledge, exercise their analytical skills, learn to communicate effectively, exploit their negotiation skills, working collaboratively in teams, compliance with legislation, and harness creative through processes to eradicate business problems. Students can also learn new business start-ups troubles like writing business plans, obtaining business loan as a startup capital. Through this “entrepreneurial experience” the students developed entrepreneurial competencies.

Entrepreneurship should provide students with the chance to grasp transferable skills that can be harnessed in any firm context, and there should transcend a narrow focus on business startup [CIHE/NCGE/NESTA, 2008]. Definite efforts are also being focused at encouraging innovative activities and in refining innovative capabilities. It should be considered the crucial factors that play a key role within EE, such as the contents of courses, pedagogical methods, teaching models and learning experience. The pedagogy should encapsulate relevant techniques like running a real business, visiting business location and interviewing entrepreneurs. These teaching techniques might be considered as the most vital in enhancing their entrepreneurial awareness and mind-set.

Game based learning

Innovative pedagogical approaches such as game-based learning (Gamification), which provide an immersive environment, are especially well suited for entrepreneurship education [Ahn, 2008]. Game-based learning is an evolving pedagogy that carries together the emerging nature of young learners and experiential learning. Williams (2015) suggests that the business simulation endorsed students to confront their limitations, overcome some of them and make significant progress in their learning. Using SimVenture improved students’ appreciation of business in general and the challenges entrepreneurs have to face in running a business. Business simulation game, SimVenture, develops not only students’ business and management skills but also their entrepreneurial attitude and values. Game-based learning combines the benefits of traditional teaching and learning (that is, lectures and tutorials).

Business simulation games

Business simulation games are currently being used to teach a broad range of business and management disciplines. Business games generate a dynamic environment that presents a series of decision-making activities. Every cycle creates a new situation with a new problem to solve or decision to make. Simulations not only construct a nearly ‘real world’ experience but also help to bring theory and practice together by developing the ability to use acquired knowledge and skills [Williams, 2015].

Design thinking Approach

Design thinking process was proposed by the Stanford School and the HPI School of Design Thinking. It involves six interdependent phases: understand, observe, define, ideate, prototype and test. Daniel & Ellis-Chadwick (2016) further revealed that the DT process has now become a trend in management and new product development fields, but its use in the context of entrepreneurship education is rather new. The ‘understand’ phase refers to a team effort to gather and use information in order to understand a certain problem domain and so to become more knowledgeable about the nature of the problem in question [Lugmayr *et al.*, 2014]. In the ‘observe’ phase, team members interact with potential users with the aim of engaging with their conception of reality and examining their problems, habits, attitudes and needs. Based on the results of the previous phases, the team is now in a position to define the problem or aspect of the problem they wish to concentrate on. In the ‘ideation’ phase, the team starts to develop solutions, ideas and proposals, using various techniques to enhance creativity. Some of these ideas and proposals can then be taken to the ‘prototype’ phase, in which mock-ups are produced. These are then tried out in practice in the ‘test’ phase to evaluate possible solutions [Lugmayr *et al.*, 2014].

FLIGBY

FLIGBY is a serious game that was originally developed with the objective of simulating the business management process and the application of Flow Theory in a business context [Almeida & Buzáy, 2019]. FLIGBY appeared in the market as a serious game integrating three dimensions: (i) learning the Flow in business; (ii) using simulation as a practical teaching tool; and (iii) including

motivating elements as games. The objective was to provide a serious game that can be used in education and training of business, management, and entrepreneurial skills and attitudes.

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