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Towards an Integrative Model of Innovative Entrepreneurship Education for Institutional Sustainability

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6.1 Introduction

World over, the innovative entrepreneurship culture is increasingly gaining wide-spread relevance as a critical success factor not just for entrepreneurship practice but also for pedagogy in entrepreneurship education (Faltin, 1999, 2001). Up until now, majority of its attention,

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which is largely triggered by competition, is being channelled to Small and medium sized enterprises (SMEs) and rapidly growing companies that are technology based. No doubt, entrepreneurship is rather complex and multidimensional. As such, entrepreneurial innovativeness does not solely emerge from intensified competition but emanates from identifying prevalent social issues and secure opportunities in existent market. However, discoveries from Vesper (1993), Csikszentmihalyi (1999), and Olarewaju and Olurinola (2021) show that an individual's background (education, social demography, and experiences) naturally opens up platforms and maximises potentials for developing sound and innovative entrepreneurial ideas that are based on well researched factors (SWOT—strengths, weaknesses, opportunities, and threats) which are not easily imitable by other competitors. So, being able to adapt and imbibe societal tenets and communal problems critically helps in successfully executing given innovative ideologies of an entrepreneur. de Jong & Marsili (2015) buttress the major argument of Block et al. (2017) that just very few entrepreneurs can truly be said to be innovative.

Shane (2003) agrees that an individual's experience and knowledge determines how well and efficiently opportunities are identified and exploited, hence the need for properly educating potential entrepreneurs. Surprisingly, there are a plethora of thriving innovative entrepreneurs whose educational background involves them dropping out of school. For instance, founder of Microsoft, Bill Gates dropped out of Harvard whereas the founder of NIKE, Phil Knight received his BSc in Business Administration from University of Oregon, and Master's degree from Stanford Business School. This triggers questions about the relationship between higher educational attainment and innovative entrepreneurship. Can innovation be adequately practised in college? How can universities and colleges actively help students to imbibe innovative entrepreneurial skills? Such inquisitions have resulted in institutional stakeholders revisiting educational practices to examine its efficacy in motivating students' innovative desires for proffering solutions to ongoing issues that extend into future generations. Although some studies such as Akhmetshin et al. (2019) and Undiyaundeye (2015) have evaluated the importance of entrepreneurship education in the schooling system of developing nations including Nigeria, there appears to be a gap and disconnect

of reality from expectations of innovative entrepreneurship in Nigerian schools, which this article seeks to address.

For one, in developing countries like Nigeria, graduates seem not to be strong enough in their personal capacity, resolve and drive to becoming independent entrepreneurs, perhaps because of fear, inertia, and unwillingness to take-risk (Lawal et al., 2018; Ukenna, 2009). These are evident in the increasing number of young graduates seeking jobs and the high failure rate of newly established small businesses (Adegbuyi et al., 2018). Such shortcomings in Nigerian graduates somewhat suggest that prevailing innovative entrepreneurship educative models may be pedagogically defective, hence a crucial gap which this study aims to bridge. For one, the Design Thinking Approach, D.I.S.R.U.P.T, and Experiential learning theoretical models do not specifically consider the context of students within educational settings transitioning into real-life entrepreneurial environment, particularly with respect to pedagogical curriculum, technological and institutional peculiarities. It is important to note that policies pertaining to innovation are key in affecting innovative feats. However, they must be designed to cater for the specific needs and institutional structures of each peculiar nation (OECD, 2005). This is otherwise known as the national innovation system—NIS (OECD, 1997) which will be elaborated upon alongside these 3 main theories observed in this research.

Accordingly, it is imperative to posit an integrative model that eliminates the elements of fear, inertia, and weak risk-taking attitude at the tertiary educational levels that concomitantly translate into fostering institutional sustainability through innovative entrepreneurial practices. This theoretical paper seeks to address the research question: what integrative model of innovative entrepreneurship education can guide pedagogy, curriculum development, and practice in innovative entrepreneurship for the context of developing economies—particularly Sub-Sahara African regions like Nigeria? As such, developing such integrative model is impossible without synergising the pertinent theories discussed in this paper, which not only bridges existing gaps but has the potential of providing future researchers in the area of innovative entrepreneurship research with an array of ideas to guide their research. In addition, the model can provide an insight for innovative entrepreneurship practice

and training. The rest of the paper discusses the following themes: literature review, methodology, finding, and discussion of proposed model, followed by conclusion and implications.

6.2 Innovative Entrepreneurship

The concept of entrepreneurship has three major approaches: entrepreneurial function that pertains to dynamic actors including managers and intrapreneurs who undertake crucial choices on production, research and development (R&D), location, innovation, and investment. This highlights originality, creativity, dynamism, and innovativeness which are at the core of entrepreneurship. The second aspect entails enterprise performance where firm strategies and capabilities are focused upon, from individual to state ownership, joint ventures, multinational subsidiaries, and so on (Goedhuys & Sleuwaegen, 2010). The third strand deals with owner-operated enterprises, which is a main subset of firms which often targets self-employment and small and SMEs (Szirmai et al., 2011).

Innovative entrepreneurship is a derivative of the first strand of the broad concept of entrepreneurship. The field of innovative entrepreneurship amalgamises two concepts—innovation and entrepreneurship. From the plethora of existing definitions, innovation is turning an idea into a solution that adds value from a customer's perspective. It is something newly introduced, such as a new method or device. Modern thinking in innovation synthesises technologies and continues to challenge conventional techniques. Agreeably, innovation requires technological changes in the form of new era of equipment, machineries, and better educated workers. So, technological advances sometimes emerge from on-the-job training, capabilities, R&D, formal and informal investment forums (Helpman, 2004). Usually, innovation is measured by the magnitude of patents or venture capitalist dollars received. Despite the various perceptions of innovation, including defining it as procedures of inventing new products for modification to satisfy clientele preferences before production and sales, one thing remains common across all definitions, innovation encompasses value creation (Tidd et al., 1997). Inserting the

concept of innovation to entrepreneurship leads to producing new items or services or developing uniquely new techniques to manufacture or deliver commodities at lower cost (Baumöl et al., 2007a). This is very contrary to a replicative entrepreneur who imitates what already exists in the market and probably adopts an already existent business model that best suits their personal interests rather than that of the customer base. Cantillon (1755), Say (1827), Schumpeter (1936), and Kirzner (1973) are few authors who first distinguish between replicative and innovative entrepreneurship.

Baumöl (2010) explores bringing innovative entrepreneurship into micro-theory of value. In his book, it was conceded that right from time; entrepreneurs have been acknowledged for their contribution to the general welfare of economies, although it has gradually progressed from entrepreneurs being relegated to the background to eventually coming into the limelight and gaining more obvious global recognition. Entrepreneurship goes beyond hard work and self-employment to utilising its full capacity of creativity, developing ideas (Faltin, 2001). Generation of such entrepreneurial ideas is characterised by rising educational levels which give the necessary forum to compare societal and economic values. Subsequently, it has been envisioned that such culture of innovative entrepreneurship can incorporate social, artistic, and economic activities to human embodiments of creativity. Hence, sound entrepreneurial idea is the foundation to successful innovative entrepreneurship.

Going back to Schumpeter's definition, entrepreneurial functionalities do not entail invention but are more concerned with awakening and re-defining knowledge into physical form in marketplaces. Such invasion and disruption of prevalent market equilibrium with groundbreaking innovation, otherwise termed "creative destruction" is made possible through better effective allocation of resources and a competitive environment (Chima, 2016; Schumpeter, 1993). Hinterhuber (1992) notes the importance of attaching missions or purpose to innovative entrepreneurial ideas such as Stephen Wozniak and Steven Jobs whose visions were to democratise computers such that the greater part of the populace can afford it. In this way, innovative entrepreneurship differs from the traditional business motive/objective of primarily making

profit. Additionally, Timmons (1994) sees entrepreneurship as a human creative ability to build something from nothing. Curiosity and an optimistic attitude that there are much more opportunities to be discovered helps to foster innovative entrepreneurship

Another traditional conceptualisation of an innovative entrepreneur is that such a person must be knowledgeable in basically every aspect: bargaining with clients and suppliers, coordinating employees, fostering team spirit, accounting, maintaining inventory and business equipment, handling tax collectors' demands, and other legalities involved. However, such an individual that is generally qualified and perfect is not just difficult to locate but to train from the inception, not to mention that having all these qualifications is rather scary for ordinary people. This does not mean that an entrepreneur should not be vast. Contrarily, it implies that successful innovative entrepreneurship requires basic knowledge and comprehension of these different areas to allow for flexibility as it is literally impossible to be perfectly or fully skilled in every subject matter (Faltin, 2001). This is where the topic of specialisation and division of labour comes in which is advantageous for saving time and energy such that an innovative entrepreneur can focus on turning his vision into reality.

6.3 Interconnection Between Innovation and Entrepreneurship Education

The importance of innovation for entrepreneurship education cannot be overemphasised because coupled with the rising educational levels, customers are getting more sophisticated in their preferences and tend to desire uniquely outstanding products or services (Adegbuyi et al., 2018). This partially arises from broader awareness about how businesses are generally conducted. Thus, asides top notch innovative ideas, having the right team of committed people and resources are additional ingredients that are intertwined in order to achieve innovative entrepreneurship. Embedded within these resources is the entrepreneur's education and experiences, which help to develop persistence and perseverance through the difficult points of possible failure (Ogbari et al., 2019; Olokundun

et al., 2018a, 2018b). However, for these factors to work, a thoroughly refined business model is necessary. Undeniably, the process involved in formulating innovative entrepreneurial ideas is critical component of business models. Such models must include synergetic strategies that account for societal values and problems which are common to all or most individuals within any given society; else this might backfire due to its inability to attract the public (Morgan, 1991).

Baumöl (2004) and Ogbari et al. (2019) observe that educating innovative entrepreneurs at the university level is a deliberate process to prevent excessive dependence on imitating traditionally confining thoughts which hamper creative behaviours and attitudes that are important for innovation-oriented activities. Researchers have argued over time on the realistic possibility of teaching entrepreneurship that is innovative, rather than replicative and whether such personality skills including risk-taking are natural (in-born) or nurtured (learnt at an early age) or a synergy of both. Ukenna (2009) advocates for how to overcome risk inertia and cultivate skills towards risk-taking. Some persons believe that one either possesses this entrepreneurship skill or does not, others such as Baumöl, Litan and Schramm (2007b) are of the opinion that training, and education are vital contributors to innovativeness of entrepreneurs.

Modern conditions of professional educational institutions feature rising competitiveness; thus, modern teachers should practise innovative and entrepreneurial dexterity in addition to applied professional competence (Ivanov et al., 2011; Olokundun et al., 2018a, 2018b). Unfortunately, majority of teachers are not focusing on the innovative aspect of business and remain unready for its active implementation (Osipov, 2006). This is probably because most modern educators have not developed their innovative entrepreneurial competence well enough.

Models of entrepreneurial activities span across consulting, inventory, commercial, investment, market-games, acquisition, intermediary and institutional models. So, productivity level of competent innovative and entrepreneurial formation is related to readiness to innovate, dynamism, and the level of teachers' openness/receptiveness to new approaches of doing things. Active involvement in conferences, innovative ideas, grants, projects, and systematic publications also help in boosting teacher's efficiency with regard to innovative entrepreneurship. Cooperating with

relevant research institutes, technologies, and developmental projects helps to ensure the integrity of innovative processes of entrepreneurial efficacy (Ivanov et al., 2015).

However, it is apparent that the existent educational structure has not completely succeeded in encouraging a sufficient innovative entrepreneurship approach to tackling overall real-life challenges (Klatt, 1988; Moses et al., 2015). As a matter of fact, most educational schemes that should combine education with real-life production activities do not actually reflect the intricacies of the market. Meanwhile, diverse experiences and lessons can be gotten from being involved in the real functionality of markets, starting from entrepreneurial ideas to pricing and quality which must be favourable to consumers' demands. Also, building dependable network and people-relationships as well as learning to effectively deal with both formal and informal power structures of society is a vital asset that goes beyond the theoretical teachings of schools (Mayhew et al., 2012). In training students for undertaking entrepreneurial ventures that are innovative in nature, higher technical education which combines legal and economic knowledge with practical exposure.

Hence, entrepreneurship education is much beneficial than Intrapreneurship where in the latter, job seekers usually present their educational certificates (most likely without practical experience and vocational training) and wait for employers to accept potential employee's offers of practicalising their own ideologies for organisational gains. However, this stifles innovative entrepreneurship as the entrepreneur is restricted or saved from the burden of personally seeing to the establishment of his own business enterprise. The reality is that for youths to cultivate essential entrepreneurial skills, they must actively participate in developmental programmes that have strong pedagogical accentuation on encouraging creativity, building leadership and problem-solving skills for taking the initiative, dealing with negotiations, decision making amongst other key life skills (Gibb, 1996a).

Baumöl (2004) recommends that universities adopt an integration of two methods in training innovative entrepreneurs: students should choose research projects that allow practical proficiency in prevalent analytical techniques coupled with a liberal imaginative process that is

unorthodox. Nonetheless, balancing the provision of sufficient training technicalities with attempts to evade regularised and ordinary thinking approaches remains a crucial obstacle to designing quality schooling curricula for potential innovative entrepreneurs. So, it is much needed for such pedagogy to be imbibed within educational curriculum context that extends to even non-business students that demonstrate flair and interest in such. This is preferable to being restricted to business environment or special trainings in business administration. A vivid illustration is the rising pattern of involving science, arts, and engineering students in the entrepreneurship process (Kuratko, 2005). In fact, the Kauffman Panel on Entrepreneurship Curriculum in Higher Education (2008) is a strong proponent of teaching innovative entrepreneurship as this is not a case of one size fits all, thereby cutting across all disciplines. Therefore, for students to effectively learn how to implement innovative entrepreneurial operations, there must be proper interaction with their teachers.

6.4 National Innovation Systems (NIS) and Institutional Sustainability

Carlsson et al. (2002) note that the concept of innovation system encompasses the operations of public and private actors, interlinkages as well as the roles of institutions and policies. Hence, NIS stems from R&D activities undertaken by research institutes, government agencies, and universities which go beyond traditional inputs such as R&D expenditures, number of research manpower, and patent-related outputs. Lundvall et al. (2002) observe innovation systems from two angles: its structure (in terms of what is produced and the most developed competencies) and institutional setup (that is, the process/manner by which learning, innovation, and production occurs). Lundvall (1992) pinpoints the narrow and broad perspectives of innovation system where the former directly focuses upon those kinds of institutions which are major innovation sources that intentionally aid the attainment and spread of implicit cognition. The broader innovation approach acknowledges that this narrow perspective of institutions is contained within a much

larger socio-economic system. This innovation concept has even gained popularity globally including EU and OECD economies.

Interestingly, innovation goes beyond invention, which mainly pertains to R&D and encapsulates modern innovation theory that emphasises innovation as a mechanism of transferring new knowledge. Intriguingly, policy measures for stimulating innovative entrepreneurship are quite different from those that foster general entrepreneurship. Block et al. (2017) explore the magnitude of innovative entrepreneurship by investigating 102 empirical works that were published in the primary economics and management journals. This enabled adequate synthesis of existent research, thereby aiding knowledge, awareness, and support of encouraging more innovative entrepreneurship.

Many empirical works have concentrated on replicative entrepreneurs and their associated educational experiences. Nonetheless, there are recent studies which investigate the interconnectivity of educational exposition and innovative entrepreneurship (Colyvas & Powell, 2007; Mars & Lounsbury, 2009; Mars et al., 2008; Ndofirepi, 2016). A research survey on entrepreneurship education between 1985 and 1994 confirms that entrepreneurship is teachable given the positive influences of educational programmes upon a person's entrepreneurial prowess (Gorman et al., 1997). Similarly, Kourilsky and Walstad (2000) and Chilosi (2001) provide evidence of instances where education has positively led to successful entrepreneurial undertakings, which expand from start-up initiatives to facilitating mass self-employment opportunities. This stems from increased confidence to assume risks that are implicit to such innovative businesses.

Additionally, degree attainment has been affirmed to be correlated with successful performance indicators like earnings, profits, and growth. Van der Sluis et al. (2005) opine that higher educational level aids greater performance of the concerned entrepreneurial ventures. Weaver, Dickson and Solomon (2006) strongly support this assertion in belief that highest entrepreneurship levels are connected to people that possess a minimum of college education; regardless, education that exceeds bachelor's degree is not totally established to have positive linkages with entrepreneurship.

Kourilsky and Esfandiari (1997) explore the New Youth Entrepreneur curriculum that had 12 educational units of coursework that were channelled to teach students major entrepreneurial nuggets. After teaching this syllabus for one period everyday throughout the semester, it was seen that it had substantial positive impact on African American high school students from lower social classes as they were equipped with basic entrepreneurial understanding and dexterity. Other authors establish that such curricular schemes enable the acquisition of creative thinking capacity, developing new products, insights into technological innovations, leadership, and negotiation via related taught courses (Chima, 2016). These subsequently boost awareness of entrepreneurial platforms (Donckels, 1991), likely problems to be encountered (Plaschka & Welsch, 1990), traits of an innovative entrepreneur's personality (Scott & Twomey, 1998), building tolerance levels (Ronstadt, 1987), methods such as patents for safeguarding ideas (Vesper & McMullan, 1988), funding sources for entrepreneurial ventures (Zeithaml & Rice, 1987). Rabbior (1990) goes on to posit that entrepreneurship courses should also boost self-esteem and confidence by enlightening them on how it works in communities, of which communal integration and out-of-the-box thinking is very helpful. Gibb (1996b) recognises the place of addressing students' self-efficacy.

Mayhew et al. (2012) explore the link between innovative entrepreneurship educational experiences by executing series of assessment to 3,700 undergraduate seniors who graduated in 2007 spring. Their findings reveal that undertaking entrepreneurial courses as pedagogical approaches was substantially connected to innovation intentions after controlling for political, educational, demographic, and personality covariates. This buttresses the research of Olarewaju and Olurinola (2021) who recognise the importance of socio-demographic factors combined with the sound health of concerned individuals to impact the level of education attained via hands-on-training and practical experiences. Therefore, synthesising pedagogy-related information from diverse empirical and anecdotal sources makes it obvious that teaching based on real-life experiences yields the best outcomes. Whereas experience-based techniques incorporate developing business plans, field trips, consulting and holding interview sessions with on-the-field entrepreneurs, giving

chances for students to actually start-up businesses (Hills, 1988; Solomon et al., 1994); non-experiential approach includes behavioural simulations (Brawer, 1997; Stumpf et al., 1991).

6.5 Review of Previous Models Relating to Innovative Entrepreneurship Education

In this section, some selected models that are relevant to this study's objectives are examined. This will help to inform the model that will eventually be projected by this paper.

A. **Design Thinking Approach**

Originally conceptualised by professional designers and architects, the Design Thinking (DT) approach is argued to be a critical success factor that should form the basis of thinking pattern for modern entrepreneurs and managers. Rauth et al. (2015) note that DT is a management concept derived from a way of working with innovation mainly. They further argue that everyone can learn from the way that designers think and work to come up with better ideas and enable the development of more innovative offerings. Today, DT is being implemented in various organisational settings often through executive education and consultancy projects as it so useful in fuzzy front end of innovation and product development. Consequently, it is developed into a management concept that is now taught at numerous business schools as it being applied in a variety of management contexts (Rauth et al., 2015).

Notably, embedding the DT approach into innovative entrepreneurship education requires primarily the integration of the ten design thinking tools as identified by Liedtka, King and Bennett (2013):

- **Visualisation:** envisioning possibilities to translate into reality.
- **Journey mapping:** reviewing existent experiences from the perspective of the customers.

- **Value chain analysis:** analysing the current value that is most beneficial to the clientele.
- **Mind mapping:** coming up with fresh insights from exploring past and prevalent activities to develop new design criteria.
- **Brainstorming:** formation of new opportunities and alternative business models which are unique and sustainable.
- **Concept development:** gathering innovative components in an orderly manner to solve and evaluate existing problems.
- **Assumption testing:** experimenting and validating major presumptions that will determine a concept's success or failure.
- **Rapid prototyping:** representing new conceptualisations in tangible forms such that it can be tested and refined.
- **Customer co-creation:** engaging customers to generate solutions that best satisfy their needs/demands.
- **Learning launch:** executing an affordable experiment that enables clients to experience modernised solutions over elongated time periods in order to verify main tenets of market data.

However, Randall and Liedtka (2014) note that all these tools can only work after answering four critical questions: What is? What if? What wows? And what works? This corresponds to the opinions of Liedtka et al. (2013). Moreover, these tools are somewhat re-emphasised by Dijksterhuis and Silvius (2017) somewhat re-emphasises these tools by reiterating the importance of focusing on the needs of the concerned users in addition to promoting visual aids. However, this DT approach does not accommodate for learning within academic institutes. Thus, such thinking approach could be helpful when aiming to boost the competence of education for innovative entrepreneurship such that it translates into institutional sustainability. Therefore, a robust model, which this paper seeks to propose, is expected to integrate the DT tools and values.

B. **D.I.S.R.U.P.T Model**

This model is also considered in striving to achieve innovative approach for teaching entrepreneurship. Disrupt is a new way of thinking

which generates new ideas of how to meet clients' needs through the provision of either a product or a service, in this case being entrepreneurship education for innovative entrepreneurship and institutional sustainability. Disrupt is an acronym which stands for the following:

i. **D—Derive:** That is, to base a concept on another concept by either extending an original concept or modifying it to create a new one. Bring something new out or slightly change from the original existing product or service to producing a new one.
ii. **I—Include:** This has to do with making something new thing to a business process to add value and make it different from the original.
iii. **S—Separate:** This entails removing connection between people or things and creates a new product or service idea.
iv. **R—RePurpose:** To change something in a product or service to use the change product or service for a different thing.
v. **U—Unite:** This combines two products to create a new product
vi. **P—Personalise:** Designing or producing something to meet someone's or individual requirements.
vii. **T-Transplant:** Transplant is expressed when an idea that works in one place is taken and introduced in another place, which can be a country or a different customer segment.

The disruptive model emerged from the conceptualisation of disruptive innovation. A disruptive innovation is an innovation that creates a new market and value network and eventually disrupts an existing market and value network, displacing established market-leading firms, products, and alliances (Christensen, 2006). The term was defined and first analysed by the American scholar Clayton M. Christensen and his collaborators beginning in 1995. According to (Christensen, 2006), disruptive innovations tend to be produced by outsiders and entrepreneurs in start-ups, rather than existing market-leading companies. The business environment of market leaders does not allow them to pursue disruptive innovations when they first arise, because they are not profitable enough at first and because their development can take scarce resources away from sustaining innovations (which are needed to compete against current competition).

Nonetheless, the context of learning and transitioning from educational institutes is generally not considered in the DISRUPT model which mostly focuses on entrepreneurial realities in business scenarios. However, in terms of this paper's focus, the thinking of DISRUPT model can be built into the teaching of innovative entrepreneurship to attain sustainable institutions. The present teaching of innovative entrepreneurship has focused on sustaining innovation and not on disruptive innovation. Christensen (2006) explained that the goal of sustaining innovation is to improve existing product performance. On the other hand, he defines a disruptive innovation as a product or service designed for a new set of customers, which is critical to innovative entrepreneurship and institutional sustainability.

C. **Experiential Learning Theory/Model**

The critical defect of most entrepreneurship curriculum and pedagogy is the absence of experience on the part of the students. This has given rise to the knowledge-practice gap, which has resulted to low risk-taking attitude and general fear when the students face the real world. This has triggered the need to pedagogically bridge gap integrating experiential learning component in the innovative entrepreneurship education model. Thus, insights are drawn from the Experiential Learning Theory (ELT) posited by Kolb (1984).

According to McCarthy (2016), generally, there are four approaches to learning have (1) personality (2) information processing, (3) social interaction, and (4) instructional preferences. The second approach—information processing, examines how students absorb and use new information. David Kolb's experiential learning model and learning styles inventory (LSI) is the most prominent theory and instrument used (McCarthy, 2016). Depicted in Fig. 6.1, the experiential learning model is a four-stage circular process where for effective learning to occur, the learner must experience the entire cycle. Most students favour one part of the cycle over other parts hence their learning style preference.

Experiential learning, or "learning by doing" has resulted in positive outcomes. Most experts agree that when students take an active role in the learning process, the student's learning is optimised (McCarthy,

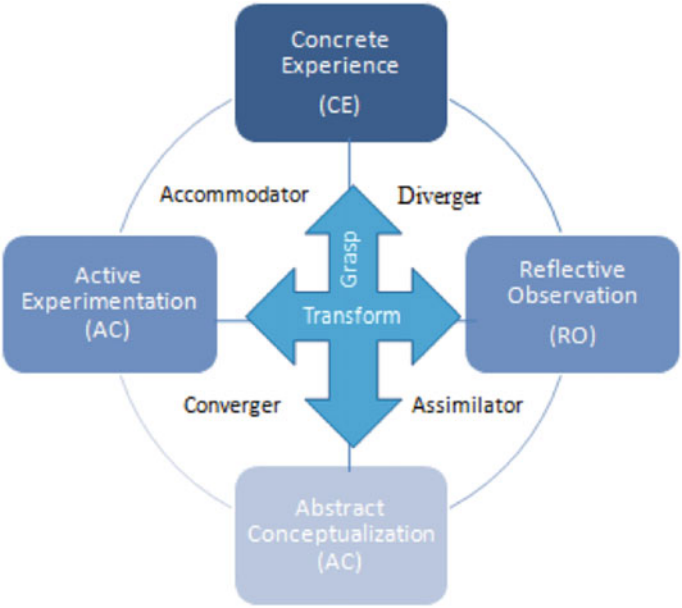

Fig. 6.1 The experiential learning cycle and basic learning styles (Kolb, 1984)

2016 citing Smart & Csapo, 2007). The ELT has important implications for innovative entrepreneurship education (Dhliwayo, 2008). Primarily by understanding experiential learning theory and linking to practise in the classroom, educators are better equipped to promote learning (McCarthy, 2016; Olokundun et al., 2017).

ELT is intended to be a holistic adaptive process on learning that merges experience, perception, cognition, and behaviour. ELT defines learning as "the process whereby knowledge is created through the transformation of experience. Knowledge results from the combination of grasping and transforming experience" (Kolb, 1984, p. 41). The experiential learning model is a cyclical process of learning experiences. For effective learning to transpire, the learner must go through the entire cycle. The four-stage learning model depicts two opposite dimensions of grasping experience—concrete experience (CE) and abstract conceptualisation (AC), and two polar dimensions of transforming experience—reflective observation (RO) and active experimentation (AE).

Experiential learning is a process of constructing knowledge that involves a creative tension amongst the four learning abilities. The learner must continually choose which set of learning abilities to use in a specific learning situation (Kolb, 1984).

The Learning Style Inventory (LSI), the instrument used to assess the individual learning styles, identifies four types of learners based on their approach to obtain knowledge—Diverger, Assimilator, Converger, and Accommodator (see Fig. 6.1).

Divergers prefer to approach learning through Concrete Experience (CE) and to process it through Reflective Observation (RO). Divergers are best at viewing existing situations from many different points of view. Individuals perform better in situations requiring generating new ideas and brainstorming. Their strength lies in imaginative ability and awareness of meaning and values. Accommodators also prefer to take in knowledge through concrete experience, however they favour processing it through active experimentation ideas (Kolb, 1984; McCarthy, 2016). Accommodators are capable of learning from primarily "hands-on" experience. They enjoy carrying out plans and involving themselves in new and challenging experiences. The assimilator prefers to approach knowledge through abstract conceptualisation and to process it through reflective observation.

The converger also approaches knowledge through abstract conceptualisation however the converger favours processing it through active experimentation. Convergers prefer to deal with technical tasks and problems rather than with social and interpersonal issues. (Kolb, 1984). Although ELT is more accommodating of various learning techniques, it does not narrow down to transitioning mechanisms of students imbibing practical entrepreneurial exposure. Obviously, the ELT provides critical insight in any conceptualisation of an integrative model to guide understanding of innovative entrepreneurship education. Such an integrative model incorporates an experiential component that supports students to allay fear and triggers appropriate risk-taking behaviour when engaging in real-world situation, which this paper seeks to develop.

6.6 Findings and Discussion of Proposed Model

Guided by the conceptual framework of Ukenna & Nkamnebe (2017) and National Innovation Systems Approach by Organisation for Economic Cooperation and development—OECD (1997), this study involved a wide range of peer reviewed academic journal articles aimed at addressing the issues and cognate models on innovative entrepreneurship education (IEE). This process led to the conceptualization and formulation of the variables or elements that constitute the proposed Integrative Model of Innovative Entrepreneurship Education (IMIEE). The elements of fear, inertia, no risk-taking (Lawal et al., 2018; Ukenna, 2009) that seems to have partly triggered the increasing number of young graduates seeking jobs and the high failure rate of newly established small businesses owned by young entrepreneurs (Adegbuyi et al., 2018) seems to question the adequacy of prevailing models of innovative entrepreneurship education. Accordingly, we posit the Integrative Model of Innovative Entrepreneurship Education (IMIEE) depicted in Fig. 6.2. Therefore, the IMIEE we propose is expected to guide effectively teaching and other pedagogical activities in innovative entrepreneurship across schools, high schools, and universities alike such that institutional sustainability will be the ultimate result. In addition to the above discussed three key models (i.e., DT Approach, Disruptive Model, and Experiential Learning Theory) that build upon the NIS approach to inform the conceptualisation of IMIEE. Other informative cognate works are sparks of innovation by Hoffman (2005) and entrepreneurship culture and climate by Gabr and Hoffman (2006).

The IMIEE seeks to contribute to the understanding of innovative entrepreneurship in two ways. First, it gives insight to curriculum design and pedagogy in innovative education and second, it provides managerial tool for both potential and current entrepreneurs who seek deepened knowledge that strengthens their innovative drive. Accordingly, IMIEE comprises four critical components or constructs—entrepreneurship education (EE), sparks of innovation drivers (SID), stimulants of innovative entrepreneurship (SIE) culture, and NIS & institutional sustainability.

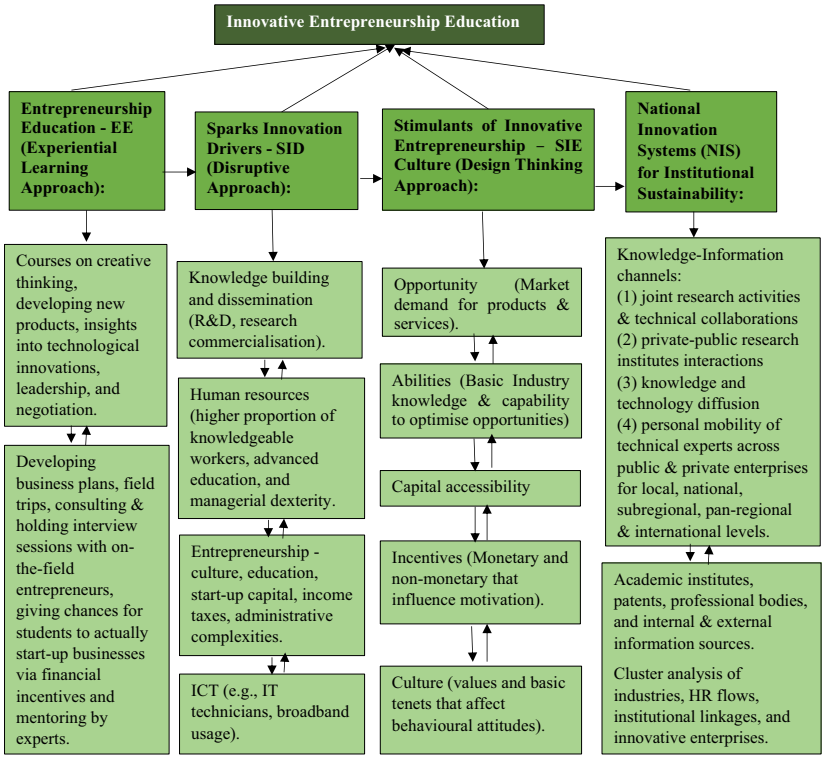

Fig. 6.2 The Integrative Model of Innovative Entrepreneurship Education—IMIEE. Authors' Compilation (2021)

The first construct, entrepreneurship education (EE), in this context is conceptual from the experiential learning prism. The EE construct is strongly underpinned by the Experiential Learning Theory (ELT), as it is believed that the EE projected must be hands-on giving the students opportunities to acquire experience. Hence, it involves two distinct but interrelated parts: the creative development of their products or business idea; and the actual execution of such ideas into micro start-ups within and outside campus. This is bridged by this paper's propositions of more practical-oriented courses, field trips, interview sessions, monetary rewards for outstanding performances, developing business plans, learning the ropes of negotiation by groups of students working

closely with assigned successful entrepreneurial mentors. This is a departure from prior teachings in EE, which are theoretical-loaded thereby making EE too abstract, and seemingly increasing inertia, fear, and wider knowledge-practice gap due to non-experiential lessons.

The second construct, SID, is underpinned by the Disruptive Model of innovation building. It is expected that during teaching, instructors are to provoke disruptive and outside-the-box entrepreneurial mind-set. For instance, on-campus competitions, incentives, and awards can exist for students who are able to conceptualise entrepreneurial ideas and sustainably solve school-related challenges. Christensen (2006) maintained that the approach of sustaining innovation should be replaced with disruptive innovation approach if start-ups seek institutional sustainability and survival. The third construct, SIE, argues that innovative entrepreneurship education must be strengthened by wide-spread and firm-wide culture and climate of innovation through sound design thinking across main nuggets of entrepreneurial-inclined values, identifying opportunities via SWOT evaluations, abilities & resources, capital accessibility, and pecuniary incentives.

These 3 models form the basis and build upon NIS approach for institutional sustainability which entails information and knowledge flows across private–public research institutes, collaborations with experts on local, national, sub-regional, pan-regional, and international platforms. Thus, this informs the integrative model of innovative entrepreneurship education (IMIEE) for pedagogical institutes and schools to be sustainably well-equipped for real-life entrepreneurial realities.

6.7 Conclusion and Implications

This study sought to explore innovation entrepreneurship from the perspective of entrepreneurship education. Therefore, the paper investigates diverse approaches to determine how best innovative entrepreneurship can be taught to aspiring entrepreneurs regardless of their disciplines. This entails an overall restructuring of school curriculum and pedagogy such that more practical and hands-on experiences can be gained. This has informed the need of proposed IMIEE, which we

conclude will guide curriculum development and other pedagogical issues in innovative entrepreneurship education. It is concluded that an innovative entrepreneurship education that is pedagogically effective through insight from IMIEE can strongly translate into successful entrepreneurial practice, as it is expected to incubate future practitioners.

This study recommends using this paper's proposed integrative model for cluster analysis of specific educational institutes to investigate entrepreneurial-related curriculums and how effective their mechanisms have been in translating into successful real-life entrepreneurs. For instance, future researchers could consider academic institutes without or with very little practical entrepreneurial activities as control group whereas universities and colleges with more practical trainings pose as the experimental group to allow for effective comparisons and informative findings. This would be a build-up of four (4) existing research avenues on NIS but beyond OECD's scope of advanced countries: mapping institutional linkages, human resource (HR) flows, industrial clusters, and innovative firms within the context of chosen African nation(s) or developing countries to achieve sustainable integrated innovative entrepreneurship education.

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