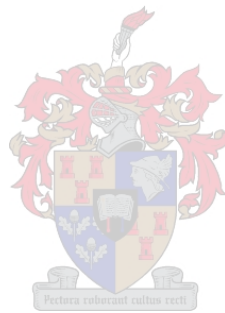# Developing creativity in entrepreneurs – A scoping review

by

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DECLARATION

By submitting this thesis electronically, I declare that the entirety of the work contained therein is my work, original work, that I am the sole author thereof (save to the extent explicitly otherwise stated), that reproduction and publication thereof by Stellenbosch University will not infringe any third-party rights and that I have not previously in its entirety or in part submitted it for obtaining any qualification.

April 2022

ABSTRACT

With the emergence of rapid technological advancement enforcing pressure on the workforce to upskill, an essential skill like creativity is critical for survival in these uncertain times. The emergence of the Fourth Industrial Revolution (including Industry 4.0) and the current global pandemic are challenging humankind to embrace change to survive the 21st century. These unpredictable times have affected many industries, especially entrepreneurs who are significant contributors to economies and employment sectors. Entrepreneurs need creativity skills to enhance their ideas, products and services. The aim of this study was to conduct a scoping review to explore existing literature and provide an overview of all relevant research found regarding creativity and entrepreneurship. The scoping review followed the five stages of the framework outlined by Arksey and O'Malley (2005) and included literature studies (N=23) that answered the research question. The review spanned a period of 21 years (2000 – 2021). The results of the review indicated that entrepreneurs learn creativity either in groups or individually, formally or informally, and through different learning modes. Different learning strategies and models were noted and recommendations for using these shared. The results of the study point to a need for a unified approach in formal education (and in particular in higher education) to teaching creativity in entrepreneurship education with the inclusion of modern pedagogical models and technology to be more learner-centric. Emphasis should be given to the creativity content. Creativity and entrepreneurship are inextricably linked and by further developing creativity skills, the future generation of entrepreneurs may be drivers of economic development.

Key words: creativity, entrepreneurs, entrepreneurship education, learning

OPSOMMING

Met die onlangse versnelling in tegnologiese voortuitgang wat druk op die arbeidsmag plaas om spesifieke vaardighede te ontwikkel, is kreatiwiteit geïdentifieser as n kritiese vaardigheid. Die Vierde Industriële Revolusie (insluitend Nywerheid 4.0) en die huidige wêreldwye pandemie daag die mensdom uit om ontwikkeling en vooruitgang aan te gryp om die 21ste eeu te oorleef. Hierdie onvoorspelbare tye het alle bedrywe geraak, veral entrepreneurs wie beduidende bydraers is tot ekonomieë en indiensnemingsektore. Entrepreneurs het kreatiwiteitsvaardighede nodig het om hul idees, produkte en dienste te verbeter. Die doel van hierdie studie was om 'n bestekoorsig te gebruik om bestaande literatuur te ondersoek en 'n samevattende oorsig te gee van alle relevante navorsing in die literatuur rakende kreatiwiteit en entrepreneurskap. Die bestekoorsig volg die raamwerk in vyf fases wat deur Arksey en O'Malley (2005) uiteengesit is, en bevat literatuurstudies (N=23) wat die navorsingsvraag beantwoord het. Die oorsig het 'n periode van 21 jaar betref (2000 – 2021). Die resultate het aangedui dat entrepreneurs kreatiwiteit leer in groepe of individueel, formeel of informeel, en deur verskillende leermodes leer. Verskillende leerstrategieë en modelle is ontdek en aanbevelings vir die gebruik daarvan word bespreek. Die resultate van die studie dui op 'n behoefte aan 'n eenvormige benadering in formele onderwys (en veral in die hoëronderwyssektor) om kreatiewe onderrig in ondernemersopvoeding te onderrig, met die insluiting van moderne pedagogiese modelle en tegnologie om meer inklusief en leerdergesentreerd te wees. Klem moet gelê word op die kreatiwiteitsinhoud. Kreatiwiteit en entrepreneurskap is onlosmaaklik verbind en deur verdere ontwikkeling van kreatiwiteitsvaardighede, mag die toekomstige generasie entrepreneurs die dryfveer van ekonomiese ontwikkeling wees.

Sleutelwoorde: kreatiwiteit, entrepreneurs, entrepreneurskap opleiding, leer

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I am most thankful and grateful for the perseverance and faith I held onto that allowed me to keep swimming (no matter the speed) despite the currents being against me, and for this I am most proud of myself.

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Keep believing, keep creating and most of all Keep Daring Greatly!

> *"It is not the critic who counts; not the man who points out how the strong man stumbles, or where the doer of deeds could have done them better. The credit belongs to the man who is actually in the arena, whose face is marred by dust and sweat and blood; who strives valiantly; who errs, who comes short again and again, because there is no effort without error and shortcoming; but who does actually strive to do the deeds; who knows great enthusiasms, the great devotions; who spends himself in a worthy cause; who at the best knows in the end the triumph of high achievement, and who at the worst, if he fails, at least fails while daring greatly, so that his place shall never be with those cold and timid souls who neither know victory nor defeat."* Theodore Roosevelt (extracted from a speech given in 1910).

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1.1. Introduction

> *The new era of rapid change plays to the greatest strength of human beings: adaptability. The squirrel will always gather nuts by instinct and the beaver will always build its house in the same way. Humans are the learning species, the fittest to learn. We can adapt to rapid change by constantly seeking ways to expand our opportunities for learning. Even more important, we are capable of developing our varied talents to the fullest and dreaming dreams of what might be* (Davis & Davis, 2000:199).

The last two decades have brought rapid and fundamental technological change to our world in the form of new technology, digitisation, artificial intelligence and disruptive innovation. These 21st century developments have effected transformation in all areas of human life where humans have had to adapt how they live; from what they eat, how they communicate, travel, work, play, procreate, learn, interact, heal and most importantly survive. The change is not just providing us with new coping capabilities like adapting and creative thinking, it is bringing the arrival of entirely new ways of living our lives (Schwab, 2017; World Economic Forum, 2016, 2020; Shalley, Gilson & Blum, 2009; Ślusarczyk, 2018). Critical skills – including complex problem solving, critical thinking, and creativity – are required in workplaces if organisations want to keep ahead of the competition and stay in business (World Economic Forum 2016, 2020; Driver, 2001; McWilliam, 2008).

The World Economic Forum (WEF, 2016, 2020) agree that the workforce of the future will need to be agile to align their skillsets with the fast pace of change as certain future jobs are not even in existence yet, while several existing jobs will become obsolete. A report by the World Economic Forum (2016) placed creativity skills in the top three skills workers would need in 2020 together with complex problem solving and critical thinking. In 2020, the World Economic Forum Future of Jobs report places creativity, originality and initiative in fifth position in the top 15 skills needed for 2025. Creativity has remained on this list of top skills required, pointing to the imperativeness of indispensable skills for the 21st century. Van Laar, Van Deursen, Van Dijk and De

Haan (2017:582) found in their systematic review of 21st century skills, that creativity skills was amongst seven core skills that determine an "organisations competitiveness and capacity to drive innovation" in this global knowledge economy. Shalley *et al.* (2009) concur that the changes of the 21st century have increased the need for skills like creativity, which is required from employees at all levels, across different jobs and from those who previously were not expected to be creative. It is evident that creativity skills are repeatedly listed and emphasised as a key skill for the 21st century with scholars leading studies over the last few decades, motivating and substantiating the effect of developing creativity skills as vital for progress and survival.

In his working paper on the OECD survey on adult skills, Martin (2018), discusses how skill requirements are changing rapidly not just under the pressure of globalisation and technological advancement, but also the pressure of continuing changes to how society is structured and to its demographics. He highlights that although skills are essential to everyday life and the growing economy, the availability and supply of skills struggles to meet the speed of the evolving demands. Martin (2018) grouped themes found by the OECD survey, one being lifelong learning which is now an urgency due to new skill demands coupled with an ageing workforce. It was found that now more than ever, employees, workplaces and governments need to place importance on investing in developing skills throughout the working life. McGowen and Shipley (2017) agree with Deloitte's John Hagel (Deloitte Shift Index, 2011) cited in their article, that it is imperative for workplaces to rapidly adapt to new information and quickly deploy new skills to act upon. McGowen and Shipley (2017) present the concept learning uncertainty as the agile mindset needed to empower workers now and future generations to prosper in this rapidly changing economy.

With the emergence of rapid technological advancement there has been an equally precipitous growth in start-ups, particularly tech start-ups founded by entrepreneurs contributing to the Fourth Industrial Revolution (including Industry 4.0). This revolution has brought many opportunities for the entrepreneurial mindset as the top skills demanded for growth and survival in this era are also entrepreneurial skills (Abdullahi, Khata bin Jabor & Akor, 2020). Entrepreneurs do not only contribute to a country's economic development, but their ventures create employment, value and meaning in society. Entrepreneurs are known for being creative, original, motivated, and

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innovative risk takers who in the face of adversity can thrive due to their creative mindset. Their creative skills enable entrepreneurs to profit from opportunities created in a multitude of approaches resulting in economic advantages for their business and employees (Fillis & Rentschler, 2010). Entrepreneurs need creativity to produce and implement valued products, and to also influence and engage with customers, stakeholders and investors. Creativity is described as the life force of entrepreneurship (Ward, 2004). These enterprising individuals are fundamental, as they exist in all types and sizes of businesses, from the solo entrepreneur to the local microenterprise to the international corporation (Fillis & Rentschler, 2010). The relationship between creativity and entrepreneurship lends itself to explore how entrepreneurs develop their creative capacity as a significant player in local and global economies in a rapidly changing world driven by efficiency through technology and digitization.

It is necessary to understand the challenges currently driving creativity skills in entrepreneurs, like the onset of Industry 4.0, and more recently, the Covid-19 global pandemic. Klaus Schwab, the founder and executive chairman of the World Economic Forum, introduced the phrase Fourth Industrial Revolution[1] in an article in the publication Foreign Affairs. He describes the Fourth Industrial Revolution (also sometimes referred as 4IR) as being present for both our current living circumstances and also expected for the foreseeable future. It is different and unique to the three previous industrial revolutions – each of which generated major change in society; mechanisation, new energy sources and the emergence of electronics and technology respectively (Schwab, 2017). This revolution is characterised by advanced technology that is being created at a phenomenal speed and will not only create shifts in economies, but also shifts in the way we learn and the power gained from the new knowledge. Dean and Spoehr (2018) characterise Industry 4.0 as a time during which vast developments in computing power and the merging of multiple digital technologies take place. This seamless way of working contributes to a faster and more efficient way of doing business by essentially replacing work done by humans with machines. It is different to the previous revolutions that replaced skilled workers with technology, in that technology complements highly skilled workers whilst

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[1] The phrase was first introduced in 2011 by a German team of scientists developing a high-tech strategy for the German government (vdi-nachrichten.com, 2011)

replacing lower skilled workers (Abdullahi *et al.*, 2020). Hence the importance placed on acquiring essential 21st century skills which will continue to evolve as change continues around us.

A critique of Industry 4.0 is crucial in understanding how to navigate our way around change and continuous technological disruptions. Despite Industry 4.0 pointing to technological globalisation, Johns (2019) highlights that there is an assumption that it is an unstoppable force and a general lack of questioning from leaders of the world about whether Industry 4.0 is a desirable future for all. Indicating that despite the onset and speed of technological advancement, we cannot accept that our future is destined to be controlled by machines and technology, nor that this will necessarily have a positive impact on the workforce and economy. This revolution may only benefit the large tech companies and other private enterprises (Broadbent, 2018; Morgan, 2019). Morgan (2019) conducted an in-depth study of Industry 4.0 and its impact on the workforce and describes it as being coupled with a type of capitalism that will not free people from working but limit work opportunities to many workers. Morgan (2018) further discusses that the main sources of information on Industry 4.0 are from large private enterprises, consultancies and think tanks who are public facing and, in a position, to influence governments by gaining much attention leading them to research further for future policy and decision making. Broadbent (2018) also finds insufficient evidence supporting the predictions about Industry 4.0 originally put forward by Schwab (2017) and recommends remaining inquisitive and exercising critical thinking when navigating Industry 4.0 and to rather reserve acceptance when evidence is available.

The Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2), which caused the coronavirus disease in 2019 (commonly referred to as Covid-19), and the subsequent global outbreak in 2020, has resulted in an economic recession, tragic increases in mortality rates with far-reaching effects on humankind. The unexpected and destructive arrival of Covid-19, the many lockdowns and social distancing measures have left many businesses worldwide crippled – especially those that rely on social interaction. These industries include restaurants, hospitality, travel, tourism, manufacturing, and entertainment that were either forced to close due to lockdown measures or closed as a result. This was attributed to the loss of customers as people

reduced their spending as a result of job loss, working from home and more. Those who were quick to respond and make changes to their businesses have managed to weather the challenges of the lockdowns and remain resilient. Creativity during the Covid-19 pandemic, a time of uncertainty and adversity, has led the resilient entrepreneurs to create solutions or products based on their customers' new needs, offer online sales channels, delivery and collection and sourcing new suppliers (Thukral, 2021; Ratten, 2020b).

In a time like Industry 4.0 or times of extreme change (e.g., a global pandemic), Xu, David and Kim (2018) assert that the rarest and most treasured resource will not be the everyday workforce and investment, but instead individuals who can create and innovate. These individuals are entrepreneurs, who through the creation of new business opportunities and enable the development of new markets that contribute significantly to the economy and to social advancements through the provision of (new) jobs, products, services through innovation and new business models which are key contributors of the 21st century (Ślusarczyk, 2018). Research on entrepreneurs' creativity is important, as entrepreneurs in their roles as business owners and developers need to be creative to manage their human and financial resources and deal with daily business issues (Weinberger, Wach, Stephan & Wegge, 2018). Although creativity is critical to all those who want to succeed during Industry 4.0, it is most important for the entrepreneur – as their contribution to innovation, societal growth and economies are vital.

There is much pressure on entrepreneurs to contribute to this changing economy by being creative and innovative. However, creativity and innovation are often used interchangeably which is a common error. Amabile, Conty, Coon, Lazenby and Herron (1996:1155) differentiate the concepts by defining creativity "as the production of novel and new ideas in any domain" and innovation as "the successful implementation of these ideas within an organisation". Creativity is the starting point of innovation, where an idea is developed and then executed past the original stage. Both concepts are inextricably linked to entrepreneurs, often distinguishing entrepreneurs from others due to the success of their creativity and innovation skills (Sarri, Bukouris & Petridou, 2010). Creativity and entrepreneurship are discussed in detail in chapter two.

Whilst conducting this research, it was equally evident that the terms skills, and competency in particular, are also used synonymously by various authors and studies. However, the definitions of the two terms confirms the distinction between them. The European Parliament and European Council (2008:4) defined "skills" as

> the ability to apply knowledge and use know-how to complete tasks and solve problems. Skills are described as cognitive (involving the use of logical, intuitive and creative thinking) or practical (involving manual dexterity and the use of methods, materials, tools and instruments).

The OECD (2005:4) defines competency as more than just knowledge and skills, it involves the ability to meet "complex demands, by drawing on and mobilizing psychosocial resources (including skills and attitudes) in a particular context". It is seen as enabling a person to do a job, and not the task of a job and described as essential personal behaviour, purpose, skills and knowledge of a person (Mitchelmore & Rowley, 2017). "Skills" is a term used commonly as contributing to a person's competency. It is used in the simplest way to describe a developed or learned ability. I have therefore chosen to use the term skills in this research study as it best represents creativity in the context of this study and the studies used in the review.

The Covid-19 global pandemic has had detrimental effects on global and local economies and consequently increases in job and business loss during the 2020 and 2021 lockdowns and in many countries has contributed to an economic crisis. The resilient have survived and continue to work around the restrictions, effects of the lockdowns and spread of the virus. Entrepreneurs are considered resilient as they are able to use their creative skills to fix problems, find new solutions and help their communities and society rebuild and create new opportunities. Creativity is also viewed as a means to problem solving, therefore this entrepreneurial skill has helped entrepreneurs during this uncertain time; with the many changes the new "normal" brings, make way for learning and developing new ways of solving business challenges. Similarly, whether it is Industry 4.0, the general advancement of technology and globalisation or a natural disaster; entrepreneurs will continue to be under pressure to create, innovate, diversify and contribute to growing the economy and job creation. Literature for and against Industry 4.0 (where evidence of the projected impact is lacking) indicate that Industry 4.0 is not fully accepted. It leaves room for us to not only accept what is being put forward as the status quo, but to rather

look critically at how the rate at which technology is growing can affect us. In doing so, we can personally prepare for unexpected change – be it technology or a disruption like the current pandemic – to our work and life as we know it.

There are a multitude of ways in which entrepreneurs can learn to be creative, despite some having inherent creative abilities (Egan, Maguire, Christophers & Rooney, 2017; Tang, Byrge & Zhou, 2018). Gundry, Ofstein and Kickul (2014) describe programmes for entrepreneurs as providing context to help them apply competencies and skills expected to be used in businesses to create and add value. There are comparatively those who do not possess this skill, and may need to develop their creative thinking ability. This has given rise for the need to explore how exactly entrepreneurs learn creative skills by looking at what is available in the context of education and training. It has been established that creativity is a critical skill, vital for innovation, business growth and market developments globally. Entrepreneurs are at the forefront, in that their innovative products, services, technology and processes are creating new opportunities and jobs. There is an intrinsic link between creativity and entrepreneurs and to leverage the benefits of creativity for the future of their business, entrepreneurs need to develop their creativity skills. This study proposes to conduct a non-empirical scoping review to explore how entrepreneurs learn to be creative for the changing 21st century.

1.2. Rationale for study

The world of learning, the how and what we learn, has been evolving over the centuries as demands for labour and skills have changed with the industrial revolutions. Today, local conditions, changing economies and the technological and digital advancements of the 21st century, have had major impacts on learning, workplace skills, employee retention and business growth. This requires a workforce who are adaptable, resilient, creative, innovative and quick to respond to the changing technology around us. Possessing and developing specific critical skills like creativity are the differentiators between those that thrive and those that do not. Skills development is recognised as enhancing employees' capacities and opportunities to work, therefore proposing more scope for creativity and job satisfaction (The International Labour Office, 2011). Blaschke and Hase (2016) assert that the change we are experiencing currently has

become the norm and it is sporadic, making the ability to learn critical skills the key to survival for both adults and organisations alike. As creativity is a complex phenomenon (McWilliams, 2008; McWilliam, 2009; Ward, 2004; Fillis & Renstchler, 2010), researchers have done considerable work to shift perceptions of the role creativity plays so it can be recognised as a key driver for the development and implementation of innovation in multiple domains. To this end, creativity (although still complex) is highly viewed as researchers continue to prove that creativity is vital and valuable to societal progress.

Duxbury (2012) confirms that demonstrating creative ability is one of the first tasks required of an entrepreneur to invent new opportunities for products and the promise of the value to be expected. Having high levels of creativity can therefore enhance the level of innovation in a business, as the entrepreneur can identify opportunities for new ideas, products and services or engage in the efficient use of current methods or equipment thereby effectively solving problems (Shahab, Chengang, Arbizu & Haider, 2019). Whilst McMullen and Shepherd (2014) share that being an entrepreneur is acting on the possibility of identifying the opportunities that are worth chasing and investing time and effort in. Entrepreneurs therefore have to be proactive and agile, using their creative skills to keep them abreast, whilst converting their ideas into innovative solutions that meet the demands of the changing world, we operate in.

Consequently, the importance of possessing and leveraging creative ability and strength is imperative for an entrepreneur. According to McWilliams and Haukka (2008), creative capital is emerging as most valuable to new cultures that are created as a result of organisations using technology, as they are benefiting from the resourcefulness of their human capital to problem-solve and generate new ideas, opportunities and products. Moran (2010:77) recognises the value of creativity to society as an "opportunity, inventing and guiding the future to favourable victory". This creative capital extends to the entrepreneur, as they invest in their own abilities to create, produce and innovate whilst also growing their creative tribes.

In preparation for the changing future and surviving adverse times like a pandemic, entrepreneurs are a beacon of light in that they have the ability to take risks using their creative skills, to create products and services of value. As an adult educator, mentor

to entrepreneurs and advocate for lifelong learning, I wanted to better understand how entrepreneurs in the formal sector learn to be creative to effectively support them. Formal sector refers to businesses that are registered and paying tax and have contracted employees or business relationships. Higher education institutes, organisations and local governments are equally invested in harnessing entrepreneurial mindsets in students, employees and citizens and therefore developing creativity skills is vital to entrepreneurial education.

This study intends to identify the ways in which entrepreneurs learn creativity, of which some ways may be formally through entrepreneurship or enterprising courses or informally through other means. It is necessary at the onset to distinguish between entrepreneur education and enterprise education as these two concepts are often used interchangeably or merged into one. Jones and Iredale (2010), differentiate the two concepts; entrepreneurship education focuses on the needs of the entrepreneur in starting, developing and running their business versus enterprising which focuses on growing and gaining the necessary skills and abilities that are transferable to different contexts and usable through the entrepreneur's life. Whilst this study may find results in either or both of these forms of education it is important to note the core differences.

1.3. Problem Statement

It has been established that creativity is a vital skill for the workforce and in particular entrepreneurs as key contributors to economic and societal growth in order to advance Industry 4.0. This led me to want to explore how do entrepreneurs in the formal sector learn and acquire creative skills. There is much emphasis at governmental level to provide more education and support for skills that will help society prosper in the 21st century. These important kills that include creativity. Yet it isn't clear that all entrepreneurs have access to different ways to learn creativity, and if so, what are the ways they learn creativity? From my personal experience it is not clear how entrepreneurs can learn to be creative and then further develop the skill. This therefore is the study problem to understand how entrepreneurs learn creativity skills. Surely, not all entrepreneurs are born with creativity skills, nor do all entrepreneurs attend business schools.

This has given rise to the research question:

How do entrepreneurs learn to be creative?

The following sub-question arose from the main research question:

What are the commonalities and differences in the ways in which entrepreneurs learn to be creative?

I intentionally chose to conduct a non-empirical study to explore a wide range of literature including empirical and non-empirical, where different types of entrepreneurs in many countries and across different industries would be studied. This resulted in a diversity of evidence-based perspectives about the subject on how entrepreneurs learn to be creative. The research question that was posed and subsequently guided this scoping review was broad in nature allowing for a breadth of information to be generated. Using a scoping review, the research question provided the foundation for the purpose of the study and concluded in a summary of information to address the questions as discussed above.

1.4. Research design

The research design, according to Mouton (2001), is the map of how one intends to direct the research. Research design informs the process of the research study and is classified into empirical or non-empirical designs. Non-empirical studies generally focus on philosophical and concept analysis, theory building and literature reviews (Mouton 2001). These studies centre on drawing out meaning in contexts and requires a data collection tool that is perceptive in finding deeper meaning when collecting data to interpret (Merriam & Tisdell, 2010). This non-empirical study intended to draw out meaning from existing literature aligned to the research question and present key themes and potential gaps that can be used for future entrepreneur development, entrepreneurial education and training requirements.

1.4.1 Research Paradigm

Willis (2007) explains that a paradigm is a comprehensive view of the world or a belief system about the way to see the world, which provides the researcher with a

framework to guide research and practice in a particular field of study. Philosophically, a paradigm is seen as three parts, the study of a view or belief system of reality (ontology); the study of what we can know about the reality and how we know it (epistemology); and lastly the approach to generating the knowledge (methodology) (Willis, 2007; Taylor & Medina, 2011; Cresswell, 2003). Put simply, it is a system of beliefs about the way of the world. When applied to research, one can describe a paradigm as a belief of what is real to the researcher, where the researcher can become more knowledgeable using a specific method to understand the knowledge produced. A paradigm is therefore the base from which the researcher goes about generating knowledge and thereby informs the way a research study is undertaken, and the methodology used.

Broom and Willis (2007) argue that choosing the suitability of a particular research paradigm is intricately tied to the research question as it guides the way in which the researcher attempts to answer the question. As this research design is directed by a non-empirical scoping review of peer-reviewed literature, this study adopted an interpretivist research paradigm. Thanh and Thanh (2015) describe the principal role of the researcher working in an interpretive manner as gaining a comprehensive understanding of information, which is precisely the intention of this study in finding answers to the research question.

According to Broom and Willis (2007), researchers positioned within the interpretivist paradigm believe that knowledge is socially constructed and they gather understanding with a focus on subjective meanings and interpretations therefore viewing reality as subjective. The researchers within an interpretive paradigm (Thanh & Thanh, 2015) use the experience and understanding of others to explore their own world to make meaning, which allows for the review and inclusion of numerous viewpoints on the topic. Broom and Willis (2007) share that whilst the researchers in the interpretive paradigm focus on subjective explanations and meanings, seeking understanding to consider the similarities and uniformities found while keeping the authenticity of the information. As the researchers progress through the study, they develop patterns of meaning versus having a pre-determined theory at the start of the study (Creswell, 2003). Reality is therefore constructed and not predetermined. In this study, I chose to position myself within the interpretivist paradigm in order to explore

the vast literature available linking entrepreneurs and learning to be creative. It has enabled me to take into account the work of a variety of scholars, by reviewing multiple sources of literature to find consistencies in their interpretations, understanding and perceptions (Mason, 2002) which supported and formed the basis of my study.

1.4.2 Research methodology

The motivation for choosing a methodology like the scoping review for this study was to review, analyse and interpret existing literature on the study area, allowing for a broad research question that incorporates a range of literature including both non-peer reviewed material and sources and peer-reviewed scholarly literature (Daudt, Mossel & Scott, 2013).

When using a scoping review, the breadth of the literature can be broadly explored and the researcher can systematically map the area of the study area so that key concepts and gaps are identified. Consequently, the choice of a scoping review for this study is to better understand the relationship between entrepreneurs and creativity in the context of learning and potentially inform future information relating to how entrepreneurs learn to be creative.

A scoping review is a precise approach used to identify and review an established body of work in the field of study resulting in findings and gaps in current knowledge (Arksey & O'Malley, 2005; Daudt *et al.*, 2013; Grant & Booth, 2009). It involves a systematic and rigorous method to review published and unpublished literature related to a specific area of interest. Arksey and O'Malley (2005) developed a methodological framework to be used when conducting a scoping review, which was employed in this study.

Egan *et al.* (2017) highlight that scoping studies are used extensively in the medical research field where they develop practice in particular fields and evidence-based bodies of knowledge, while O'Flaherty and Philips (2015) found that scoping reviews are becoming prevalent in summarising literature in other subject areas like education, workforce planning and associated health. Egan *et al.* (2017) noted that the education discipline will follow in the increased adoption of using scoping reviews as these studies can have implications for practice, not only for individuals but for institutes and

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at worldwide reach. The adoption by other subject areas like education in using scoping reviews, further supports my choice for using a scoping review in the discipline of education to explore how entrepreneurs learn to be creative.

To distinguish the aim, purpose and appropriate use of a scoping review from other reviews, Arksey and O'Malley (2005) drew particular comparisons between scoping and systematic reviews. Below are summaries from three studies including that of Arksey and O'Malley (2005), highlighting the main defining purposes for using either review.

Table 1.1: Summaries comparing scoping reviews to systematic reviews (Adapted from Munn, Peters, Stern, Tufanaru, McArthur & Aromataris, 2018; Munn, Stern, Aromataris, Lockwood & Jordan, 2018; Grant & Booth, 2009; Arksay & O'Malley, 2005)

Type of review / Aspect	Scoping review	Systematic review
Key Purpose	▪ Scoping reviews address broad topics where many different study designs might be applicable ▪ scoping reviews are less likely to address specific research questions nor the quality of included studies ▪ a scoping review ensures a wide and comprehensive recovery of relevant data, no matter the type of study found in the selected literature.	▪ systematic reviews that typically focus on a well-defined question where appropriate study designs can be identified in advance ▪ systematic reviews aim to provide answers to questions from a narrow range of quality assessed studies
General	▪ As a precursor to a systematic review ▪ To clarify key concepts/ definitions in the literature ▪ To identify the types of available evidence in a given field ▪ To examine how research is conducted on a certain topic or field ▪ To identify key characteristics or factors related to a concept to identify and analyse knowledge gaps	▪ Systematic review is longer and more costly ▪ Identify and inform areas for future research ▪ identify new practices ▪ Identify and investigate conflicting results ▪ Uncover the international evidence ▪ Confirm current practice/ address any variation/ ▪ Produce statements to guide decision-making

In reviewing all the above differences, I selected a scoping review as the preferred methodology for the study as it addresses broad topics and reviews a wide and comprehensive range of literature. It provides an overview of the available literature about creativity and how entrepreneurs learn it; with the objective to collate and summarise the information selected and identify any potential gaps in the selected published and unpublished literature.

The lack of an existing scoping review to answer the research question is a key driver for choosing this methodology. Arksey and O'Malley (2005:21) have identified four common reasons why a scoping review is undertaken:

1. to identify the range and nature of research activity and provide a snap overview of the study area;

2. to identify the feasibility for a systematic review;

3. to summarise and disseminate research findings; and

4. to identify potential research gaps in the existing literature and draw conclusions.

The first and fourth reason are the motives as to why a scoping review was chosen for this research study: to have a snap overview of the study area – the available literature about creativity and how entrepreneurs learn this skill and summarise information gathered, and to identify any potential gaps in the selected body of existing literature.

It is therefore considered appropriate in this study to do non-empirical research to provide information that can be used in future within entrepreneurial education settings. This research did not intend to generate or create any theoretical development of new concepts or frameworks; however, it did attempt to focus on the rich literature specifically written about entrepreneurs and how they learn to be creative. This analysis will provide relevant stakeholders with a point of entry to a body of work that summarised and analysed multiple literature studies to answer the research question.

The methodological framework developed by Arksey and O'Malley (2005) was used in this study. The framework comprises five key stages with an optional sixth stage. The Arksey and O'Malley framework was initially developed in 2005 and later enhanced by Levac, Colquhoun and O'Brien (2010) and Daudt *et al.* (2012). It is widely used within scoping review studies. It also formed the basis for which the Johanna Briggs Institute developed their own scoping review framework (Peters, Godfrey, McInerney, Khalil, Parker & Baldini Soares*,* 2015).

The six stages of the Arksey and O'Malley (2005) framework are presented below with a description of each stage and how it was applied to this scoping review study.

Stage 1: Identifying the research question

Arksey and O'Malley (2005) highlight the importance of identifying which aspects of a research question are significant to the study to guide the way the search strategies are developed. They emphasize that defining parameters whilst maintaining an extensive approach will generate a wide range of coverage of information. The research question for this study: *How do entrepreneurs learn to be creative*, is broad as the focus of the review is to summarize an extensive range of evidence answering

the research question. Parameters were set for this question to avoid missing relevant literature (see stage 3 – study selection). When searching for literature, I focused strictly on the *learning* to be *creative* (rather than on other concepts, like using or optimizing creativity in entrepreneurial settings). Therefore, the term creativity had parameters so that large numbers of irrelevant literature was not selected.

Stage 2: Identifying relevant studies

To retrieve a comprehensive body of literature to answer the research question, I had to identify published work. Arksey and O'Malley (2005) recommend using different sources to search for relevant research literature like; electronic databases, reference lists of related articles, manual searching of key journals, relevant conferences and organisations. A preliminary search was done online via Google Scholar and searches through multiple entrepreneur, creativity, business, education and innovation academic journals and no studies using a scoping review were found in the subject area of how entrepreneurs learn to be creative. In addition to using Google Scholar, the following electronic collections and databases generated relevant literature specific to the research study: Academic Search Premier – EBSCO Host, Emerald Insights, ProQuest, SCOPUS, Taylor and Francis academic journals, Web of Science, Wiley Online, WorldCat Dissertations and Theses. I used the Electronic Thesis and Dissertation (ETD) databases to find theses and dissertations that were relevant to the research question. These different sources guided the breadth and richness of the literature search for key terms like creative, creativity, entrepreneur, learning and associated terms like originality, innovation, business venturing, and learning for the future. See chapter three for details on the databases used.

Stage 3: Study selection

To avoid the inclusion of irrelevant studies, Arksey and O'Malley (2005), recommend setting inclusion and exclusion criteria at the beginning of the study. They advise that the study selection should include post hoc inclusion and exclusion criteria that arise once the researcher gains a new familiarity with the subject matter after reading through various studies and based on specifics of the research question. Peters *et al.* (2015) describe inclusion criteria as providing understanding of what reviewers propose in their study and for reviewers it provides a direction to decide on which sources of literature to include in their review. This process helped me reduce the

number of studies not relevant to the research question therefore inclusion criteria needed to be succinct.

I incorporated the below categories from Peters *et al.* (2020:417) to assist in defining inclusion and exclusion criteria which includes; the type of participant, concept, outcomes and context.

The following inclusion criteria were formulated and applied to this study:

- literature that included entrepreneurs and business owners (Types of participant criteria);
- literature that addressed how to be creative (Concept criteria);
- literature that contained the term or similar terms to "creative" to be found in the title, abstract or article (Concept criteria);
- literature that contained the term or similar terms to "learning" to be found in the title, abstract or article (Concept criteria);
- literature that contained how Entrepreneurs learn to be creative were included (Context criteria);
- literature in English (the language of the researcher) or those already translated into English as time and budget did not allow for translations;
- all literature sourced and published between 2000 and 2021 (until the study was completed), as it is the start of the 21st century where the connection to creativity is significant. It provides nearly two decades of literature that broadens the scope of the search and eventual understanding of how the topic evolved over this period of time; and
- literature should be available as full text.

The following exclusion criteria used in this study were formulated with the same basis as the inclusion criteria above.

- non-English literature;
- literature where only partial text was available;
- literature published before the year 2000;
- literature that included other professional fields other than entrepreneurship were excluded to ensure that the context of entrepreneurs was followed as guided by the research question; and

- non published literature in all databases except the Electronic Thesis and Dissertation (ETD) databases (allowing for peer reviewed literature in the form of theses and dissertations to be considered).

Stage 4: Charting the data

This stage involved sifting through all the selected literature and sorting the material into main topics and themes. Arksey and O'Malley (2005:26) liken it to a narrative review where the researcher must extract contextual or information focused on processes from each study. I had to decide what information to record from the primary literature studies and Arksey and O'Malley (2005:27) suggest using a "data charting form", to record general and specific information about the study. The literature consulted was a large body of data and it was therefore important to present the information found in a meaningful manner and ensure clarity when reporting the results. Using Microsoft Excel, I recorded information under the recommended headings of author, year and location of study, intervention type, study population (entrepreneurs), aims of the study, methodology, outcome measures and important results. Other additional information was captured together with information gathered through the data charting form to shape the basis of the analysis. This is discussed in chapter two.

Stage 5: Collating, Summarising and Reporting the Results

Results from the charting stage can be reported on in the form of a narrative review or the use of figures and tables (Arksey & O'Malley, 2005) to provide an outline of the extensiveness of the literature reviewed. The spreadsheet created to chart the literature provided ease of use to see the information captured in a systematic approach. The findings are discussed in chapter three.

Stage 6: Consultation

This stage was not completed in this study as it is usually relevant if there are stakeholders outside the research team who need to be consulted, which is not the case here.

Levac *et al.* (2010) and Daudt *et al.* (2013), after using the Arksey and O'Malley (2005) framework, made comparative recommendations on each of the six stages of the framework that improved their overall scoping review research studies. These recommendations were considered in this study, as they are relevant in ensuring the study is more comprehensive and rigorous. The comparative recommendations were used where relevant to guide this study. Some of the recommendations included were:

- start with linking the purpose of the study to the research question (Levac *et al.* 2010);
- consider the time factor when identifying relevant studies (Daudt *et al.* 2013); and
- when collating, summarising and reporting, researchers should break this stage into 3 steps namely analysis, reporting and consider meaning (Levac *et al.* 2010).

The reviewing of a complex topic of how entrepreneurs learn to be creative, the limited scope of the study (as a 50% Master's thesis), the need to identify potential gaps in the literature and draw conclusions together with the structured methodological framework (Arksey & O' Malley, 2005), expanded on by Levac *et al.* (2010) and Daudt *et al.* (2013), made a scoping review the appropriate methodology for this research study. The first stage – identifying the research question (Arksey & O'Malley, 2005) is completed in this chapter (Section 3 – problem statement).

1.5. Ethical considerations

This is a non-empirical study and therefore did not require institutional permissions or ethical clearance as the literature consulted is already publicly available. The study focused on reviewing bodies of knowledge from peer-reviewed published literature sources and not working directly with people (respondents or participants). However, non-empirical studies do require ethical discipline when assessing literature and developing knowledge. I exercised discipline and showed responsibility when conducting the scoping review, following the line of enquiry as set out in the research design and methodology. This strengthened the validity of the study and provided me with an ethical code to work from.

Furthermore, there are common ethical codes that need to be adhered to with any form of study. Schwandt (2007) explains that there are three ethical theories to consider when addressing ethics in the planning and design of research. These include:

- accountability – doing what is right;
- worthiness – moral worth of an activity and how much value it adds; and
- integrity – exhibiting moral compliance and excellence in your character.

I was rigorous in determining and utilising valid and deep insights extracted from literature sources. I had to be accountable and use reliable sources, that were worthy of the research question and determine the value it added to the study before using it. Additionally, I exhibited integrity at all times in how I chose the literature ensuring to follow the inclusion and exclusion criteria I created.

1.6. Quality of the study

Houghton, Hunter and Meskell (2012) suggest that by showing consistency and clarity between the paradigms and methods employed it is more probable for the researcher to ensure quality and rigour in a non-empirical study. In non-empirical studies, rigour is used as a measure of quality, as it is not easy to measure quality using the quantitative approaches of validity, generalisability, and reliability (Mason, 2002:40). To recognise quality in a non-empirical study, Kitto, Chesters, and Grbich (2008:243) propose that rigour; the meticulousness of the study, the trustworthiness or reliability of the findings and the significance and usefulness of the study are used.

Scoping reviews, however, do not place emphasis on nor assess the quality of the evidence in the primary literature sources or studies. Thus, the amount of literature retrieved in the study selection can be considerable, allowing for the depth and breadth of the research study topic. I therefore had to be rigorous in determining and utilising valid and deep insights extracted from literature sources. To increase the quality and findings of this scoping review and address methodological rigour, I ensured I explicitly recorded and documented all methods used through the various stages of the review framework to permit the replication of the study by others (Arksey & O'Malley, 2005).

The combination and overlapping of criteria applied quality standards and methods proposed by Levac *et al.* (2010), Daudt *et al.* (2013), and Taylor and Medina (2011) to

ensure the quality of the research study. Tracy's (2010) principles of ensuring quality in research was applied to this study and further supported the scoping review framework. The model consists of eight key markers of quality found in non-empirical research and was applied to this study below in Table 1.2.

Table 1.2: Application of Tracy's (2010:840) research quality criteria

	Quality Criteria	**Application of quality criteria to this study**
1	Is the *topic worthy*? *Is it interesting, relevant and timely?*	The topic chosen for study is worthy, relevant and timely considering the necessity for entrepreneurs to be creative for the changes and challenges of Industry 4.0.
2	Is the *rigour rich*? *Does the study use appropriate theoretical sources and methods to source and analyse the data?*	I followed the methodological framework and demonstrated the use of the detailed steps to source literature and appropriately analyse the literature consulted for themes and gaps.
3	Is it sincere? *Does the study show transparency and reflexivity on subjectivity?*	I shared any methods and challenges used to manage subjectivity.
4	Does it have *credibility*? *Does the research include a range of theoretical viewpoints and description that are inclusive and trustworthy?*	The study considered peer reviewed literature providing a wide range of perspectives on entrepreneurs and how they learn to be creative. Using inclusion and exclusion criteria the study inclusive using credible and relevant literature sources.
5	Does it exhibit *resonance*? *Does the study provide meaning and influence to readers? Is it transferable?*	The study is transferable and can contribute to future research on entrepreneurial education, creativity and learning methods.
6	Does it make a significant contribution? *Do the findings contribute practically, methodologically, conceptually and morally?*	The study is able to provide a base of comprehensive information to educators and entrepreneurs seeking to develop creative competence.
7	Is the study *ethical*? *Does the researcher take a complete view and approach to ethics?*	I applied the appropriate research ethics during the study, and considered and acknowledged all sources, meanings and themes.
8	Is there meaningful coherence? *Does the study show how it achieved its purpose, using relevant methods and steps to achieve the intended goal?*	Literature was identified and selected using the comprehensive approach outlined in the methodological framework to ensure the purpose and research question was adequately answered. All steps were employed and validated during the charting stage.

1.7. Conclusion

This chapter introduced the study and presented the choice for a scoping review; and the objective of this scoping review which is to review all relevant literature available on how entrepreneurs learn to be creative in order to yield broad and in-depth results. The research design, methodology and question together with the outline for this research study were presented and discussed.

Chapter one served as an orientation to the study. It gave a brief background, context and rationale for choosing to address the identified research problem. It also covered the research design and methodology, and included Stage 1 (*Identifying the research question*) of the Arksey and O'Malley (2005) methodological framework for scoping reviews.

Chapter two presents deeper insight into the concept's creativity and entrepreneurship

Chapter three focuses on discussing and sharing outcomes of *Stage 2: identifying relevant studies, Stage 3: study selection* and *Stage 4: charting the data* of the framework.

Chapter four focuses on *Stage 5: collating, summarising and reporting the results* and the discussion of the results.

Chapter five concludes the study and reveals the overall findings of the research study.

Chapter 2:
Creativity and entrepreneurship overview

2.1 Introduction

In this chapter, we revisit creativity and entrepreneurship to provide deeper insight into their origins and definitions, whereafter the connection between the concepts is explored. The concepts were presented briefly when introducing the study and discussing the research question in chapter one.

2.2. Creativity

Testimony of the existence of creativity dates back to the divine creation of the earth, Greek mythology and myths about Mother Goddess – the creator of the Universe (Roche Cárcel, 2020; Niu & Sternberg, 2006). This gives evidence of creativity spanning many millennials and centuries and has shaped the meaning of creativity as a result of its historical origins. Both Plato and Aristotle made contributions to the origins of creativity, with Plato believing that creativity was a result of ideas from "madness of divine origin" whereas Aristotle pondered as to whether creativity emerged from the faint area "between melancholia and its temperaments" (Akiskal & Akiskal, 2007:2). Rothenberg and Hausmann (1976:33) in their study on creativity go back to historical references of creativity too noting Aristotle's view of creativity as being part of natural laws and not something that occurs by chance. We have ancient knowledge and evidence of creativity in the form of music, art, stories, dance and decoration passed on from generation to generation within different cultures and also recorded through books, places and structures. This has been a source of our early connections to creativity.

Formal creativity research was introduced in the 1950's by Joy Paul Guildford, in his seminal address to the American Psychological Association where he shared his dissatisfaction on the low number of studies conducted on creativity by Psychologists. He advocated for the understanding of creativity as it is of particular importance in the field of education, in order for our creative personalities to be developed through education (Guilford, 1950). Following Guilford's (1950) address, creativity research grew considerably, starting since the 1960's with much research focusing on creativity

as an intellectual ability, opening it up then to creative thinking and the creative individual (Fillis & Rentschler, 2010). Guilford is recognised as perhaps publishing the first convincing argument that creativity can be studied methodically and scientifically (Runco & Jaeger, 2012). He described creativity as a characteristic of the creative person, one who has original ideas and the flexibility to use creative thinking therefore requiring synthesising and analysing abilities. Guilford's (1950) description of creativity set the world in motion and there have multiple subsequent descriptions and definitions that have developed over the last 70 years.

There are many authoritative authors who have written extensively about creativity over the last 25 years like Runco and Jaeger (2012) who credit Stein (1953:311) as being the first to make use of the standard definition when he started with a definition: "creative work is a novel work that is accepted as tenable or useful or satisfying by a group in some point in time." Runco and Jaeger (2012) describe the standard definition of creativity as requiring originality and usefulness to be credited to two scholars of the 1950's – that of Stein (1953) and Barron (1955), noting reference to originality dating to before 1900.

Through the works of Sternberg and Lubart in the 1980s and 1990s, their definition for creativity developed and has been used and built on since. Sternberg and Lubart (1999:3) define creativity as "[t]he ability to produce work that is both novel (i.e., original, unexpected) and appropriate (useful, adaptive concerning task restraints)". Amabile (1988:126) prefers to define creativity from a product orientated context as it is more straightforward, therefore the definition is based on product, "Creativity is the production of novel and useful ideas by an individual or small group of individuals working together."

The above definitions are merely a snapshot of the plethora of definitions authors have explored and have novel, original, appropriate, useful, ideas and product in common. However, these prevalent definitions of creativity do not give insight into the act of creativity i.e., what being creative means. Walia (2019) emphasises the need to distinguish creativity (the act) from creation (the end result) by placing emphasis on the dynamic nature of creativity not ending once something has been created (the creation) but as ongoing. Understanding the nature of creativity and its components enables us to learn, utilise and harness our creativity effectively. Knowing what creativity is, is not enough; we need to know what drives it, enables it, measures it,

distinguishes it and constitutes it. Below is an overview of different authors models or components of creativity that are popular as they offer answers to these questions.

Amabile (1998) uses three components to explain the creativity within people. Expertise refers to knowledge and what a person can do in their area of interest and work, creative thinking refers to how a person thinks about and approaches problems and finally motivation determines what a person will do and is affected by extrinsic and intrinsic factors. These components together underpin our creativity and is dynamic in nature as our levels of expertise, creative thinking and motivation ebb and flow.

Figure 2.1 Three components of creativity (Amabile, 1998:78)

To further understand creativity, we need to look at what makes up creativity in order for it to be dynamic and variable over time. Kampylis and Valtanen (2010:198) in their study of over 42 explicit definitions of creativity found that the majority of the definitions intersected at four key components to understand creativity:

1. creativity is a key ability of individual(s);
2. creativity presumes an intentional activity (process);
3. the creative process occurs in a specific context (environment); and
4. the creative process entails the generation of product(s) (tangible or intangible). Creative product(s) must be novel (original, unconventional) and appropriate (valuable, useful) to some extent, at least for the creative individual(s).

These components are also commonly referred to the as Four P's of creativity, or the Four P framework (Rhodes,1961). Rhodes (1961:305) studied creativity in depth and accumulated over 40 definitions of which he discovered were all intertwined, as being, "the phenomenon when a person communicates a new concept which is the product."

He organised the definitions into four strands of creativity and produced the four P framework;

- person (the personality, traits and intellect that makes up a creative person);
- process (what happens during creative thought or expression);
- press (external forces influencing creativity); and
- products (what is the result, output or product of the creativity).

His model together with Kampylis and Valtanen's (2010) four components compiled almost 50 years later provide researchers with guidance in the pursuit to learn more about developing creativity in various contexts which is of particular importance to this study. Creativity is complex and viewed through multiple lenses and domains, therefore it is imperative to be informed when approaching creativity and the Four P's provides the foundation to build on for the learner, teacher and facilitator of creativity.

Other authors studying creativity have chosen to categorise people into levels of creatives. Whilst this is a classification that can aid learners as they enhance their creative ability, the model should be seen as means of connecting our creative ability as it develops. Kaufman and Beghetto (2009) categorise creativity into their 4C Model. They expand on the two known C's, Big C includes creativity found in celebrated creatives and little c refers to creativity in everyday people. Kauffman and Beghetto (2009) added two more creative categories to make up their model, the third is mini c comprises creativity that is essential for personal development and the learning process and finally Pro-c, which is professional-level expertise in a creative area. Kauffman and Beghetto (2009) describe the evolution from mini c to Big C as a development course with not everyone achieving or striving for pro or Big C, however, the mini-c and Little-c can be experienced by most of us. Runco (2014), after studying the 4C model, emphasises that the 4 types of creativity should not be seen as a dichotomy to each other, nor as definitive categories, but rather as a continuity of one's creative potential. This emphasis reinforces how personal and original creativity is to each person and up them to decide how far they want to take it – renowned genius or not. Creativity is in and for everyone.

In this unpredictable 21st century, with Industry 4.0 and the current pandemic, there is a desperate need to recognise the precipitous changes around us and within us and move away from creativity being associated with only the arts, music, writing and

theatre and fully recognise its place in science, technology and other disciplines and as a general means to problem solving (Newton and Newton, 2014; Runco, 2004). So where are we now with creativity? Many countries have recognised that the workforce needs to develop their creative capacity as this skill is critical for economic growth, employment opportunities, business development and sociologically. Creativity and innovation are closely associated as shared in chapter one and the core difference between the two lies in creativity being the theory and innovation the practical application of this (Fisher & Amabile, 2000). The advancement of creativity impacts the advancement of innovation as the introduction of a new product, service, concept or in today's world disruptive innovation. The establishment of technology-based service companies such as Uber, Netflix and Airbnb have caused positive disruptions to industries such as the taxi, television and hospitality industry. We can now travel, watch movies and holiday conveniently whilst paying less and still having an exceptional experience. These disruptions are driven by entrepreneurial skills like creativity and innovation; i.e., creativity the ability to create fresh and original ideas leading to innovation which is successfully preparing the original ideas into ready for market products and services. It is important to note that creativity and innovation can happen independently of each other and still yield positive outcomes.

Creativity is therefore linked to entrepreneurs, geniuses, risk takers, talented individuals, small business owners, who through time and creative effort, transcend their innovative creations on us. Due to its close relationship to and with innovation, it is common to therefore link creativity to entrepreneurship. The next section will look at the concept of entrepreneurship and the inevitable link between creativity and entrepreneurs.

2.3 Entrepreneurship

The earliest historical references to entrepreneurship come from the field of economics and the types and sources of profit. Schumpeter (1942), when following his studies of economic and social change, drew focus to the vital part creativity and innovation played in economics and entrepreneurship. Schumpeter (1934) in earlier work published in 1911, called innovative individuals' entrepreneurs and expanded his understanding of entrepreneurs in later work (1942) as people who have the ability to combine and recombine essential resources to meet market needs. Similarly, Alcaraz-

Rodríguez, Villasana, and Alvarez (2013:643) define the entrepreneur in their detailed definition as:

> a person that can be considered to have the skills to create and initiate a business making use of his/her competences for resource optimisation and problem solving in an innovative way, taking advantage of opportunity areas that others have not identified, as well as the capacity to work hard and persevere towards the achievement of his/her goals.

These definitions highlight creativity and entrepreneurship as being inextricably linked, as the entrepreneur has the ability to create, to initiate and invent and to bring existence to something new. These traits share commonalities with creativity. Fillis and Rentschler (2010) in their paper on the contribution of creativity to entrepreneurship theory and practice; found creativity to be a critical skill during the entrepreneurship experience starting with problem identification to how entrepreneurs' lead and develop their product.

As a result of Schumpeter's studies, entrepreneurship has been associated not only with the theory and practice of economic growth development, but creating employment, creativity, innovation, education and technological advancement (Youl-Lee, Florida & Acs, 2004; Fillis & Rentschler, 2010). Furthermore, Lourenco and Jayawarna (2011) explored the effects of a creativity training programme on nascent entrepreneurs and found that creativity and entrepreneurship are directly linked in that the ability to think creatively is an essential skill that gives support to decisions in uncertain business situations. As a result of the relationship between creativity and entrepreneurship, creativity and imagination come to be critical parts of the entrepreneurial process during periods of high levels of uncertainly and limited resources (Lin & Nabergoi, 2014). Fillis (2002) describes creativity in entrepreneurship as a driving force of competitive advantage for both individuals and organisations.

During times of change and challenge, business owners dig deep to find ways of using their imagination to change their circumstances for the better, this is entrepreneurial creativity. Entrepreneurial creativity, known as EC, categorises the unique creative abilities of entrepreneurs across a number of diverse contexts (Lin & Nabergoi, 2014). These abilities and skills are not just used to create new products and services but also needed to complete the successful product to market journey in detecting opportunities in untapped markets to creatively promoting and delivering to market.

Amabile (1997:20) suggests the following definition of entrepreneurial creativity (built on her standard definition of creativity) is the "the generation and implementation of novel, appropriate ideas to establish a new venture" – this could be a new business or programme to deliver new or existing products or services. The entrepreneur part of the definition emphasises the action required to bring the creativity to fruition and implementation of those ideas.

Shahab *et al.* (2019) found that individuals with high creativity can advance their levels of innovation as they are more open to seeing prospects for the development of their ideas in products. Amabile (1997) found that individuals who were most motivated to work for themselves, exhibited creativity characteristics. Building on Sternberg and Lubart's (1999:3) definition of creativity being the ability to produce work that is "both novel (original) and useful", Youl-Lee, Florida and Acs (2004:882) contend that an entrepreneur is a form of creativity and can therefore be categorised as "business or entrepreneurial" creativity as new businesses are original and useful. The relationship between creativity and entrepreneurs has been established in multiple studies and is the basis of this study.

To better understand the role creativity plays within entrepreneurship in response to the shifting nature of our world, Fillis and Rentschler (2010) illustrate this in Figure 2.2 below.

The Entrepreneur and the Enterprise:
Opportunity focused, innovative, open to change, personality driven, operating under resource constraints, informal knowledge exploitation, entrepreneurial networking

Entrepreneurial competencies:
Energy, zeal, commitment, determination, persistence, opportunity focused, open to risks, need for achievement, locus of control

Impact of cognitive skills (learned and situational personality characteristics):
Idea generation, flexibility, originality, motivation, unafraid of failure, opportunity focused, exploitation of networks, analytical skills, intuition, judgement, determination, innovation, unrestrained thought, self-belief, ability to work with change, ambition, visualisation skills

Social and other environmental influences:
Educational impact, openness to new experiences, encouragement of creativity, seeing things differently, curiosity, independent thinking, persistence

Creativity as:
Competitive advantage, strategic weapon, embedded philosophy, contributing to employer and employee motivation, problem solving and improved performance

Figure 2.2 Creativity in entrepreneurship (Fillis & Rentschler, 2010:68)

Creativity through its impact reaps benefits for the entrepreneur through the process depicted above which is non-linear, yet through multiple combinations of:

- the different entrepreneurs;
- their varying level of competencies;
- the impact of their cognitive skills; and finally
- any social and environmental influences all nurture and stimulate the creativity unique to that entrepreneur.

This chapter focused on a deeper overview of the concept's creativity and entrepreneurship and their link which is the basis of this study. The next chapter focuses on stage two, three and four of the scoping review framework (Arksey & O'Malley, 2005), where relevant literature studies on creativity and entrepreneurs that answer the research question will be reviewed.

Chapter 3:
Identifying, selecting and analysing the studies

3.1 Introduction

Scoping reviews are guided by a need to identify all associated and relevant literature (published and unpublished) irrespective of the study design chosen (Arksey & O'Malley, 2005). This requires a comprehensive scope of identifying primary literature into the field of study to answer the research question. As the researcher becomes more familiar with the literature selected, they are able to refine their search with more specific terminology and get deeper into the search. At this stage it is imperative not to be rigid with the search terminology used to identify relevant literature. Therefore, the process for selection becomes iterative as the researcher, in order to be thorough is required to repeat steps ensuring the literature is handled comprehensively (Arksey & O'Malley, 2005; Levac *et al.*, 2010). This chapter discusses how I approached and applied stage two, three and four of the framework; identifying relevant studies, study selection and charting the data to my study.

3.2 Stage Two: Identifying relevant studies

In this stage, Arksay and O'Malley (2005) recommend that the researcher is as thorough as can be when searching for literature evidence using diverse sources. To begin the literature selection, I used my research question to guide the selection process as recommended by Arksay and O'Malley (2005), Levac *et al.* (2010) and Daudt *et al.* (2013).

Stage one of the Arksay and O'Malley (2005) framework starts with the identification of a research question. My research question was: *How do Entrepreneurs learn to be creative?* The key words in the research question guided the process used to find relevant literature.

3.2.1 Search data sources

I did some preliminary searches to see if they would be suitable to the research concepts. Peters *et al.* (2015) discuss the need to create a scoping review protocol – as is done with systematic reviews – which predefines aims, purposes and process to be used including the proposed plan. I created a literature search protocol informed by my research question to provide me with a systematic approach in working my way through the available databases and to direct me when starting the literature search.

The electronic collections and databases I decided to use to identify relevant literature to my research question included those that are global, include multiple databases, and cover a wide range of topics and fields of study, and that yielded the depth and volume required when conducting a scoping review. The following eight electronic collections and databases were searched and reviewed: Academic Search Premier – EBSCO Host, Emerald Insights, ProQuest, SCOPUS, Taylor and Francis, Web of Science, Wiley Online, WorldCat Dissertations and Theses. Google Scholar was employed to do a preliminary search.

Below is an overview of each database consulted, as described on the University of Stellenbosch Library page (http://library.sun.ac.za/en-za/Pages/Home.aspx). Where descriptions were not available on the university website, I used information from the database homepage.

- **Academic Search Premier – EBSCO Host** provides full-text for nearly 3200 scholarly publications covering social sciences, humanities, education, computer sciences, engineering, language and linguistics, arts and literature, medical sciences, and ethnic studies. https://www.ebsco.com

- **Emerald Insight** is a comprehensive collection of peer reviewed management journals providing full text access to 150 journals and reviews from 300 management journals. https://www.emerald.com/insight/

- **Google Scholar** is a search engine to search for scholarly literature across multiple disciplines and sources including articles, books, theses, abstracts and court opinions, from academic publishers, professional societies, online repositories, universities and other web sites. https://scholar.google.com/

- **ProQuest** provides a single source for scholarly journals, newspapers, reports, working papers, and datasets along with millions of pages of digitized historical primary sources and more than 450,000 e-books. The University portal gives access to 10 databases. https://www.proquest.com/

- **Scopus** by Elsevier is the largest abstract and citation database of peer-reviewed literature which includes scientific journals, books and conference proceedings. They uniquely combine a comprehensive, curated abstract and citation database with enriched data and linked scholarly content. https://www.scopus.com/

- **Taylor and Francis** partner with world-class authors, from leading scientists and researchers, to scholars and professionals operating at the top of their fields. They publish scholarly journals, books, eBooks, text books and reference works in areas of Humanities, Social Sciences, Behavioural Sciences, Science, Technology and Medicine sectors. https://taylorandfrancis.com

- **Web of science** is the world's largest publisher-neutral citation index and research intelligence platform. https://login.webofknowledge.com/

- **Wiley Online Library** hosts a multidisciplinary collection of online resources covering life, health and physical sciences, social science, and the humanities. https://onlinelibrary.wiley.com

- **WorldCat Dissertations and Theses** via FirstSearch provides fast and convenient access to the dissertations and theses available in OCLC member libraries. https://www.worldcat.org/

The literature search protocol found in Addendum A, gives an overview of the steps used to search for the relevant literature. The search was divided into two parts: Part One for the electronic collections and the subsequent databases; and Part Two for online web searches.

As I worked through the electronic collections, I employed the following Boolean phrase search technique in the databases where available. Boolean connectors [AND, OR, NOT] were used to combine search terms with the initial search sequence being key words related to and similar to those in the research question. These included the Boolean phrase (Entrepreneur OR business owner OR Entrepreneurship) AND (Learn OR Learning OR Develop OR Lifelong Learning) AND (Creative OR Creativity OR Creative skills). These search terms yielded a large and wide selection of studies and upon reading through the abstracts of the studies on the first two pages, it became clear that the search was overly broad and returning studies that were not relevant to the research question.

At this stage, I decided to follow the recommendations of Arksey and O'Malley (2005), and I consulted with two university librarians. They both verified the search databases and sources I had chosen as being relevant to my research question and guided me in re-refining the key search terms. I had attempted this alone and was faced with an exhaustive search return of thousands of literature studies, many of which were not suitable. The search terms were therefore modified and simplified to include those in the table below.

Table 3.1: Key search terms

	Entrepreneur OR Entrepreneurs
AND	Learn OR Learning
AND	Creative OR Creativity

After applying the above search terms, the search results narrowed notably, however, after a quick review of the literature there were many studies that included children in schools where creativity was being taught. To prevent these types of literature studies displaying in the search, I used the Boolean connecter "NOT" to ensure the following terms were not included (Child OR children OR youth OR adolescent OR teenager).

There were three search parameters chosen in the initial database searches:
1. literature published between the years 2000 to 2021;
2. literature accessible in English; and
3. literature with the full text available.

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These parameters reduced the search to an accessible and relevant quantity of literature returned. The number of databases accessed require time and resources to work through the searches to identify relevant studies. Arksey and O'Malley (2005) recommend developing a timeline when starting out, to plan the scoping review and to set a date limit where no further literature would be considered and included. As I am the sole researcher in this scoping review, a timeline and end date were of utmost importance to keep me on track and able to manage the volume and complete the scoping review.

3.2.2 Literature screening

Screening was done in two levels to ensure firstly, familiarity with the process of searching for relevant literature and secondly, to give time and effort to the literature without missing anything relevant. A Microsoft Excel spreadsheet was created to capture details of all literature returned as a result of the search. This was done to help manage the results returned from varying databases. The Excel document was set up per database with the selected literature details captured.

Level 1: Reviewing literature titles for relevance

The total number of literature studies found after all the electronic collections and database searches were complete and with the inclusion criteria applied, retrieved 496 studies. To supplement the database search, Google Scholar was used to search more peer reviewed journal articles and this retrieved a further 11 studies bringing the total to 507. All the articles that met the inclusion criteria were exported to an Excel document where each of the titles were reviewed allocating a "YES" or "NO" into a column which was filtered for a second level of screening. A review of the literature titles revealed large numbers of studies that were irrelevant as they related to learning creativity in primary and secondary school, across corporations or covering general entrepreneurial skills not relating to creativity. The reason for excluding primary and secondary schools as well as corporations was to focus on firstly, adults i.e., students preparing to be entrepreneurs, students exploring entrepreneurship and existing entrepreneurs. Secondly, I excluded corporations as I wanted the study to focus on entrepreneurs who run their own business and not the manager, entrepreneurs or

intrapreneurs within a corporation. Duplicate studies were removed manually as they were discovered and studies that were in a foreign language (some slipped through the study with an English title) bringing the studies to 179.

Level 2: Reviewing literature abstracts for selection

Screening (level 2) by reading the abstracts of the 179 results was completed, and the abstracts that contained the key words and focused on entrepreneurs and creativity were selected, resulting in 69 literature sources that were included in the third stage of the study.

3.3 Stage Three: Study selection

Levac *et al*. (2010) view this stage as an iterative process and suggest that the focus be on "searching the literature, refining the search strategy and reviewing articles for inclusion". A scoping review research study requires the researcher to review a broad selection of primary and secondary sources of literature, whilst at the same time ensuring there is not only volume but depth to the literature studies consulted. The selected literature is reviewed therefore repeatedly, as the researcher engages with the different stages to be comprehensive. Arksey and O'Malley (2005:22) emphasise that the process is not "linear but iterative" in the identification and selection of literature. In doing so the literature search becomes finetuned as suggested by Arksey and O'Malley (2005).

3.3.1 Inclusion and exclusion criteria

The inclusion and exclusion criteria were developed before and during the study selection and the rationale for creating these criteria was presented in chapter one. As the researcher becomes more familiar with the subject matter, the inclusion and exclusion criteria are developed and adjusted (Levac *et al.* 2010). Peters *et al.* (2015:143) suggest that the inclusion criteria provide a guide for the reviewers to base decisions on the literature studies to be included in the scoping review and the inverse applies to the exclusion criteria. Therefore, application of the criteria is imperative during the study selection phase.

Daudt *et al.* (2013:4), in their scoping review experienced the massive task of creating an inclusion criterion later in the selection process. This created time and resource wastage and they therefore emphasise following the advice of Arksey and O'Malley (2005) and Levac *et al.* (2010) not to "reduce the need to adjust their question to fit the methodology". Table 3.3 below presents the admissibility criteria used to guide the literature search.

The inclusion and exclusion criteria were applied to the literature selection during the level one screening and again, if they met the criteria, during the abstract screening process when the literature was selected for inclusion. This resulted in 69 literature studies that were individually downloaded and imported into Mendeley.

Table 3.2. Inclusion and exclusion criteria table

	Inclusion Criteria	Exclusion Criteria
General Factors	Literature selected must be: • Published in English • Published between the years 2000-2021 • Available in full text and peer reviewed • Available in academic journals • Academic theses • Peer reviewed articles found on Google Scholar	Literature must not be: • Non-English • Published before the year 2000 • Available in partial text • Sources not peer - reviewed • Sources not published in academic journals • Non-academic theses • Non-peer reviewed articles found on Google Scholar
Explicit factors	At least one of the below search terms had to be present in the abstract: Entrepreneur/s or Business owner as participant(-s) (unit of analysis) *Must be presented with the terms (concepts) below* Creative or creativity AND Learn or Learning	Search terms present in the abstract: Professions other than entrepreneurs Terms not present in the full text: Child Children Youth Adolescent Teenager

Mendeley is a reference management software application platform by Elsevier and is used to store, organise and search all references in one place (www.mendeley.com). A "remove duplicates" feature helped to remove and merge any further or missed duplicates within the selected literature resulting in 62 literature studies. Using Mendeley, therefore provided a suitable way to search, organise and collect study references for the main purposes of accessing the studies to write this research study.

The full text of the 62 literature studies including theses were approved for inclusion for the next screening stage, which resulted in a narrower selection to 21 studies. The 41 studies that were excluded and the reasons for doing so can be found in a table in Addendum A. Some key reasons for exclusions found after reading the full text of each article include:

- studies focused on Entrepreneurship Education in Higher education and improving them with no specific focus on creativity;
- studies focused on learners and teachers more than content and how entrepreneurs learn creativity;
- new media technology introduced into the learning environment to enhance general skills;
- entrepreneurship education introduced from primary school to Higher Education; and
- benefits of social media empowering skills in rural woman – not entrepreneurship.

A thorough review of the reference list of each of the selected 21 studies provided an additional two studies identified for inclusion bringing the final number up to 23 selected studies. Peters *et al.* (2020) emphasise the importance of reporting on the number of literature studies identified and selected for inclusion in the scoping review. They recommend a narrative description of the search result together with a search result flowchart. The flowchart should incorporate the review decision process, including the results from the search, removal of duplicates, the study selection, the full literature retrieval, and any other additions from reference lists and final summary presentation (Peters *et al.,* 2020). A Preferred Reporting of Items for Systematic Reviews and Meta-Analyses (PRISMA) diagram developed by Moher *et al.* (2009) and recommended to use by Peters *et al.* (2020), is a flow chart chosen to capture the steps used during the search strategy and study selection. Details that go into the PRISMA diagramme were captured iteratively into excel as the study selection progressed and is depicted in the flow chart in figure 3.1 below.

3.3.2 Limitations to identifying and selecting literature

There were a number of limitations encountered when working through stages two and three of the Arksey and O'Malley (2005) framework. One limitation was time and resources required to work through the breadth and volume of literature. Levac *et al.* (2010:5) highlight that lack of time and resources compel researchers to compromise the balancing of breadth, comprehensiveness and feasibility of the scoping review. They recommend that researcher's provision for decision making around feasibility ensuring it does not compromise the purpose of the study in answering the research question. This was the case with this study as there was one researcher with limited time. Additional literature studies may have been overlooked due to limiting the language to English and there may have been multiple studies conducted in other languages related to the research question. Additional limitations and overall challenges with the scoping review is discussed in chapter four.
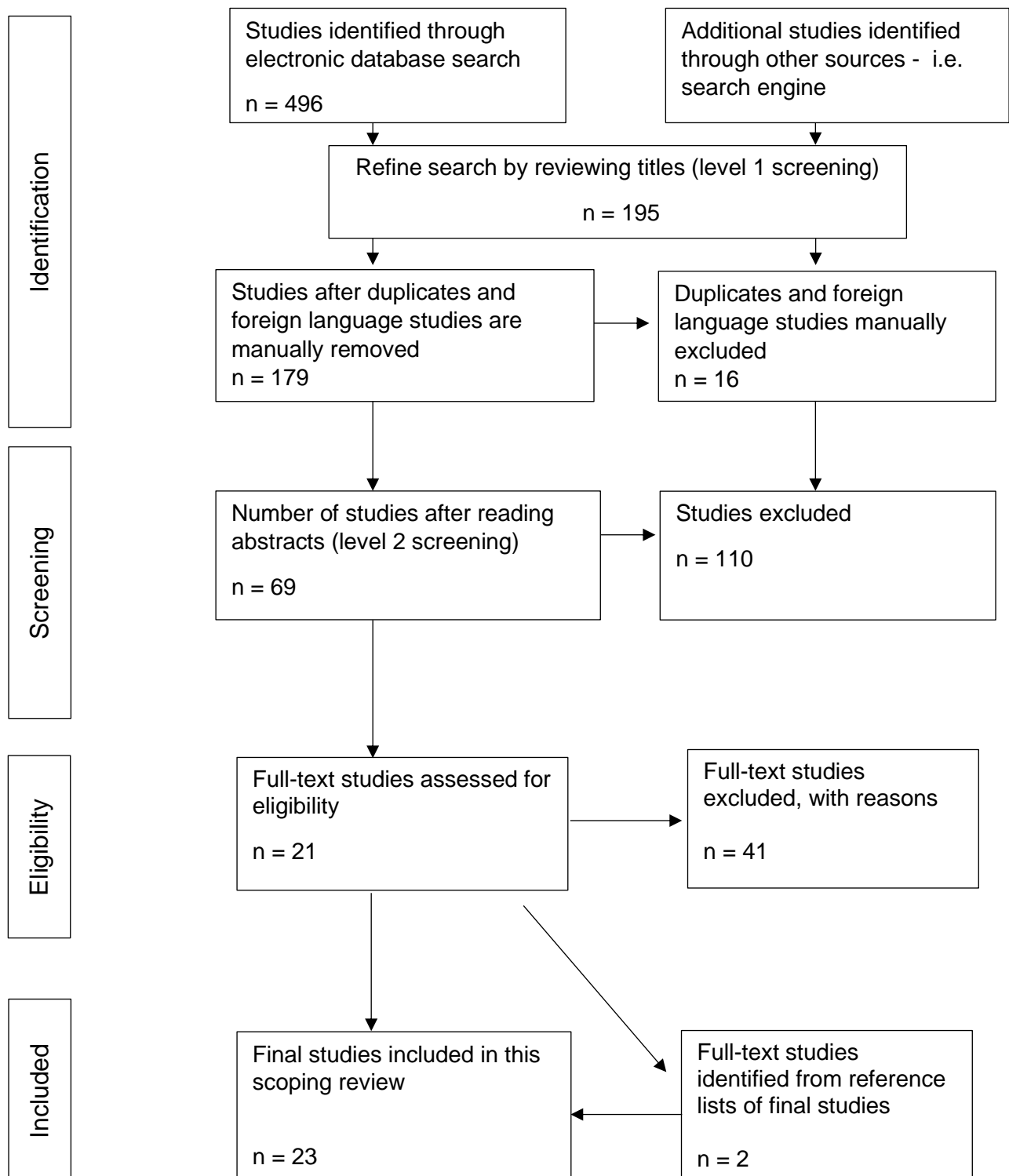
Figure 3.1: Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) flowchart showing the search strategy and literature selection (Moher *et al.,* 2009:3)

3.4. Stage Four: Charting the data

Stage four focuses on the extraction or charting of the data once the literature studies that are directly linked to the research question, "How do Entrepreneurs learn to be creative?", were selected. Arksey and O'Malley (2005:26) describe the charting process as taking a broader view with the intention to record key information about the "process" used to extract data from each literature study for the "outcome" to be presented in an understandable format. Peters *et al.* (2015, 2020) recommend using a draft charting table to record particular key information. In this study, an Excel document was chosen as the charting form to capture the data extracted from the chosen literature studies relevant to the research question. Changes and improvements to the charting form happened continuously and when necessary, whilst I worked through the process of extraction making the charting process iterative.

Although a uniform approach was used when collating key information from all 23 literature studies, there were many instances where it was not possible to extract all the information uniformly, as some reports did not include the same format of relevant information. Attempts were made to ensure the collating was as uniform as possible and explanations provided when not.

A comprehensive summary of the final literature studies selected for inclusion is presented in table 4.1 in chapter four. Reporting the data extraction in this way provides a record of all the literature studies i.e., the sources of data, are maintained and saved.

The extracted list of categories in Table 3.3 below used in my final charting Excel document were most useful when extracting the data in the search for how entrepreneurs learn to be creative. This is an adapted list of key information recommended for data extraction during the charting process by Peter *et al.* (2020). The final category, *learning mode*, refers to the way or means of how entrepreneurs learn to be creative and was found in the studies in answering the research question.

Table 3.3: Categories employed for data extraction (based on recommendations by Peters *et al.*, 2020:420)

No.	Category
1	Publication Source
2	Title
3	Author(s)
4	Year of publication
5	Study location
6	Intervention type
7	Duration of the intervention
8	Study populations
9	Aims of the study/Study purpose
10	Methodology
11	Key findings
12	Learning mode

This chapter focused on stages 2, 3 and 4 of the Arksey and O'Malley (2005) scoping review framework which identified the relevant studies from various database searches, selected the studies using robust selection steps and analyses the data after charting it. The next chapter will focus on Stage five of the Arksey and O'Malley (2005) framework which includes collating, summarising and reporting the results of the scoping review on how entrepreneurs learn to be creative and is followed by a discussion of the results in this study.

Chapter 4:
Results and discussion

4.1. Introduction

The process of gathering and reviewing data from the literature consulted during a scoping review is Stage 5 of the Arksey and O'Malley (2005) framework which is collating, summarising and reporting of said data. Summarising the chartered data produced themes and commonalities in how creativity is learnt by entrepreneurs, resulting in key findings from the included studies. Consideration was taken on how to effectively present the information as suggested by Arksay and O'Malley (2005), therefore the analysis is thematic in nature, presenting a narrative interpretation of the selected literature studies**.** The results are presented in two parts, beginning with the preliminary overview, followed by the reporting of the key results summarised from the literature. The chapter concludes with a discussion of the results.

4.2 Results

A summary of the final non-empirical dataset of literature studies is presented below reporting on results that were collated to share the connections the studies have in addition to answering the research question. These are represented in the form of graphs and charts and include the study publications per year, geographical location of the various studies and methodology employed.

4.2.1 Publications per year

One of the inclusion criteria for this scoping review was to include studies only published between the years 2000 and 2021. This information was included as the increase in publications covering creativity and entrepreneurship was more evident in the last decade. The majority of the studies focusing on entrepreneurs and how they learn creativity were published after 2011, with only one published before 2011. This rise in the number of publications as per the trend line in Figure 4.1 giving focus to entrepreneurs and creativity can be attributed to the investment and focus in upskilling entrepreneurs and investing in new businesses globally (WEF, 2020). For future

studies on entrepreneurs and creativity, it would be useful for researchers to focus their study from 2017 onwards as there has been a greater body of work relating to the research question since.
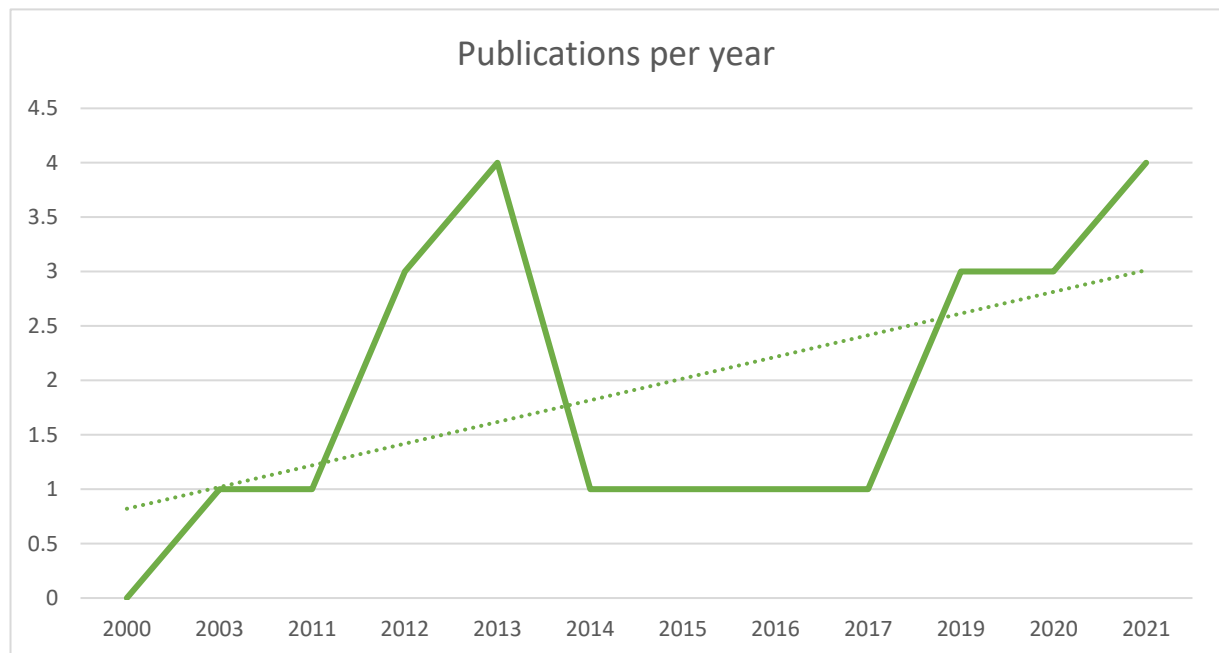

Figure 4.1: Number of Publications released per year

4.2.2. Geographic context of study

Locations of study focus were spread between 21 countries, with the United States of America (USA) and the United Kingdom (UK) being the most represented. There were studies from all seven continents which is representative of the importance of entrepreneurship across the globe. In total, 19 studies had single country contexts, whilst three had multi country focus (Turnbull & Eickhoff, 2012; Mehrotra & Velamuri, 2021; Shahab *et al.* 2019), and one; Kakouris (2020) did not specify a geographical parameter, however, contributes theoretically. Research in entrepreneurship and education are well developed in the United States with Europe only starting development of entrepreneurial education programmes in the 1970's versus the USA in the late 1940's (Turnbull & Eickhoff, 2012; Guzmán & Liñán, 2005). Studies from the USA have provided opportunity to learn from experiences with entrepreneurial education. Therefore, it's no surprise that the USA has the greater number of studies represented here. One example of a multi country study is in the European Union by Turnbull and Eickhoff (2012), conducted with a network of Universities from Germany,

the UK, France, Poland, Portugal, and the Czech Republic – showing the importance of both collaboration and research in entrepreneurship and creativity.
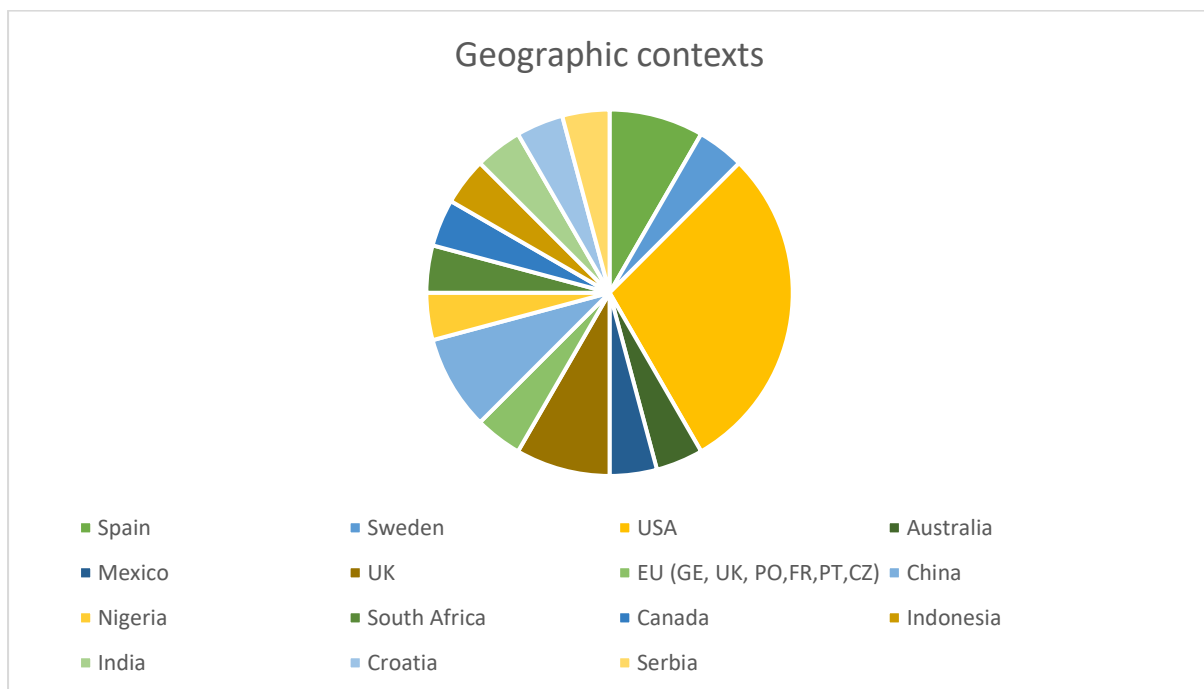
Figure 4.2: Geographic context of study

4.2.3. Methodology employed in a study

Methodology refers here to the method used to conduct a study. The methodologies employed are important to give insight into how each of the studies were approached which resulted in their overall findings. The variety of methodologies used provided rich data for the research study in that both primary and secondary data were considered. This contributes to richer data when answering the research question. Of the twelve methodologies used across the reported studies included in this scoping review, 12 studies used surveys, showing that individual input and experience are relevant and important to understanding how entrepreneurs learn to be creative.

Figure 4.3: Methodologies employed in the included studies

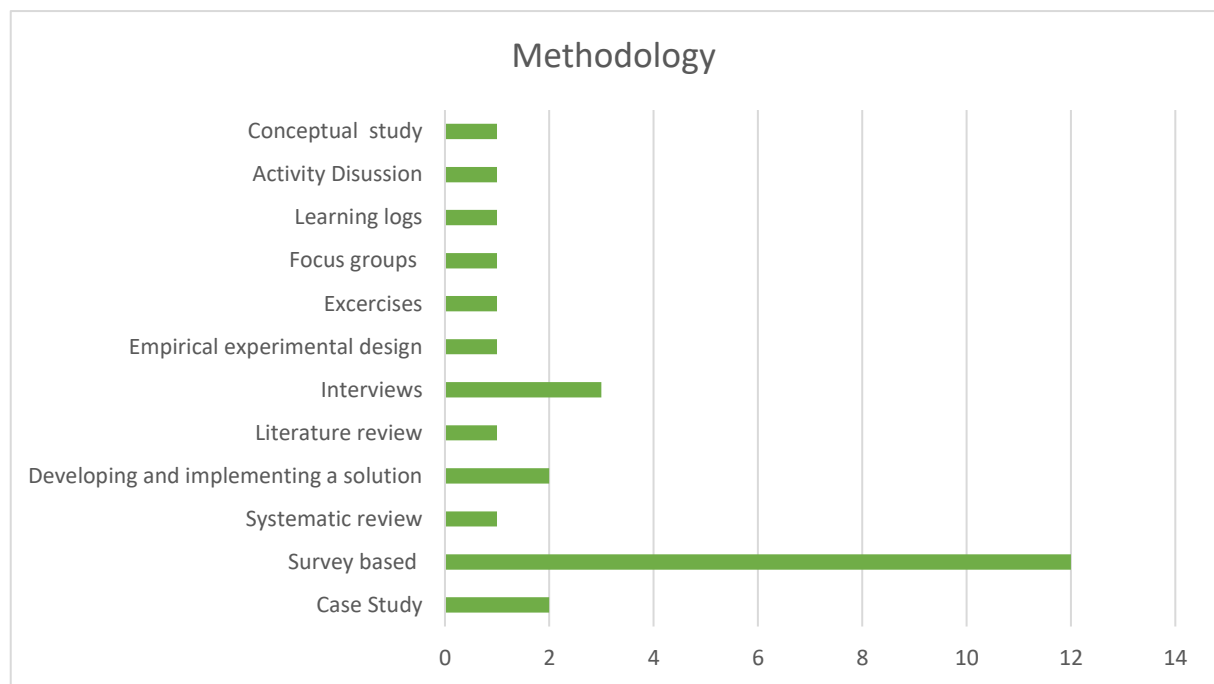Table 4.1 below provides a summary of all 23 literature studies reviewed in this scoping review. The table outlines the study title, authors, year of publication, study population and methodology, aims of the study, outcome measures and the learning mode.

Table 4.1 Summary of all literature studies

(Study number) Study Title	Author(s) and Year	Study location	Study populations *Methodology*	Aims of the study	Key findings	Learning Mode
(1) The Role of Environment in Fostering Conductive Entrepreneurial Learning - Teaching the 'Art' of Entrepreneurship in Boot Camps	Kwong, Thompson, Cheung, and Manzoor, 2012	UK	12 Higher education students - *Interviews, focus groups and learning logs*	To explore the effects of the bootcamp on the entrepreneurial attitude, goals and characteristics of individual students. The bootcamp intended to provide support to business students considering starting their own businesses as an alternative to seeking employment.	The practical learning sessions with entrepreneurs in the bootcamp focused on creativity (and innovation) versus only theoretical and technical aspects of business planning. The informal environment away from campus aided creative thinking, as students easily discussed their ideas and received greater feedback from mentors and peers.	Bootcamp
(2) Learning to develop as a rock band: The contradiction between creativity and entrepreneurship	Malm (2020)	Sweden	A rock band - *Case study*	To understand the learning that occurs within a rock band and how this learning supports organisational development by enhancing creativity and entrepreneurship. Through the theory of communities of practice, the study analyses the learning processes in how the band organises its practices for productivity (creative) and hibernation (downtime).	The band members learned to become a micro-organisation at times of production, and they learnt to be partial community of creators and entrepreneurs during hibernation. Informal learning in the community of practice provided band members an opportunity to grow from each other.	Community of practice
(3) An action learning approach to entrepreneurial creativity, innovation and opportunity finding	Antonites, 2003	South Africa	Commerce degree students specialising in Entrepreneurship - *Literature Review and Experimental empirical design*	To explain the creativity, innovation and opportunity (CIO) model which is a new action learning approach, developed to increase creative and innovative behaviour and actions of the entrepreneurship learner.	The main objective was to test the effect of the training intervention using a new product, service or process as the outcome. This training methodology enhanced the level of creativity and innovation in the learner.	Course

(4) Enterprise education: the effect of creativity on training outcomes	Lourenco and Jayawarna, 2011	UK	384 final year business enterprise degree students and scholars from the New Entrepreneurs Scholarship (NES) -*Survey*	To use the theory of planned behaviour (TPB) to explore the effects of a creativity-enhancing training programme on the learning intentions of nascent entrepreneurs. The training aimed to develop many entrepreneurial skills including creative thinking.	The results suggest that creativity or a perception of creative ability can be a positive or negative factor affecting learning in entrepreneurship education.	Course
(5) Business Creativity–Innovating European Entrepreneurship Education	Turnbull and Eickhoff, 2012	Europe (GE, UK, PO, FR, PT, CZ)	144 Business Management students in one of the six networked European universities - *Survey*	The focus of this study is on the delivery and structure of teaching entrepreneurship, particularly the initial creative phase of the business evolutionary process relating to business planning and idea implementation. The study also explores the effects of the collaboration with other universities on the student's creativity.	Idea generation and opportunity recognition are overlooked in the process of business creation and therefore, require greater attention by promoting the creative talents of the business students.	Course
(6) Creativity in the Entrepreneurship classroom	Schmidt, Soper, and Facca, 2012	USA	89 students, in a beginner's entrepreneurship class - *Survey and exercises*	To assess the relationship between creativity and entrepreneurship, and the value of administering divergent thinking exercises in the entrepreneurship classroom.	The study suggests that practice in divergent thinking activities can affect perception of and confidence in creativity.	Course
(7) Fine-tuning Entrepreneurship Education: How do Programs Impact Entrepreneurial Characteristics in Students?	Alcaraz-Rodríguez, Villasana, and Alvarez, 2013	Mexico	327 undergraduate students at Tecnologico de Monterrey - *Survey*	To explore the impact of a 'Development of Entrepreneurs' course on 10 entrepreneurial attributes (creativity, initiative, self-confidence, work energy, perseverance, leadership, risk taking, need of achievement, tolerance, problem management skills).	Findings indicate that creativity, risk management, self-confidence, and problem management skills were the most impacted by the course. Exposure to a formal and structured programme may modify desirable entrepreneurial characteristics.	Course

(8) Creativity in the Entrepreneurship program: A survey of the Directors of award-winning programs	Schmidt, Soper, and Bernaciak, 2013	USA	Directors of award-winning entrepreneurship undergraduate programmess in 22 schools - *Survey*	To survey Directors in top undergraduate entrepreneurship programmes to share best practices on how creativity (and innovation) is taught, and assessed. The results provide a base of information for future development of entrepreneurship programmes or to evaluate existing entrepreneurship curricula.	This study presents a start point to identifying guidelines and best practices for programmes and therefore confirms that creativity training should be included in programmes, especially for the main courses.	Courses
(9) Teaching creativity, team work and other soft skills for Entrepreneurship	Robinson and Stubberud, 2014	USA	23 Norwegian students in the USA - *Survey*	To establish the effect on and improvement in skills after students attended an intensive entrepreneurship course that focuses on soft skills, hands-on activities and self-analysis. Students explored their orientation to entrepreneurship and focused on enhancing soft skills like creativity and team work.	Survey results confirmed a change in the students' perceptions and significant increases in all 15 skills taught between the pre and post-test. The skills showing most increase is the ability to be creative and to network.	Course
(10) Developing a Workshop to Help Small Businesses Get Unstuck	St. George, 2015	USA	Small business owners - D*eveloping and testing a workshop (Solution)*	To design and develop a Creative Problem Solving (CPS) based workshop to teach small business owners the tools, creativity exercises and networking activities to creatively problem solve when facing challenges.	The positive reactions to the pilot workshop positively impacted the researcher to find opportunities to take small businesses owners from challenge to solution using different creative tools.	Course

(11) Entrepreneurial self-efficacy and intention: do entrepreneurial creativity and education matter?	Shahab, Chengang, Arbizu, and Haider, 2019	China and Spain	808 students - *Survey*	To present a 'moderated mediation model' on the connection between entrepreneurial self-efficacy (ESE) and entrepreneurial intentions (EI) by two countries. The theory of planned behaviour (TPB) and self-efficacy, theorises that entrepreneurial creativity (EC) and attitudes towards entrepreneurship (ATE) facilitate the relationship between entrepreneurial self-efficacy and entrepreneurial intentions.	The results suggest that entrepreneurial creativity and attitudes towards entrepreneurship positively mediate the relationship between entrepreneurial self-efficacy and intention. Through entrepreneurial education, learners can effectively develop entrepreneurial creativity to nurture their entrepreneurial intentions, irrespective of the economic maturity of their country.	Course
(12) The modern model of education as a driver of the development of entrepreneurial thinking and learning	Buble and Zelic, 2020	Croatia	48 entrepreneur students - *Survey*	To propose a modern model of entrepreneurship education using modern diverse methods of education to impact the overall learning experience and creativity of the students. Therefore, encouraging the development of entrepreneurial thinking and learning.	90% of respondents who attended the course at the private college confirmed that education through the course Entrepreneurship influenced their creativity	Course
(13) Learner creativity among entrepreneurship students in higher education through e-learning	Radović-Marković, Vučeković, Nikitović and Lapčević, 2020	Serbia	180 University entrepreneur students - *Survey*	To find the extent to which education encourages creativity in higher education	The findings show that creative education and training can increase business students' creativity and logical thinking. Many students requested the provision of a comprehensive curriculum for	Course

					business school students that is developed on the philosophy and practice of creative education using technology.	
(14) Building capacity for creativity: Rediscovering the inner "superhero" as a mechanism for developing a creative mindset for entrepreneurial problem-solving	Fleck and Asmuth, 2021	USA	Learners from school through to higher education and educators	To present multiple methods to be used in a course for all ages to support the development of creative capacity through a workshop that includes exercises, readings, self-reflection, and action to support the development of a learners' creative self-efficacy in a many different contexts.	After implementing the workshop with a number of different learners, feedback shows that learners have greater insight into their own creative abilities, increased enthusiasm for and belief in further developing their creative skills and enjoyment of the workshop exercises.	Course
(15) Teaching creativity in entrepreneurship: Embolden or discourage?	Kakouris (2021)	Not stated	Entrepreneurs - *Activity discussion*	To present a reflective practice activity for educators to use and consider in entrepreneurial teaching. This instructional methodology is provided in response to the need for critical approaches in teaching entrepreneurship. This methodology has been tested for over 5 years in different entrepreneurship courses.	The reflective activities - presented and described is about learning through experience, critical thinking and reflection.	Course

(16) Entrepreneurial thinking: A signature pedagogy for an uncertain 21st century	Peschl, Deng and Larson, 2021	Canada	Second-year business undergraduate students - *Conceptual study*	To present a pedagogical approach for entrepreneurship education, with a specific focus on students who do not necessarily identify as entrepreneurial. Seven essential entrepreneurial thinking skills are presented as a framework for entrepreneurial education: (1) problem solving, (2) tolerance for ambiguity, (3) failing forward, (4) empathy, (5) creativity with limited resources, (6) responding to critical feedback, and (7) teamwork approach.	The 12-week mandatory entrepreneurial education course proposes a pedagogical approach to teaching entrepreneurial skills using the signature pedagogy encompassing three components - the flipped classroom, learning through failure, and access to open educational resources.	Course
(17) Creativity and innovation in the restaurant sector: Supply-side processes and barriers to implementation	Lee, Hallak and Sardeshmukh (2019)	Australia	18 Restaurant owners in business for >5years selling a range of cuisines - *Systematic review and Interviews*	To explore sources for creative ideas, the different types of innovations, and barriers to their implementation in the restaurant industry.	This study presents new insights on how restaurant entrepreneurs initiate, develop, and implement creativity and innovation in their business. Restaurant owners primarily use external sources of information to generate ideas and inform creativity.	Creative imitation, customer feedback and online searches

(18) **Secondary Business Model Innovation in Emerging Economies**	Mehrotra and Velamuri, 2021	India and China	2 Quick Service restaurant chains - *Two case studies*	To build on the secondary business model innovation (SBMI) by simplifying its elements into creative and imitative, identifying the means through which these elements are attained, and propose that it is a specific case of creative imitation. SBMI was founded on inter-organisational learning, thereby highlighting how entrepreneurs learn from other businesses.	This study applies the creative imitation concept to business model innovation through inter-organisational learning, whilst also investigating the means through which entrepreneurs creatively imitate business models of other businesses to achieve SBMI.	Creative imitation
(19) **Modelling creativity and innovation of student entrepreneurship: empirical study of social cognitive theory**	Feriady, Purwana, Wibowo and Setiaji, 2021	Indonesia	273 University economic students - Survey	To examine the leading factors that influence the creativity and innovation using social cognitive theory of student entrepreneurship in Indonesia.	The model created and applied showed congruency between the theoretical and empirical model. Student engagement in the entrepreneurial organisation had a significant effect on their entrepreneurial creativity (and innovation) versus the classroom.	Engagement in an entrepreneurial organisation
(20) **University services for fostering creativity in high-technology firms**	Willoughby, Talon-Renuncio, Millet-Roig and Ayats-Salt (2013)	Spain	Potential and nascent entrepreneurs - *Three case studies*	To present the model used by the Ideas Institute for Business Development and Creation at a University through three case studies of companies who benefited from the value of mentoring and how it aided the development of their creative ability.	Through guided entrepreneurship and tailored mentoring client firms now have a competitive edge as the creative ability and intelligence among entrepreneurs is stimulated and they receive the necessary tools and guidance to continuously create and innovate.	Mentoring

(21) Entrepreneurs' mentoring of undergraduate Business Education students in Delta State.	Ukor (2017)	Nigeria	274 undergraduate students - *Survey*	To determine how often undergraduate business education students were mentored on the development of 21st century entrepreneurial behavioural skills i.e., creative, innovative and proactive behaviour during their industrial training.	The findings showed that the business education students who were mentored on creative entrepreneurial behaviours did not receive adequate or quality mentoring during their work experience. A planned initiative with quality intentional mentoring should be implemented.	Mentoring
(22) Linking personal turbulence and creative behavior: The influence of scanning and search in the entrepreneurial process	Tang, 2016	USA	108 entrepreneurs - *Survey*	To provide a deeper understanding of how turbulent events perform with regard to creativity. A theoretical framework of the relationship between personal turbulence and creativity for entrepreneurs was tested.	The model advocates that personal turbulence enhances creativity directly and through the mechanism of scanning and search. Entrepreneurs could benefit from turbulent experience by engaging in scanning and search to enhance their creativity.	Personal turbulence
(23) Socio-Cognitive foundations of Entrepreneurial venturing	Gemmell, 2013	USA	32 technology entrepreneurs - *Interviews*	To generate a grounded theory on how technology entrepreneurs use social behaviours, techniques and cognitive processes to attain, develop, validate and filter creative ideas for new products, processes or services.	Findings showed that all the entrepreneurs use complex and sophisticated social networks as sources of ideas to test, refine and validate trial ideas.	Social networking, experiment and iterate, filtering ideas

4.3 Reporting and discussion of key results

The key themes extrapolated from the data collated from the literature studies is reported below. The first key finding is the broader level learning modes which is divided into group and individual modes followed by the second finding focusing on the individual strategies and learning approaches that facilitate the learning of how to be creative for entrepreneurs. Additionally, the results for the sub-question – *what are the commonalities and differences in the way in which entrepreneurs learn to be creative?* – is included in this section.

4.3.1. Modes of learning how to be creative

Learning to be creative is not the same process for every entrepreneur. This study set out to find the different ways in which entrepreneurs learn to be creative. The literature studies found to answer the research question, present the way or the learning mode, which is a high-level categorisation of in this study of "how" creativity is learnt by entrepreneurs. Within the learning modes there are key strategies that facilitate how entrepreneurs in different situations learn creativity either formally or informally. There are 12 different learning modes listed in Table 4.2 below that were identified from the 23 literature studies reviewed, and each learning mode and their context is classified into either group modes or individual modes accordingly.

Table 4.2: Learning modes found in studies

	Learning mode	Number of studies
Group modes	Bootcamp	1
	Community of practice	1
	Courses	14
Individual modes	Creative imitation	2
	Customer feedback	1
	Engagement in entrepreneurial organisations	1
	Experiment and iteration	1
	Filtering ideas	1
	Mentoring	2
	Personal turbulence	1
	Online searches	1
	Social networking	1

Courses are the most widely used learning mode followed by creative imitation and mentoring. In some studies, more than one mode is researched and discussed, therefore the numbers presented in Table 4.2 do not add up to the total number of studies reviewed. During the review, the following key themes became evident across the different learning modes: entrepreneurship curriculum, learning models, new entrepreneurship education models, virtual collaboration and technology, experiential learning and activities, theory of planned behaviour and self-efficacy, learning from others and learning from personal challenges. The key themes are discussed in the subsequent sections with reference to the studies where they are explored and disseminated.

4.3.1.1 Group modes

Studies that fall under group modes focus on how entrepreneurs learn to be creative within group settings. These studies include references to a bootcamp, communities of practice and courses.

A bootcamp was the focus of a study by Kwong, Thompson, Cheung, and Manzoor (2012) which included multiple group activities that culminates an entrepreneurship programme. This external environment outside the classroom has three main components: idea formation and development, technical training, and motivational talks with entrepreneurs. Students found the outdoor environment to be creatively motivating and agreed that a new type of programme like the bootcamp, that enhances entrepreneurship behaviour through exposure to a new learning environment, is needed.

Another group learning environment is of an informal learning model, where entrepreneurs in a group-setting learned creativity and entrepreneurship from each other through a community of practice learning. The community of practice (CoP) learning approach in the study by Malm (2020), shared how a rock band demonstrated learning from each other which resulted in an increase in creative knowledge amongst other entrepreneurial attributes. This study uses an informal learning method which transpired organically amongst the group members as their creativity developed as did their overall growth as a micro-organisation.

The third group learning mode is courses, which refers to structured organised learning events usually consisting of taught classes either face to face in a classroom, online or blended training solutions. There were fourteen (N=14) studies that involved entrepreneurship programmes with creativity included: some studies were of more than one type of higher education institute, ten studies were offered by universities (n=10), three by an independent course provider (n=3), one by a business school (n=1) and one by a vocational and education training centre – VETC (n=1). These courses were offered to undergraduate students at universities studying Business Management, Business, Commerce, Entrepreneurship and enterprises, to entrepreneurs attending business school, young enterprise student entrepreneurs, and new enterprise scholarship students. Whilst undergraduate students are not all entrepreneurs as yet, many are studying these degrees to become entrepreneurs or develop the necessary skills when they are ready to pursue this route. In studies where the students' experience and interpretations of the courses they attended were surveyed, students showed increases in their interest to pursue entrepreneurial careers with many stating that creativity was the skill most positively impacted and enhanced after attending the course (Alcaraz-Rodríguez *et al.*, 2013; Lourenco & Jayawarna, 2011; Robinson & Stubberud, 2014; St. George 2015). Findings from the courses, community of practice and bootcamp learning mode answer the research question in that these entrepreneurs and nascent entrepreneurs were taught creativity and other soft skills with the goal of developing their entrepreneurial competence. The details of the strategies on how creativity and complementary entrepreneurial soft skills were taught to the group and individual learning mode entrepreneurs are shared in Table 4.2 and section 4.3.2.

Entrepreneurship curricula was the key focus in the following studies by Alcaraz-Rodríguez *et al.* (2013), Robinson and Stubberud (2014), Peschl, Deng and Larson (2021), St. George (2015) and Schmidt, Soper and Bernaciak (2013). They all focused on how creativity was included in their entrepreneurship course curricula. Alcaraz-Rodríguez *et al.* (2013) compiled ten entrepreneurial attributes by completing a comprehensive study of entrepreneurship literature and drawing out what they deemed to be the necessary skills to include in their entrepreneurship curriculum. These skills included: creativity, initiative, self-confidence, working skills, perseverance, leadership, risk management, need of achievement, tolerance and

problem management skills. In contrast, the Robinson and Stubberud (2014) study included 15 characteristics (soft skills) of entrepreneurship, selected on the basis of being more challenging to teach and learn versus the usual concrete business topics like accounting, marketing and finance. The study intended to develop particular entrepreneurial tendencies orientation that fall under creativity and innovation, risk-taking and proactiveness. This programme placed a larger emphasis on creativity particularly as one group of attendees did not have a high perception of their creativity abilities. This course aimed to prove that soft skills can be improved through a planned and personalised course.

Peschl *et al.* (2021) developed their entrepreneurial programme based on an entrepreneurial thinking skillset (called the ET-7) which was collated after completing an extensive review of key literature studies that have comprehensive descriptions of entrepreneurial skills necessary for entrepreneurial activity. ET-7 was developed as a result of three criteria 1. dominant groupings arising from the literature studies, 2. Skills that can be taught to business students who have nascent entrepreneurial tendencies and 3. Skills that have can enrich entrepreneurial education. The ET-7 skills are: having the ability to (1) solve problems, (2) tolerate ambiguity, (3) failing forward[2], (4) empathise, (5) be creative with limited resources, (6) respond to critical feedback, and (7) work in a team. Using their ET-7 integrated framework and teaching methods (see 4.3.2), the authors outline how to teach and develop these skills in entrepreneurs. St. George (2015) draws on personal experience as an entrepreneur in the development of a workshop for entrepreneurs who are "stuck". The workshop is designed for small business owners and comprises of a curriculum based on the authors many years of experience and studies and includes creative problem solving (CPS) tools, creativity and networking activities. The placement of creativity in an entrepreneurship programme curriculum varies among institutes.

Schmidt *et al.* (2013), who surveyed the directors of programmes listed in the top twenty-five undergraduate entrepreneurship programmes (identified by Entrepreneur magazine for 2009 to 2011 in the USA), found that 71% of programmes have stand-alone creativity courses and 86% have a creativity unit in their core modules. Having creativity as a stand-alone course or integrated into several core courses raised the

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[2] Learning from failures, reflecting and preventing failure from re-occurring

questions of where best creativity should be placed in the curriculum and how creativity should be assessed. Stand-alone creativity courses allow the instructor to use a broad range of approaches to teach the skill and identify the importance of creativity. Whilst introducing creativity systematically as a unit in several courses reinforces the value of creativity throughout the entrepreneurship programme. The authors draw the conclusion and are in agreement with 57% of the programmes in their study who integrated creativity into the entrepreneurship programme both as a stand-alone course and incorporated in courses throughout the programme. Where to place the creativity course is an important consideration for anyone developing an entrepreneurship programme as these entrepreneurship programmes provide insight into best practice and can inform future courses.

The introduction and study of learning models was prominent in studies by Peschl *et al.* (2021), Turnbull and Eickhoff (2012) and Antonites (2003), with the focus particularly on the learning and creativity models developed to teach creativity to students attending an entrepreneurship course. Peschl *et al.* (2021) developed a signature pedagogical approach using experiential activities simulating the environment entrepreneur's encounter, thereby presenting to future entrepreneurs and for those pursuing other career paths the importance of developing entrepreneurial skills like creativity in real situations like these uncertain times. Their pedagogical approach encompasses three important components, namely the usage of a flipped classroom, learning from failure, and having access to open resources, The Peschl *et al.* (2021) proposed signature pedagogical model is conceptual and leaves itself open to future research to study the impacts of the ET-7 on learners using the methods and tools of the pedagogical model to teach these skills. In studies by Turnbull and Eickhoff (2012) and Antonites (2003), the learning models to develop and enhance creativity in entrepreneurship were presented, discussed and implemented and learners' feedback is considered and shared in the study. Turnbull and Eickhoff (2012) present in their study how the network between six European universities was created in response to a need to develop cross border relationships between learners to enhance collaboration, research and exchange in areas of entrepreneurship. Following this, a business creativity module was developed and implemented in the six universities which was designed to enhance the skillset of entrepreneurially minded students by encouraging their creative talents particularly through teamwork and the

use of technology during the module. The study highlights the delivery and format of how entrepreneurship is taught, with special consideration for the initial creative phase of the business evolutionary process that complements the existing teaching methods concerning business planning and idea implementation. The shift in Europe from a managerial society to an entrepreneurial society is supported by the business creativity module and the joint venture with the European universities. In addition to promoting creative talents in the module, it tests the student's ability with regards to other skills like respect of coordination, leadership, motivation and judgement.

The study by Antonites (2003) demonstrates how a new action learning approach and training model can increase creative and innovative behaviour and actions of the entrepreneurial learner. The model was developed to change the traditional training on entrepreneurship that focused on the traditional manager and not the entrepreneurs – much like the Turnbull and Eickhoff (2012) study. Antonites (2003) found there was a lack of training for growth-oriented skills in addition to the lack of tools, textbooks and strategies to develop creativity in the field of entrepreneurship education resulting in stifled pedagogical paradigms when teaching business and entrepreneurship. The author's action learning model uses a learner centric approach revealing more "about" and "for" the learner than traditional teaching methods that are lecturer-centred.

New entrepreneurial education models featured in studies by Radović-Marković, Vučeković, Nikitović and Lapčević (2020) and Buble and Zelic (2020) who propose a modern model of entrepreneurship education in their respective countries of Serbia and Croatia moving away from learners being passive but instead allowed to be active learners. Both studies agree with the study by Antonites (2003) as they highlight the importance of moving away from traditional systems of teaching where the teacher imparts the knowledge and the learners are simply recipients to a new personalised model of teaching with the learners contribute to the educational process as much as the teacher. Personalising the learning model means including a diversity of teaching approaches and strategies to support the individual needs of the learners. Radović-Markovic *et al.* (2020) collated input from learners about the introduction of new forms of education like creative education and modern strategies to teach business students creative and logical thinking. It was found that traditional learning systems result in students being passive participants and their personal creativeness is neither encouraged, nor are they challenged to think critically and originally. The findings

reveal that education that is founded on freedom of learning and teaching helps to foster creativity. The authors recommend that the Serbian entrepreneurship education system employ new strategies and models for teaching and the encouragement of creative practices in education with a strong focus on technology and eLearning. Buble and Zelic (2020) similarly propose a modern model of entrepreneurship education within the Croatian education system to motivate and promote entrepreneurial thinking and learning. Their proposed learning model is envisioned to create a learning environment that may benefit not only students and entrepreneurs, but society too. A survey following an entrepreneurship course found students were more motivated to work when in smaller groups, and a personalised approach taken with these learners created a sense of belonging, and consequently uncovered their creativity. The research in this study and that of Radović-Markovic *et al.* (2020) revealed that modern approaches to entrepreneurship education in Serbia and Croatia respectively can encourage students who are potentially new entrepreneurs to learn and to think creatively like entrepreneurs.

Virtual collaboration and technology are lacking despite the growth of the entrepreneurial process in Serbia. Radović-Markovic *et al.* (2020) have found that the lack of experience in deploying technology for virtual learning has created a lack of awareness in the country. The need for an international learning network, much like the European network Turnbull and Eickhoff (2012) created, may enhance e-learning and virtual learning opportunities in Serbia. Buble and Zelic (2020) also advocate for information and communications technology-ICT enriched learning that is learner centered and promotes motivation and active participation in entrepreneurial learners.

Experiential learning and activities are another key theme and the study by Kakouris (2021), presents an experiential learning[3] reflective activity to understand and enhance creativity in response to the need for critical approaches in entrepreneurial teaching and reflective practice empowerment for the entrepreneurial learner. The reflective activity has been utilised in various entrepreneurship programmes during the last 5 years and offers an opportunity for creativity and critical reflection to be well positioned within entrepreneurship versus other creative industries. Peschl *et al.* (2021) develop a number of experiential learning activities within their model that

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[3] Learning using experience to inform new opportunities for learning, emphasising learning by doing

replicates a changeable entrepreneurial environment. The study by Alcaraz-Rodríguez *et al.* (2013:642) uses an experiential learning approach in their mandatory entrepreneurship course that focuses on three core areas: 1) academic elements like application of learning materials and activities to embed technical knowledge; 2) motivation focusing on developing entrepreneurial competences; and 3) institutional, support through the provision of business incubators. Looking to our childhoods, the study by Fleck and Asmuth (2021) presents a superhero workshop as part of an entrepreneurship course that uses a childhood activity to encourage learners to immerse themselves in their childhoods where creativity is at an all-time high, imaginations are vivid and formal stifling boundaries absent. The study shares a number of experiential learning tools and activities like readings, exercises, self-reflection for entrepreneurship educators to use in supporting the development of creative self – efficacy and ultimately creative capacity for problem solving in their learners. Feedback from learners show an increase in their creative self-efficacy and ability to use their creative capacity for problem solving in entrepreneurial contexts.

The Schmidt, Soper and Facca (2012) study used creativity and divergent thinking exercises to help increase the entrepreneurship students' abilities to generate a greater number and range of ideas, but had no impact on increasing their approaches to creative problem solving. The findings following the entrepreneurship course, found that practice through divergent thinking exercises can affect creative perception and confidence in creativity.

The theory of planned behaviour and self – efficacy is prevalent in these theories relationship to creativity in entrepreneurship and studies by Lourenco and Jayawarna (2011) and Shahab *et al.* (2019) use the theory of planned behaviour (TPB) as their theoretical framework to underpin their studies on creative intentions and perceptions of entrepreneurs. The theory of planned behaviour introduced by Ajzen in 1985 and in 1991 in a paper is a psychological theory linking belief to behaviour and is concerned with the prediction of behavioural intentions (Ajzen, 2011). Using TBP, Lourenco and Jayawarna (2011) explore in their study the effects of a creativity-enhancing training programme on the learning intentions of nascent entrepreneurs. Findings revealed that a learner with a perception of their creative ability is more likely to perceive that they have: 1. learned creativity tools, 2. perceive the ease of use of these creativity

tools, and 3. they have favourable perceptions of the usefulness of the tools following the creativity-enhancing training. They also have higher intentions to utilise their learning (Lourenco & Jayawarna, 2011:237). Learners who perceive themselves as having a lack of creative ability are likely to gain less following the training i.e., intentions or motivation to use their learning. The results of the study imply that a perception of creativeness can be either a positive or negative factor in pursuing creative thinking. Self-efficacy defined by Bandura (1977:193) is a "person's estimate that a given behaviour will lead to certain outcomes" or their belief in their behaviour, skills or ability to take on or complete a task. Lourenco and Jayawarna (2011) found that self-efficacy or a perceived belief in behavioural control has a positive connection with an individual's intention to exploit learning and is therefore critical to understanding how learners will exploit the learning of creativity in entrepreneurship education.

Shahab *et al.* (2019) investigated how entrepreneurial creativity positively mediates the relationship between entrepreneurial self-efficacy and entrepreneurial intention in in China and Spain. The level of an individual's entrepreneurial self-efficacy stimulates the level of entrepreneurial creativity which ultimately increases or decreases their intentions towards entrepreneurship. The authors found that entrepreneurial education has a positive effect on moderating the mediating effect of entrepreneurial creativity and attitudes towards entrepreneurship on the entrepreneurial self-efficacy and intention relationship in China and Spain. With the appropriate entrepreneurship education, individuals can efficiently develop entrepreneurial creativity to enhance entrepreneurial self-efficacy and consequently increase their intentions towards entrepreneurship.

Results from the entrepreneurial courses taught in the group learning mode studies discussed above, reveal that the various courses overall had a greater impact on creativity, there was improvement in thinking creatively and the ability to design new and innovative offerings, enhancement of idea generation and problem solving skills, increase in entrepreneurial thinking and creativity, increase in awareness of creative potential and overall enhanced creativity and innovation (as seen in Robinson and Stuberud, 2014; Alcaraz-Rodríguez *et al.*, 2013; St. George, 2015; Buble & Zelic, 2020; Schmidt *et al.*, 2013; Fleck & Asmuth, 2021; Antonites, 2003). Results from

learners attending the bootcamp revealed that it provided them the space to think and behave "out of the box" thus enhancing the students' creative ability (Kwong *et al.*, 2012), whilst members of the band enhanced their creativity, which developed in an artistic form, and their entrepreneurial skills, which was leveraged by the CoP (Malm, 2020).

4.3.1.2. Individual modes

There are seven studies in which the nine individual learning modes below were discovered and reviewed. Studies conducted by Lee, Hallak and Sardeshmukh (2019) and Gemmell (2013), include three learning modes each; creative imitation, customer feedback and the internet and social networking, experiment and iterate and filtering ideas. The remaining studies focus on one learning mode each. The individual learning modes are:

- creative imitation;

- customer feedback;

- online searches;

- engagement in entrepreneurial organisations;

- mentoring;

- personal turbulence;

- social networking;

- experiment and iterate; and

- filtering ideas.

Learning from others is a key finding within the individual learning modes on how entrepreneurs learn creativity*;* with six of the studies focusing on learning strategies that achieve this. Lee *et al.* (2019) and Mehrotra and Velamuri (2021) focused on imitating others as the learning mode to developing creativity in the restaurant industry in Australia and China and India respectively. Known to be a creative sector, restaurant entrepreneurs were studied via survey in Australia and by presenting two case studies in India and China to gather data on how they use imitation to learn creativity. The studies revealed that using creative imitation on their competitors and

highly successful restaurant chains is vital for these entrepreneurs in learning and developing their creativity skills. Mehrotra and Velamuri (2020:347) draw on different definitions of creative imitation starting with the definition initially proposed by Levitt (1966:66) as 'innovative imitation', where the entrepreneur copies existing products or services, but reworks and improves it with their own new characteristics and features. Mehrotra and Velamuri's (2021) study, using case studies of two quick service restaurant (QSR) chains, investigated how two entrepreneurs used creativity and imitation to grow their businesses into national successes. The entrepreneurs drew on the successful attributes of global fast-food brands by imitating these and expanding their own creativity and then innovation this way. The study builds on the concept of 'secondary' business model innovation (SBMI), by looking at how creativity and imitation form the basis for inter-organisational learning, and propose that it is a construct of creative imitation. Similarly, Lee *et al.* (2019) explored the sources for creative ideas and how these ideas were implemented for different types of innovations like products, services, marketing and management. The authors use social cognitive theories to examine the personal development of restaurant entrepreneurs' knowledge and skills and how they interact with the environment. Restaurant entrepreneurs develop their creativity through idea generation by imitating the best practices of their leading competitors. The authors found that existing studies on restaurants and creativity were limited to food creativity and innovation and there was a need to explore beyond culinary creations and look at creativity in how systems, new services and processes are managed (Lee *et al.,* 2019). Other learning modes that emerged from the Lee *et al.* (2019) study found that the restaurant entrepreneurs also relied on customer feedback, the use of the internet for online searches and other external media sources to learn and enhance their creativity.

Learning creativity from others through the provision of a creative learning environment like an entrepreneurial organisation was the focus of the study by Feriady, Purwana, Wibowo and Setiaji (2021). The authors consider how entrepreneurial students benefit from an entrepreneurship course complemented by engaging with entrepreneurial organisations outside the classroom. The study found that the relationship between the internal factors of students who had attended the entrepreneurship course, the learning environment and creativity can be explained through social cognitive theory and the roles these factors play on the outcomes of the

learning process. Social cognitive theory was proposed by Albert Bandura in the 1980's as the reciprocal interaction between a person, their behaviour and the environment (Bandura, 1989). Student engagement in entrepreneurial organisations had a greater effect on creativity than the classroom. This study is classified with individual learning modes and not as a group learning mode, as the findings of the study prove that learning outside the classroom can enhance creativity and innovation skills. Mentoring is another learning mode where students attending business courses and entrepreneurs learn from other experienced entrepreneurs and experts (Ukor, 2017; Willoughby, Talon-Renuncio, Millet-Roig & Ayats-Salt, 2013).

Ukor (2017) defines mentoring as a nurturing process when a more experienced and skilled person teaches, encourages and counsels a less experienced person in a field or interest that may enhance the mentees personal and professional growth. This study reported on a collaboration between successful entrepreneurs and a work experience scheme in Nigeria for undergraduate business students to be mentored. The study revealed that the students were not getting sufficient time with mentors and the level of mentoring was low due to the programme not being efficiently set up. The study by Willoughby *et al.* (2013) presents three case studies of firms that show the value of personalised mentoring for entrepreneurs and how it aids the development of creative intelligence[4]. This study shows a positive result and impact on the businesses through mentoring versus the study by Ukor (2017) where the mentorship is still in its establishment phase. Willoughby *et al.* (2013) share how the IDEAS Institute for Business Development and Creation supports the creation of new businesses and spin off companies and contributes to boosting the country's economy (the study was situated in Spain). The three case studies are companies the IDEAS lab helped to start and who were later approached to advise and support the entrepreneurs by providing mentoring to each business in the form of technical experts. The mentoring resulted in positive outcomes enabling the entrepreneurs to use their creativity to build upon what they needed to be innovative and pro-active in growing their business offerings.

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[4] The authors did not define this term but based on its usage it refers to creative ability

The study by Gemmell (2013) explored the cognitive and social dimensions of entrepreneurial creativity and innovation within the technological field, resulting in the use of three modes for learning to be creative: social networking, experimentation and iteration, and filtering ideas. Results reveal that the technology entrepreneurs use social behaviours to build social networks which are sources of ideas, that they test, refine and then validate. This social network serves as a domain of expertise where they can practice filtering ideas. They actively experiment and iterate ideas this way which is using a practice that is already familiar in their technological world versus drawn out conceptual analysis. It was found that having a trusted colleague sharing the same context provides a safe space to exchange and refine ideas, thus allowing for creativity to unfold in a trusted environment. The process for learning creativity happens through the social connections which enable the entrepreneurs to create or conceptualise their idea to the experimentation phase where they may have multiple iterations of the ideas, leading them to experiment until they find an acceptable version of their idea to be tested and developed.

Learning from personal challenges is particularly important as it is representative of the changes, we are currently experiencing around us. The changes include vast technological advancements resulting in potential employees being ill-equipped to resume new positions, the effects of the Covid-19 pandemic, high unemployment rates in many countries due to skills shortages, and industries changing production processes, resulting in personal challenges or turbulence for entrepreneurs and the people they employ. The study by Tang (2016) surveyed 108 entrepreneurs to understand how personal turbulence affects creativity. Personal turbulence defined by Tang (2010:472) is "unusual, rapid, and agenda-setting events" that someone - in his case an entrepreneur - experiences which may possibly impact the dynamics of their business. Turbulence can be negative or positive depending on how it affects a life or business. It was found that negative turbulence has more of an influence on creativity for entrepreneurs than compared to positive turbulence. The mechanism of scanning and searching partially mediates the relationship between negative turbulence and creativity, yet fully mediates the effect of positive turbulence on creativity. The author concludes that the turbulent events or catalysts can provide entrepreneurs with an opportunity to make a change in how they operate their businesses and benefit from the competitive advantage this can yield.

The key themes that were extracted and analysed from the 12 learning modes are: entrepreneurship curriculum, learning models, new entrepreneurship education models, virtual collaboration and technology, experiential learning and activities, theory of planned behaviour and self-efficacy, learning from others and learning from personal challenges. These key themes also reflect the commonalities found in the final studies and in doing so answer the sub-research question

> *What are the commonalities and differences in the way in which entrepreneurs learn to be creative?*

The differences in the way entrepreneurs learn to be creative lies in the diversity of learning modes uncovered from the literature. The results demonstrate how entrepreneurs learn creativity; either in a group environment that is formal; a planned entrepreneurship course or informally in a community of practice, similarly they learn individually from others, by pursuing an interest or as a result of an incident. These common themes give rise to the learning strategies that are the actual "how" entrepreneurs learn to be creative and are presented in the following section.

4.3.2 Strategies enabling creativity

Many of the studies included in this review have researched, proposed or implemented learning strategies and models, activities and tools to effectively aid the learning of creativity for entrepreneurs and students of entrepreneurship. The "how" entrepreneurs learn to be creative have been classified and described under the topic of learning strategies listed in Table 4.3 below. The majority of the studies (N=14) are entrepreneurship education courses that are formally structured and offered by education institutes or professional providers which is concurrent with how most students and entrepreneurs learn entrepreneurship (Handscombe, R. D., Rodriguez-Falcon, E. & Patterson, E. A.*,* 2009 and Henry & Lewis, 2018). How the teaching is done is a topic of great interest as the pedagogical approach and how one does the task or job is far more critical than the content (Handscombe *et al.,* 2009; Gibb, 2002; Kakouris & Liargovas, 2021). Therefore, the learning strategies have been analysed to present the details of how each strategy enhances primarily the learning of creativity and other skills taught within the curriculum. The informal learning strategies similarly sit within the field of entrepreneurial education; however, the learning happens

organically and is usually self-directed by the learner or entrepreneur. This study focuses on how the entrepreneur in the formal sector learns to be creative.

Table 4.3 Learning strategies employed in studies included in the analysis

No.	Literature study	Learning Mode	Learning strategy
1.	Robinson and Stubberud (2014)	Courses	Group learning activities and games
2.	Peschl, Deng and Larson (2021)		Three component signature pedagogy built on experiential learning tools and activities (course resources can be found as an open source online - https://failingforward.ca/)
3.	Alcaraz-Rodríguez, Villasana, and Alvarez (2013)		Experiential learning approach centred on academic elements, motivation and the institutes support.
4.	St. George (2015)		Creative problem-solving workshop
5.	Schmidt, Soper, and Bernaciak (2013)		Convergent team -based creativity methods
6.	Lourenco and Jayawarna (2011)		Using Theory of planned behaviour to assess training programmes and design learning solutions to encourage the perception of the usefulness of the creativity skills learnt.
7.	Radović-Marković, Vučeković, Nikitović and Lapčević,(2020)		Modern models of learning including technology like eLearning
8.	Buble and Zelic (2020)		Proposal of an active teaching model, inclusive of ICT rich teaching that holds the learner central to the learning process.
9.	Turnbull and Eickhoff (2012)		Collaborative model focusing on team work through use of technology and collaboration
10.	Antonites (2003)		Action oriented experiential learning model – Creativity innovation and Opportunities (CIO) model
11.	Shahab, Chengang, Arbizu, and Haider (2019)		Incorporating the development of self-efficacy into entrepreneurial courses
12.	Fleck and Asmuth (2021)		Superhero workshop based on experiential learning theory to draw out creative capacity in learners
13.	Schmidt, Soper, and Facca (2012)		Using Divergent thinking tests and exercises to assess and improve creative ability in learners
14.	Kakouris (2021)		Reflective practice activity for educators to include in entrepreneurial education courses.
15.	Kwong, Thompson, Cheung, and Manzoor (2012)	Bootcamp	Group learning in an outside environment
16.	Malm (2020)	Community of practice	Informal learning through a community of practice
17.	Lee, Hallak, and Sardeshmukh (2019)	Creative Imitation, online sources and customer feedback	Creative imitation of competitors and the best in the industry
18.	Mehrotra and Velamuri (2021)	Creative Imitation	Creative imitation of global successful brands in a theoretical framework for SBMI
19.	Feriady, Purwana, Wibowo and Setiaji (2021)	Engagement in entrepreneurial organisations	Enhancing creativity within an entrepreneurial organisation
20.	Willoughby, Talon-Renuncio, Millet-Roig and Ayats-Salt (2013)	Mentoring	Personalised mentoring from experts
21.	Ukor (2017)		Structured mentoring with entrepreneurs
22.	Tang (2016)	Personal turbulence	Proactive searching and scan to prepare creatively for any unexpected personal turbulence be it positive or negative
23.	Gemmell (2013)	Social networking, experiment and iterate and filtering ideas	Social networking with trusted partners and colleagues, to generate ideas which are testes, experimented with, iterations occur and filtering to determine best creative ideas

To better understand and contextualise the learning strategies which the various studies revealed on how to learn creativity, it is necessary to view this in the wider context of entrepreneurship education and how it fits in. Kakouris and Liargovas (2021) present a typology framework of entrepreneurial education which includes three modes or forms of entrepreneurial instructional design: namely "about", "for" and "through". All forms of this entrepreneurship education typology framework have been used by many scholars researching entrepreneur education since the well-established three category framework was first introduced by Jamieson (1984). Pittaway and Edwards (2012) used the same typology with an added fourth form; "embedded" in their study which is as popular as the original version. Henry and Lewis (2008) describe the forms as being differentiated between educating "about", "for", "through" and "embedded" entrepreneurship.

The first form, "about" entrepreneurship is centred on awareness and knowledge accumulation using traditional methods to teach useful and relevant content e.g., lectures and case studies. This form "about" entrepreneur education is usually designed for entrepreneur students to learn the importance of enterprising skills to enhance their job prospects. The next form, "for" entrepreneurship is about equipping the learners with the skills to apply in real situations and gain the practical exposure to set up a business through learning by doing. This "for" entrepreneurship education is usually for nascent entrepreneurs looking for self-employment and new business development. The third form "through" entrepreneurship is about providing the learning environment where the business and enterprise activity are located, so the learners can connect with real entrepreneurial activity, meet entrepreneurs and apply the connection between theoretical knowledge and practical experience. Experiential learning emerges. This "through" entrepreneurship would be applicable for new or established entrepreneurs. The final form "embedded" is usually when the learning needs to begin. "Embedded" entrepreneurship is about where the learner is situated and their context of chosen subject or module. The content can be found in courses focused on other disciplines and happens in the learner's context or situation e.g., an engineer who needs to develop entrepreneurial skills (Henry & Lewis, 2008; Pittaway & Edwards, 2012; Kakouris & Liargovas, 2021; Handscombe et al., 2009). Creativity in entrepreneurship education is the focus of this study aiming to understand all the formal and informal modes and strategies of learning creativity skills. The four-form

entrepreneurship education typology framework serves as the backdrop to how the learning strategies educate entrepreneurs on creativity.

Learning strategies that fall under the education "about" entrepreneurship includes a Creative Problem Solving (CPS) workshop designed to be highly interactive and team based by St. George (2015). The workshop includes Thinking Skills which is an eight-part process guiding groups from exploring their vision through to formulating a plan, De Bono's (1985) six thinking hats, design thinking[5] (two key ideas: empathy and protypes), additional tools and exercises to teach creative problem solving. The study does not share the exact learning approach as the focus is on the curriculum and is focused on helping business owners develop their creativity through creative problem solving.

Learning strategies that support the education "for" entrepreneurship includes group learning through the provision of multidimensional entrepreneurship activities in an informal bootcamp by Kwong *et al.* (2012). The bootcamp is practical and is centred on creativity and innovation within entrepreneurship, permitting learners to spend time with other learners in activities that facilitate group learning. The bootcamp is built on three components that make up the learning strategies, two of which fit into "for" entrepreneurship: firstly, idea formulation and development which used brainstorming activities for learners to formulate ideas and to develop a business plan by the end of the week; and secondly, technical training skills on budgeting, marketing internationalisation, and personnel management to be applied to their business idea.

The bootcamp proposes learning strategies that create a longer-term emphasis on creative success, focusing on continued intentions and the use of entrepreneurial behaviours within all organisational contexts. Another account of the learning strategy using group or team-based learning activities is a study presented by Robinson and Stuberud (2014) where play and games are used to practice and enhance creativity and risk-taking skills in the entrepreneurship course. The group activities consisted of quizzes involving uncertainty and risk taking; and a competition between the students throughout the programme, culminating with presenting projects to business owners

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[5] A solution-based approach rooted in a hands-on way of thinking and working to problem solving.

on topics that underpinned the course, e.g., social entrepreneurship and solar energy. The game and competition elements presented the learning to be fun and engaging.

Turnbull and Eickhoff (2012) developed a business creativity module incorporating virtual group work with online teams bearing a mixture of cultures and competences (from six participating European universities). The content of the module focuses on the creativity phase of the business evolution process and encourages learners to take full responsibility for their progress, and encouraging their input through regular on-site classes. The online technology gives easy access to meet learners from other universities for collaboration and group activities which further develops creative thinking.

The superhero workshop is a learning strategy developed by Fleck and Asmuth (2021) and is based on activities that encourage participants returning to their childhoods to ignite their creativity without any boundaries or constraints. The workshop used multiple methods that are built on experiential learning theory to support the development of the learner's creative capacity through activities like reading, exercises, self-reflection, and action which also enhances the learners' ability to develop their creative self-efficacy. For a step-by-step account of the superhero workshop see study by Fleck and Asmuth (2021:87-90). This workshop is designed to stimulate creativity to encourage entrepreneurial thinking and action and move away from the traditional methods of standardised testing to develop creativity.

Another new model in support of moving away from the traditional ways of teaching creativity in entrepreneurial education is the three-component innovative signature pedagogy developed by Peschl *et al*. (2021). This model is designed to teach entrepreneurs seven key entrepreneurial thinking skills (see table 4.2 for details), including creativity with limited resource. The components of the model include the use of flipped classrooms[6], learning through failure, and access to open educational resources. A signature pedagogy, created by Shulman, 2005, is a new approach to learning with an uncertain pedagogy that creates a classroom that behaves in surprising and impulsive ways (Peschl *et al*., 2021). A flipped classroom approach allows for concrete and operational learning through interrelated experiential activities. The student and instructor work together to create the interactive experience and the

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[6] Flipping the ownership of learning to the learner, who can learn at their own pace in the course.

instructor moves into a facilitator role allowing for students to become more engaged. Learning from failure, educators teach the learner to reflect on what went wrong, take corrective action and enhance their perseverance. There are a number of experiential exercises used to simulate turbulent and uncertain times in the entrepreneurial environment and allow for adaptive anxiety. Students learn creativity through the activity of creating a prototype of their final idea with a limited amount of time and no money by week 12 to present to their potential customer for feedback. This activity forces them to use their creativity to complete the project. All resources used in the model are available for other educators to use and implement as needed.

Building on learning strategies that are unpinned by experiential learning like Fleck and Asmuth (2021) and Peschl *et al.* (2021), Antonites (2003) presents his action oriented experiential learning model called the Creativity Innovation and Opportunities (CIO) model which he developed and implemented almost 20 years ago. The model uses experiential learning, creative problem-solving, co-learner group support and acquisition of relevant knowledge as its core components and makes up a unique training process and methodology. There is an emphasis on thinking through reflection and action. Examples of classes held in unconventional physical environments like a museum or highly practical sessions like playing musical instruments enhanced creativity. The model also uses exercises where theoretical creativity techniques are applied to real life situations. The course contains exercises from the 1995 textbook by Couger called *Creative Problem Solving and Opportunity Finding.* The success of the learner in entrepreneurship after completing this module is wholly dependent on the individual's determination and application of the skills learnt in the module. Details of the entire workshop can be found in the study by Antonites (2003) which was tested and reviewed on a number of learners resulting in positive outcomes.

Tests and activities are advocated strongly for by Schmidt *et al.* (2012), who use divergent thinking tests and activities in entrepreneurial courses. Their study findings suggest that adding a variety of ways for divergent thinking to be expressed and practiced in the classroom enhances the range of idea options. Further findings indicate that divergent thinking exercises support the development of multiple approaches to creativity and divergent thinking activities can affect perception of and confidence in creativity in the students (Schmidt *et al.*, 2012), Students who partook in the divergent tests and exercises performed better at divergent thinking in ideas

generated (fluency) and in the range of ideas expressed (flexibility). The Schmidt *et al.* (2012), study supports that creativity should be spread throughout an entrepreneurship curriculum rather than concentrated in a single course.,

Another learning strategy built on experiential learning is presented by Kakouris (2021) and is an instructional methodology; an open-ended reflective practice activity implemented into an entrepreneurship course (see figure 4.4 below for steps of the activity). This activity provides answers to how students can critically reflect on the role of creativity in entrepreneurship and what it means to them. The reflective activity is intentionally open ended so learners can practice reflection in the context of the demands and reasons for creativity, to better examine entrepreneurship. This gives way to critically examine and develop ways of adapting creativity to business contexts. The reflective activity aims to draw out the fundamental viewpoint on creativity in entrepreneurship and to encourage educators and learners to make adjustments when using creativity in different contexts either "emboldening" or "discouraging" it depending on the situation and needs of the learners (Kakouris, 2021:469). The activity is available for any educator to implement in their own courses.

Step		Duration
1	In-classroom discussion on the role of creativity in entrepreneurship – critical questions	30-60 mins
2	Work in groups: recalling an innovator	20-40 mins
3	Introduction of Csikszentmihalyi's 10 traits of creative people	¬ 15 mins
4	Work in groups: identification of Csikszentmihalyi's 10 traits in each group's case	15-30 mins
5	In-classroom collective reflection and insights. Response to critical questions of Step 1	Up to 30mins
6	Educator's case as a conclusion and exposure to new experience	¬ 15 min
7	Assessment	¬ 10 min

Figure 4.4 List of steps in the reflective activity (adapted from Kakouris, 2021:466)

Multiple learning strategies were discovered in the study by Schmidt *et al.*, (2013) who collated the best practices used in USA universities to teach creativity in entrepreneurial programmes. These learning strategies are made up of:

1. *Teaching methods*: convergent methods, team projects (business concepts or plans), individual projects (portfolios of creative work and a project to redevelop a dated product into a new product).

2. *Exercises:* Generating bug reports, mind mapping, SCAMPER[7], Snowball[8], exercises from Michalko's Cracking Creativity[9] and creativity exercises testing divergent thinking methods.

3. *Cases:* divergent exercises like developing a new game or teaching by use of the metaphor, convergent thinking games like examining the life of entrepreneurs.

4. *Other:* workshops, presentations, guest speakers, videos, bootcamps, simulations, idea excursions, customer and opportunity research and multidisciplinary network problem finding exercises.

The dominant methods for teaching creativity are team-based products and instructor or team evaluations. The multitude of learning strategies above provide a tried and tested collection of learning methods, exercises, cases and other activities to consider when developing entrepreneurial courses for entrepreneurship.

Studies by Radović-Markovic *et al.* (2020) and Buble and Zelic (2020) motivate for a new model of entrepreneurship education that is grounded on the individual's growth. New technologies are needed to allow for the learner to explore new areas of learning and thinking, like eLearning which can provide support of creative learning and innovative teaching methods and result in developing individual potential. Buble and Zelic (2020) present a new model of teaching entrepreneurship and enhancing creativity that is learner centric. Most students recognised the methods used in the course which is a mix of lecture, practical examples, discussion and audio-visual content, which encouraged small working groups of learners. However, it was the combinations and models of teaching that had the higher impact on enhancing students' creativity. The model developed by Alcaraz-Rodríguez *et al.* (2013) is within a mandatory Development of Entrepreneurs course at a university which is built on an experiential learning approach centred on 3 areas: *Academic* where learners focus on using learning resources and activities to build their technical knowledge, *motivational*

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[7] SCAMPER is a creativity tool used to generate diverse ideas
[8] Snowball is an active learning strategy to help students learn from each other on various topics
[9] A book from renowned creativity expert Michael Michalko

which inspired the learners to develop entrepreneurial competence and lastly *institutional support* provided through business incubators and a test site infrastructure for learners to start their businesses and test ideas and products out. Activities during the course included workshops for identifying opportunities, project development and personal development for students to identify their areas of strength and weaknesses. This model combines the use of all three forms of the entrepreneurship education typology. This ends the section on learning strategies which promoted education "for" entrepreneurship. Majority of the strategies fall under this form and are indicative of the focus being on the learner.

Learning strategies that support education "through" entrepreneurship includes; the bootcamp study by Kwong *et al.* (2012) which was built on learning and enhancing skills like creativity outside the classroom environment. Exposure to real entrepreneurs in the form of motivational talks with entrepreneurs, where four entrepreneurs of different backgrounds were invited to talk to the learners and interact with them was markedly beneficial for the learners as they were able to engage with entrepreneurs and gain a deeper understanding of creativity and the world of entrepreneurship.

The community of practice places entrepreneurs in the company of other entrepreneurs which is indicative of "through" entrepreneurship as this informal way of learning incites the sharing of theoretical and practical knowledge and experience. Malm (2020) presents learning creativity through a community of practice (*CoP)* which is a group of people of any size who come together due to a shared interest or passion and learn from each other. The results of this learning strategy show enhanced creativity within a group setting in the case of the rock brand who were developing not just as creators but entrepreneurs too. This community or rock band is therefore likened to a CoP (Wenger, 1998) who use an integrated approach to learning. Feriady *et al.* (2021) recommend combining engagement in entrepreneurial organisations with the traditional classroom approach. Entrepreneurial organisations provide an opportunity for students to learn in the real world and practice, additionally they could network with entrepreneurs and learn on the job from real problems. Student engagement in the organisation gives students an active role to play in the organisation and therefore provide a variation in learning, emphasising student engagement, resulting in students being more creative. This learning strategy places students in a real environment where they can apply what they learn in the classroom.

The final learning strategy is mentoring and places the learner directly with an entrepreneur or expert in the field of their business as seen in studies by Willoughby *et al.* (2013) and Ukor (2017). A tailored and personalised one-to-one professional advice and guidance (Willoughby *et al.*, 2013) provides the entrepreneurs with a greater possibility of business success. This access to experts in a mentorship relationship promotes creativity as a fundamental route to innovative practices and success by providing important tools, guidance and advice to entrepreneurs entering the business world. Similarly, Ukor (2017) builds mentorship into an entrepreneurial as part of a collaboration with successful entrepreneurs to mentor and guide undergraduate business students to get an insight into real work and entrepreneurship. Necessary recommendations were made to support the successful mentoring of the business students on creativity and other important entrepreneurship skills to aid their journey into entrepreneurship to combine lecture days with days spent with entrepreneurs at their business.

The form "embedded" entrepreneurship places emphasis on the context and environment of the learner as being key to develop creativity. Lourenco and Jayawarna's (2011) study centers on how one's perception of creativeness can be either a positive or negative factor in pursuing creative thinking. They suggest educators use the theory of planned behaviour as a tool to assess their entrepreneurship training programmes. The following key design considerations are recommended for inclusion in entrepreneurship courses to reinforce a positive cycle of perceptions to support the development of creativity. The first is to spread the development of behaviour, attitudes and skills across the business and entrepreneurship courses as opposed to it being concentrated in one course and the second is the inclusion of easy to learn and use, less complex techniques that will raise learners' perceptions on the usefulness of the creativity techniques learnt. If the tools are not perceived as helpful, this will not prompt intentions to learn or develop creativity any further. Consideration of the theory of planned behaviour is integral to a successful course. Similarly, the study by Shahab *et al.* (2019) recommend that the provision of appropriate entrepreneurship education geared towards efficiently developing entrepreneurial creativity allows for individuals to enhance entrepreneurial self-efficacy and subsequently increase their intentions towards pursuing

entrepreneurship. This must be considered when developing curriculums and courses to support self-efficacy, positive attitudes and entrepreneurial creativity in students. It should be considered as a guiding principle to aid the sustainability of the knowledge and skills learnt during the course.

An important learning strategy that fits within "embedded" entrepreneurship is creative imitation where two studies – that of Lee *et al.* (2019) and Mehotra and Velamuri (2021) – share how imitating the creative success of competitors has allotted them opportunities to enhance their own creative ability and apply this to their businesses. In the Lee *et al.* (2019) study, restaurant entrepreneurs visit the restaurants of direct competitors where they learn what was working best for the competitors and modify these to their restaurants. Imitation was also done by visiting international establishments to learn and source creative inspiration to then innovate with. Due to the size of the restaurant and the cost of innovating, these entrepreneurs prefer to imitate competitors who are successful and use this creativity towards innovating, implementing new products, modifying existing marketing and production practices and making improvements to their management system. Feedback forms were given to customers to generate input from what the customers would like, and these were considered and built upon. Watching online videos (e.g., YouTube) and TV also exposed them to new innovative concepts, recipes and food presentation e.g., MasterChef Australia. Others subscribe to print media including Industry and trade publications like magazines to scan and gather information on new ideas and innovation in restaurants globally. The entrepreneurs in the Mehotra and Velamuri (2021) study used their existing inert creativity to grow their idea of selling street food into a national fast-food chain and thus successfully created their national businesses. They drew on the successful attributes of global fast-food brands by imitating these and expanding their own creativity and then innovation this way. The study builds on the concept of 'secondary' business model innovation (SBMI), by looking at how creativity and imitation form the basis for inter-organisational learning, and propose that it is a construct of creative imitation. These two studies present a learning strategy that is familiar yet effective if applied efficiently.

Another study is the learning strategy presented by Tang (2016), which is focused on personal turbulence and managing it to one's benefit. Creativity is delicate and requires regular observation and attention to any turbulent events that may occur

outside the control of the entrepreneur. To be proactive and prepared should turbulence occur, whether positive or negative occur, entrepreneurs are encouraged to increase creativity through the regular practice of screening and searching for new information (any best practice in industry locally and further) and learning daily. This practice helps entrepreneurs learn and gain new input to navigate any impending turbulence, it is also a means to redirect the turbulence into creative accomplishment. The final study within "embedded" entrepreneurship is the study by Gemmel (2013) on technology entrepreneurs who use complex social networks as sources of ideas, that they test, refine and then validate. This social network serves as a domain of expertise where these entrepreneurs can practice filtering ideas. They actively experiment and iterate ideas this way which is using a practice that is already familiar in their technological world versus drawn out as a conceptual analysis. Within the social network it was found that having a trusted colleague sharing the same context provides a safe space to exchange and refine their ideas. This learning strategy is unique to these entrepreneurs and their working environments and contexts and may not be transferable to another entrepreneur, however, the strategy does share mechanisms that are rooted in experiential learning requiring reflection and application of new knowledge.

The learning strategies in majority of the studies provide an array of options for an entrepreneur to learn creativity in different modes, be it at the start of their entrepreneurial journey or discovering it through a business course or as a seasoned entrepreneur perturbed by the challenges faced daily. For example, in the case of the courses learning mode there are strategies from the perspective of the entrepreneur or learner and educator or educational facility where the curriculum and learning methodologies can be designed with the learner at the core of the entrepreneur programme. Within this learning mode, the strategies explore curriculum, learning models, learning activities and the inclusion of alternate learning environments in the course. The entrepreneurship education four-form typology is an excellent approach to designing an entrepreneurial programme be it formal or informal, as it touches on key aspects for consideration not just acquiring surface knowledge but the connection and application of theory and practice.

4.4. Conclusion

This chapter focused on reporting and discussing the results from the analysis of all 23 studies resulting in a detailed overview of the group and individual learning modes and learning strategies that answered both the research and sub research question.

The four common reasons for undertaking a scoping review proposed by Arksey and O'Malley (2005) were shared in chapter one and the two reasons chosen for this study were revisited in this chapter. Reason one was to identify the range of research activity and provide a snap overview of the study areas, and reason four was to identify any potential gaps in the selected literature studies. These two reasons provide the outline and structure for the conclusions in the next chapter, including recommendations and suggestions for future research of the study.

Chapter 5:
Findings and Conclusion

5.1 Introduction

The need to answer this research question was initially born from my personal experience as an entrepreneur in an industry that demanded creativity on a daily basis. I found myself learning on the job as I did not have the time or capacity to attend a formal course. Having a background in learning and development, meant lifelong learning was already a part of my daily life and I was always open to learning in whatever format that may be. Following this period, I returned to formal studies and simultaneously started to mentor upcoming entrepreneurs which contributed to me developing my research question of "how do entrepreneurs learn to be creative. I was working informally with entrepreneurs in the formal sector who were facing 21st century challenges and struggling to grow their business. The research question thus gave me an opportunity to explore the relationship between creativity and the different ways in which creativity is learnt - formally or informally (unstructured or unplanned) and the particular learning strategies that drive the learning and continued interest in creativity. The informal way entrepreneurs learn creativity was drawn from the literature reviewed and categorised as per table 4.3 in chapter four.

Another major contributing factor to pursuing an interest in creativity and entrepreneurs is Industry 4.0 and the rise in technological advancements, the unpredictable change that technology is threatening through developments like machine learning, artificial intelligence, automation and the threat of losing jobs as they may no longer be needed. This together with the current Covid-19 pandemic have created uncertainty, loss of jobs and turbulence in our lives. Developing creativity in these times is critical for employees looking to change careers or progress within the workplace as the study has shown how creativity is viewed as a critical skill for the 21st century (see chapter one). Various studies have proven how entrepreneurship contributes to economies through job creation, advancement in productivity, innovation and efficiency brought by products or services which further promotes entrepreneurship as a viable career path. The relationship between creativity and entrepreneurship is strengthened by the challenges uncertain times bring and this

together with entrepreneurship is discussed in chapter two. Entrepreneurship is therefore an option for those who need to draw on talents and hobbies to make a living and for the entrepreneurs who have been deeply affected by the changes. Enhancing their creativity, idea generation, creative thinking and problem solving could help them reinvent their business offerings.

Entrepreneurship education provides students interested in entrepreneurship with an understanding of the role entrepreneurs play in the economy and society apart from the characteristics, skills and technical knowledge needed to progress as an entrepreneur. More importantly the development of one's creative capacity builds the entrepreneurs mindset not only resulting in prosperous entrepreneurs but also in a workforce with the resourcefulness to adapt to the ever-changing global economy (Fleck & Asmuth, 2021). The research question is therefore appropriate as it validates the connection between creativity and entrepreneurship and seeks to understand what literature studies are uncovering about entrepreneurs and their relationship with creativity in context of education and lifelong learning.

Although entrepreneurship and enterprise education are different concepts and focus on different elements that entrepreneurs learn, it was found in the literature during this study that many entrepreneurship courses are moving away from teaching the how to start and grow a business module to include skills like creativity. These entrepreneurship education courses are also adapting new methodologies like pedagogical ways of teaching the entrepreneurs, in which is also embedded in experiential learning usually found in enterprising education (Jones & Iredale, 2010).

This study used a scoping review methodology to explore and review literature studies (see chapter three) that answer the research and sub research question. Findings from the literature studies (N=23) reveal that business students, nascent and experienced entrepreneurs learn to be creative through either group (n=15) or individual learning modes (n=8), either formally through entrepreneurship education courses and a bootcamp or informally through mentoring, creative imitation, online searches and customer feedback, personal turbulence, social networking, experimenting and iterating and filtering ideas and communities of practice (see

chapter four and 4.3.1) . These learning modes further revealed the "how" i.e., learning strategies through which entrepreneurs learn to be creative. The learning strategies (see chapter four and 4.3.2) provided the answers to the research and sub research question by presenting a range of strategies that can be used by both educators and entrepreneurs when teaching and learning to be creative respectively. The entrepreneur education four – form typology provides a framework to navigate the learning modes and strategies in which entrepreneurship can be taught and learnt.

5.2 Findings

Key findings of the study show that creativity is valued within the construct of entrepreneurship, as time and focus have been invested in understanding the relationship and development of creativity for entrepreneurs. The studies consulted in this scoping review are representative of the extensive range of countries and industries that invest in developing creativity in entrepreneurs in the recent years. It is not surprising that 21 of the final 23 studies were published between 2012 to 2021 and eight of these studies were conducted as recently as 2020 and 2021. This reflects the critical relevance creativity has in the 21st century, particularly in the development of entrepreneurial mindsets and enhancing creativity in business students and entrepreneurs (see Radovic-Markovic *et al.*, 2020; Buble & Zelic, 2020; Malm, 2020; Peschl *et al.*,2021; Kakouris, 2021; Mehrotra & Velamuri, 2021; Feriady *et al.*, 2021; Fleck & Asmuth, 2021).

The results of the scoping review yielded 12 different learning modes for entrepreneurs to learn creativity. The learning modes were categorised into group and individual learning modes signifying how entrepreneurs learn within group and team settings or individually. Within the learning modes there were multiple learning strategies that emerged, which represents the "how" entrepreneurs learn creativity. The learning strategies are varied, with some studies providing detailed descriptions and results, whilst other studies placed more focus on other factors that play a role in the connection between creativity and entrepreneurs (for example creative self-efficacy, the theory of planned behaviour and social cognitive theory) (see Shahab *et al.*, 2019; Feriady *et al.*, 2021; Lourenco & Jayawarna, 2011).

The importance of entrepreneurial skills development in higher education institutions (HEI) is reflected in over half of the total studies reviewed, which are based on

entrepreneurship courses offered by HEIs. An entrepreneurship education typology that comprises four forms; "about", "for", "through" and "embedded" entrepreneurship was used to understand and report on the learning strategies (Pittaway & Edwards, 2012). This typology framework is typically used in the instructional design of entrepreneurial education as it provides a framework of what works for the learner or entrepreneur based on the stage they are in their entrepreneurial journey. The studies reviewed, demonstrate how new approaches to teaching creativity have been effective and beneficial for the learners. Studies advocated for a shift from the traditional models of teaching which is instructive and content-centred to a learner-centric approach that focuses on the way in which creativity is taught (rather than only on the content of the course). Therefore, new models of entrepreneurship education should be based on individuals' development and increase their sense of self, belief in their creative abilities and creative perceptions. New models for teaching creativity in entrepreneurship were researched and applied by some studies reviewed and are reflected in the learning strategies which comprises of learning models and activities that were implemented and those that are proposed in their relevant studies. These new learning models and activities are based on experiential learning; to encourage learners to discover new information from their learning experiences through activities that simulate a real entrepreneurial environment. Learning models by Antonites (2003), Turnbull and Eickhoff (2011) and Peschl *et al.* (2021) proved effective for learning creativity as seen by the learners' positive responses in the studies. These models had a number of activities which shifted the focus of how entrepreneurial courses are developed with a focus on learning content to rather how the new knowledge and skills were embedded.

Activities like games, exercises, reflection and action, divergent thinking tests, readings, teamwork and problem solving built into entrepreneurship programmes by Robinson and Stubberud (2014), Kakouris (2021), Flesck and Asmuth (2021), Schmidt *et al.* (2012), Alcarez-Rodríguez *et al.* (2013), and Kwong *et al.* (2013) support the development of learners' creative self-efficacy, i.e., their belief in their ability to increase their creative capacity (see 4.3.2 for details on the learning strategies). The models and activities outlined above and within the learning strategies section, stress the importance of how creativity is enhanced in entrepreneurship education and can provide guidance and an example to others looking to improves their entrepreneur

programmes. For example, it was found that Serbia and Croatia (Radović-Markovic *et al.*, 2020; Buble & Zelic, 2020) are behind the curve in what they offer in their entrepreneurship education programmes to promote creativity. Their students are requesting new methods, tools and technology for teaching entrepreneurship education as they understand the need to prioritise entrepreneurial skills in these changing times to have access to employment. Therefore, the learning strategies reported on may aid HEIs looking to change their current way of teaching creativity in entrepreneurship.

The results also emphasise the importance of virtual collaboration and networking between the HEIs who offer entrepreneurship education courses. Using new technology to learn together with learners from other classes and institutes makes way for the exploration of novel areas of learning and creative thinking and encourages the learners to explore their potential as found by Turnbull and Eickhoff (2012). The results showed an emphasis on learning from others with six studies using learning strategies that enhanced the entrepreneurs' creative ability, particularly in idea generation and new product and service offerings with the assistance and support from others. Mentoring, creative imitation of other businesses, participation in a community of practice, feedback from customers, social networking, engaging with an entrepreneurial organisation and entrepreneurs have proven through the results to be effective in growing creativity skills and businesses. These learning strategies are informal ways how entrepreneurs can develop their creativity skills and are self-directed based on their business and personal needs. For example, the case studies from Willoughby *et al.* (2013) prove how structured mentoring from subject matter experts can give rise to new business offerings and in some cases new departments developing as a result. The study on restaurant owners (Lee *et al.*, 2019) illustrates how imitating competition can be applied to multiple areas of one's business as seen in the Mehrotra and Velamuri (2021) study when an entrepreneur imitated successful operational processes of a global food chain. The various informal learning strategies are an indication of the multitude of methods available for entrepreneurs in the formal sector to learn on the job.

The study about learning from personal turbulences (Tang, 2016) was the most representative of the effects of a turbulence like the current Covid-19 pandemic and its effects on the general public and entrepreneurs specifically. The study highlights

how personal turbulence in an entrepreneur's life can lead to a negative or positive effect and through the method of scanning and search, a creative solution can be found and a change in how the business is operated may bring new creative ideas and opportunities. The results of this study have highlighted the demand for developing creativity both formally and informally within the field of entrepreneur education. Students within HEIs and entrepreneurs are in a crucial position as businesses are constantly evolving and demanding critical skills like creativity. Developing creativity is a vital element in the entrepreneurial journey and is ongoing with entrepreneurs constantly looking to evolve in a positive and meaningful way that promotes creativity on par with the growth of economies and society.

The various learning modes have revealed not only the formal and informal approaches to entrepreneurs learning creativity but also what's feasible for the busy entrepreneur given their business and circumstances. My personal interest from a researcher's viewpoint are the informal learning modes. How does the entrepreneur measure their creativity after partaking in these modes of learning? Does the proof in the effectiveness lie in the success of the entrepreneur or is there more? The studies are lacking creative assessment and testing which exist in the formal space of entrepreneurship education yet still needs much research attention (Pittaway, Hannon, Gibb and Thompson,2008; Pittaway & Edwards, 2012).

These questions give rise to the why is this important and to whom. I believe the entrepreneur is unaware of their lifelong learning opportunities like mentoring or communities of practice. Money for personal development is a necessary expense to avoid when trying to grow and keep a business afloat. However, we have all heard how time is money, perhaps knowing that investing in some learning opportunities that do not necessarily cost in money but do in time could pay off. My interest as an educator lies in the sharing of knowledge and where the entrepreneur not only gains the knowledge but marries this acquired knowledge to their existing attitudes, behaviours and skills and applies their competence to the complete benefit of their growth and personal success. The next section will discuss any gaps in the literature that were discovered during the study.

5.3 Gaps in the studies

One of the reasons mentioned earlier for choosing a scoping review as the research methodology was to identify any potential gaps in the literature on entrepreneurs learning creativity and this study has met this requirement by identifying the following gaps:

- whether creativity input should be offered as a stand-alone course in entrepreneurship education, or built into each of the different modules;
- whether mentoring should form a structured part of an entrepreneurship course for nascent and experienced entrepreneurs;
- what the benefits are of establishing communities of practice for entrepreneurs; and
- what guidelines exist (or should be developed) for teaching creativity virtually to students and entrepreneurs.

The study by Schmidt *et al.* (2013) raised the point of whether creativity input should be taught as a stand-alone course in entrepreneurship education or built into each of the different modules. Their study found that a combination of both would be beneficial to the learner, however this raised the question to me as to what the overall benefits would be to the learner to have a stand-alone creativity course, creativity content in different modules or a combination. An evaluation of entrepreneurship programmes offering creativity either as a stand-alone course or integrated into each module could provide more evidence for the development of creativity. Ultimately the purpose is for the learner to develop their creativity, the question is what is the best way to do so.

The second gap raises the question of whether mentoring should form a structured part of an entrepreneurship course for nascent and experienced entrepreneurs. Two studies (Ukor, 2017; Willoughby *et al.*, 2013) present how mentoring enhances creativity, however, in one of the studies the effects of the mentoring were not positive due to it not being set up effectively within the entrepreneurship programme, compared to the second study where existing entrepreneurs had positive experiences and business results due to receiving mentoring services from a business development institute. Further research is required to examine how the provision of structured mentoring within entrepreneurship education programmes for nascent and experienced entrepreneurs enhances creativity.

The next gap is especially important, as it focusses on learning creativity informally through a community of practice. The study by Malm (2020) of a rock band learning creativity and enhancing their entrepreneurship abilities organically through a community of practice highlighted a gap as there were no other studies found using communities of practice. A study on how entrepreneurs can benefit from sharing and exchanging creative knowledge experiences through an informal learning mode like communities of practice can provide valuable input for anyone who has a vested interest in group learning (e.g., universities, vocational education and community centres or local businesses).

The final gap represents how remote learning took precedence over the last two years due to lockdowns imposed by the Covid-19 pandemic. This leads to the exploration of how to ensure that creativity is taught effectively to entrepreneurs through virtual applications and studies developing and sharing guidelines would prove beneficial.

5.4 Recommendations for future studies

Longitudinal studies on how entrepreneurs learn to be creative that spans more industries, countries and learning strategies, which culminates in a framework for entrepreneurs, are recommended. The framework should not only include the ways to learn creativity, but should also provide additional support and tools to serve as a learning plan for entrepreneurs.

Another recommendation for future studies would be to research a deeper understanding of the neuroscience of creativity in entrepreneurs i.e., how the brain functions when entrepreneurs are being creative. An area of interest is Dietrich's four basic types of creative insights which are the result of the deliberate and spontaneous brain processing modes that guide the structures that contribute emotional content and provide cognitive analysis (Dietrich, 2004).

5.5 Conclusion

The theoretical contribution from this study provides a wide view of how entrepreneurs learn to be creative in the formal sector. For educators looking to design learning for entrepreneurs or entrepreneurs looking to mentor others, this study provides details on what exists or is accessible. The gaps identified through the scoping review of the studies together with recommendations for future studies are further findings that will enhance any future learning activities. Additionally, the shift to include pedagogical theories and experiential learning into the design of the learning courses in formal entrepreneurship education programmes changes the offering of traditional entrepreneurship education. Teaching creativity does require innovative approaches versus the traditional ways programmes were and in many cases are offering.

To conclude this study, I would like to confirm that this study verified that creativity is a critical 21st century skill required for the workforce and most importantly the entrepreneur and future entrepreneurs. The findings reveal that the research and sub research question are answered as entrepreneurs learn to be creative through common group or individual modes comprising of learning strategies that span new pedagogical models that are rooted in experiential and action learning, with reflective activities, group games, divergent and convergent tests and exercises, learning outside the classroom, mentoring, imitating, customer feedback, online searches, social networking, experimenting and iterating, filtering ideas and from personal turbulence all designed or results in enhancing creativity and creative problem solving.

The learning takes place formally and informally and is not only driven by an institute, educator or policy but rather by the entrepreneur themselves as they engage in lifelong learning, utilising learning strategies to enhance their creative capacity, problem solve and ultimately keep up and ahead of the ever-changing times. The entrepreneur after all is the risk taker, who knows the true value of what creativity means to their existence.

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Addendum A:
Identify relevant literature studies

Phase 1: Search electronic collections and academic databases.

1. Go online to the Stellenbosch University's webpage and find the library http://library.sun.ac.za/en-za/Pages/Home.aspx

2. Click on Databases A-Z list, located on the right under the page banner
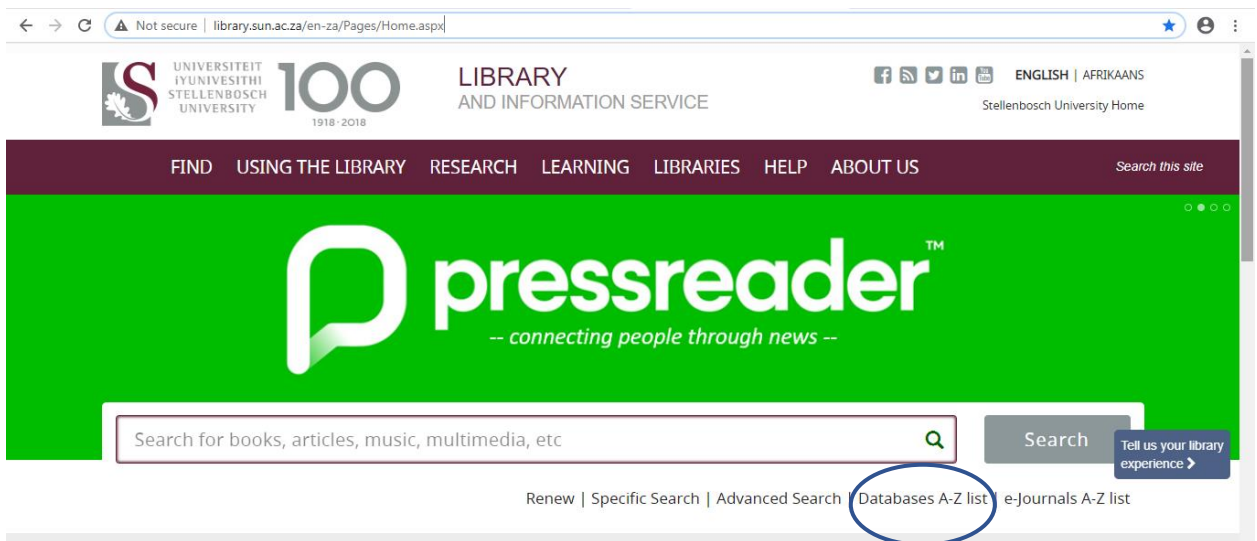
3. An alphabetical electronic database will appear, click on A to begin
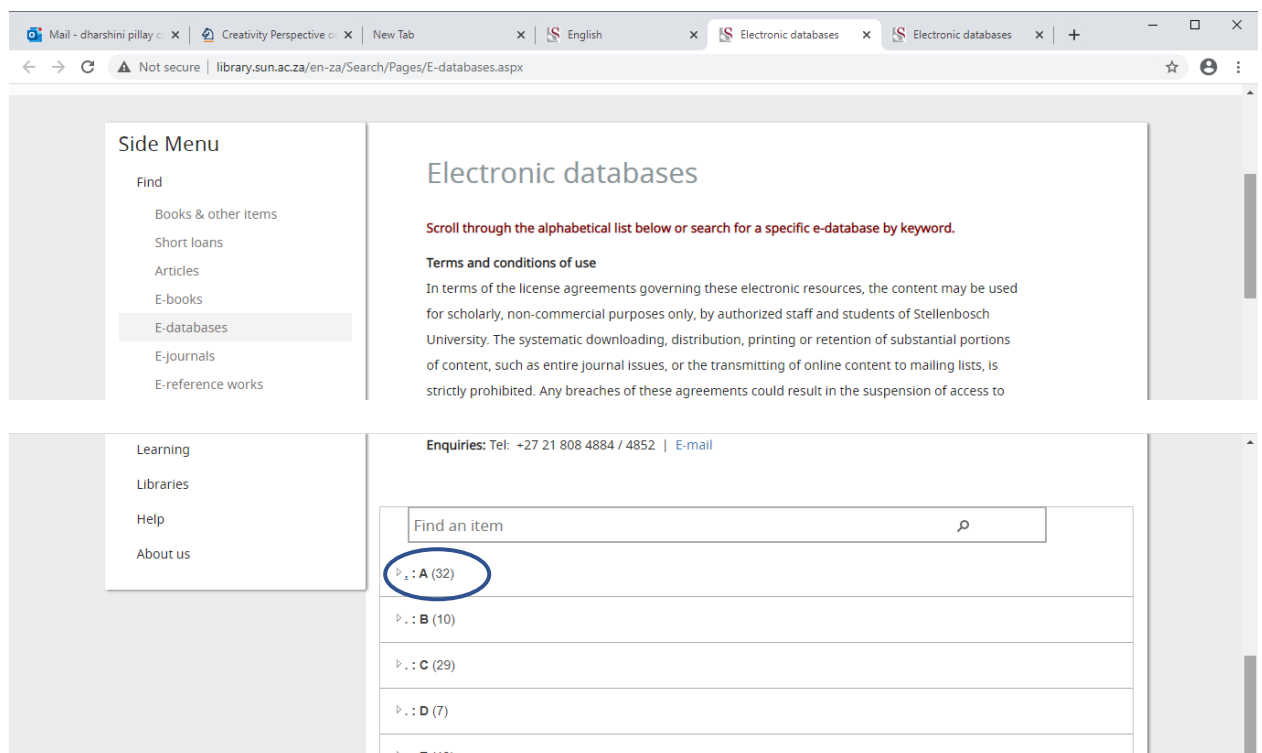
4. Choose and click on "Academic Search Premier – EBSCOhost" - the electronic collection to start the database search
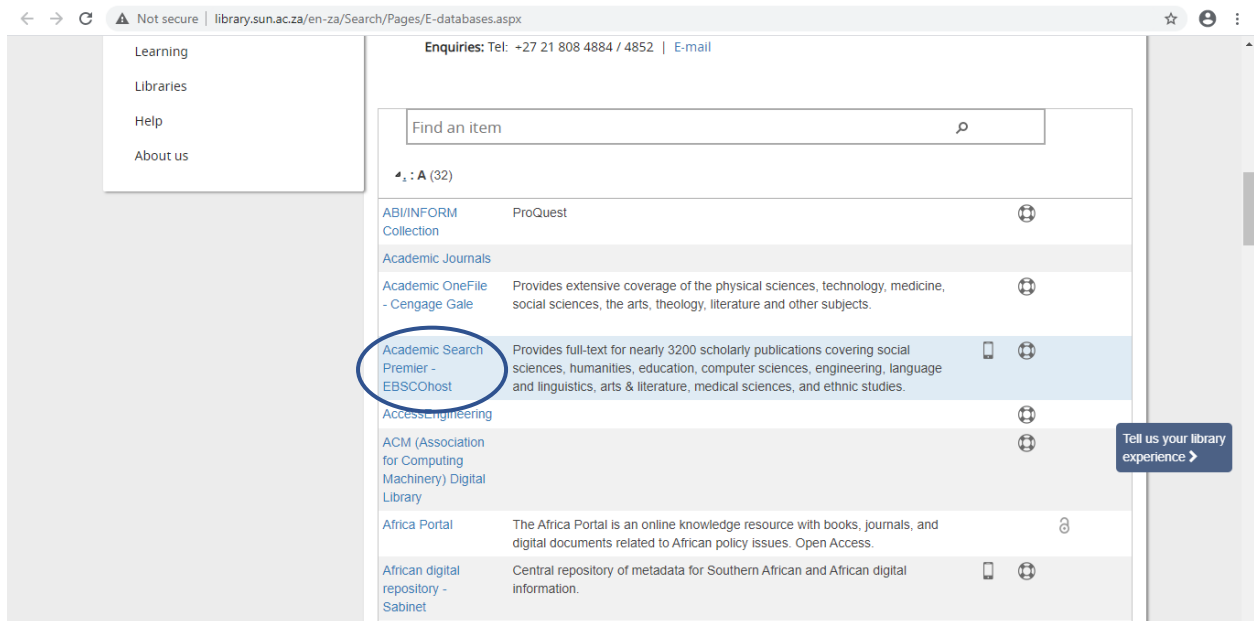
5. You will be prompted to log into the library with your student username and password.
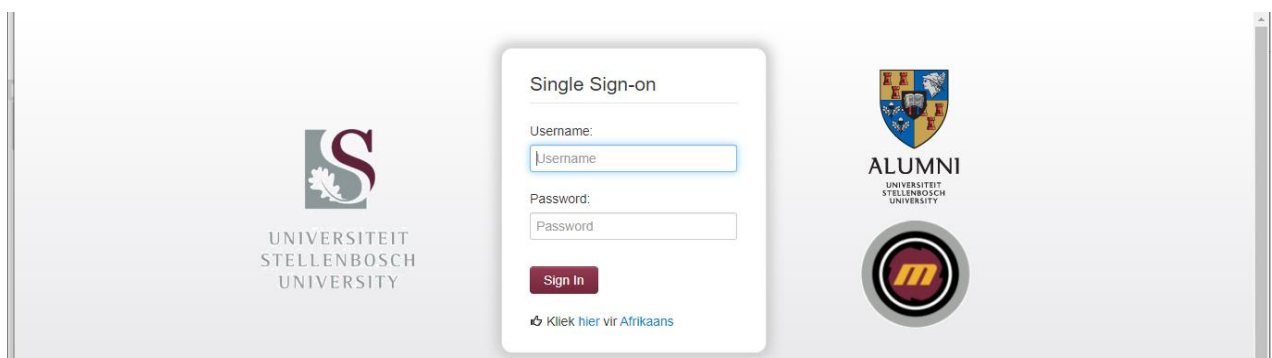
6. The EBSCO Host page will open up with the Academic Search Premier as the chosen search. Click on "Choose databases"
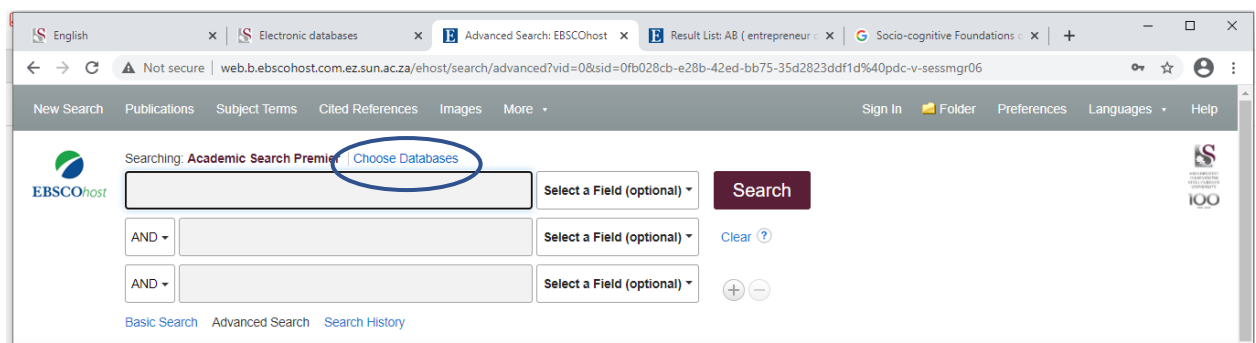
7. A screen will appear with databases to "Choose databases". Select these four databases and click OK. "Academic Search Premier", "Business Source Premier", "E-Journals" and "ERIC".
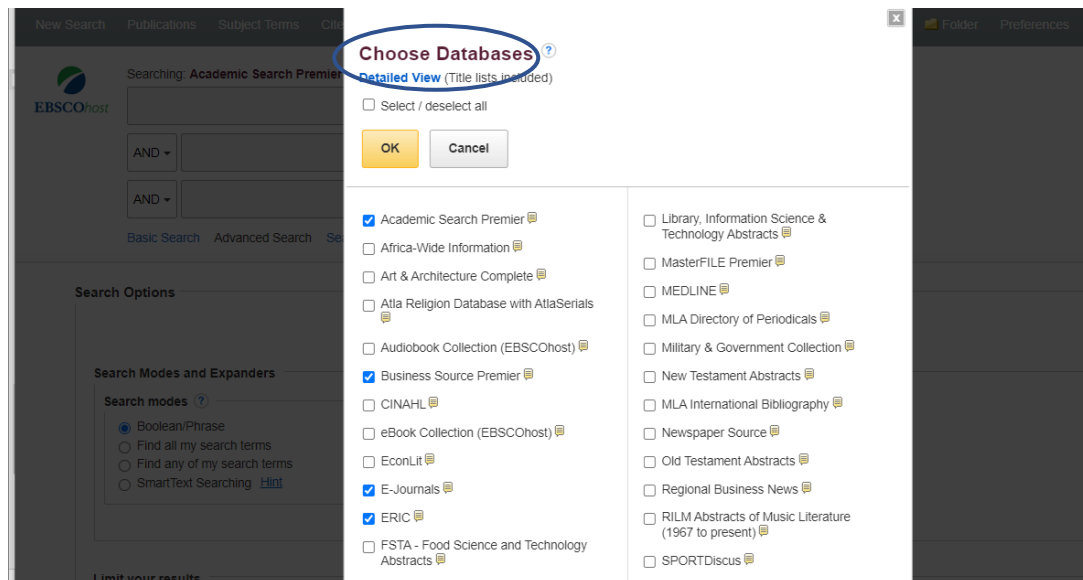

8. A search bar will appear, input the following search terms into the first search bar (Entrepreneur OR Entrepreneurs). In the "select a field" box on the right, choose "Abstract" to ensure the search terms will be found in the abstract.
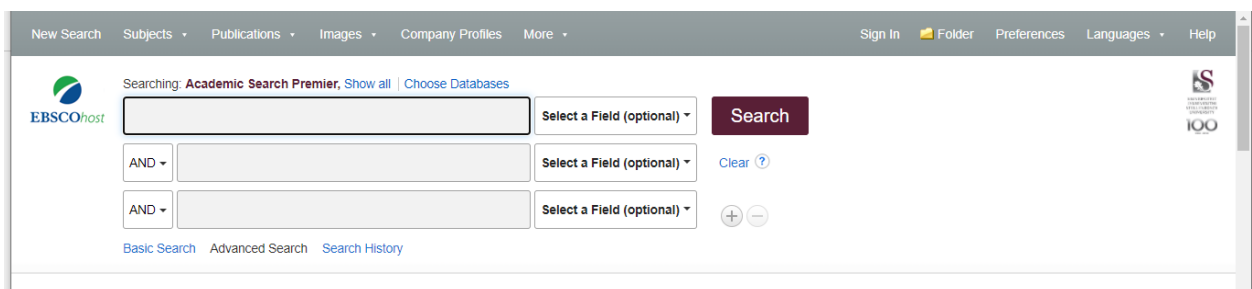
9. In the second search bar input the following search terms (Learn OR Learning) and select 'Abstract' in the next box. Ensure the Boolean Phrase "AND" is selected between search box one and box two.

10. In the third search bar, input the search term (Creative OR Creativity) and select 'Abstract' in the next box. Ensure the Boolean Phrase "AND" is selected between search box two and box three.

11. Use the plus sign on the right to add the final search box. Choose the Boolean phrase "NOT" and input the search terms that you do not want to see appear in the literature search. Select "All Text" from the box to the right to ensure these particular search terms do not appear anywhere in the literature. Input the search terms, (Children OR adolescents OR youth OR child OR teenagers).
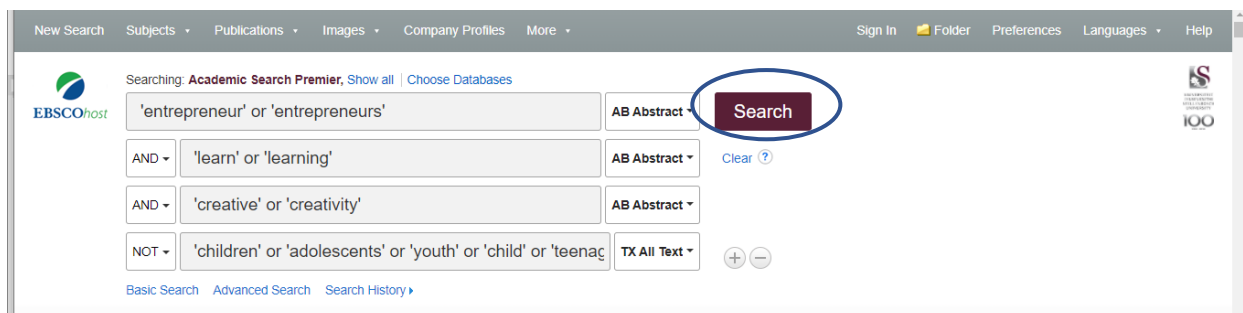

12. Click on search.

13. Click on refine results on the left and select the following Limiters:

    1. In the "Limit to" section, select "Full Text"

    2. Next, refine the period by moving the slider to show the year range "2000 - 2021"

   3. Move further down and choose Language, select English.
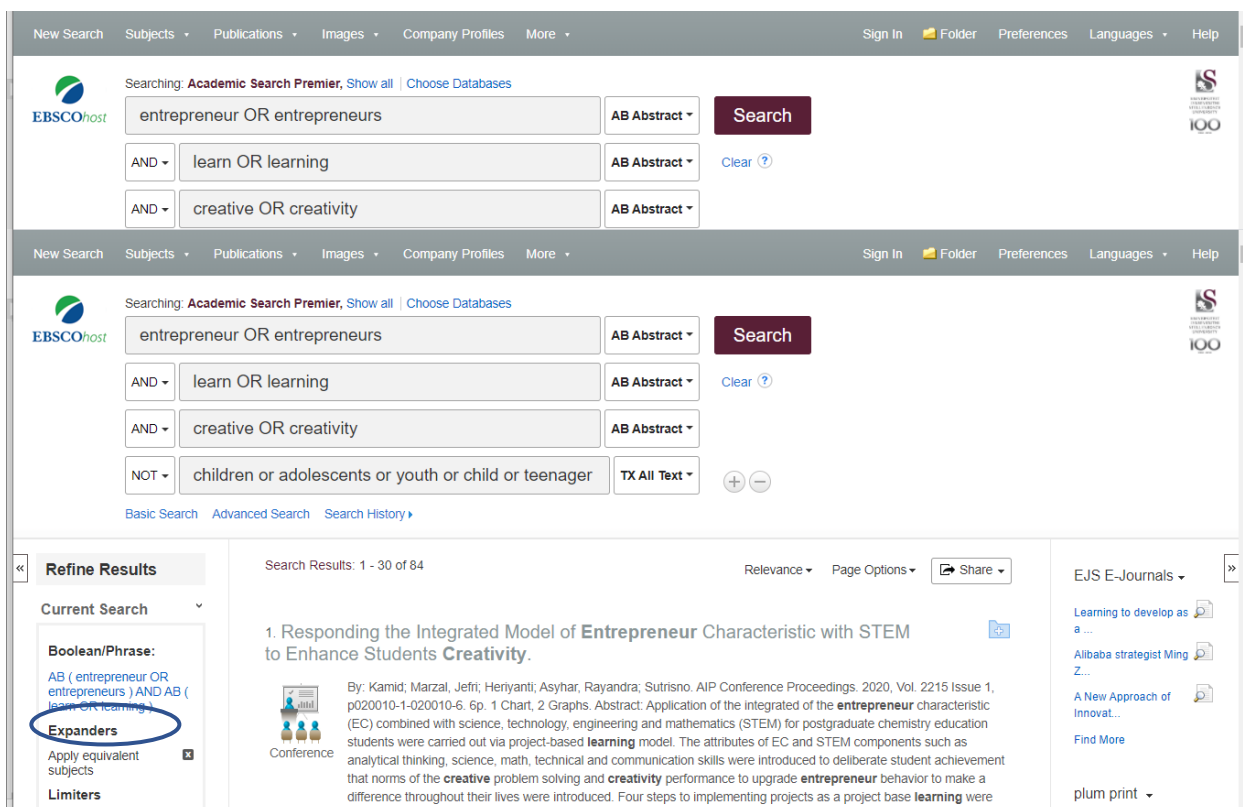
14. The search results will return the literature that meet the search criteria. To download the search results, click on "share" and choose "Results folder" to download the search results. Repeat for page two. Any exact duplicates will be removed at this stage.
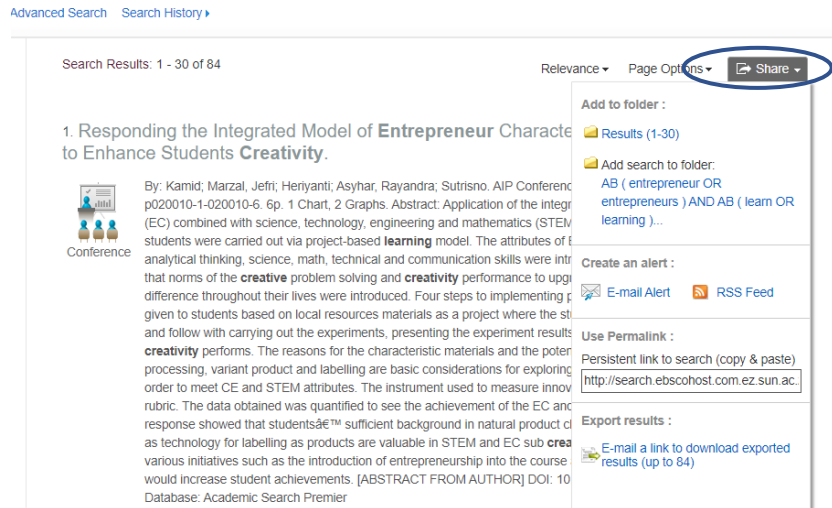
15. Once all the results are downloaded, go to "Folder" at the top of the page and export the results.

16. Return to the electronic databases page and work through the alphabetical list to repeat the search in the other chosen databases.

16.1 Emerald Insight
16.2 ProQuest
16.3 Scopus
16.4 Taylor and Francis
16.5 Web of Science
16.6 Wiley Online library
16.7 WorldCat dissertations and theses

Phase 2: Search Online sites

17. Next open the Internet browser and go to the Google Scholar website scholar.google.com   Click on the menu icon on the left corner to access the advanced search options.
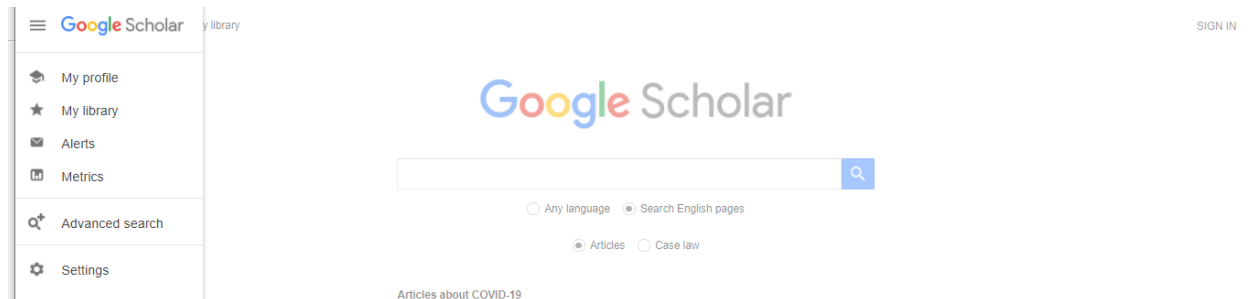
18. In the search bar "with all the words", type in (How do entrepreneurs learn to be creative)
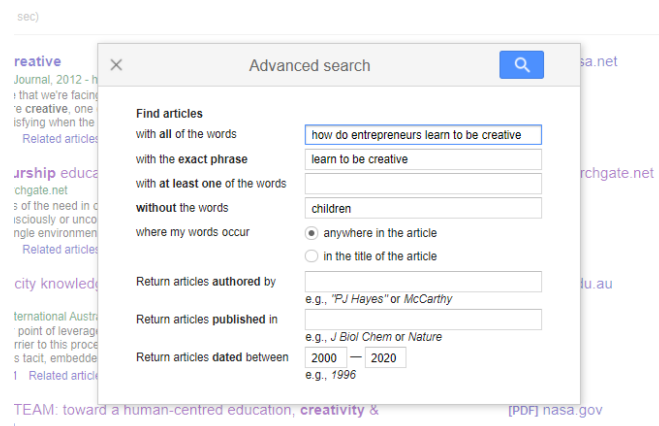
In the search bar "with the exact phrase", type in (learn to be creative)

In the search bar "without the words", type in (children)

Select the option "Anywhere in the article"

Select the return articles date range "2000 - 2021"

Click on "search"

19. Return to the menu, select settings and ensure the language is set to "English" Save.

20. Download the articles that have full text available and are peer reviewed and combine the downloaded results from all the electronic databases and Google scholar.

21. Screening Level 1 - Read all the titles of the results and exclude irrelevant literature.

22. Screening Level 2 - Read the abstracts of the remaining literature search results.

23. Remove any duplicates

24. Read the full text of all the literature that meet the search inclusion and exclusion criteria and select the most suitable.

25. Peruse the reference lists of the literature studies and include any relevant studies that meet all the accessibility criteria

26. The remaining literature forms the final collection of literature selected.

Addendum B:
Excluded literature studies

	Excluded literature studies	Reason for exclusion
1	Vuong, Q. H., La, V. P., Vuong, T. T, Hoang, P. H., Ho, M.T. & Ho, M.T. 2020. Multi-faceted insights of entrepreneurship facing a fast-growing economy: A literature review. *Open Economics*, 3(1):25-41.	This study provides a detailed overview on entrepreneurship in Vietnam and how creativity is low, but does not answer the research question.
2	Dayan, M., Zacca, R. & Di Benedetto, A. 2013. An Exploratory Study of Entrepreneurial Creativity: Its Antecedents and Mediators in the Context of UAE Firms. *Creativity and Innovation Management*, 22(3):223-240.	This study focuses more on motivation and how it influences the variables that impact creativity.
3	Kerr, C. & Darso, L. 2008. Case Study: Art and business for European identity: Illustrating meaningful evolutions in business through classical masterpieces of music. Journal of Management & Organisation, 14(5): 588-592.	This study does not discuss creativity skills specifically and does not answer the RQ
4	Deveci, I. & Seikkula-Lein, J. 2016. Finnish Science Teacher Educators' Opinions about the Implementation Process Related to Entrepreneurship Education. *Electronic Journal of Science Education,* 20(4):1-20.	This study focuses on primary to higher education.
5	Mustar, P. 2009.Technology Management Education: Innovation and Entrepreneurship at MINES ParisTech, a Leading French Engineering School. *Academy of Management Learning & Education,* 8(3):418-425.	This study focuses on engineering students and the training model viability more than creativity.
6	Rambe, P., Ndofirepi, T.M. & Dzansi, D. 2017. *Shaping the Entrepreneurship Intentions of Students: The Role of Education and Technological Creativity*, Academic Conferences International Limited, Reading: 537-547.	This study does not look at creativity specifically
7	Lu, J.G., Hafenbrack, A. C., Eastwick, P. W., Wang, D.J., Maddux, Wi. W. & Galinsky, A.D. 2017. Going "out" of the box: Close intercultural friendships and romantic relationships spark creativity, workplace innovation, and entrepreneurship. *Journal of Applied Psychology*, 102(7):1091-1108.	This study does not have a deep focus on enhancing creativity skills, the focus is more on how to promote creativity.
8	James, F, Figaro-Henry, S. & Wickham, L. 2016. *Virtual Spaces Impacting Real Places: Entrepreneurial Innovations in Trinidad and Tobago's Tertiary Education Landscape*, Academic Conferences International Limited, Reading: 320-327.	This study does not specifically discuss enhancing creativity.
9	Ceptureanu, E. G. 2016. How to enhance entrepreneurship in universities. Bucharest university of economic studies case study. *Annals of the University of Oradea, Economic Science Series,* 25(1):881-887.	This study focuses on improving entrepreneurial education at universities in general with no specific focus on creativity.
10	Lloyd-Reason, L. 2013. Entrepreneurship Education: Shifting the Landscape through Embedding Practitioner Experience. Unpublished paper delivered at the Proceedings of the European Conference on Innovation & Entrepreneurship. 69-77.	This study focuses on improving the enterprise education on offer at Higher Education institutes

11	Nevalainen, T. & Maijala, M. 2012. Creative management in TAMK Proacademy. *Development and Learning in Organizations, 26(6):17-19.*	This study focuses on managing a creative organisation.
12	Kirby, D.A. 2004. Entrepreneurship education: can business schools meet the challenge? *Education + Training,* 46(8-9):510-519.	This study focuses on entrepreneurial courses and not specifically on creativity.
13	Gilbert, D.H. 2012. From chalk and talk to walking the walk: Facilitating dynamic learning contexts for entrepreneurship students in fast-tracking innovations. *Education & Training,* 54(2-3):152-166.	This study focused on a collaborative industry engaged learning programme and not creativity.
14	Nurwahidah, L.; Julianto, C. & Zoni S. 2019. *Improving Creativity through social media for Rural Women's Empowerment*, European Alliance for Innovation (EAI), Surabaya.	This study looks at the benefits of social media and confidence building in rural woman and not entrepreneurs.
15	Ferrero, M. A. & Bessière, V. 2017. *When Confidence and Risk-Taking Leads to Innovative Behavior: Evidence from a lab Experiment*, Centar za istrazivanje i razvoj upravljanja d.o.o, Zagreb.	This study focuses why entrepreneurs are more likey to implement a creative idea and not on how they learn to be creative.
16	Rangarajan, R & Lakshmi, R.S. 2013. Creativity and Innovation in Entrepreneurship - A Brief Assessment. *Journal of Management,* 2(4): 55-60.	This study explores how entrepreneurs in Chennai are creative and innovative but not how they learn to be creative.
17	Jusoh, R., Ziyae, B., Asimiran, S. & Kadir, S. A. 2011. Entrepreneur Training Needs Analysis: Implications on The Entrepreneurial Skills Needed for Successful Entrepreneurs. *The International Business & Economics Research Journal,* 10(1): 143-148.	This study looks at the training needs of entrepreneurs in relation to what is on offer within entrepreneurship education in Malaysia. It does not answer the research question.
18	Richardson, C & Henriksen, D. 2018. It's not 'hippies running barefoot through a field of daisies' and other contemplations on creativity with Dr. Jonathan Plucker. *TechTrends,* 62:432-437.	This article is an interview with a leading creativity expert Dr Plucker; however, he does not discuss how entrepreneurs learn creativity despite discussing it generally
19	Zhao, Y. T2012. Flunking innovation and creativity. *The Phi Delta Kappan*, 94(1): 56-61	This study looks at the connection between academic performance and entrepreneurial abilities across different countries.
20	Hoppe, M. 2016. Policy and entrepreneurship education. *Small Business Economics,* 46(1):13-29	This study provides a historical overview of policies and provision of entrepreneurial education in Sweden. It does not answer the research question.
21	Huang, L. & Pearce, J.L. 2015. Managing the Unknowable: The Effectiveness of Early-stage Investor Gut Feel in Entrepreneurial Investment Decisions. *Administrative Science Quarterly,* 60(4):634-670.	This study reviews entrepreneurial investment decision making and does not answer the research question.
22	Villalba, E. 2010. Monitoring Creativity at an Aggregate Level: a proposal for Europe. *European Journal of Education*, Human and Social Capital Development for Innovation and Change 45(2): 314-330.	This study provides an overview of the field of education and creativity and the measurement but does not answer the research question.
23	Weinzimmer, L.G., Eric J. Michel, E.J & Franczak, J.L. 2011. Creativity and Firm-Level Performance: The Mediating Effects of Action Orientation. *Journal of Managerial Issues*, 23(1): 62-82.	This study looks at how an organisation takes or doesn't take action towards developing creativity. It does not answer the research question.
24	Baucus, M.S, Norton, Jr. W.I., Baucus, D.A & Human, S.E. 2008. Fostering Creativity and Innovation without Encouraging Unethical Behavior. *Journal of Business Ethics,* 81 (1): 97-115.	This study focuses on the ethical concerns around fostering creativity and innovation and does not answer the research question

25	Robson, P.J.A, Akuetteh, C.K., Westhead, P. & Wright, M. 2012. Innovative opportunity pursuit, human capital and business ownership experience in an emerging region: evidence from Ghana. *Small Business Economics,* 39 (3): 603-625.	This study focuses on innovation and not creativity.
26	Hoegl, M., K. Praveen Parboteeah, K.P. & Muethel, M. 2012. *Cross-National Differences in Managers' Creativity Promoting Values. MIR: Management International Review*, 52 (4): 565-595.	The focus on this study is detailed and cross-national looking at differences between managers creativity promoting values and does not answer the research question.
27	Fillis, I. & McAuley, A. 2000. Modeling and Measuring Creativity at the Interface. *Journal of Marketing Theory and Practice,* 8 (2): 8-17.	This study looks at creativity from the perspective of the marketing entrepreneurship and does not answer the research question.
28	Byrne, J., Delmar, F., Fayolle, A. & Lamine, W. 2016. Training corporate entrepreneurs: an action learning approach. *Small Business Economics,* 47(2): 479-506.	This study looks at how action learning can develop corporate entrepreneurs but does not look at creativity specifically.
29	Liu, M.C. & Chi, M.C. 2012. Investigating Learner Affective Performance in Web-based Learning by using Entrepreneurship as a Metaphor. *Journal of Educational Technology & Society,* 15(3): 202-213.	This study looks at web-based learning and entrepreneurial traits. It does not answer the research question as the study does not show if web-based learning can enhance creativity.
30	Ghina, A., Simatupang, T. & Gustomo, A. 2017. Entrepreneurship Education within Higher Education Institutions (HEIs), in Renes, S (ed.) Global Voices in Higher Education. Intechopen. 47-55.	The study presents a systematic framework for entrepreneurship education in higher education institutes to develop successful entrepreneurs. It does not focus or share information on how to learn creativity specifically.
31	Newerli-Guz, J. & Palka, A. 2018. *Creating Entrepreneurial Attitudes among Students of the Faculty of Entrepreneurship and Commodity Science in Gdynia Maritime University*, Academic Conferences International Limited, Reading.	The study reviews an entrepreneurship programme to make improvements, however it focuses generally on entrepreneurial skills and not creativity.
32	Kyro, P. 2006. Entrepreneurship education and Finnish society. *TUTWPE.* 152: 63-80.	This study has a focus on entrepreneurial education and not creativity
33	Gangi, J. 2018. Classical Guitar Study as Creativity Training: Potential Benefits for Managers and Entrepreneurs. *Journal of Open Innovation: Technology, Market, and Complexity,* 4(4):45. https://doi.org/10.3390/joitmc4040045	This study proposes learning to play a guitar to build creativity and is a hypothesis. It did not fully answer the research question.
34	Napier, N. K. & Nilsson, M. 2006. The Development of Creative Capabilities in and out of Creative Organizations: Three Case Studies. *Creativity and Innovation Management, 15(3):268-278.*	This study focuses on how creative people within organisations can lead, however it does not answer the research question.
35	Weerasiri, R.A., Zhengang, Z & Perera, T. R. 2012. Innovation and Creativity of Small and Medium Scale Enterprises (SMEs) in Sri Lanka: A Review. *IFRSA Global Business and Economics Review,* 2(1):9-14	This study gives an overview of entrepreneurship om Sri Lanka, however there isn't information on creativity that answers the research question
36	Labégorre, Q. 2016." The rules of the game": how to favor entrepreneurship and creativity in a non-capitalistic economy. Unpublished Master's thesis. Jyväskylä: University of Jyväskylä. http://urn.fi/URN:NBN:fi:jyu-201702021345	The study discusses promoting entrepreneurship and creativity in an economy; however, the creativity development aspect focuses on developing creativity in schools rather than in adults.

37	Deveci, I. & Seikkula-Lein, J.2016. Finnish Science Teacher Educators' Opinions about the Implementation Process Related to Entrepreneurship Education. *Electronic Journal of Science Education*, 20(4):1-20.	This study looks at how Finnish teachers view incorporating entrepreneurship education into their classes. It does not answer the research question.
38	Broekhuis, H. & Van Weerden, L. 2009. How to manage enterprise? From creation to rational continuation. HAN Business Publications, 2:19-34. http://www.han.nl/start/graduate-school/onderzoek/lectoraten	This study highlights the importance of entrepreneurship and developing entrepreneurs but does not look at creativity specifically.
39	Popescu, M. & Crenicean, L. C. 2013. Considerations Regarding the Size of Innovative Organization in The Knowledge Economy. *Romanian Economic Business Review, Romanian-American University*, 8(4.1): 402-409.	The study focuses on high level innovation and not creativity.
40	Dmukauskaite, E. & V Jurėnienė, V. 2019. Business development model in a creative hub. I*nternational Journal on Global Business Management and Research,* 8 (1): 21-30.	This study provides interesting data about how creative hubs are growing and role it can play, however the focus is on creative artists more that entrepreneurs.
41	Rosca, I.G. & Todoroi, D. Creativity in conscience society. *The AMFITEATRU Economic journal,* 13: 599-619.	This study gives an overview of creativity in relation to society and although the entrepreneur is discussed it does not look at how it is learnt by entrepreneurs.