Online entrepreneurship teaching and learning approaches: A South African conceptual perspective

Samuel John Chiromo

Department of Applied Management, College of Economic and Management Sciences, University of South Africa, Pretoria, South Africa.
echirosj@unisa.ac.za
https://orcid.org/0000-0002-6814-0523

Risimati Maurice Khosa

Department of Applied Management, College of Economic and Management Sciences, University of South Africa, Pretoria, South Africa.
khosarm@unisa.ac.za
https://orcid.org/0000-0002-5968-6153

Vivence Kalitanyi

Department of Business Management, College of Business and Economics, University of Johannesburg, Johannesburg, South Africa.
vkalitanyi@uj.ac.za
https://orcid.org/0000-0002-0140-6649

Abstract

In this conceptual paper, we review literature on entrepreneurship education with the aim of determining viable approaches for teaching entrepreneurship using online platforms. We discuss existing studies on constructivism as a theoretical framework and examine how entrepreneurship education can be offered through online teaching, as well as the effectiveness and the design of online teaching for entrepreneurship education. We used a conceptual analysis methodology and also conducted a library search to examine previous pertinent literature on online entrepreneurship education. Our findings indicate that online entrepreneurship education should be grounded in constructivism as a learning theory. Additionally, during online entrepreneurship learning, lecturers should introduce and explain new concepts by using students' prior knowledge and should assign practical and experiential tasks. Our findings also show that online activities should allow students to interpret and assimilate new knowledge, and that online entrepreneurship modules should incorporate learning by doing and experiential learning. Lecturers should also provide feedback as part of online entrepreneurship learning and, at the end of such learning, lecturers should assign online questions that provide an opportunity for students to reflect on their learning and knowledge.

Keywords: online teaching, entrepreneurship education, constructivism, learning by doing, experiential learning

Introduction

Entrepreneurship education is a process that teaches people how to recognise business opportunities as well as the information and skills needed to profit from them (Gautam & Singh, 2015). Our purpose in this paper is to examine existing literature on the best practices for online entrepreneurship education, with the aim of determining viable approaches for teaching entrepreneurship using online platforms.

Entrepreneurship education, according to Kirby (2004), is the training for an uncertain future that provides the ability to establish a firm, while Greene et al. (2015) viewed entrepreneurship education as a tool for developing entrepreneurial culture. As a result, there is a prevailing belief that education in general, and entrepreneurship education in particular, generates intellectual capital that entrepreneurs may utilise to start and run businesses (Hayes & Richmond, 2017). Entrepreneurship education facilitates the transition of students from the study stage to salaried status or self-employment (Daskalou & Komninou, 2016). The economic importance of entrepreneurship is thus increasingly acknowledged, and, as a result, there is now great interest in which approaches to use when offering online teaching and learning on entrepreneurship education. The growing interest in entrepreneurship education is seen in the increased number of courses, majors and minors, chairs and professorships, doctoral programmes, journals, and media reports on entrepreneurship (Fredericksen, 2015).

In this current digital age, entrepreneurship education is increasingly offered using web-based tools. The internet and a variety of web-based tools have proved to be effective when offering teaching and learning in various fields ranging from engineering, economics, and social sciences (Picciano, 2017). However, in entrepreneurship, online teaching seems to be a new phenomenon, and holistic research on how online teaching in entrepreneurship should be conducted is therefore required.

Despite the increasing energy and resources dedicated to teaching entrepreneurship, viable approaches to be applied when teaching and learning entrepreneurship using online tools remain understudied and unclear. Thus, how entrepreneurship can best be taught and learned remains a complex phenomenon that requires further study (Henry et al., 2005).

A constructivist approach to teaching and learning that involves students as the active participants in the learning process, was cited by Akpomi and Kayii (2022) as the most effective approach for teaching entrepreneurship. Moreover, the teaching and learning process of entrepreneurship should be grounded in building on existing knowledge, experiential learning, and learning by doing. However, experiential learning and learning by doing remain a challenge when one is designing online entrepreneurship education since these components require physical interaction between students and entrepreneurs (Henry et al., 2005). It is with this purpose in mind that we seek to answer the following research question:

- What viable approaches can we adopt when teaching entrepreneurship using online platforms?

Methodology

We adopted a conceptual analysis approach. According to Kothari (2004), a conceptual study focuses on theories or concepts that are intangible. Philosophers and other thinkers typically utilise it to create new concepts or to reinterpret existing ones. Consequently, the methodology for this paper included doing a library search and assessing prior literature reviews on the best practices for online entrepreneurship education. The library search included both online and printed resources, as well as journal articles. We consulted online databases including ProQuest, EBSCOhost, Scopus, Science Direct, and Google Scholar. A notable limitation of this paper is, therefore, that we did not collect empirical data.

The next section of the paper deals with the importance of entrepreneurship education, the theoretical framework of entrepreneurship education, teaching approaches for entrepreneurship, and, finally, the state of online teaching and learning in South Africa.

Literature review

Academics and businesspeople alike are moving away from the idea that entrepreneurs are born, not created (Kuratko, 2005). Since Drucker (1985) asserted that entrepreneurship is neither magical nor mysterious and has nothing to do with DNA, arguments in favour of this perspective have been mounting. Entrepreneurship is now viewed more like a discipline that can be learned, just like any other discipline (Kalitanyi & Khosa, 2018). Thus, in this study, we regard entrepreneurship education as the process of imparting to others the abilities and understanding of how to recognise business opportunities (Jones & English, 2004), with the three major goals of developing a creative attitude, learning how to analyse business issues, and becoming knowledgeable about how to be an entrepreneur (Petridou & Glaveli, 2008; Ratten & Thukral, 2020).

The importance of entrepreneurship education

Integrating entrepreneurship into education has proved to have positive economic impact on communities around the world (Lackéus, 2016; Ratten & Thukral 2020). Since the introduction of the first entrepreneurship programme at Harvard Business School in 1947, entrepreneurship education has contributed significantly to student venture creation skills, knowledge acquisition, change in attitudes, and graduates' ability to start successful businesses, as well as to job creation (Echozona, 2015). Entrepreneurship education is therefore an instrument for advancing innovation and entrepreneurship such that it promotes an entrepreneurial culture that is imperative for economic growth globally (Greene et al., 2015). Entrepreneurial culture refers to entrepreneurial characteristics and attributes such as risk-taking, innovation, and creativity that an individual should have to function as an entrepreneur (Wong, 2014).

Entrepreneurship education is based on two facts: the success of the entrepreneurship depends on the entrepreneurial skills and competencies of the business owner; and these

skills and competences can be shaped by education (Maresch et al., 2016). According to Ratten and Thukral (2020, p. 151), students can gain practical experience that improves their employability and skills through entrepreneurship education. Students who study entrepreneurship learn the importance of being proactive in the market and learn that being employed or starting one's own business are both viable career possibilities.

Entrepreneurship education also promotes entrepreneurial intentions that, in most cases, lead to the creation of ventures (Maresch et al., 2016). Entrepreneurial intentions are mental orientations such as desiring, wishing, and hoping that persuade an individual to become an entrepreneur (Peng et al., 2012). Platzek et al. (2014) asserted that entrepreneurship education is also useful in managing sustainable growth in global business environments since it teaches students how to create new opportunities and pursue entrepreneurial initiatives such as learning through experience, coping with ambiguity, uncertainty, and risk, and attaining self-awareness.

The European Commission's entrepreneurship 2020 Action Plan, issued in 2013, indicated that about 20% of graduates who receive an entrepreneurship education start a successful business. Furthermore, entrepreneurship education enhances critical competencies such as creativity, tenacity, teamwork, using one's initiative, the ability to understand and mitigate risks, and a sense of responsibility. According to Zenner et al. (2017), many young graduates around the world are unemployed and are facing challenges in the pursual of self-employment. Entrepreneurship education plays a critical role in preparing these graduates for self-employment. Through entrepreneurship education, students acquire knowledge, attributes, and skills that are useful for new venture creation (Bux, 2016). In South Africa, entrepreneurship education is known to be an important driver of the economy since it leads to the creation of small business ventures. As a result, more jobs are created, and the national competitive edge is enhanced. Furthermore, entrepreneurship education is also said to open opportunities for the country's relatively young population and thus redress some of the past social and economic inequalities among South Africans (Nchu, 2015). Waghid and Oliver (2017) have concurred that in South Africa entrepreneurship education increases the entrepreneurial skills needed to establish new economic and social ventures, and that this promotes sustainable development.

Theoretical framework for entrepreneurship education

In this conceptual paper, we integrate online teaching and entrepreneurship education, and this makes it necessary to provide a theoretical framework for the online teaching of entrepreneurship. The theoretical model that best explains how entrepreneurship education can be offered through online teaching is constructivism (Ilie, 2014).

Constructivism states that students should not be passive recipients of knowledge but, rather, should be active participants in the learning process by discovering new knowledge (Mbati & Minnaar, 2015). Through groups and other learning interactions, constructivism enables students to construct new knowledge from their own experiences and think through these experiences (Schell & Janicki, 2012). Constructivism also enables students to gain a deeper

understanding of the subject being studied through the interpretation and assimilation of new knowledge (Carwile, 2007; Schell & Janicki, 2012).

According to constructivism theory, students do not learn effectively by memorising what the facilitator has provided, but, rather, by constructing their own versions of the learning unit (Löbler, 2006). The facilitator's role in a constructivist approach is to establish a context that motivates the students to learn new knowledge, and to provide content and learning resources that allow them to find solutions to the relevant problems and questions (Baviskar et al., 2009). Facilitators primarily guide and facilitate the learning process and encourage students to view the module content from various perspectives (Carwile, 2007).

According to Hein (2007) and Mogashoa (2014), adopting constructivism in teaching practices should be guided by the following principles.

- It takes time to learn: learning consists of both constructing meaning and constructing systems of meaning.
- Learning is an active process in which the student uses sensory input and constructs meaning out of it.
- People learn to learn as they learn: learning consists both of constructing meaning and constructing systems of meaning.
- The crucial action of constructing meaning is mental: physical action and hands-on experience may be necessary for learning.
- Learning involves language: the language people use influences their learning.
- Learning is social activity: one's learning is intimately associated with one's connection to other human beings such as one's teachers, peers, family, as well as casual acquaintances, including the people before or next to one at an exhibit.
- Learning is contextual: people learn in relation to what else they know, what they believe, their prejudices, and their fears.
- One needs knowledge to learn: the more one knows, the more one can learn.
- Learning is not the passive acceptance of knowledge that exists out there: learning involves the student engaging with the world and extracting meaning from their experiences.
- Motivation is a key component in learning: motivation not only aids learning but is an essential part of it.

It is imperative to note that there is an overlap of principles of constructivism from different scholars. However, they all emphasise the construction of learning, self-discovery, problem solving, and the acquisition of knowledge through activities and initiatives.

Entrepreneurship education is more effective when experiential learning, collaborations, self-discovery, and students' active participation are all promoted during the learning process. As a result, many scholars agree that online teaching of entrepreneurship should be grounded in constructivism as a learning theory (Carwile, 2007; Mbati & Minnaar, 2015; Schell &

Janicki, 2012). We therefore use constructivism to determine viable approaches for teaching entrepreneurship using online platforms.

Teaching approaches for entrepreneurship education

Despite the crucial role that entrepreneurship education plays in society, not all teaching approaches may result in the effective learning of entrepreneurship. For Esmi et al. (2015), entrepreneurship teaching approaches should provide lessons that are consistent with entrepreneurship goals and should be developed according to the students' needs. Additionally, utilising the most effective approaches for introducing teachable skills and identifying relationships between the students' needs and teaching approaches is key to successful entrepreneurship education.

Various scholars have offered approaches to teaching entrepreneurship (Arasti et al., 2012; Oyelola, 2013; Solomon, 2008; Torben, 2010). According to Oyelola (2013), the most appropriate entrepreneurship teaching approach includes: process-oriented instead of content-oriented teaching; problem-based teaching instead of the introduction of concepts; group projects; writing business plans; practical experience in producing and selling products and services; and learning from mistakes. Similarly, Arasti et al. (2012) considered the most critical aspects of entrepreneurship teaching to be: group projects and discussions; case studies; individual projects; developing new investment projects; problem solving; guiding young entrepreneurs by supporting them in their projects; training in investment; official speeches; interviewing entrepreneurs; simulations; and scientific visits.

Torben (2010) viewed entrepreneurship camps that focus on the production of problem-related ideas and the transformation of those ideas into (business) concepts as the most effective entrepreneurship teaching approach. The relevant concept is formulated and presented in a rough business plan format focusing on value proposition, targeted market and competitors, and the organisational and practical efforts needed to turn the concept into practice. In contrast, Potter (2008) did not support the concept of entrepreneurship camps. Instead, he emphasised teaching approaches such as: business planning; case studies; students starting businesses; business games; student entrepreneur teams and networks; internship in small companies; feasibility studies; training in communication; receiving advice in starting small businesses; distance education; external cooperation; offering business simulations; analysis and discussion of real businesses; group work; mentoring; networking (common experience); tutoring; action learning; problem-oriented methods; peer group support; expert advice; intensive counselling; and access to business networks.

Solomon (2008) also placed emphasis on: case studies; business planning; discussions; research projects; computer simulations; entrepreneurship; visiting sites; and class practice as the most effective teaching approaches for entrepreneurship. Tan and Ng (2006) focused on: problem-oriented learning; active learning; and action learning. Sharif et al. (2011) introduced entrepreneurship through: individual extracurricular activities and entrepreneurship training; defining and completing individual projects; doing action research; probing process; turning ideas into action plans; discussing important and perfect actions

plans and implementing designed plans; controlling research methods; and researching scientific, educational, and research development.

It is therefore apparent that teaching entrepreneurship should be multi-faceted. Accordingly, there must be a combination of various teaching approaches that assists in meeting students' goals of becoming successful entrepreneurs. The amalgamation of entrepreneurship teaching approaches should also be appropriate to the South African context in promoting a diversity of entrepreneurial skills that will meet the employment needs of students.

In combining entrepreneurship teaching approaches, instructors can select the appropriate ones and design their educational activities accordingly. In addition, by instructors' utilising these teaching approaches, students can participate in more challenging educational activities, and consequently gain experience that provides insights into discovering and creating entrepreneurship opportunities. Moreover, such a combination can enable them to take advantage of educational opportunities and start and manage their businesses successfully.

State of online teaching and learning in South Africa

In 2000, NUA reported that there were about 280,000 learners (primary & secondary) and students (tertiary) in South African schools and universities by the end of 1999 and projected that this figure would increase to 360,000 by the end of 2000. Even then, it was already being suggested that the online market in South Africa would grow substantially because of globalisation and technological advancements. Damoense (2003) proposed a merging of traditional teaching and learning practices and online teaching using technology to attain positive learning outcomes. For this scholar, the challenge for instructors was to find appropriate mechanisms to develop an online learning environment that sparks motivation, self-confidence, inclusive participation, and analytical thinking.

Apart from UNISA (the University of South Africa), the teaching and learning systems at higher learning institutions in South Africa have been mainly traditional, face-to-face teaching of students by lecturers during lectures or through assessments. This practice, however, experienced significant challenges and setbacks with the onset of the Covid-19 pandemic, during which many traditional institutions were obliged to start offering online teaching and assessment. This is the reason why most recent studies on online teaching and learning in South Africa focus on what happened during the Covid-19 pandemic. For example, Dube's (2020) study revealed that students in rural areas experienced many challenges in online learning because of poor connectivity, lack of access to learning management systems, and low-tech software. Conversely, in urban areas of South Africa and in other parts of the world, this was generally not the case. Ratten (2020) posited that many students are digital natives since they are tech savvy and rely on information technology. Dube's (2020) paper pointed out that, even though Covid-19 provided unforeseen impetus for making online teaching in South Africa more widespread, an inclusive approach going forward is necessary so that no learner or student is left behind because of their geographical location.

In the same vein, Mpungose (2020) stated that only a handful of students in South Africa had access to online learning platforms during the Covid-19 pandemic and this led to challenges in the transfer from traditional to online learning. Given this problem, Mpungose noted that the pandemic underscored the already damaging digital literacy and access divide in South Africa.

Gumede and Badriparsad (2021) reported that online teaching and learning platforms were introduced to cope with the effects of Covid-19, so that higher learning institutions could continue providing an education to students. However, the pandemic indicated the dire need for both lecturers and students to be digitally literate so that they could all operate various digital technologies. Furthermore, Gumede and Badriparsad (2021) postulated that online teaching and learning are still at the experimental stage, and this means that more interventions to foster this are still needed. As reported by students, there are still various challenges to online teaching and learning, such as connectivity and data costs, and, additionally, load shedding.

According to Bawa (2020), online teaching and learning is less effective than the face-to-face variety when it comes to academic success. This study showed that students were not comfortable with the new online method since most of them were not tech savvy, while others did not have adequate technological access. This issue was also highlighted by Mishra et al. (2020), who reported that some students experienced challenges with the online system during the pandemic because of not being familiar with the necessary technological devices. Similarly, another study (Ferri et al., 2020) mentioned the unavailability of the necessary electronic devices to provide equal opportunities to all students for learning online.

A further challenge mentioned by some researchers is the ongoing inability of education stakeholders to understand how various universities are performing with online teaching and learning system. According to Ligami (2021), there is a need for additional research to determine exactly which factors contribute to the effectiveness of such a system. It is important to note that some 300 academics in South Africa drafted a motion against university management teams who described the 2020 academic year as successful and one that produced satisfactory outcomes (Ligami, 2021).

Online teaching for entrepreneurship education

With increasing debate about the effectiveness of online teaching, many scholars (Daskalou & Komninou, 2016; Fredericksen, 2015; Schell & Janicki, 2012) argued that online teaching could reach a greater number of students more easily and efficiently than face-to-face teaching, especially those students who reside far from the institution and would not be able to attend traditional face-to-face lectures. Although some are of the view that online teaching is more effective than face-to-face teaching, online entrepreneurship education is currently not adequately delivered in most higher institutions worldwide (Daskalou & Komninou, 2016). Some South African universities, such as UNISA, that is an open distance e-learning university, offer some entrepreneurship modules through online teaching.

According to Daskalou and Komninou (2016) online entrepreneurship teaching requires students to be active participants in the learning process since they should be able to work in groups and be able to complete projects that will develop their entrepreneurial competencies. These entrepreneurial competencies include, among others, the recognition and assessment of business opportunities and risk management, problem-solving skills, value creation, and the effective use of networks (Dogan, 2015).

Students with these entrepreneurial competencies are able to identify potential sources of profit or returns from the environment, evaluate opportunities to determine accurately their relative attractiveness, take actions that reduce the chances of risk occurrence, relate previously unrelated objects to produce useful outcomes, develop new business models that generate revenues exceeding costs, and maintain relationships with others who help them in performing entrepreneurial activities (Dogan, 2015). Sirelkhatim and Gangi (2015) argued that, if it is to develop these entrepreneurial competencies, curriculum content must have three generic themes of entrepreneurship education: teaching about entrepreneurship programmes; teaching for entrepreneurship programmes; and teaching through entrepreneurship programmes. We discuss these three themes in more detail in the following sections.

Teaching about entrepreneurship programmes

This theme relates to the theory-oriented element of entrepreneurship education that focuses on creating awareness of the social and economic benefits of entrepreneurship and encouraging students to choose entrepreneurship as their career. Subjects covered include business plans, marketing, and the financial management of small businesses. Furthermore, this theme also covers theoretical entrepreneurship content such as entrepreneurial traits, personality characteristics, and economic success (see Sirelkhatim & Gangi, 2015).

Teaching for entrepreneurship programmes

The curricula content for this theme focuses on enabling students to develop entrepreneurial skills through which they learn about the strategies of running a business (Bennett, 2006; Sirelkhatim & Gangi, 2015). Students are provided with a portfolio of approaches to entrepreneurship practice that include, among others, the generation of ideas, team building, business planning, creativity, innovation, opportunity recognition, and risk taking (Fayolle & Gailly, 2013; Piperopoulos & Dimov, 2014; Sirelkhatim & Gangi, 2015). Thus, this theme is characterised by learning by doing and experiential learning, whereby students pretend to do the entrepreneurial tasks practically (Ratten & Thukral, 2020, p. 152). Tools used in the teaching of this theme include simulations, self-directed activities, mentoring, and networking with entrepreneurs (Honig, 2004; Sirelkhatim & Gangi, 2015).

Teaching through entrepreneurship programmes

Here students experience being an entrepreneur rather than pretending to be one (Sirelkhatim & Gangi, 2015; Vincett & Farlow, 2008). They become real-life entrepreneurs and experience real market forces. They are also able to generate viable business ideas. This

theme is characterised by real-life teaching methods that include incubators, internships, and real projects where students interact with real business stakeholders (Sirelkhatim & Gangi, 2015).

Based on the above literature, an effective online entrepreneurship education should meet the following four broad design requirements (Daskalou & Komninou, 2016).

- Action: This involves online teaching that creates artifacts and includes collaboration with experiential learning.
- Value creation: Online teaching should create artifacts with a value for others.
- Teamwork: Students should be able to work in teams.
- Interaction with the real world: Online teaching should allow the students to collaborate with external communities.

Discussion

Online teaching and learning for entrepreneurship education

Online entrepreneurship teaching should be designed in such a way that students are able to construct their own knowledge of the entrepreneurship processes. Through online discussions and interactions, students are able to construct meaning with others so constructivism can be seen to be the most important and influential theory in an online teaching environment of entrepreneurship education (Baviskar et al., 2009). Carwile (2007) emphasised that online learning must take place in an authentic and real-world environment involving social negotiation and mediation. Additionally, with online learning, students are assessed formatively, and they are encouraged to become self-regulatory, self-mediated, and self-aware.

When designing interventions for online teaching, according to Baviskar et al. (2009) and Mbati and Minnaar (2015), there are four important elements that must be considered in the structure, content, and activities of online modules in order to adhere to the constructivist criteria: eliciting prior knowledge; creating cognitive dissonance; applying knowledge with feedback; and reflecting on learning.

Eliciting prior knowledge

This criterion presumes that the prior knowledge of a student plays a critical role in the learning process. Hence, online learning should be built on what the student already knows about the content of the module. Facilitators can use formal pre-tests, informal questions, and formal interviews with students, and concept mapping in order to elicit their prior knowledge.

Creating cognitive dissonance

The student must be able to distinguish between their prior knowledge and the new knowledge. To meet this criterion, facilitators should choose activities that present problems for which the students must find solutions.

Applying knowledge with feedback

This criterion allows students to apply their knowledge using feedback by interpreting and changing prior knowledge in the context of new knowledge. Facilitators may use quizzes, presentations, group discussions, and other activities that allow the students to contrast their own knowledge with that of the rest of the group.

Reflecting on learning

Once the students have acquired new knowledge, awareness should be created in them about what they have learned through a reflection on their own learning. This can be done by providing students with the opportunity to do presentations about what they have learned, present papers, sit an examination that includes reflective questions on the learning process, or by having the students explain a concept to fellow students.

Constructivist theory and entrepreneurship education

Löbler (2006) conducted a study on entrepreneurship education from a constructivist perspective, and the findings revealed that entrepreneurship education should allow students to develop their own abilities and learning goals into competencies, and they should be able to create content that addresses the difficulties and learning objectives they outlined. Furthermore, the study revealed that entrepreneurship education should not test students in the classical manner but, rather, should allow them to perform activities by doing; these activities should be designed in such a way that students can present their thoughts, ideas, and opinions in argument against other students (Löbler, 2006). Through these arguments, students should be able to gain a precise perspective on their own thoughts. Löbler's (2006) study also revealed that entrepreneurship education should provide open access to all kinds of information that can be combined in different ways, hence encouraging students to consider various entrepreneurial opportunities.

Ilie's (2014) study on developing entrepreneurial competencies in students through constructivist education revealed that applying a constructivist approach in entrepreneurship education plays a significant role in developing entrepreneurial competencies in students. This is because constructivism is centred on action, problem solving, and the transferability of knowledge and skills. The study concluded that there is a correlation between a constructivist approach and entrepreneurial education, so an effective application of the constructivist approach in entrepreneurship education results in the development of entrepreneurial traits in students.

According to Middleton et al.'s (2014) study on experience-based learning in entrepreneurship education, experience-based learning is an integral component in the preparation of students to become entrepreneurs. However, experience-based entrepreneurship education is a relatively new phenomenon, and more research on it is needed.

Purwatingsih et al. (2017), in their study of the link between a constructivist learning model and building entrepreneurial intentions, concluded that constructivist learning has a significant effect on the intention of students to become entrepreneurs, and therefore learning institutions that focus on producing entrepreneurs must put more effort into applying constructivist learning.

Recommendations

Based on the literature review, online entrepreneurship education can be improved by adopting the following online teaching and learning approaches.

- Online entrepreneurship education should include theory-oriented elements that focus on creating an awareness about the social and economic benefits of entrepreneurship and encouraging students to choose entrepreneurship as a career. Subjects covered should include business plans, marketing, and the financial management of small businesses. Furthermore, this education should also cover entrepreneurship-related theoretical content such as entrepreneurial traits, personality characteristics, and economic success.

- Online entrepreneurship teaching should be grounded in constructivism. In other words, students should not be passive recipients of knowledge, but, rather, active participants in the learning process as they discover new knowledge. They should be able to construct new knowledge from their own experiences.

- Online activities for entrepreneurship education should be designed in such a way that entrepreneurial learning is built on what the student already knows about the content of the module. Lecturers should first familiarise themselves with what students know about entrepreneurship, by, for example, asking pertinent questions through online learning platforms or informal interviews that will enable students to disclose their current knowledge on entrepreneurship. This exercise assists the student to recognise their prior knowledge on entrepreneurship as well as the new knowledge that needs to be acquired. Lecturers should introduce and explain new concepts by making use of the knowledge that students already possess to help scaffold new understandings of entrepreneurship.

- Students should be able to gain a deeper understanding of entrepreneurship through interpretation and the assimilation of new knowledge. Therefore, lecturers should post online activities that allow students to interpret and assimilate new knowledge.

- Online entrepreneurship modules should incorporate learning by doing and experiential learning through self-directed activities, mentoring, and networking with entrepreneurs.

- Students should experience real-life entrepreneurship through incubators, internships, and real projects where they can interact with actual entrepreneurs.

- Online activities should allow students to collaborate with each other and the lecturer to the extent that students should be able to work in teams and create entrepreneurial value for each other.

- Feedback is critical to entrepreneurship learning. Lecturers should provide constant online feedback on both knowledge-based and practical tasks.
- At the end of the learning process, students need to reflect on what they have learned about entrepreneurship. Lecturers should post online questions at the end of the learning process that provide an opportunity for students to outline the elements of the entrepreneurship process, thus creating an awareness in the students about what they have learned.

Conclusion

Our purpose in this article was to examine the existing literature on the best practices for online entrepreneurship education with the aim of determining viable approaches for teaching entrepreneurship using online platforms. We reviewed literature covering the importance of entrepreneurship education, teaching approaches for entrepreneurship, online teaching in entrepreneurship education, the constructivist approach to online teaching and learning, elements of constructivist theory and entrepreneurship education, and online teaching and learning in South Africa.

Given the diversity of course topics and educator views, there is no consensus on the best pedagogical approach to apply in entrepreneurship education (Ratten & Thukral, 2020), although most such courses share some pedagogical components (Marginson, 2018; Ratten & Thukral, 2020). The literature indicates that online entrepreneurship education can be improved by incorporating a theory-oriented element that focuses on creating awareness of the social and economic benefits of entrepreneurship. Students should also be able to construct new knowledge from their own experiences regarding entrepreneurship, and entrepreneurial learning should be built on the students' prior knowledge. Lecturers should assign online activities that allow students to interpret and assimilate new knowledge.

Furthermore, the literature revealed that online entrepreneurship education can be improved by incorporating learning by doing and experiential learning in online activities, and by incorporating activities such as incubators, internships, and real projects during which students interact with real entrepreneurs. The literature also indicates that students should learn to work in teams and create entrepreneurial value for each other, and that lecturers should provide continual online feedback on both knowledge-based and practical tasks. Finally, at the end of their entrepreneurship educations, students should reflect on what they have learned about entrepreneurship.

References

Akpomi, M. E., & Kayii, N. E. (2022). Constructivist approaches: A budding paradigm for teaching and learning entrepreneurship education. *International Journal of Education, Teaching, and Social Science, 2*(1), 31–44. https://doi.org/10.47747/ijets.v2i1.586

Arasti, Z., Kiani Falavarjani, M., & Imanipour, N. (2012). A study of teaching methods in entrepreneurship education for graduate students. *Higher Education Studies Persian*, *2*(1), 2–10.

Baviskar, S. N., Hartle, R. T., & Whitney, T. (2009). Essential criteria to characterize constructivist teaching: Derived from a review of the literature and applied to five constructivist-teaching method articles. *International Journal of Science Education*, *31*(4), 541–550.

Bawa, P. (2022). Learning in the age of SARS-COV-2: a quantitative study of learners' performance in the age of emergency remote teaching. https://doi.org/10.1016/j.caeo.2020.100016. 100016.

Bennett, R. (2006). Business lecturers' perceptions of the nature of entrepreneurship. *International Journal of Entrepreneurial Behavior & Research*, *12*, 165–188. http://dx.doi.org/10.1108/13552550610667440

Bux, S. (2016). *The effect of entrepreneurship education programmes on the mind-set of South African youth*. [Doctoral dissertation, University of Pretoria, RSA].

Carwile, J. (2007). A constructivist approach to online teaching and learning. *Inquiry*, *12*(1), 68-73.

Damoense, M. Y. (2003). Online learning: Implications for effective learning for higher education in South Africa. *Journal of Educational Technology*, *19*(1), 25–45.

Daskalou, V., & Komninou, M. (2016, September 23–25). *Designing an online entrepreneurship course for higher education: Preliminary issues and challenges*. [Conference session]. 10th Pan-Hellenic and International Conference "ICT in Education", Ioannina, Greece.

Doğan, E. (2015). The effect of entrepreneurship education on entrepreneurial intentions of university students in Turkey. *Ekonometri ve İstatistik e-Dergisi*, *23*, 79–93.

Dube, B. (2020). Rural online learning in the context of COVID-19 in South Africa: Evoking an inclusive education approach. *Multidisciplinary Journal of Educational Research*, *10*(2), 135–157. https://doi.org/10.17583/remie.2020.5607

Drucker, P. F. (1985). *Innovation and entrepreneurship*. Harper & Row.

Echozona, N. (2015). Entrepreneurship education as a strategy for the promotion of entrepreneurship culture and poverty reduction among university students. [Master's Dissertation, University of Fort Hare, Alice, RSA].

Esmi, K., Marzoughi, R., & Torkzadeh, J. (2015). Teaching learning methods of an entrepreneurship curriculum. *Journal of Advances in Medical Education & Professionalism*, *3*(4),172–177.

Fayolle, A. & Gailly, B. (2013). The impact of entrepreneurship education on entrepreneurial attitudes and intention: Hysteresis and persistence. *Journal of Small Business Management*, *51*, 315–328

Ferri, F., Grifoni, P., & Guzzo, T. (2020). Online learning and emergency remote teaching: opportunities and challenges in emergency situations. *Societies*, *10*(4),86. https://doi.org/10.3390/soc10040086

Fredericksen, E. (2015). Is online education good or bad? And is this really the right question? *The Conversation*. Retrieved March 23, 2023, from https://theconversation.com/is-onlineeducation- good-or-bad-and-is-this-really-the-right-question-35949

Gautam, M. K., & Singh, D. S. K. (2015). Entrepreneurship education: Concepts, characteristics and implication for teacher education. *International Journal of Education*, 21–35.

Greene. P., Brush, G., Eisenman. E., Neck. H., & Perkins, S. (2015). *Entrepreneurship education: A global consideration from practice to policy around the world*. World Innovation Summit for Education, The Finnish Lifelong Learning Foundation-Tsinghua University.

Gumede, L., & Badriparsad, N. (2021). Online teaching and learning through the students' eyes – Uncertainty through the COVID-19 lockdown: A qualitative case study in Gauteng province, South Africa. *Radiography*, *28*(1), 193–198. https://doi.org/10.1016/j.radi.2021.10.018.

Hayes, D., & Richmond, W. (2017). Using an online assessment to examine entrepreneurship student traits and to measure and improve the impact of entrepreneurship education. *Journal of Entrepreneurship Education*, *20*(1), 88–107.

Hein, G. E. (2007). *Constructivist Learning Theory*. Lesley College Press.

Henry, C., Hill, F., & Leitch, C. (2005). Entrepreneurship education and training: Can entrepreneurship be taught? Part I. *Education+ Training*, 47(2), 98–111.

Honig, B. (2004). Entrepreneurship education: Toward a model of contingency-based business planning. *Academy of Management Learning and Education*, *3*, 258–273. http://dx.doi.org/10.5465/AMLE.2004.14242112

Ilie, V. (2014). Developing entrepreneurial competencies in students through constructivist education. *Education Journal*, *3*(5), 293–302.

Jones, C. & English, J. (2004). A contemporary approach to entrepreneurship education. *Education +Training*, *46*, 416–423.

Kirby, D. A. (2004). Entrepreneurship education: can business schools meet the challenge? *Education+ Training*, *46*(8/9), 510–519.

Kalitanyi, V., & Khosa, R. M. (2018, July 3–7). *Immigrant entrepreneurial education in South Africa*. [Conference session]. Global Business and Technology Association conference, Bangkok, Thailand.

Kothari, C. R. (2004). *Research Methodology: Methods & Techniques* (2nd ed.). New Age International Publishers.

Kuratko, D. (2005). The emergence of entrepreneurship education: Development, trends, and challenges. *Entrepreneurship Theory and Practice*, *29*, 577–598. http://dx.doi.org/10.1111/etap.2005.29.issue-5

Lackéus, M., (2016). A 'value' and 'economics' grounded analysis of six value creation based entrepreneurial education initiatives. *VCPLIST.COM*. Retrieved May 22, 2019, from https://vcplist.com/2016/03/20/a-value-and-economics-grounded-analysis-of-six-value-creation-based-entrepreneurial-education-initiatives/

Löbler, H. (2006). Learning entrepreneurship from a constructivist perspective. *Technology Analysis & Strategic Management*, *18*(1), 19–38.

Ligami, C. (2021). South Africa 'Humanise online teaching and learning'. *University World News (Africa edition)*. Retrieved June 30, 2022. from https://www.universityworldnews.com/post.php?story¼20210609201303562

Maresch, D., Harms, R., Kailer, N., & Wimmer-Wurm, B. (2016). The impact of entrepreneurship education on the entrepreneurial intention of students in science and engineering versus business studies university programs. *Technological Forecasting and Social Change*, *104*, 172–179.

Marginson, S. (2018). Public/private in higher education: A synthesis of economic and political approaches. *Studies in Higher Education*, *43*(2), 322–337.

Mbati, L., & Minnaar, A. (2015). Guidelines towards the facilitation of interactive online learning programmes in higher education. *The International Review of Research in Open and Distributed Learning*, *16*(2).

Middleton, K., Mueller, S., Blenker, P., Neergaard, H., & Tunstall, R. (2014). Experience-based learning in entrepreneurship education-a comparative study of four programmes in Europe. In *RENT (Research in Entrepreneurship and Small Business) XXVIII* (1–15).

Mishra L., Gupta T., & Shree A. (2020). Online teaching-learning in higher education during lockdown period of COVID-19 pandemic. *International Journal of Educational Research Open*, 1, 100012. Online: https://doi.org/10.1016/j.ijedro.2020.100012

Mogashoa, T. (2014). Applicability of Constructivist Theory in Qualitative Educational Research. *American International Journal of Contemporary Research*, *4*(7), 51–59.

Mpungose, C. B. (2020). Emergent transition from face-to-face to online learning in a South African university in the context of the Coronavirus pandemic. *Humanities and Social Sciences Communications*, *7*(1), 1–9. https://doi.org/10.1057/s41599-020-00603-x

Nchu, R. (2015). The Effectiveness of Entrepreneurship Education in selected High Schools in the Cape Town Metropolitan. [Master's Dissertation, Cape Peninsula University of Technology, Cape Town, RSA].

NUA (2000). Internet growth slowing in South Africa. Acuity Media Africa. NUA Internet Surveys, 24 May. Retrieved October 25, 2001, from http://www.nua.ie/surveys/?f=VS&art_ . . . =true[verified 28 Jan 2003 at http://www.nua.ie/surveys/index.cgi?f=VS&art_id=905355799&rel=true

Oyelola, O. T. (2013, January 15–17). *Embedding entrepreneurship education into curriculum: A case study of Yaba College of technology, Centre for Entrepreneurship Development*. [Conference session]. The 1st International Africa Enterprise Educators Conference, Lagos, Nigeria.

Peng, Z. G., Lu, G., & Kang, H. (2012). Entrepreneurial intentions and its influencing factors: A survey of the university students in Xi'an China. *Creative Education 3*(8B), 95–100.

Petridou, E., & Glaveli, N. (2008). Rural women entrepreneurship within co-operatives: Training support. *Gender in Management: An International Journal*, *23*(4), 262–277.

Picciano, A. G. (2017). Theories and frameworks for online education: Seeking an integrated model. *Online Learning*, *21*(3), 166–190. https://doi.org/10.24059/olj.v21i3.1225

Piperopoulos, P., & Dimov, D. (2014). Burst bubbles or build steam? Entrepreneurship education, entrepreneurial self- efficacy, and entrepreneurial intentions. *Journal of Small Business Management*, *52*(2). https://doi.org/10.1111/jsbm.12116

Platzek, B. P., Pretorius, L., & Winzker, D. H. (2014). The vital entrepreneurial learning organization: A corporate mindset for entrepreneurial change management. *International Journal of Innovation and Technology Management*, *11*(6), 1–23.

Potter, J. (2008). Entrepreneurship and higher education: Future policy directions (OECD). *Education & Skills*, *18*, 313–35.

Purwatiningsih, A., Putra, S. P., & Sugito, P. (2017). The linkage of constructivist learning model with the purpose of building entrepreneurial intentions. *Imperial Journal of Interdisciplinary Research*, *3*(8).

Ratten, V. (2020). Coronavirus (Covid-19) and the entrepreneurship education community. *Journal of Enterprising Communities: People and Places in the Global Economy*, *14*(5), 753–764. https://doi.org/10.1108/JEC-06-2020-0121

Ratten, V., & Thukral, E. (2020). Sport entrepreneurship education. In V. Rattern (Ed.), *Sport Entrepreneurship* (pp.151–160). Emerald Publishing Limited. https://doi.org/10.1108/978-1-83982-836-220201021

Schell, G. P., & Janicki, T. J. (2012). Online course pedagogy and the constructivist learning model. *Journal of the Southern Association for Information Systems*, *1*(1), 26–36.

Sirelkhatim, F., & Gangi, Y. (2015). Entrepreneurship education: A systematic literature review of curricula contents and teaching methods. *Cogent Business & Management*, *2*(1), 1052034.

Sharif, S. M., Jamshidian A., Rahimi, H., & Naderi, N. (2011). An analysis of entrepreneurship education status in Iran Higher Education. *Entrepreneurship Development-Persian*, *3*(11), 3.

Solomon, G. (2008). Entrepreneurship education in the United States. *OECD Education & Skills*, 18, 95–118.

Tan, S. S. & Ng, C. K. F. (2006). A problem-based learning approach to entrepreneurship education. *Education + Training*, *48*(6), 416–428.

Torben, B. (2010). The camp model for entrepreneurship teaching. *International Entrepreneurship and Management Journal*, 7(2), 279–96.

Vincett, P., & Farlow, S. (2008). Start-a-business: an experiment in education through entrepreneurship. *Journal of Small Business and Enterprise Development*, *15*, 274–288.

Waghid, Z., & Oliver, H. (2017). Cultivating social entrepreneurial capacities in students through film: implications for social entrepreneurship education. *Educational Research for Social Change*, *6*(2), 76–100.

Wong, M. A. (2014) Entrepreneurial culture: Developing a theoretical construct and its measurement. [Doctoral dissertation, University of Western Ontario, Ontario, Canada].

Zenner, L., Kothandaraman, K., & Pilz, M. (2017). Entrepreneurship education at Indian industrial training institutes. A case study of the prescribed, adopted and enacted curriculum in and around Bangalore. *International Journal for Research in Vocational Education and Training*, *4*(1), 69–94.