

Constructivist Approaches: A Budding Paradigm for Teaching and Learning Entrepreneurship Education

AKPOMI, Margaret E. & KAYII, NumbaraBari E.

Department of Business Education

Rivers State University, Nkpolu- Oroworokwo, Port Harcourt, Nigeria.

Email: numbarabari.kayii@ust.edu.ng

Abstract

Constructivism is an approach to learning that believes in the personal construction of knowledge by learners through the interaction of prior knowledge to form a new experience. Constructivism represents the state-of-the-art in the teaching of Mathematics and Sciences at all levels of education. However, there is less work on constructivist teaching and learning in Entrepreneurship Education. This study reviewed theoretical and empirical studies on constructivism with emphasis on how it can help organizations achieve value creation through the vehicle of Entrepreneurship Education. Also, the study summarizes the pedagogical goals of constructivist learning and conceptualizes the dimensions of Entrepreneurship Education, the relevance of Entrepreneurship Education, teaching methods in Business Education, and brings out an understanding of the paradigm shift. The study reveals that the focus of Entrepreneurship Education is to promote innovation and value creation among learners. Consequently, the researcher has drawn a useful conclusion on the application of constructivist approaches in teaching Entrepreneurship Education, and it was recommended, among others; that stable industrial policy on the collaboration between small business entrepreneurs and research institutions for the exploitation of research findings of those institutions to achieve sustainable technological development.

Keywords: constructivist, teaching, learning, entrepreneurship, education

1. Introduction

Education has undergone significant review processes to identify the best approaches to human learning and the conditions that enhance effective teaching and learning. In particular, there has been a paradigm shift in the instructional approaches of engaging the learner, from behaviorism to cognitivism in the past and most recent constructivism. Constructivism is a learning theory based on observation and how people construct their own understanding and knowledge of the world, through experiencing things and reflecting on those experiences (Ekpenyong & Edokpolor, 2016), basically suggests how people react when they encounter something new, reconcile it with their previous ideas and experience, to believe or discard the new information as irrelevant. Constructivism encourages people to be active creators of knowledge. To do this, the students must discover and locate sources of information through asking questions, exploring, and assessing and pointing towards a number of different teaching practices (Tuckman & Monetti, 2011). This process of intellectual connectivity occurs when the students reconcile formal teaching experiences with their existing knowledge, within the cultural and social contexts in which learning occurs, and with an array of other factors that stimulate understanding.

In the context of Entrepreneurship Education, teaching is designed to encourage students to use active techniques (experiments, real-world problem solving) to create more knowledge, reflect on, and talk about what they are doing and how their understanding is changing. The Lecturer

makes sure he or she understands the students' preexisting conceptions and guides the activity to address the training need of the students to provide them with the knowledge, skills, and motivation to encourage entrepreneurial success in a variety of ways. Entrepreneurship education aids students from all socioeconomic backgrounds to think outside the box and nurture unconventional talents and skills, create opportunities, ensures social justice, instills confidence, and stimulates the economy (Oseni, 2017). Entrepreneurship education is a lifelong learning process, starting as early as elementary school and progressing through all levels of education, including adult education (Amesi & Akpomi, 2014; Akpomi, 2013). Introducing students to entrepreneurship education is to develop their initiative and help them to be more creative and self-confident in whatever they undertake and to act in a socially responsible way. There are many ways entrepreneurship lessons can be integrated into tertiary institution programs, and one of the ways is by adopting the constructivist approaches.

Constructivism is an approach to learning that believes that people actively construct or make their knowledge based on the reality predetermined by the experiences of the learner (Elliott, Kratochwill, Littlefield & Travers in McLeod, 2019). Constructivist approaches underpin a variety of student-centered teaching methods and techniques which contrast with traditional education, whereby knowledge is simply passively transmitted by business subject teachers to students. Typically, this approach is a combination of the three broad categories of constructivism: Cognitive constructivism based on the work of Jean Piaget, social constructivism based on the work of Lev Vygotsky, and radical constructivism by Ernst von Glasersfeld (McLeod, 2019). In adopting the approaches, the primary responsibility of the business educator is to create a collaborative problem-solving environment where students become active participants in constructing their learning. From this perspective, the business educator acts only as a facilitator of learning in helping the students construct from new learning experiences or build on prior knowledge from the established learning environment.

However, Honebein in Naade, Alamina, Okwelle (2018) summarizes the seven pedagogical goals of constructivist learning environments:

1. To provide experience with the knowledge construction process (students determine how they will learn).
2. To provide experience in and appreciation for multiple perspectives (evaluation of possible and alternative solutions).
3. To authenticate (embed) learning tasks in a realistic context
4. To encourage ownership and a voice in the learning process (student-centered learning).
5. To embed learning in social experience (collaboration).
6. To encourage the use of multiple modes of representation (video, audio text, etc.)
7. To encourage awareness of the knowledge construction process (metacognition).

Based the fact that, the increasing importance of constructivism in teaching and learning, constructivism has been thoroughly studied by researchers and applied educators in different areas of learning. However, there is less work on constructivism connecting teaching entrepreneurship education. This existing gap becomes more glaring that, teaching and learning of Entrepreneurship Education assumed to have adopted problem-solving, inquiring, and experiential, and other approaches are long considered as a factor to increase knowledge construction process and perspective for skills acquisition (Oseni, 2017; Ekpenyong and Edokpolor, 2016; Gautam & Singh, 2015). However, the teaching of entrepreneurship courses

and other vocational courses in Nigerian institutions trivialized the practical application of the actual theoretical experience in solving contemporary issues. This situation not only portends danger for graduates of Business Education, but to the younger generation who is discouraged to take calculative risk, chances to experiment, create and discover new frontier of opportunities in the evolving economic development, culture, technology, and education for inclusive and sustainable entrepreneurial growth. Entrepreneurial growth embraces innovativeness. Innovative learning is any kind of teaching and learning that allows collaboration, reflections and shared inquiries, and community engagement leading to a more robust, continuously improved ethical of practice.

2. Methodology

The approach adopted in this research is the phenomenological approach. The reason for adopting the phenomenological approach is because the researchers follow a sequence of systematic steps in reviewing the literature and guidelines for assembling the textual and structural descriptions. The researchers determine and introduce the paradigm shift that is best examined using a phenomenological approach. The type of problem is best suited for this form of research because it is important to understand several individuals' common or shared experiences of a phenomenon.

To continuously improve the teaching and practice entrepreneurship, a number of scholars have canvassed for a paradigm shift in the teaching methodology, design and scope to allow extensive industrial synergies and consultations with relevant stakeholders with a view to clearly understand the indicators of economic growth, its relevance in the Nigerian context and the feasibility of producing them for policy formulation and informed decision-making process (Oseni, 2017). This study therefore theoretically examines the teaching and learning of entrepreneurship education using the constructivist approaches.

3. Theoretical Literature

The purpose of this section is to discuss the use of constructs and prepositions of constructivism in relation to the teaching and learning of Entrepreneurship Education among other headings under the theoretical literature.

3.1 Constructivist Learning Theory

Constructivism is a broad term used by psychologists, educators, philosophers, curriculum designers, and other categories of professionals. Grassersfeld (1997) sees it as “a vast and woolly area of contemporary sociology, epistemology, and psychology of learning”. Constructivist approaches are grounded in the research of Jean Piaget, Lev Semionovich Vygotsky, Jerome Bruner, and the like of John Dewey, etc. This endless list suggests that there is no one constructivist theory of learning, but almost all the constructivist theories seem to agree on two prepositions:

- i. Learners construct knowledge and infer meaning to concepts through experience, and that
- ii. Social interaction is a factor in the knowledge construction process.

The constructivist theory was credited to Jean Piaget, who used scientific data to prove that the theory was of some validity. Concerning education, constructivist theories have had a

significant impact on pedagogy, even though constructivism is not a pedagogy in and of itself (Tuckman and Monetti, 2011). Within constructivism, the idea is that people respond to new knowledge by internalizing it and accommodating this knowledge into their existing internal schema, the personal constructs of meaning and understanding that are unique to them. This explains one of the key facets of constructivism as applied to skills acquisition, that learners learn individually, and their knowledge is individually constructed and, arguably, unique to them. Therefore, learning is derived from sensory input from which the learner constructs knowledge. This seems rather simplistic but runs counter to several previous theories, particularly the long-standing belief that knowledge is universal because instead, the learner must interact with the world of works through social context or environment in some way, to learn.

In contrast, social constructivism derives from the work of Vygotsky ‘the social-cultural theory of learning’ which assumes that the social intersection of people brings about interaction, ideas sharing, analyzing issues among the students (trainees, apprentices, mentees), and the lecturer (teacher or instructor, mentor) who initiates, shapes and takes charge of the individual learning process.

However, these two major approaches bring to the fore, the practical emphasis of constructivism are linked to the variations in the teaching of entrepreneurship education (Ekpenyong & Edokpolor, 2016; Adetoso, Akesinro & Oladejo, 2013). For instance, the Piagetian approach aligned with the fact that emphasizes instruction should be designed taking students’ developmental stage into account because students do not yet have the mental capacity to solve such a problem. While Vygotsky’s approach offers encouragement and providing assistance in the form of scaffolding to have students solve the problem through social interactions.

In constructivism, theorists posit that learners learn as they learn, in that while they are learning new knowledge they are learning on many levels, about more than just the facts they are acquiring (Naade, Alamina, Okwelle, 2018). For example, if the student is learning about different materials, such as wood, plastic, and metal, they are learning about the nature of these substances, but also they are expanding their vocabulary, learning what these substances look and feel like, and, are also processing examples of how these materials are used, and why. Applying this knowledge to their social world allows them to test their new understandings and to see what elements of their environment are constructed out of these different materials. The construction of meaning is a mental process that is enhanced by physical activities (Shepardson cited UKessays, 2018), but cognitive engagement through learning activity is key to entrepreneurship education.

3.2 Entrepreneurship Education

The two most frequent terms used in this field are *enterprise education* and *entrepreneurship education*. The term enterprise education is primarily used in the United Kingdom and has been defined as focusing more broadly on personal development, mindset, skills, and abilities, whereas the term entrepreneurship education has been defined to focus more on the specific context of setting up a venture and becoming self-employed (Blank & Dorf, 2012). The term entrepreneurship Education will be used extensively in this report to avoid confusion. Further, the word “student” will in this report used for learners on all levels of education.

Being entrepreneurial can mean many things to many people. A conception according to Gartner (1990) in Kayii and Uranta (2018) is that entrepreneurship is about entrepreneurial individuals creating innovative organizations that grow and create value, either for profit or not. But entrepreneurship does not have to include the creation of new organizations. It can also occur in existing organizations (Lackeus, 2013). Val-Ossai (2017) defines entrepreneurship as “a process by which individuals - either on their own or inside organizations - pursue opportunities without regard to the resources they currently control. Blank and Dorf (2012) use a constructivist approach to propose a definition incorporating not only the entrepreneur but also the new value created, the environment within which it takes place, the entrepreneurial process itself, and the links between these constructs over time. Since no generally accepted definition of entrepreneurship education abounds in literature, this paper proposed a wide definition of entrepreneurship education as any knowledge that focuses on personal development, creativity, self-reliance, initiative-taking, action orientation, i.e, becoming *entrepreneurial*. What definition and approach are used profoundly affects educational objectives, target audiences, course content design, teaching methods, and student assessment procedures, leading to a wide diversity of approaches.

Entrepreneurial education is often categorized into three approaches, (O'Connor, 2013). Teaching “about” entrepreneurship means a content-laden (*curriculum which results in superficial-surface information coverage of content*) and theoretical approach aiming to give a general understanding of the phenomenon. It is the most common approach in higher education institutions (Mwasalwiba, 2013). Teaching for entrepreneurship means an occupationally oriented approach aiming at giving budding entrepreneurs the requisite knowledge and skills. Teaching through means a process-based and often experiential approach where students go through an actual entrepreneurial learning process (Okpara, 2011). This approach often leans on a wider definition of entrepreneurship and can be integrated into other subjects in general education, connecting entrepreneurial characteristics, processes, and experiences to the core subject. While the “about” and “for” approaches are relevant primarily to a subset of students on secondary and higher levels of education, the embedded approach of teaching “through” entrepreneurship can be relevant to all students and on all levels of education.

3.3 Relevance of entrepreneurship Education: Constructivist Evidence

Today entrepreneurial education has become an important part of both industrial and educational policy in many countries, but development is underway with policy pressure exerted on educational institutions nationwide to offer entrepreneurship education as a program or a general studies course.

The most common reason that researchers and experts promote entrepreneurial education is that entrepreneurship is seen as a major engine for economic growth and job creation (Okpara & Halkias, 2011). Entrepreneurial education is also frequently seen as a response to the increasingly globalized, uncertain, and complex world we live in, requiring all people and organizations in society to increasingly equip with entrepreneurial competencies (Val-Ossai, 2017). Besides the common economic development and job creation related reasons to promote entrepreneurial education, there is also a less common but increasing emphasis on the effects entrepreneurial activities can have on students as well as employees’ perceived relevancy, engagement, and motivation in both education and in work-life (Amabile and Kramer, 2011).

The strong emphasis on economic success and job creation has indeed propelled entrepreneurial education to a prominent position on the higher education level, but not as an integrated pedagogical approach for all students on all levels. So far the primary focus has been on elective courses and programs for a few secondary education and university students already possessing some degree of entrepreneurial passion and thus self-selecting into entrepreneurial education (Mwasalwiba, 2010). The emphasis on economic effect has so far hampered the widespread adoption of entrepreneurial education in the remaining parts of the educational system. Instead, it is often viewed as a “dark threat” by teachers, stating that the “ugly face of capitalism” is now entering educational institutions (Johannisson, 2010, p.92). The stated necessity of all people to become more entrepreneurial due to globalization and increasing uncertainty on the market has spurred significant activity on the policy level but has not yet transferred into wide adoption among teachers on all levels of education.

A more viable starting point in education could be to perceive entrepreneurial education as a means to achieve more interest, joy, engagement, and creativity among students (Johannisson, 2010, Lackéus, 2013). A few scholars have recently put forward the potential of entrepreneurial education to spur increased perceived relevancy of subjects taught among learners, increasing motivation and school engagement, and alleviating problems of student boredom and dropout (Lackéus, 2015; Val-Ossai, 2017). This is however a very unusual approach so far in practice.

The booming student interest in social entrepreneurship is another unusual but promising starting point for entrepreneurial education. Interest among young people to engage in solving societal challenges is high around the world (O'Connor, 2013). Here entrepreneurship can be positioned as a tool for young people to attempt to act as societal history-makers (Amesi & Akpomi, 2014). If such an interest can be mobilized as part of the curriculum, it can propel deep learning and put theoretical knowledge to practical work in meaningful ways for students. Corporations can also be asked to participate with their financial resources in such endeavours.

3.4 Teaching Methods in Entrepreneurship Education

The term teaching method refers to the general principles, pedagogy, and management strategies used for classroom instruction. (Amesi, Akpomi & Okwuanaso, 2014). Teaching methods are all techniques or strategies available to a lecturer during the teaching engagement to communicate ideas, skills, knowledge, and alter attitudes to enable them to behave in the manner stated in the objective of the lesson. The adoption of teaching method(s) depends on educational philosophy, classroom demographic, and subject area(s). Some of the teaching methods in use can be organized into two categories, one is the philosophical or traditional principles and the other psychological (experiment) principle. It is important to point out here some of these methods based on psychological principles have some philosophical and traditional backing and vice versa. The teaching methods discussed below are the most methods used by lecturers in our classroom. Some of these methods are; lecture, tutorial, discussion, project, demonstration, inquiry, discovery, teaming teaching, etc.

3.4.1 The Lecture Method

The Lecture Method or expository method allow lecturers transmit information verbally to their students, while the students listen and take note of facts and ideas considered important and

sometimes ask the lecturer questions for clarification. The reason for adopting this method is that the students are matured and able to assimilate the lecture.

3.4.2 The Tutorial Method

This method is also referred to as ‘question and answer method.’ The lecturer does little or no transmitting, but only play a role of stimulating students’ thinking by drawing out important points through question and answer. This is done mostly done by given students assignment from textbook or other referenced materials to be prepared before coming to class.

3.4.3 The Discussion Method

The method is a resemblance of the tutorial method except that the lecturers do not only ask questions, but also get involved in the group discussion. The assumption for adopting this method is that everyone has something to contribute.

3.4.4 The Demonstration Method

This method is used entirely for skill learning, thus appropriate for teaching psychomotive skills. The students manipulated certain scientific equipment to illustrate principle or concept to confront nature itself and observe natural processes. The role of the lecturer is to illustrate a principle or show how to something, which the students will later repeat on their own.

3.4.5 The Discovery Method

This is one of the teaching methods used for developing problem-solving. Sometimes, the lecturer provides some guidance or gives principle that can lead to solving a given problem (guided discovery) and a situation where the lecturer neither gives the principle nor solution to the students is called unguided discovery.

3.4.6 The inquiry method

This method allows students to develop critical thinking as they collaboratively to articulate their ideas and to respect the opinion and expertise of others. Inquiry-based learning is an approach to learning that emphasizes the student’s role in the learning process rather than the teacher telling students what they need to know, students are encouraged to explore the material, ask questions, and share ideas. Inquiry-based learning uses different approaches to learning, including small-group discussion and guided learning to build knowledge through exploration, experience, and discussion. Teaching methods and approaches are very important in impacting knowledge into the learners, methodologies that are only teachers centred will achieve less result, preferably student-centered may fit into the today options.

In constructivism, learners are central to the learning process, not the knowledge they are required to acquire through a rigorous activity that is student-centered, experimental, and improvisation (ASEI), the budding paradigm.

4. The ASEI-PDSI Approach

In an attempt to find solutions to the dwindling quality of education in Nigeria, the Nigeria Teachers Institute (NTI) in conjunction with the Federal Ministry of Education, Universal Basic Education Board collaborated with Japan International Cooperation Agency (JICA) brought in “The Strengthening of Mathematics and Science Education” In-service Training Nigeria,

initiatives called SMASE-INSET Nigeria to improve the teaching and learning of mathematics and science subjects in schools, to build technologically inclined citizens by moving to teach and learning in the classroom from the teacher-centered approach to activity-based, student-centered, experimentation and improvisation - plan, do, see and improve (ASEI-PDSI) approach (Tukur, Omosidi, Awodiji, & Olagunju, 2020).

ASEI-PDSI is an acronym in which A -stands for Activity-based S- stands for Student-centered E -stands for Experiments I - stands for Improvisation P- stands for Plan D- stands for Do S - stands for See and I - stands for Improve. The ASEI principle calls for a paradigm shift from the traditional practice of teacher-centered and knowledge-based teaching through the PDSI approach to student-centered and activity-based methods.

In Nigeria, improving the quality of instruction is essential for national development. Comparatively, to measure up with top industrial countries in the world in accordance with the sustainable development goals. A shift in teaching methodology is the key factor, especially at various levels of education. To this end, JICA is now implementing a technical cooperation project, "Strengthening Mathematics and Science Education Project (SMASE project) collaboration with the Federal Ministry of Education and in-service training for teachers to play a vital role in ensuring success and quality of education.

Okello (2016) stated that the principles of ASEI-PDSI approach calls for a shift in paradigm from traditional practice which is teacher-centered to that of students-centered and activity based as well as practically knowledge-bound. The acronym is explained below:

A for Activity: A lesson should have adequate activities to assist the learners in achieving the set objectives. These activities may include experiments, demonstrations, discussions, modelling, exercises, etc. They should be interesting to the learners and should not be unnecessarily long. The activities should be directly related to the lesson objectives. They should also be within ability of the learners. The role of activities in assisting the learners to concretize concepts cannot be over-emphasized. Besides, activities also help to arouse and sustain interest and curiosity in learning. When properly used, a lesson changes to an activity-based lesson other than a chalk-and-talk lesson.

S for Student-centered: The student (learner) is the most important person in a teaching-learning situation. All efforts should therefore be towards making the learners' profile higher than that of the teacher. Student-centered teaching enables the learners to construct knowledge based on their prior experiences together with results from activities carried out during the lesson. The teacher assumes the role of a facilitator in the teaching-learning process by encouraging the learners to talk, allowing them to give their own experiences, provoking them to hypothesize/predict and letting them carry out activities and record observations. The learners later discuss how their predictions or observations differ from those of others. Generally, the learners are encouraged to explain their ideas related to content and are granted freedom to ask questions. As a facilitator, the teacher should organize the lesson so as to provide adequate opportunities for the learners to engage in activities that develop the scientific/mathematical process skills. Some of the skills developed are: verifying predictions; recording observations, analyzing data; etc. The lesson organization should also help the learners develop the affective skills: cooperating, patience, cleanliness, work organization, etc.

E for Experiment: Experiments should be small-scale in cases where smaller quantities of reagents still give the same results as standard quantities. This encourages thrift while at the same time reducing time required for preparation. Small-scale experiments are also safer and environment friendly. In many schools, teachers conduct very few experiments. When these are conducted, the common practice is that the teacher gives the experimental procedure, diagrams of the experimental set up and even the observations the learners are supposed to make, before they perform the experiment. The learners' potential is therefore not properly harnessed. By the time the learners do the activity, it is not meaningful to them, because they already know the results to be expected.

I for Improvisation: The experiments or activities performed during the lesson need not be those given in the textbooks. They should, however, be well thought out. The equipment and materials for such activities should be locally available and from learners' real-life experiences whenever possible. Planning for such an activity calls for teacher's innovativeness in:

- Making use of resources available in learners' immediate environment and real-life experiences to enhance teaching and learning
- Designing simple experiments to enhance learner's participation and learning
- Innovative use of conventional equipment/apparatus.

4.1 The PDSI

The ideals of ASEI are realized through application of PDSI approach. PDSI is an abbreviation for Plan, Do, See and Improve. In planning, the teacher considers why the content of that lesson should be taught, what objectives are to be achieved, materials to be used (appropriate and adequate for the learners' use), prerequisite knowledge and skills necessary for the content of the lesson and finally how the lesson will flow. The plan is then actualized by 'doing', i.e. delivering the lesson using skills that ensure the learners are actively involved. As the lesson develops, the teacher is expected to 'see', that is, to evaluate how the learners are growing in knowledge and skills, and to make necessary instructional adjustments whenever required to do so. Evaluation can be done as the lesson progresses or at the end of the lesson. For evaluation that is done at the end of the lesson, necessary 'improvements' are ploughed into subsequent lessons. Evaluation of the lesson can also be accomplished by seeking opinions of the learners and colleague-teachers who have sat through that lesson.

UNESCO (2016), The Association for Development of Education in Africa (ADEA) (2014), and Orado (2017) have all emphasized the need for teachers who are adequately prepared to implement new teaching methods in science, mathematics, and other vocational subjects. It is on this premise that teachers influence learning outcomes and therefore one way Africa countries can move forward in building their human capital.

4.2 Why the shift in teaching Methods

The findings of SMASE Nigeria based line survey (2006), revealed that majority of primary and school teachers opted for demonstration method of teaching in preference to group work activities. This assertion undermined the established condition for teaching according to National Policy on Education (FRN, 2013) which states that 'teaching shall be participatory, exploratory, experimental and student-centered. This review stern to support the other systematic survey to evaluate the modification in instructional strategies toward the attainment of the 2030 Agenda for Sustainable Development. It is also an exercise of aiming at dissecting

the problem, first and foremost before the Nigerian society, as regards our Government's measures towards a more prosperous and fair Country, with opportunities for all- including for future generations (Akpomi, Achinewhu, Amesi, Amadi, & Wogboroma, 2016).

Our first step in restoring this perspective to Nigerian was to face the labor crisis that had hit the country and which had compromised not only economic growth, generating unemployment and poverty, but also the State's security to advance public policies in the social and environmental areas.

In Nigeria, we have learned, in practice, that it is meaningless to address social and environmental responsibility in the absence of quality education. By restoring order in the educational system and public confidence, several educational reforms have been put in place to translate into increased quality investments, greater economic activity (Gautam, 2015), more decent work depend on teaching methods. To reverse the trend in teaching entrepreneurship courses, there is need to improve on instructional method/skills that are in used in lecture halls and studios.

The most prevalent traditional methods for teaching entrepreneurship include the business plan, case studies, presentation and discussion of case studies, and training by entrepreneurs who act as role models for the students (Kabongo & McCaskey, 2011). However, some authors consider these traditional methods of teaching entrepreneurship as lacking the innovation component (Kabongo & McCaskey, 2011), as not promoting entrepreneurial skills in students (Hytti, Stenholm, Heinonen, & Seikkula-Leino, 2010), and inhibiting the ability of teachers to take risks, to take on new practices and to implement new methodologies extended to new publics and new contexts, i.e., they do not promote entrepreneurial behaviour (Kabongo & McCaskey, 2011).

The importance of cooperation between universities and the business sector in terms of creating innovative pedagogical practices that able to develop fundamental capacities in young people for making them successful future citizens is noted. These authors consider that networks between schools/universities and the local community is essential for creating the foundations of an innovative and sustainable society. They focus on the learning processes, often in the form of cooperation networks and more flexible relationships between the university and other local institutions, corroborating the potential for moving the boundaries between systems of education, training, and work, as pointed out by (Dambusse, Anabela, & Mário, 2015). Within the pursuit of a common goal – enabling young graduates both to develop work practices and to contribute to community development.

One approach in the field of teaching entrepreneurship is associated with preparing trainers to transmit more solid knowledge about the subject. When speaking about trainers linked to entrepreneurship, not only lecturers should be considered, but also a network of business-people, ex-students, or even students with an entrepreneurial profile, all of whom can serve as models in classes (Dambusse et al.). The impact of teaching entrepreneurship can be greater when we make a connection between theory and practice, which the above-mentioned network individuals can transmit during the learning process (Hytti, Stenholm, Heinonen, & Seikkula-Leino, 2010). Educators responsible for teaching entrepreneurship tend to bring in outside examples to present diverse classes involving theory and practice, in this way improving the learning of entrepreneurship (Hytti et al.). In this way, the educator becomes more of a facilitating agent than a lecturer, as they provide students with experience in terms of transmitting knowledge about entrepreneurship (Amesi & Akpomi, 2014). This fact is

corroborated by the teaching of those students who have entrepreneurship as an intrinsic characteristic, as studies such as (Akpomi, 2013) prove that these students are searching for practical knowledge in addition to theoretical knowledge to formulate their business ideas.

Therefore, cooperation networks become a viable and stable strategy for achieving objectives that the organization might not be meaningful on its own ((Akpomi, Achinewhu, Amesi, Amadi, & Wogboroma, 2016). These objectives emerge as a result of the influence of the organization's external environment (the organization's social and economic surroundings), as well as its internal conditions (Gautam & Singh, 2015). In this country, where entrepreneurial culture and knowledge is low as it pertains to historical and cultural circumstances, cooperative networks with other national and international institutions can foster the creation and dissemination of entrepreneurship knowledge and competencies.

Therefore, the ASEI-PDSI conceptual model for learning-by-doing is based on the work of constructivist researchers such as Vygotsky, Leont'ev, and Galperin. In learning-by-doing, the student takes action together with other people, primarily classmates but also external stakeholders. This interaction is based on a shared set of "mediating artifacts", such as shared tools, rules, processes, knowledge, signs, ideas, etc. A tool-mediated view on learning was proposed by Vygotsky as a reaction to the predominant acquisition-based model of learning in solitude explored by Piaget and others (McLeod, 2019), where prepackaged knowledge is transmitted to passive recipients (UKEssays, 2018). The term "artifact" can be broadly defined as anything created by human art and workmanship (Naade, Alamina & Okwelle, 2018). According to Vygotsky and colleagues, human activity leads to two main outcomes; "externalization of activity into artifacts" (McLeod, 2019, p.19) and "internalization of activity and the gradual formation of mental actions", i.e. construction of new mental abilities (Oseni 2015, p.29). Here, externalization is the resulting value creation and internalization is the resulting deep learning. Shared artifacts, new artifacts, and mental artifacts can all consist of tools, rules, processes, knowledge, ideas, etc. Also explained are the concepts of surface learning defined as memorization and acquisition of facts, and deep learning defined as the abstraction of meaning and interpretation of experience. Surface learning informs action, and deep learning is the result of the shared interaction. Deep learning is therefore by definition meaningful to learners, which leads to increased motivation. If the artifacts created become valuable to a wider community it will also trigger even higher levels of motivation and engagement. In essence, learning-by-doing can be regarded as an emotional and motivation-laden process, where motivational levels depend on what actions are taken, what learning occurs, and what value is created. This conceptualization shows how learning (internalization) and value creation (externalization) are interconnected and can reinforce each other.

5. Conclusion

This report has introduced and discussed some of the concepts relating to constructivism and entrepreneurship education as well presented seven pedagogical goals of constructivist learning environments and the importance of constructivism. The report also identified definitional confusion partly due to the absence of a progressive approach to entrepreneurship education, as well outlined some traditional teaching methods used in teaching entrepreneurship education, the relevance of entrepreneurship education, and proposed the budding shift to answers to the crucial question of learning-by-doing-*what*? Finally, suggest how students need to learn to identify problems before they learn how to solve them.

Way Forward

Constructivism has a promising effect on Entrepreneurship Education on students and society. Importantly, to keep in mind that the field of Entrepreneurial Education is in quite an early stage of development. It is still regarded as an innovative but marginal pedagogical approach spurring much interest and much confusion among various stakeholder on the inclusion of entrepreneurship course in all disciplines, assist in solving this problem of high unemployment and underemployment, and the road to achieving such an ambitious goal is still long, winding, and risky without a shift in pedagogical approaches to the teaching and learning of Entrepreneurship Education. The pedagogical approach as suggested in the study has been recognized as a key driver to sustainable Entrepreneurship Education. Based on the issues identified and discussed in this study, the following recommendations are proffered:

- i. There should be a stable industrial policy on the collaboration between small business entrepreneurs and research institutions for the exploitation of research findings of these institutions to achieve sustainable technological development.
- ii. Tertiary institutions should start to commercialize their research findings instead of leaving them on the shelves.

References

- Adetoso, J. A., Akesinro, A. S., & Oladejo, K.S. (2013). Entrepreneurship education: The way forward to economic and technological advancement of Nigeria. *Journal of Economics and Sustainable Development*, 4(27), 24-28
- Akpomi, M. E. (2013). Repositioning business studies through teaching for effective professional studies in secondary schools. *Business Studies Research Journal (BUSREJ)*. 2(2), 1-26.
- Akpomi, M.E., Achinewhu, S.C., Amesi, J., Amadi, N.S & Wogboroma, N. (2016). Making of an entrepreneurial university in the 21st Century - Global Universities as a Role Model *International Affairs and Global Strategy*, 42, 38-46.
- Amabile, T., & Kramer, S. (2011). *The progress principle: Using small wins to ignite joy, engagement, and creativity at work*, Harvard Business Press.
- Amesi, J & Akpomi, M.E (2014). Entrepreneurs' success and creativity in business education. *Journal of education and practice*, 5, 40-47.
- Amesi, J., Akpomi, M. E., & Okwuanaso, S. I. (2014). Teaching strategies in business education for sustaining information and communication technology learning in the Niger Delta. *International Journal of Humanities and Social Science*, 2(3), 10 - 21
- Blank, S. G., & Dorf, B. (2012). *The startup owner's manual: the step-by-step guide for building a great company*. California: K&S Ranch, Incorporated
- Dambusse, L., Anabela, D & Mário, F (2015). Promoting entrepreneurship education through university networks: A case study of Mozambique. *Institute for Small Business & Entrepreneurship*, 7 – 9, 1-20
- Ekpenyong, L E & Edokpolor, J. E. (2016). Constructivist approaches: an emerging paradigm for the teaching and learning of business education. *Nigerian Journal of Business Education (NIGJBED)*, 3(1), 149-158

- Gautam, M. K., & Singh, S. K. (2015). Entrepreneurship education: concept, characteristics and implications for teacher education. *Shaikshik Parisamvad (An International Journal of Education) SPIJE*, 5(1), 21-35
- Hytti, U., Stenholm, P., Heinonen, J., & Seikkula-Leino, J. (2010). Perceived learning outcomes in entrepreneurship education: The impact of student motivation and team behaviour. *Education Training*, 52(8/9), 587-606.
- Johansson-Sköldberg, U., Woodilla, J., & Çetinkaya, M. (2013). Design thinking: past, present and possible futures. *Creativity and Innovation Management*, 22, 121-146.
- Kabongo, J. D., & McCaskey, P. H. (2011). An examination of entrepreneurship educator profiles in business programs in the United States. *Journal of Small Business and Enterprise Development*, 18(1), 27-42.
- Kayii, N. E., & Uranta, K. B. (2018). Entrepreneurial mentoring application and bench-marking in out-of-school vocational training centre. *International Journal of Business & Law Research*, 6(2), 51-58
- Lackéus, M. (2013). *Developing entrepreneurial competencies - an action-based approach and classification in education*. Licentiate Thesis, Chalmers University of Technology.
- Lackéus, M. (2015). *Entrepreneurship in Education*. Munich: Entrepreneurship360 OECD publication Licentiate Thesis, Chalmers University of Technology.
- McLeod, S. (2019). Constructivism as a theory for teaching and learning. *Educational Technology*, 40 (6)
- Moberg, K. (2014). Two approaches to entrepreneurship education: The different effects of education for and through entrepreneurship at the lower secondary level. *International Journal of Management Education*, In Press.
- Mwasalwiba, E., Dahles, H., & Wakkee, I. (2012). Graduate entrepreneurship in Tanzania: Contextual enablers and hindrances. *European Journal of Scientific Research*, 76, 386-402.
- Naade, N. B., Alamina, J. I., & Okwelle, P. C. (2018). Effect of 7E's's constructivist approach on students' achievement in electromagnetic induction topic in senior secondary schools in Rivers State, Nigeria. *Journal of Education, Society and Behavioural Science*, 24(3), 1-9.
- O'Connor, A. (2013). A conceptual framework for entrepreneurship education policy: Meeting government and economic purposes. *Journal of Business Venturing*, 28, 546-563.
- Okello, B. O. (2016). *An evaluation of ASEI-PDSI teaching approach in mathematics in public primary schools in Kisumu West Sub County Kenya*. University of Nairobi.
- Okpara, J. O. & Halkias, D. (2011). Social entrepreneurship: an overview of its theoretical evolution and proposed research model. *International Journal of Social Entrepreneurship and Innovation*, 1, 4-20.
- Orado, G. (2017). *Revitalizing Education towards the 200 Global Agenda and Africa's Agenda 2063: Sub-theme Promoting Mathematics, Science and ICT Triennial Meeting Dakar*. ADEA.
- Osakwe, R. N. (2015). Entrepreneurship education in Delta State tertiary institution as a means of achieving national growth and development. *International Journal of Higher Education*. 4(1), 182-186.

Oseni, E. F. (2017). The relevance of entrepreneurship education to the development of micro, small and medium enterprises (MSMEs) In Nigeria. *International Journal of Small Business and Entrepreneurship Research*, 5(5), 1-8.

SMASE, (2012). Strengthening Mathematics and Science Education. *SMASE Newsletter*, 2.

Tuckman, B., & Monetti, D. (2011). *Educational psychology: From theory to application*. New York: Cengage Learning.

Tukur, M. A., Omosidi, A. S., Awodiji, O. A., & Olagunju, O. C. (2020). *ASEI-PDSI lesson approach and quality assurance in classroom delivery in Ilorin west local government area basic schools, Kwara State*. Retrieved from researchgate.net

Val-Ossai, M.U. & Akpomi, M.E. (2017). Entrepreneurship education and empowering 21st century Business Education students for employability. *Rivers Business Education Journal (RIVBEJ)*, 2(1), 12-21

UK Essays. (November 2018). *Constructivist theory of knowledge in the curriculum*. Retrieved 18th December, 2020 from <https://www.ukessays.com/essays/education/constructivist-theory-knowledge-2438.php?vref=1>

UNESCO, (2016). *Education for People and Planet: Creating Sustainable Future for All*. Paris: UNESCO.

Copyrights

Copyright for this article is retained by the author(s), with first publication rights granted to the journal.

This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (<http://creativecommons.org/licenses/by/4.0/>)