

**AN INVESTIGATION OF TEACHERS' INSTRUCTIONAL DECISIONS ON THE
DEVELOPMENT OF LEARNERS' ENTREPRENEURIAL SKILLS IN AGRICULTURAL
SCIENCES IN THE LIMPOPO PROVINCE, SOUTH AFRICA: A CASE STUDY OF
THE SEKHUKHUNE DISTRICT**

by

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ABSTRACT

The development of learners' entrepreneurial skills in Agricultural Sciences remains as one of the crucial aspects in the midst of the high unemployment rate in South Africa. Development of these skills depends on the capacity of teachers' instructional decisions. These skills play a significant role in the agricultural sector as this sector experiences changes in the production and marketing of agricultural products. These significant changes demand relevant skills, such as negotiation skills, critical thinking skills and creativity skills, in order to support these changes and also for school leavers to remain relevant in the 21st century.

Therefore, it is against this background that the study sought to investigate teachers' instructional decisions on the development of learners' entrepreneurial skills in an Agricultural Sciences classroom. The social reconstructionism theory was used as a framework to guide how teaching and learning should be structured in order to develop agricultural entrepreneurial skills. The study was submersed in the exploratory mixed method approach. Purposive and systematic sampling were used to select 4 teachers and 100 Grade 12 Agricultural Sciences learners from 4 local secondary schools in the Sekhukhune District of Limpopo, from whom the data were collected through the use of observational inventory and questionnaires. Interpretative analysis and a multinomial logistic regression model were used to analyse the collected data.

The study found that Agricultural Sciences lessons were dominated by traditional methods for both teaching and assessment because teaching is geared towards passing control tests and examinations rather than towards the development of skills. Furthermore, a lack of professional knowledge was also visible, where lessons were not properly planned and the teachers' inability to relate the lesson to reality was evident. It was also observed from the results of the multinomial logistic regression that other factors that influence the development of agricultural entrepreneurial skills include, among others, the type of questions asked, the learning environment and the number of practical lessons. The study further found that 68% of learners prefers to learn through interact methods other than the traditional methods. The results further indicated that learners have positive attitudes towards learning agricultural entrepreneurship and they also use

some this knowledge in their daily activities. Therefore, as a result of this study, the researcher recommends that the Department of Basic Education, in conjunction with institutions of higher learning, provide regular workshops or training opportunities for Agricultural Sciences teachers so that they become relevant practitioners of developing learners' agricultural entrepreneurial skills. The workshops should focus mainly on planning a lesson for a vocational subject like Agricultural Sciences, and emphasis should be placed on the type of resources relevant to the teaching of Agricultural Sciences.

Keywords: agricultural sciences, entrepreneurial skills, teaching methods, teachers and learners

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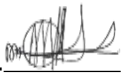
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DECLARATION

I, Mmapake Florence Masha declare that thesis hereby submitted by me to the University of Limpopo for partial fulfilment of Doctor of Philosophy in Science Education has not previously been submitted by me for a degree at this or any other university. This is my own work in design and in execution, and that all material contained therein has been duly acknowledged by means of complete references.



--18/03/2021-----

Signature

Date

DEDICATION

I dedicate this study to my daughter Karabo Masha; my siblings Maleke Masha, Neo Masha and Kwena Masha; and to my nieces Bonolo Masha and Lethabo Masha. This dedication is also extended to my sister in-law, Rina Masha.

Contents

ABSTRACT	ii
DECLARATION	v
LIST OF TABLES	x
LIST OF FIGURES	xi
LIST OF ABBREVIATIONS	xii
CHAPTER ONE: BACKGROUND	1
1.0 Introduction	1
1.1 Background to the study	5
1.2 The problem statement	13
1.3 The rationale of the study	14
1.4 Research aim and objectives	15
1.4.1 The research objectives	15
1.4.2 The research questions	15
1.5 Research design	16
1.6 The significance of the study	17
1.7 Limitations of the study	18
1.8 Organisation of the thesis	18
My personal life history and experience with agricultural science	19
1.9 Summary of the chapter	20
CHAPTER TWO: LITERATURE REVIEW	21
2.0 Introduction	21
2.1 Countries that advocate entrepreneurship	21
2.2 Entrepreneurship in the context of high unemployment	24
2.3 Societal problems because of unemployment	27
2.4 Benefits of entrepreneurial skills	28
2.5 The effect of instructional decisions on entrepreneurial skills	29
2.5.1 Teaching entrepreneurial skills in schools	30
2.5.2 Learning entrepreneurial skills from constructivist perspectives	34
2.5.3 Assessment in the Agricultural Sciences classroom	35
2.5.4 Teaching entrepreneurial skills in the context of South Africa	39
2.5.5 Developing entrepreneurial skills in Agricultural Sciences	47
2.5.6 Factors that affect the development of entrepreneurial skills	52

2.6 Role of theory in the study.....	56
2.6.1 Teaching, learning and assessing entrepreneurial skills from the social reconstructionist perspective.....	61
2.6.2 The rationale for using social reconstructionist	71
2.6.3 The shortfall of social reconstructionist.....	72
2.7 Chapter summary.....	72
CHAPTER THREE: RESEARCH METHODOLOGY	74
3. Introduction.....	74
3.1 Research paradigm.....	74
3.2 Research design.....	76
3.2.1 Sequential exploratory design.....	76
3.3 The rationale for using mixed method.....	78
3.4 Study area	79
3.5 Sampling.....	81
3.5.1 Population and sample size	84
3.6 Data collection	85
3.6.1 Non-participant observation	88
3.6.2 Likert scale questionnaire	91
3.6.3 Semi-structured questionnaire.....	93
3.6.4 Document analysis	93
3.7 Data analysis	95
3.7.1 Interpretive analysis.....	95
3.7.2 The multinomial logistic regression	96
3.8 Quality criteria.....	98
3.8.1 Quality criteria for quantitative approach.....	98
3.8.2 Quality criteria for qualitative approach.....	99
3.9 Ethical considerations	99
3.10 Chapter summary.....	100
4.0 Introduction	101
4.1 How are learners taught entrepreneurial skills?.....	101
4.2 Classroom observation on the teaching of agricultural entrepreneurship	102
4.3 Assessment activities: How are learners assessed in Agricultural Sciences classroom?	161
4.3.1 Learners' activities during lessons.....	161

4.3.2 Description of the activities	163
4.4 Learners views and attitudes on learning agricultural entrepreneurship from the questionnaire.....	164
4.5 The extent to which learners used entrepreneurial skills in their daily lives.....	176
4.6 Summary of the Chapter.....	179
CHAPTER FIVE: DISCUSSION OF FINDINGS IN RELATION TO THE THEORETICAL FRAMEWORK.....	180
5.0 Introduction	180
5.1 How learners are taught entrepreneurial skills in the Agricultural Sciences classroom	180
5.1.1 Teaching methods	180
5.1.2 The teaching and learning process.....	188
5.1.3 Relating a lesson to reality	191
5.1.4 Learning engagement and participation.....	192
5.1.5 Teachers instructional decisions and learners' views on the preferred methods.....	193
5.2 The determination of how learners are assessed in Agricultural Sciences	195
5.3 Factors that affect the development of entrepreneurial skills	198
5.4 Attitudes and views of learners towards agricultural entrepreneurship.....	205
5.5 The extent to which learners use the entrepreneurial skills for community development.....	208
5.7 Summary of the chapter	215
CHAPTER SIX: IMPLICATIONS OF THE FINDINGS, RECOMMENDATIONS AND CONCLUSION.....	217
6.0 Introduction	217
6.1 Implications of the findings.....	217
6.2 Conclusion	219
6.3 Recommendations	221
REFERENCES	223
ANNEXURES	267
OTHER APPENDICES	298

LIST OF TABLES

Table 3.1: Summary of the methodology used in the study.....	94
Table 3.2: Description of the variables.....	96
Table 4.1: Brief summary on the teaching strategies emerged from observed lessons.	161
Table 4.2: Learners attitudes towards learning agricultural entrepreneurship.....	168
Table 4.3: Learners views towards learning agricultural entrepreneurship.....	170
Table 4.4: Learners' attitudes toward learning about agricultural entrepreneurship through 5 point Likert scale.....	172
Table 4.5: Descriptive analysis on the extent to which learners use entrepreneurial skills in their lives.....	176
Table 5.1: Presentation of multinomial results on factors that affect the development of entrepreneurial skills.....	199

LIST OF FIGURES

Figure 1: Study area.....	79
Figure 2: Learners preferred method of learning the four streams of agricultural sciences.....	165
Figure 3: Factors that motivates learners to start their own business.....	166
Figure 4: Challenges that prevent unemployed individuals to their own business.....	167
Figure 5: Solution to unemployment.....	168
Figure 6: Preferred methods for learning agricultural economics.....	194

LIST OF ABBREVIATIONS

CAPS:	Curriculum and Assessment Policy Statement
DBE:	Department of Basic Education
KAB:	Know About Business
ECP:	Entrepreneurial Curriculum Programme
OECD:	Organisation for Economic Co-operation and Development
MENA:	Middle East and North Africa

CHAPTER ONE: BACKGROUND

1.0 Introduction

Unlike a few decades ago, the role of agriculture is no longer limited to the production of food and fibre, rather agriculture plays a significant role in the development of rural communities. The agricultural sector has experienced a dramatic change in the use of technology and in the running of the business on a day to day basis. As a result of these recent changes, farmers need to be equipped with the relevant skills in order for them to survive in the current business environment. These changes lead to many farmers requesting assistance from government officials, such as support from extension officers. The type of assistance required includes skills on how to manage a farm efficiently in order to maximise profit (Vesala & Jarkko, 2008). These skills can be acquired through proper training in schools, and through seminars or prolonged workshops, while learners and trained community members can further transfer the skills to local farmers. As such, helping learners to acquire entrepreneurial skills in schools can make a significant difference to the development of rural communities (Rudmann, 2008).

The teaching of entrepreneurial skills requires more than the traditional teaching model. The process of acquiring entrepreneurial skills may start with, firstly, providing motivation to learners and, secondly, creating an enabling learning environment where learners are exposed to suitable business scenarios (Sousa & Almeida, 2014). In addition, Rudmann and Jackel (2008) believe that the acquisition of entrepreneurial skills can best be attained through the employment of experiential learning theory because the theory encourages learners to learn by doing. Experiential learning may also involve learners learning in groups, where there will be an opportunity to exchange ideas and they will learn to work together. The theory situates the learning process in an authentic social environment, which motivates learners intrinsically, since they can easily relate to current situations in context. This type of experience assists learners to solve the problems of a society (Stuetzer, Obschonka, Davidsson & Schmitt-Rodermund, 2013). Teaching that incorporates the experiential learning theory and the social reconstruction theory involves the following teaching and learning activities:

- Learning is regarded as active endeavour;

- Learners take full responsibility for their learning. Learning, therefore, becomes a self-directed process;
- Learning is about constructing new knowledge;
- Learning is specific to a particular context. Learners should be taught what they can easily relate to;
- Learning is social in nature. Issues that affect learners should be included in the curriculum; and,
- The classroom environment should contain teaching aids, such as audio-visuals and posters (Rudmann & Jackel, 2008).

Roberts (2006) maintained that experiential learning is a hands-on theory and is cyclical in nature. Experiential learning requires that the initial process should focus on the learners doing the activity, which is followed by interaction with the subject matter. Experiential learning further involves reflection on the learning experience and the development of generalisations about the learning. Lastly, these generalisations about the experience must be tested because experiential learning theory requires active participation by both the teacher and the learners during the process of the teaching and learning of farm operations. The agricultural learning process requires that learners be hands-on, which can be accomplished by permitting learners to go through learnerships and internships after the completion of their schooling (Morgan, Marsden, Miele & Morley, 2010). Experiential learning aligns with constructivism in that learners are permitted to construct their own meaning from their learning experiences. This theory also coincides with constructivism in that it advocates for sufficient support of the learners and that feedback be given to learners in order to encourage them to want to learn more. Inquiry-based learning, simulation and problem-solving are among the important activities that need to be implemented in the Agricultural Sciences (Garalis, & Strazdiene, 2007).

Sousa and Almeida (2014) noted challenges that are likely to occur when developing entrepreneurial skills. These challenges include, among others, poor training on being entrepreneurship, a lack of proper entrepreneurial learning activities and a lack of the skills needed in a business, which are difficult to acquire through formal education. Abilities, such as risk-taking, are difficult to foster in people (learners). Other

characteristics of an entrepreneur include the ability to learn from failure; the ability to create new and innovative ideas; persistence when faced with challenges; and, being able to adapt to changing circumstances. In addition, the incorporation of experiential learning theory into the teaching of Agricultural Sciences is an effective way of developing entrepreneurial skills because it involves exposing learners to real business problems (United Kingdom Department for Business Innovation and Skills, 2015).

Entrepreneurial skills are a group of skills which are needed by individuals who intend to realise a business opportunity. These are the skills that enable one to start and develop a business. The development of such skills in a classroom requires instruction that is different from a normal everyday lesson because the acquisition of these skills is about enabling learners to create something new. There should be a link between instruction and outcomes of learners. That is the instructional strategies should be aligned with an outcome and also that the tasks used in the classroom should enable learners to develop these skills. When a learner is able to perform a particular task credibly, a skill is acquired. Acquisition of entrepreneurial skills in an Agricultural Sciences classroom can be nurtured by the application of the social reconstruction theory (Gielen, Hoeve, & Nieuwenhuis, 2003).

Morshedi-Estahbanaty (2014) maintained that, in some instances, learning new skills requires one to follow a set communicable of instructions. The teaching of skills affords learners the opportunity to follow guiding principles. The experiences that learners gain through the process of teaching and learning affords them an opportunity to fuse together all that is learned in order to perform specific tasks. When learners are busy with activities given in a classroom, they are more likely to develop or learn behaviours which are vital in entrepreneurship because, for Agricultural Sciences learners to acquire entrepreneurial skills, a set of behaviours needs to be developed by the learners. The acquisition of skills requires that learners are exposed to particular knowledge and that, during the process of exposure, learners should be actively engaged. Active engagement will assist learners to acquire the skills required to run and manage a farm business. The social reconstruction theory is based on the fact that learners should acquire skills that will help society or community at large (Tautila, 2010).

Rae (2006) notes that teachers and learners need to be emotionally involved to the process of learning in order for skills to be developed. It is crucial that the teacher should possess entrepreneurial skills in order to transfer these skills to the learners through instruction. Having teachers with these skills will not only help learners to acquire the skills, it will also increase their employability at end of the programme. The teacher who have to teach agricultural sciences must be well versed in what it means to be in a farming business. The expectation is that teachers who have teach Agricultural Sciences should possess administrative skills, time management skills and financial skills, as well as sales and marketing skills. Having these skills will help the teacher to possess the relevant experience and to deliver lessons with appropriate examples, based on running a farm business in the South African context.

There are a set of pedagogical strategies that are important in developing entrepreneurial skills in Agricultural Sciences education. These teaching methods include, among others, cooperative learning, classroom assessment, questioning techniques, the discussion method, conference style environments and written assignments. The social reconstruction theory alludes to the fact that these instructional strategies are more likely to develop learners' entrepreneurial skills and other skills, in general, because these methods allow for active participation by learners in their learning, and learners are, therefore, more likely to develop a hierarchy of behaviours, attitudes and interests in whatever they are learning (Elmuti, Khoury, & Omran, 2012).

The most important element in the process of acquiring entrepreneurial skills is to understand what entrepreneurship is. Understanding what entrepreneurship is assists in tabulating the process of developing an entrepreneur and gives hints on the type of learning activities learners need to be exposed to. The set of characteristics that make an entrepreneur include risk taking, confidence, hard-work, listening and negotiating (Cowardrey, 2012).

A clear understanding of how learners acquire entrepreneurial skills in a classroom setup would help both teachers and learners to improve their respective approaches to the learning. Teachers should be equipped with what it means to be a farm business entrepreneur, since this will help them to deliver the lessons with confidence and passion.

The confidence and passion of Agricultural Sciences teachers will stimulate learners into wanting to learn more about farm business. Teachers need to be entrepreneurial in nature in order to transfer the necessary skills to the learners in the classroom (Politis, 2005).

Farm entrepreneurship is defined as the establishment of an innovative economic entity for the purpose of gaining economic growth under conditions of risk and uncertainty (Mc Elwee, 2006). De Wolf and Schoorlerrmmer (2008) define agricultural entrepreneurship as the process of finding ways and means to create a profitable farm business in an uncertain environment. Entrepreneurial skills are defined as sets of competences needed to undertake the business activities on a farm. On the hand, Rudmann, Vesala and Rocket (2008) define agricultural entrepreneurship as the ability to survive changes in the business environment both in the present and the future. Hence these definitions guide the teachers and other stakeholders interested in developing learners' entrepreneurial skills to gain knowledge on what content should be emphasised in the process of teaching and learning.

In addition, there is a debate among scholars on the definition of what entrepreneurship education is. This matter is crucial because a clear definition will provide insights into how a programme should be implemented to ensure the development of entrepreneurial skills in learners. Isaacs, Visser, Friedrich, and Brijlal, (2007) define entrepreneurship education as the intervention through which teachers instil entrepreneurial skills and qualities that allow the learners to acquire a better understanding about the dynamics of running a business. On the other hand, Albert, Sclascia and Poli, (2004) define entrepreneurship education as a curriculum that is for conveying entrepreneurial competencies.

1.1 Background to the study

Agriculture in the Limpopo Province is one of the three pillars of economic development in the province. The province is an agricultural region that mainly specialises in the production of tea, cereal, vegetables, fruits and livestock. The production of these products from both commercial farming and small holdings contributes 17.5% and 25%, respectively, towards employment of the economically active population (Limpopo

Department of Agriculture [LDA], 2012). As one of the subjects in the educational curriculum of South Africa, Agricultural Sciences equips learners with the knowledge, skills and values needed for employment and participation in the agricultural sector of the country. The subject is meant to develop learners as farmers with the necessary entrepreneurial skills for farming and also to prepare learners for other agricultural-related careers (Department of Basic Education [DBE], 2011). The preparation of learners for the agricultural sector has been undermined by a declining pass rate in Agricultural Sciences over the past four years (Department of Basic Education [DBE], 2017).

The Department of Basic Education [DBE] NSC Diagnostic Report (2017) on Agricultural Sciences Paper 2, further indicates that learners experience difficulties with understanding the requirements of the agricultural entrepreneurship questions. Some of the questions, which require learners to suggest, justify and comment, was a problem for Agricultural Sciences learners across the country. This indicates that learners are not skilled in applying the knowledge learned in the classroom. In addition, the problems highlighted above have a negative bearing on the development of entrepreneurial skills in learners since the manner in which Agricultural Sciences content is packaged does provide the basis for the inculcation of an entrepreneurship culture in the learners. Bringing real-life situations into the classroom is crucial to enhancing deep learning, which is important in the development of entrepreneurial skills. Consequently, this raises a concern regarding the teaching methods and the assessment practices employed in the Agricultural Sciences classroom.

Miller and Rose (2008) noted that the need to emphasise self-improvement in learners is more visible in the current education policy and practices in society of Finnish. This is attributable to the fact that, for students to take full responsibility for their economic well-being, they need to be entrepreneurial, which can be achieved by placing emphasis on the topics of entrepreneurship in schools. However, this activity is often inhibited by the way in which this subject is presented and assessed in the schools (Organisation for Economic Co-operation & Development [OECD], 2015a). The discourse preparing learners for self-employment is heavily dependent on pedagogy, curriculum and the daily interaction between learners and teachers in schools (Dejaeghere, 2013). Currently,

South Africa is experiencing a high unemployment rate, with many people being retrenched because of the poor performance of the economy (Statistics South Africa [StatsSA], 2016). Agricultural Sciences as a taught subject in the schools can help to improve some of these economic challenges. The improved learning of the subject is particularly relevant to young people who may end up engaging in criminal activities as a result of unemployment (Dejaeghere, 2013). Mahadea, Ramroop and Zewotir (2011) emphasises the fact that South African schools are vital for instilling the entrepreneurial skills, attitudes and knowledge learners require. However, the above studies are silent on how instructional decisions implemented in the classroom influence the development of entrepreneurial skills, especially in Agricultural Sciences.

Other studies have focused on developing entrepreneurial skills in the context of higher education and have highlighted the role of the teacher knowledge and pedagogy as core elements in fostering entrepreneurial skills in students. Carcamo-Solis, Arroyo-Lopez, Alvarez-Castano and Garcia-Lopez (2017) highlighted the need for developing entrepreneurship in primary schools in Mexico, while Uka (2015) examined the effectiveness of mathematics in developing entrepreneurial skills in Nigeria. The literature shows that there is a need to develop entrepreneurial skills in students, hence, this study focuses on the development of entrepreneurship skills that could benefit students and help to combat high unemployment in developing countries. The obstacles to effective agricultural entrepreneurship include inappropriate content and educational planning; a lack of Agricultural Sciences books; unsuitable selection resource and training methods; and, poor assessment methods (Kharyn, Yaghoubi & Yazdanpanah, 2011).

Bidabadi, Isfahani, Rouhollahi and Khalili (2016) indicate that, for learning to occur in a classroom, teachers should employ teaching methods that stimulate learners to question their prior knowledge. Teaching should stimulate learners to see themselves as agents of change. Aligned to these teaching methods are assessment methods, such as peer-assessment and self-assessment, which motivate learners to take charge of their learning. This involves learning activities that strive for the integration of skills and knowledge from different disciplines (DBE, 2017). Most studies that have focused on student learning, in general, have demonstrated no link with the development of

entrepreneurship skills in students with instructional decisions. This study singles out the challenges faced in the teaching of agricultural entrepreneurship. However, the studies above could have added more value if the effect of instructional decisions on the development of learners' entrepreneurial skills were investigated.

Moreover, Isaacs, Visser, Friedrich and Brijlal (2007) allude to the fact that entrepreneurial education and training at school level has a significant effect on economic growth. Although the programme is implemented in the South African curriculum from Grade R – Grade 12, there are many problems that derail the successful implementation of the curriculum. These challenges include a lack of sufficient resources and poorly trained teachers. Despite the emphasis on entrepreneurship in the outcomes-based education (OBE) curriculum, it was discovered that 60% of the schools were not exposing learners to the entrepreneurship training programme.

Furthermore, Leffler and Svedberg (2005) noted that the introduction of entrepreneurship education in Sweden came as a result of youth unemployment. The approach of launching enterprises in schools was seen as a strategy for a new direction towards the betterment of youth. However, the challenge facing the introduction of the enterprise school was the lack of entrepreneurship knowledge of teachers. The lack of entrepreneurial knowledge of teachers leads to a distortion of the development of entrepreneurial competencies in learners.

Kourisky (1995) maintains that schools serve three important purposes: the need to feed learners with entrepreneurship information; the need to provide learners with skills for job creation and not for job seeking; and, the promotion of economic growth through the creation of new companies. The study discovered that 5 out of 10 high school learners showed an interest in starting a business, however, most of them lacked knowledge of entrepreneurship education and an understanding of entrepreneurship. Che Mat, Mistima Maat and Mohd (2015) noted that technology students have high attitudes for entrepreneurship. This implies that students wish to engage in business in the future.

Because the level of employability of senior high school learners is extremely low in the context of the South African economy, there are no guaranteed jobs for those who have

matriculated. Statistics show that only 5 to 7% of matriculants successfully found jobs in the formal sector in 2006. This situation calls for urgent intervention in order to address the level of unemployment as a result of the lack of entrepreneurial skills and orientation to create new businesses in the economy, which is high among learners leaving schools after 12 years. Another factor that leads to unemployment is the low morale of teachers who do not prepare the learners to be job creators. There is a need to change the mode of delivery of subjects in the classroom. There should be a pedagogical shift from teacher-centeredness to learner-centeredness and activity-based learning in order to increase the level of employability of school leavers (Horn, 2006).

Currently, the education system in South Africa fails to equip learners with the necessary skills needed in the job market. It is important that our schools produce learners that are suitably educated and skilled in order to benefit the job market and society at large, by creating more jobs. In addition, Jones and Iredale (2006) assert that entrepreneurial teaching requires a form of teaching that takes learners through the process, rather than dealing with the content only. Enterprise education demands different pedagogical methods in order to change the educational experiences of learners.

There is a need for different pedagogies because activities in the workplace have shifted from the primary activities of agriculture and mining sectors to the secondary and tertiary sectors. These secondary and tertiary sectors require the use of technology, which can be complex to learners who are not well trained during their schooling years. There is no vacuum between the education and the job market, therefore, educational reforms can help to close the gap between the education system and the job market (Nieuwenhuis, 2002).

Leffler (2009) alludes to the fact that there are specific characteristics or attributes an entrepreneurship teacher should have in order to successfully implement the entire curriculum. These attributes include teachers who break the ordinary patterns; a teacher who is an entrepreneur and an enthusiast; and, a teacher who does away with formal teaching but who creates a business world in the classroom. The teacher should act as a guide and not an expert. In addition, an entrepreneurial learner is one who can freely come up with their own ideas and turn them into concrete actions. These attributes are

important in the implementation of the curriculum because there seems to be a lack of strategies in the various schools of the country in order to achieve the curriculum goals (Yaghoubi, 2010).

Moreover, Onstenk (2003) notes that entrepreneurship is a highly discussed topic in economic and labour market discourses because there seems to be lack of entrepreneurial spirit among the members of society. It is noted that the inculcation of an entrepreneurial spirit is not seen as an important attribute, the focus is on the key skills that are applicable to entrepreneurship. However, in tertiary there seems to be a trait where students are exposed to the learning of enterprising activities on mini enterprises. This is more likely to bring positive activities to students who intend starting their business in the future. In addition, Draylott and Rae (2011) note that entrepreneurship education places emphasis on the delivery of soft skills. However, Kirby (2004) maintains that the greatest threat to the development of entrepreneurial skills is the use of the traditional teaching approaches because they stultify, rather than develop, the learners. This challenge can be resolved by changing the process of learning and also by changing the content. This calls for a pedagogical shift from teaching about entrepreneurship to teaching for entrepreneurship. This shift will allow the development of right-brain entrepreneurial capabilities and left-brain analytical skills (Spais, 2010).

Furthermore, Welshn, Tullar and Nemat (2016) noted that in some instances learners who are from the classroom often do not get the same attributes, even though they go through the same content and activities. The study indicated that the process of learning entrepreneurship education often increases the entrepreneurial intentions, attitudes and motives. It is also important to note that the grades of the students do not correlate with the entrepreneurial success. This poses questions about whether the methods of assessment used are relevant to the assessment of entrepreneurial capabilities.

Moreover, Gibb (2007) highlighted that, for students to be fully fledged entrepreneurs, they should demonstrate entrepreneurial behaviours, attributes and skills. These three components contain more than one characteristic of entrepreneurial behaviour, involving seeing things through; opportunity seeking and grasping; as well as entrepreneurial attributes, including perseverance, creating and entrepreneurial skills, such as strategic

thinking, negotiating and selling. In addition, San-Tan and Ng (2006) discovered that problems that are related to entrepreneurial situations within the classroom environment contribute to developing the capacity and appreciation of the entrepreneur. This stems from the fact that problem-based learning promotes active learning. Furthermore, it has been found that learners learn better when exposed to real-life situations, which enables them to become critical thinkers as real-life situations stimulate learners to think broadly, not only on issues relating to the running of a business, but also in developing individual interpersonal skills. The type of practice also allows them to do both theory and practical work. However, an important question remains about whether the problem modelled in the real-life situation mirrors the real-life situation in business (Mars, & Torres, 2014).

Creation of real-life situations is in line with the aim of entrepreneurial education which is to instil entrepreneurial skills and knowledge. These types of classroom are based more on developing enterprising essence and the inculcation of self-reliance through the effective learning process. Learning entrepreneurship skills involves motivating participants to find and explore concepts in a case study presented from different viewpoints. Learning entrepreneurship skills involves greater emphasis on experience-based learning and also learning by doing (Garavan & Cinneide, 1994). In addition, Kuttim, Kallaste, Vanesaar and Kiis (2014) allude to the fact that entrepreneurship is one of the development goals set by the politicians, students and higher education institutions because the curriculum tends to have the capacity to motivate students to want to enrol in entrepreneurial activities. The packaged content seems to be relevant to what needs to be achieved, however, the methods used do not necessarily provide learners with entrepreneurial intentions.

on the contrary Kuttim et al. (2014) and Maresch, Harms, Kailer and Wimmer-Wurm (2016) indicate that entrepreneurship education does not always lead to entrepreneurial intentions because of the different contexts in which the curriculum is delivered. In addition, Barba-Sanchez and Antienza-Sahuquillo (2018) maintain that, for students to have the intentions to be entrepreneurs, they must be trained to be independent. Schools need to create an environment in which learners undertake business projects with entrepreneurs to encourage them to develop an interest in business and the confidence

to carry out projects on their own. Teachers should also make use of workshops to develop business plans and other entrepreneurial learning activities.

Moreover, Lackeus (2014) notes that, when students participate in more interactions with the outside world, they tend to demonstrate increased entrepreneurial self-efficacy. In addition, student exposure to uncertainty and ambiguity in the learning environment prepare them to tolerate uncertainty. This practice of exposing learners to real-life situation also assists them to acquire increased self-sight. Self-sight also improves their ability to communicate and envision vague ideas. It further capacitates learners to obtain resource acquisition skills and marketing skills. Narian (2003) noted that the role of government in the promotion of entrepreneurship is crucial because schools in South Africa lack necessary resources to execute teaching and learning activities. For learners and teachers to effectively achieve the objectives of entrepreneurship education, computer facilities should be provided so that learners can, for example, construct business plans; libraries should be provided so that learners can have access to information; and training of entrepreneurship teachers should be provided for them to be able to deliver the curriculum effectively and efficiently.

Malindi (2014) noted that entrepreneurial programmes used to develop entrepreneurial skills have an effect on entrepreneurial behaviour. The use of practical work and experiential learning has an effect on entrepreneurial behaviour and intentions. It was also discovered that there is a positive relationship between entrepreneurial intent and entrepreneurship education. In addition, Fulgence (2015) notes that, in Tanzania, all the schools have an entrepreneurship module, however, the educators use traditional methods of teaching and assessing, which remain a barrier to the development of entrepreneurial skills. Other prominent challenges to the implementation of this curriculum involves the lack of textbooks and crowded classrooms. A lack of teaching resources, such as textbooks and overcrowding of classrooms, diminish opportunities for the creation of active classrooms, as it is difficult to facilitate learning in such conditions. It is also crucial that the curriculum looks at the mind-set and behaviour of learners towards entrepreneurship, since a lack of resources might lead to learners not having the right mind-set towards entrepreneurship. This study outlines important aspects that teachers

should take into consideration when teaching learners entrepreneurial skills in schools, because education plays a vital role in inculcating the appropriate attitudes and perceptions into learners, which calls for the extensive training of teachers, irrespective of the disciplines they are engaged in.

1.2 The problem statement

One of the aims of the Curriculum Assessment Policy Statement (CAPS) for Agricultural Sciences requires learners to be trained to further their studies and to equip them with entrepreneurial skills (DBE, 2011). Agricultural Sciences teachers present Agricultural Sciences lessons using different teaching methods, such as cooperative learning, the use of case studies, conference style and assessment practices which, to some extent, are questionable approaches in terms of their relevance to the subject (Adeyemo, 2009). For learners to acquire entrepreneurial skills in the Agricultural Sciences classroom, they need to be exposed to a learning environment where teaching methods such as problem solving and group discussions, as well as activity-based and inquiry techniques are employed. The use of these methods is important in developing the communication, negotiation, problem-solving and research skills of the learners, skills which are vital in entrepreneurship. In their daily lessons, learners should be exposed to assessment tasks that require them to identify problems and provide solutions to these problems, as stipulated in the curriculum documents (Uka, 2015).

The National Senior Certificate Diagnostic Report Part 1 (2017) notes with concern the declining pass rate in Agricultural Sciences, especially in the section on agricultural economics, which embraces the development of entrepreneurial skills. Problems highlighted in the report include the inability of learners to answer data response questions, follow-up questions requiring justification, misinterpretation of questions and a lack of knowledge in subject terminology (DBE, 2017). This situation raises concerns about the assessment practices and teaching methods employed in Agricultural Sciences classrooms. The application of inappropriate teaching methods and assessment practices in Agricultural Sciences classrooms leads to learners not acquiring the entrepreneurial skills (Conroy, Deborah & Johnson, 1999). These studies indicate that teaching methods are fundamental to developing the knowledge and skills of learners. A

lack of practical training, field trips, teaching skills and a teacher-centred approach are the dominant factors that lead to poor performance in Agricultural Sciences (Mavhungu, 2004). This study further prompts the assumption that poor assessment practices may also be a contributing factor to the poor pass rate. Therefore, this study investigated how teachers' instructional decisions influence the development of learners' entrepreneurial skills in the Agricultural Sciences classroom.

1.3 The rationale of the study

The unemployment rate in South Africa is alarming and the economic environment is not conducive to the creation of more employment opportunities. However, the overall environment in South Africa is favourable to job creators. This calls for intervention on government, on issues such as imposing tough economic reforms, in order to revive the economic status of the country. Interventions to revive the economic performance in South Africa can start in the country's schools. If learners are trained well from early childhood on how to be self-reliant, they are more likely to be entrepreneurial throughout their lives. For learners to be entrepreneurial may also depend on the delivery of lessons in the schools. The manner in which learners are trained is most likely to influence the end product. The country needs learners who are entrepreneurial rather than job seekers. It is important that schools play their role in the development of society. The curriculum of Agricultural Sciences is apparently tilted towards producing learners who can become farmers. This study sought to establish how Agricultural Sciences learners are prepared to be farmers in the future, which is important because the manner in which learners are trained will influence the skills they acquire. The study will help in understanding how Agricultural Science is taught and assessed; and will document the views of learners about the learning of agricultural entrepreneurship. This knowledge is also important for policymakers and stakeholders who have an interest in improving the status of education for the betterment of the society. In addition, the identification of the factors that contributes to development of entrepreneurial skills will help in understanding the implications on teaching and learning. The information generated from this study will specifically create awareness among the policymakers, as well as in the society as a whole. The findings of this study may prompt the Department of Basic Education to train

teachers on how best to present Agricultural Sciences in order for the knowledge and skills obtained by the learners to be useful in their post-school lives. This study will further recommend improvements to teacher training. Therefore, it is important to investigate the situational analysis of how schools teach Agricultural Sciences in the Limpopo Province of South Africa. Agricultural Sciences is one of the subjects that can assist in increasing the number of entrepreneurs in the country which, in turn, can contribute significantly to the economic growth of the country.

1.4 Research aim and objectives

The overall aim of the study was to investigate the influence of teachers' instructional decisions on the development of learners' entrepreneurial skills in the Agricultural Sciences classroom.

1.4.1 The research objectives

- To establish how learners are taught entrepreneurial skills in Agricultural Sciences classrooms;
- To determine how learners are assessed in Agricultural Sciences classrooms;
- To describe the views and attitudes of learners towards learning agricultural entrepreneurship;
- To identify other factors that contribute to the development of learners' entrepreneurial skills; and,
- To determine the extent to which learners use the entrepreneurial skills in their daily activities.

1.4.2 The research questions

- How are learners taught entrepreneurial skills in agricultural sciences classroom?
- How are learners assessed in agricultural science classroom?
- What are the views and attitudes of learners towards learning agricultural entrepreneurship?

- What are the other factors that contribute to the development of entrepreneurial skills?
- To what extent do learners use the entrepreneurial skills in their daily activities?

1.5 Research design

The social reconstructionist theory is based on addressing social questions and inquiry to develop the society's wellbeing. The restructuring of a society is the primary goal of the schooling programme. The classroom is used as a place to discuss the social objectives. The curriculum is based on the problems that disturb the wellbeing of the society and this then develops the learner into becoming familiar with the problems experienced by a society. The knowledge on this societal problem assists the learner to better understand the dynamics of living and surviving in society and, in the process, the learners can suggest possible solutions to the problems identified in their social groups. These meetings of social groups assist learners to develop values and attitudes. A classroom of this nature develops learners and leads them to participate in shaping the society at large (Parsons, 1986). The role of the learner in this type of classroom is to be an active participant. Learners are given an opportunity to invent and reinvent solutions to issues around them, for the betterment of society (Mwanzia & Mwangi, 2016).

The research approach used in this study is a mixed method approach, where both quantitative and qualitative approaches are used sequentially. The approach employed starts from the qualitative method and moves to the quantitative method. Morse and Cheek (2014) highlight the notion that the mixed method approach is used when one approach is not sufficient to answer all the research questions posed in the study. This type of research design provides a deeper understanding of the core elements of the study. The study adopted QUAL-Quan mixed method sampling, where purposive sampling and systematic sampling were used sequentially. The sample consisted of Grade 12 Agricultural Sciences learners and their teachers in the Sekhukhune District of the Limpopo Province. The data were collected through non-participant observations and a Likert scale questionnaire. Non-participant observation focused on the activities

occurring in the classroom, without the researcher interacting with the participants. This process was followed by administering a 5-point Likert scale questionnaire at the end of the classroom observations. This instrument was used to gather the views, attitudes and the feelings of learners about learning agricultural entrepreneurship. The first phase of the research used interpretive analysis to analyse the data obtained. This analysis instrument provided insights into how a researcher in a particular context attaches meaning to a given situation (Reid, Flowers & Larkin, 2005). The second phase used multinomial logistic regression to analyse the data obtained. The quality criteria were undertaken on all the approaches where, in the quantitative approach, the study explained how reliability and validity were ensured. Qualitative data focused on how the dependability, transferability, creditability and conformability aspects were ensured. Gratton and Jones (2010) state that all researchers, regardless of research designs, sampling, techniques and choice of methods, are subjected to ethical considerations.

1.6 The significance of the study

The study adds to the body of knowledge on the instructional decisions that can be employed in the Agricultural Science classroom to develop entrepreneurial skills in learners. The study generates information on how learners are taught and assessed in Agricultural Sciences in order to develop entrepreneurial skills. The information generated from this study will specifically create awareness among the teachers, policy makers and learners regarding the need to promote entrepreneurship in South Africa. Furthermore, the study will provide an explanation of the type of assessment practices and teaching methods employed in Agricultural Sciences. This study may prompt learners to develop a positive attitude towards Agricultural Sciences as a subject. The information about the need to use appropriate tools in delivering Agricultural Sciences lessons is important in building learners who are self-sufficient and business minded. This will enable learners to make informed decisions about the role they will play between higher education and farming. Therefore, it is important to investigate the situation within the Agricultural Sciences classroom. Agriculture education may be the solution to the stagnant economy in South Africa by creating more opportunities for employment, particularly for young people.

1.7 Limitations of the study

The study was based on how Agricultural Sciences is taught and assessed in four schools in the Sekhukhune District. The study would have been more useful if all the schools in all the 5 districts were considered for the study. However, due to budget and time constraints, the study was limited to only one district. Most importantly, public education curriculum in all the 5 districts is the same and, as a result, the study considered only one district because of this homogeneity between the 5 districts. Studying all the districts could have led to saturation. The Sekhukhune District was a centre of attraction because it is a district in which the population mainly relies on agricultural practices for survival, compared to the other districts in Limpopo Province.

1.8 Organisation of the thesis

In Chapter One (1), the researcher provides the general introduction and background information to the study, problem statement, aim and objectives, rationale of the study, significance, and limitations of the study.

In Chapter Two (2) the researcher presents the literature review, focusing on the theoretical framework which indicates how teaching and learning should be structured in order to develop entrepreneurial skills in Agricultural Sciences learners. In this chapter, the researcher also presents an analysis of previous studies on agricultural entrepreneurship education and skills

In Chapter Three (3), the researcher presents the methodology used in the study and also the rationale for using the mixed methods approach to data collection and analysis. The methodology used in the study includes the research paradigm, research design, study area, data collection methods, data analysis techniques and quality criteria.

In Chapter Four (4), the researcher presents the data according to the research objectives of the study and an interpretation of the results.

Chapter Five (5) includes the discussion of the results according to the themes generated by the researcher from the observations and also a discussion of results obtained from

the semi-structured questionnaire and the Likert scale questionnaires, as well as the implication of the findings.

In Chapter Six (6), the researcher deals with a summary of findings, the conclusion and the recommendations of this research.

1.9 My personal life history and experience with agricultural science

Studying of agriculture at the university always inspired me to want to develop more knowledge on this field. Teaching this subject on different group of students, year in and year out, had always made me questions the type of skills these students have at the end of the program. This thought was also influenced by my involvement in an internship programme in one of the department of Agriculture. Part of this was also influenced by the challenge farmers had on the daily running of their farm business.

The interest on agriculture field was triggered most by the challenges farmer had because the agricultural projects in my community contributed a lot towards standard of living. Despite the role of this project played in my community and it was also disturbing to watch most of these agricultural project collapsing after three to four years of the project. The problem ranges from mismanagement of funds, lack of growth in these project. These was clear indication that these farm projects required personnel with more experience on the running of the project.

This experience had made me realize that before one can engage in a project to uplift the community; It was important for all those that will participate to be trained or workshopped on dynamics of business. The idea of the need to train participant became more apparent when I started to train students teachers in agricultural science. During one of my lesson I have come to the realization of how important learning activities were on the development of students' skills. Every time I planned a lesson for my class there was always that thought 'am I taking into account the vocational nature of agriculture science subject'. Are my students getting the desired curriculum goals?

It was against this experience that I realize it important to establish how agricultural science learners are taught in schools. This was done in order to establish the implication

of these practices on the development of learners' entrepreneurial skills (farming skills). The establishment of these knowledge was important because of the high level of unemployment and magnitude of poverty among rural areas of Sekhukhune district. Schools are entities of social change and platform to solve community problems.

1.10 Summary of the chapter

The purpose of this introductory chapter was to provide an overview of the study. This included a brief discussion on the motivation for the study, research problem, aim and objectives and brief look at the literature on entrepreneurship and skills in education. Furthermore, the research methodology and design were briefly described. This chapter concluded with a chapter outline that provides a framework of what happens throughout the study. In the next chapter, the researcher will provide a detailed review of the literature on entrepreneurial education and skills, as well as the theoretical framework employed in this study. In this chapter, the researcher will also provide a sound understanding of how entrepreneurial skills are developed in other streams outside Agricultural Sciences; and how other countries advocate for entrepreneurship education. In this chapter, the researcher will provide a synopsis on which this study is built.

CHAPTER TWO: LITERATURE REVIEW

2.0 Introduction

In this chapter the literature on entrepreneurship mentioned in Chapter 1 is identified and discussed in detail by the researcher. The researcher examines why other countries advocate for entrepreneurship and discusses the benefits of entrepreneurship in order to help deal with societal problems, such as criminal activities and unemployment. The researcher refers to the literature to provide an overview of instructional decisions that influence the development of entrepreneurial skills. The researcher also highlights the assessment and teaching methods used in the Agricultural Sciences classroom. The identification of factors that affect the development of entrepreneurial skills is also reviewed. The researcher also looks at how learners learn entrepreneurial skills and how they are taught, with reference to the literature. Lastly, the researcher discusses the theoretical framework, which indicates how teaching and learning should be structured. These tenets of the theory were used to analyse the results from the classroom observations.

2.1 Countries that advocate entrepreneurship

There is an increasing concern whether students have employable skills that are needed in agricultural sectors. These skills include the ability to work under pressure, the ability to work with others and the ability to work independently. Such skills can be pursued through classroom activities, where learners can be exposed to the problem-solving method. These skills are also important if one wants to pursue a farming business career (Robinson, Garton & Terry, 2007). Imparting agricultural knowledge and skills to learners has economic benefits to the country since these learners can increase the number of farmers in the country, which will, in turn, improve food security and lead to the creation of employment for the South African youth. It is also important to note that this is one of the millennium development goals which need to be addressed urgently (Byerlee, De anvry & Sadoulet, 2009).

Chinese schools emphasise entrepreneurship by using three hybrid teaching and learning models, namely, the classroom-based model, a practice-oriented model to emphasise

entrepreneurship and the Know About Business (KAB) model to teach students the skills and knowledge needed to start a business. Established entrepreneurs are invited into the classroom to discuss real-life case studies about the dynamics of business (Zhou & Xu, 2012). In addition, Jianping and Chao (2011) maintain that four approaches are used in Chinese schools, which include developing workshops, offering entrepreneurship courses, undertaking educational trips to pioneering parks and giving lectures.

In America, students are exposed to experiential learning activities, such as competing with their peers on the development of business plans, and students who perform better than others get a reward. This type of practice motivates learners to develop entrepreneurial skills (Vesper, 1993).

In Europe, there is strong motivation to promote entrepreneurship. There are initiatives, such as the formation of associations to promote entrepreneurship in all schools. These entrepreneurial associations start from the high schools and proceed to business schools and universities. There are three main entrepreneurial associations from different countries such as France, Spain and the United Kingdom. The main rationale for these associations is to provide students with the basic knowledge on how to start a business (Azanza, Grama & Bono, 2017).

Moreover, in Portugal there is provision for students to attend workshops for two hours per week to study entrepreneurship. In addition, the Entrepreneurial Curriculum Programme (ECP) was introduced in vocational colleges and secondary schools throughout the country. The same programme has been implemented in Norway as a way of addressing unemployment. The programme aims to encourage knowledge and skills development, as well as the positive attitudes required to enable learners to start making their own money (UNIDO, 2016).

Furthermore, in Nigeria, the entrepreneurship curriculum is meant to empower students in order for them to bring about economic development. Entrepreneurship in the curriculum was introduced because the majority of the people are poor and the previous schools were unable to develop students to that extent. The introduction of an entrepreneurship curriculum in schools was mainly for the purposes of job creation and

economic empowerment in order to reduce the unemployment rate (Kennedy, 2013). In addition, the investment of entrepreneurial and technical skills in youth is fundamental for a country that is eager to improve the standard of living of its citizens. As the world changes rapidly, uncertainty and global pressure are created, hence, a quick response to this problem is needed (United Nation Industrial Development Organisation [UNIDO], 2014). Nigerian schools also emphasise an entrepreneurship culture by including a trade subject as one of the compulsory subjects (Uka, 2015).

Currently, South Africa is one of the countries with the highest youth unemployment rate, ranked number four in the world (OCED, 2013). This predicament validates the necessity to instil a culture of entrepreneurship in learners early in their primary school years, all the way through to secondary school education. In addition, Curriculum 2005 was one of the interventions introduced in South Africa to try to instil a spirit of entrepreneurship in learners. The intention of this curriculum was to empower learners with the skills and knowledge necessary to empower their society and, thus, the curriculum was rather more hands-on. The aim of this curriculum was to empower learners to identify and engage in entrepreneurial opportunities. The aim was also to give learners an opportunity to develop as active citizens (North, 2002). However, due to lack of teaching and learning resources the curriculum was changed to National curriculum statement.

The Sekhukhune District, the study area, also experiences a high level of poverty and unemployment. Most of the households in this region survive from agricultural practice, however, this agricultural practice is mostly subsistence farming, implying that its effect on the growth rate is minimal. There seems to be lack of relevant agricultural entrepreneurship needed to expand the agricultural business sector in order to make a difference to the standard of living of people living in the area. The emphasis of agricultural entrepreneurship in schools in this district remains of paramount importance (Sekhukhune District Municipality, 2019).

The studies above have indicated how entrepreneurship education was implemented both globally and locally. The discussion of entrepreneurship education has also specifically indicated the different models that can be used to encourage entrepreneurship among learners. South Africa has subjects that incorporate

entrepreneurship education. However, there are no specific models that are used in the schools to motivate learners into entrepreneurship. Status of the entrepreneurship education in South Africa is low compared to other countries. This then implies that for South Africa to be successful in implementing entrepreneurship education and also encourage learners to engage in entrepreneurship initiatives need to be taken. South African scholars need to develop models that can be used to encourage entrepreneurship. Also that some of the models highlighted in the literature can be contextualised so that they can be implemented in South African schools. South Africa focus more on encouraging people to start their own business and less is done to instil entrepreneurship education in schools. Growth in entrepreneurship can be realised if the education around this subject is encouraged in South African schools. Perhaps like in Nigeria, South African schools can introduce entrepreneurship subject that will be compulsory for everyone attending schools.

2.2 Entrepreneurship in the context of high unemployment

Ramsey and Edwards (2011) maintain that entrepreneurship can be emphasised through the establishment and provision of appropriate training structures. High school subjects, such as Economics, Business Studies, Accounting and Agricultural Sciences, can serve as a basis for developing an entrepreneurship culture in learners. This view concurs with views advanced by the OECD (2013), which confirm that small and medium enterprises serve as one of the main players in creating employment.

In view of the above, some scholars have noted that an emphasis on the development of youth entrepreneurs will help to transform society through the identification of new avenues of employment (Mariana-Cristina, 2014). A study conducted by Green (2013) confirmed the above claims by indicating that learners whose parents are self-employed are more likely to start their own businesses in future.

Moreover, the rate of unemployment has led community members to begin a conversation about how to combat unemployment. Academics have engaged in conferences and literature to try to find direction; while policymakers in parliament have constant talks about the issue. Entrepreneurship is regarded as one way to resolve the matter. It would

be useful if there was greater support for individuals who want to engage in business (Audretsch, Carree & Thurik, 2001). Even though entrepreneurship can be one of the remedies for unemployment, a lack of entrepreneurial skills is still a challenge for many individuals who want to engage in entrepreneurship. This lack of skills leads to many emerging businesses failing as a result. A further increase in unemployment leads a generally performance of the economy, which makes it difficult to source opportunities for entrepreneurial activities (Dilanchiev, 2014).

Furthermore, the youth in many countries are affected by a lack of employment. In Europe, the number of unemployed youths is double that of the other age groups. Some of these youth have resorted to entrepreneurship but factors, such as inadequate planning, a lack of capital, access to lucrative markets, a lack of management skills, and inadequacy of ability and a lack of mentorship from established business owners, have prohibited the youth from having successful business (Ganescu, 2014). These factors result in entrepreneurship not making a significant change in reducing the unemployment rate. South Africa is also experiencing similar problems to those experienced in Europe. Youth unemployment in South Africa has increased significantly (StatsSA, 2016).

Moreover, the dynamic relationship between unemployment and entrepreneurship makes it difficult to understand the pattern of the relationship. The effect of the impact of entrepreneurship on employment takes time to manifest. In some instances, depending on the type and size of business, the impact of entrepreneurship can only be realised after two years. What is of importance in the process of the business is for the entrepreneur to get support in the form of workshops and training and also in the provision of start-up funds (Dvoulety, 2017). In addition, Thurik, Carree, Van Stel and Audretsch (2008) maintain that the complexity of the relationship between self-employment and unemployment develops a sense of ambiguity among policymakers and researchers because, through the analysis of OECD data, the study discovered that the relationship between these aspects is both negative and positive. Changes in self-employment trends have a negative effect on the rate of unemployment, while a change in unemployment has a positive effect on self-employment. Furthermore, Plehn-Dujowich (2011) describes the dynamic relationship between entrepreneurship and unemployment as an

interdependency. These two entities are dependent one another since unemployment provides an incentive to start enterprises, however, entrepreneurship diminishes unemployment because growth reduces unemployment and unemployment increases the need for growth.

Furthermore, rural communities experience extreme poverty because of the high unemployment rate of its members. The universities and colleges in South Africa should form the basis through which the problem can be solved with the introduction of an entrepreneurship curriculum. However, because of a lack of guidance for students towards entrepreneurship, fewer people participate in the entrepreneurial arena. Rural universities are meant to bring development to a community and entrepreneurship is one of the tools that can be used to stimulate sustainable development (Gamede, 2018). In addition, Adaeze (2019) notes that entrepreneurship is a solution to youth unemployment in Nigeria. This solution is only possible if government plays its role in terms of infrastructure and other entrepreneurial support. Schools should start to place more emphasis on developing entrepreneurial skills.

Moreover, the relationship between entrepreneurial activity and the labour market is based on two dimensions of the business cycle. First, there are entrepreneurs who work alone in their business and there are those who hire a few other individuals to assist them. Reducing unemployment through entrepreneurship will depend on the viability and size of the business because, in some instances, the entrepreneur needs to consider the cost of hiring people and the availability of resources (Aleksandra, 2010). This call for the inclusion of entrepreneurship as part of the curriculum is important if the country is to improve the economic dependency of young people on government and also to improve the livelihood of members of society at large (Diraditsile & Maphula, 2018). Unemployment in the Middle East and North African (MENA) countries has reached has been increasing over the years. Unemployment is more prevalent among female youth compared to male youth. This is a major concern because most of the curriculum addresses general skills, rather than specific skills. The unemployment rate is high in many MENA countries, with most graduates lacking entrepreneurial skills and this

situation is exacerbated by a lack of support from established entrepreneurs (MENA, 2017).

2.3 Societal problems because of unemployment

Youth unemployment leads to youths becoming involved in criminal activities (Dejaeghere, 2013; Mc Clelland & MacDonald, 1998). Agricultural Sciences can help rural communities to eradicate poverty and create self-sufficiency of the youth with provision of proper classroom instruction. Ahn, Garcia and Jimeno (2004) maintain that unemployment leads to increased stress on financial and vocational activity. These findings imply that bringing society's problems to the classroom will develop an awareness of these problems in the learners and, thus, create a willingness to opt for entrepreneurship which, in turn, will make them more independent. Yang and Lester (1994) note that unemployment of society members leads to distortions such as stress which cause instability between the family members, which often causes household members to commit suicide. The study further alluded to the fact that unemployment leads to an individual losing the valued identity, which leads to them being aggressive and having low self-esteem. Unemployment does not only affect one's the ability to buy material things, it also leads to deprivation of psychological benefits because of continued stress. Social participation plays an important role in the wellbeing of individuals, which is often reduced when one is unemployed (Kunze & Suppa, 2017). Social security that assists unemployed people in most countries is meant to be for a short period of time, which causes a strain on individuals that become unemployed for a longer period of time. As a result of this social security setup, the living standards of the unemployed drop significantly (Bradshaw, Cooke & Godfrey, 1993). In the case of South Africa, there is the Unemployment Insurance Fund (UIF) which assists individuals who are removed from the job market for various reasons and support from this fund is available for a short period of time. Access to the fund is available to people who were once employed and who were registered for UIF during their employment.

Moreover, unemployment of members of society leads to development of basic issues. which include financial, economic, health and social issues. These basic issues reduce the quality of life of an individual because both financial and economic problems result in

individuals being unable to afford the basic needs. This has a negative effect on the health of the individual and may lead one engaging in criminal activities (Burdo, 2018). In addition, Powell (1993) argues that unemployment has a negative effect on the individual and also the community at large. Unemployment has long-term effects on the next generation of the family. It also has a negative bearing on the production of resources in the economy. Unemployment for a longer period of time will lead to financial and budget constraints because the effect is profound.

Furthermore, Ahmad and Khan (2016) confirm that unemployment leads to many social ills. Their study indicates that all the respondents agreed that lack of income leads to one engaging in criminal activities and, in some instances, committing suicide. This causes instability in the wellbeing of the society. Unemployment has a negative bearing on the economic growth of the country. Empirical evidence points to the fact that an inverse relationship exists between unemployment and economic growth in both the long- and short-term (Makarange, 2018). In addition, Mzizi (2017) points to the fact that unemployment causes people to lose their purpose in life and, as a result, they end up having difficulties in structuring their time schedules. These individuals may end up spending more time on activities that are not meaningful in life. Consequently, they will engage in disastrous activities, such as substance abuse and violence.

2.4 Benefits of entrepreneurial skills

Karimi, Chizari, Biemans and Mulder (2010) and Frank (2005) focused on the students who had enrolled for entrepreneurship courses in higher education. The introduction of entrepreneurship at the tertiary level is often late. Anumnu (2014) notes that the development of entrepreneurial skills in students in Nigeria causes students to be relevant in different aspects of the economy. This involves the development of entrepreneurial skills in learners in the classroom, where knowledge is gathered and shared so that learners nurture their capacity to translate the school curriculum into the world of work. Muyia (1998) maintains that the sustainability of small businesses depends on the acquisition of entrepreneurial skills in schools. In addition, Yusuf (2013) and Luke, Verreyne and Kearin (2007) affirm that the education system should focus on developing the abilities of the learners so they can be self-reliant, for the betterment of society.

Moreover, the development of entrepreneurial skills in students comes with greater benefits rather than simply the ability to start a business. The development of these skills affords learners an opportunity to recognise the business opportunity and stimulates an eagerness to be independent. An increase in the number of entrepreneurs is beneficial to economic development and growth. Learners with entrepreneurial skills have the ability to interact with others, to solve problems, to communicate, to take decisions and to make presentations (Greco & Denes, 2017). In addition, entrepreneurial skills provide the basis on which individuals develop an eagerness to start their own business. Entrepreneurial ventures may create financial wealth, which provides for social ventures (Zahra & Wright, 2015).

It is important that established entrepreneurs share their knowledge with current students on how they started their own businesses in order to motivate students (Charney & Libecap, 2008). Acquisition of entrepreneurial skills prepares learners for particular occupations which are likely to improve the livelihood of individuals. It remains important that science education should be practically oriented in order to instil innovative and entrepreneurial skills in learners (Mbanefo & Eboka, 2017). The arena of rural development and economic growth relies on the abilities of the youth. Youth with entrepreneurial skills can save many developing countries from economic depression. This also signifies that the curriculum should strive to develop skills rather than just getting certificates which do not help one to be self-reliant (Undiyaundeye, 2015).

2.5 The effect of instructional decisions on entrepreneurial skills

Dugassa (2012) highlighted the fact that traditional evaluation and teaching methods were dominant in teaching and assessing entrepreneurship courses in Ethiopian universities. This type of practice led to insufficient training as most students lacked technical skills. In addition, the lack of relevance of teaching methods and assessment practices in education is often regarded as the cause of unemployment. Dumstrup (2014) indicates that a senior educational qualification does not guarantee a job, which calls for improvement in our education system. Ofoha (2011) maintains that learners should be motivated for self-employment by practising active learning in the classroom.

2.5.1 Teaching entrepreneurial skills in schools

Teaching methods in a school context serve as the heart of imparting knowledge and skills to learners. Balan and Metcalfe (2012) have identified 6 teaching methods that can assist teachers to engage learners in the classroom. Among these six methods it was highlighted that poster report and team-based learning are significant in engaging learners in the entrepreneurship classroom. Poster plan and presentation enable learners to see the ideas of their classmates. Team-based learning enables learners to have teamwork experience, as it encourages interactions between them. These methods are significant in instilling the knowledge and skills of entrepreneurship education.

South Africa is one of the countries that have a high unemployment rate. As such, entrepreneurship and training can play a vital role in combating this problem. Isaacs, Visser, Friedrich and Brijlal (2007) indicate that entrepreneurship education and training in South Africa is hindered by poor teacher training programmes and insufficient resources. This signifies that teachers in South Africa are not well equipped to teach entrepreneurship and that schools are not ready to implement such a curriculum.

Teaching entrepreneurship education demands sophisticated tools and resources in order to reach the expected outcomes. The success of imparting knowledge and skills is mostly based on the ability of the teacher to acknowledge the complexity of the curriculum and also requires an understanding that the entrepreneurship curriculum can be successfully implemented if teachers base their delivery of the content on different philosophies (Matlay and Hunnon, 2006)

Creation of real-life scenarios about the dynamics of entrepreneurship through the presentation of problems in the classroom setting enables learners to easily understand the expectations of business in general. This approach allows them to think critically about the scenarios presented to them, which gives learners an opportunity to come up with ways of solving the problems. Hence, the problem-based learning approach is one of the fundamental methods that can be used to impart entrepreneurial skills and knowledge to learners (San Tan & Ng, 2006).

Classroom practices play an important role in creating a conducive learning environment for developing entrepreneurial skills in learners. Teachers are mostly likely to adopt classroom practices such as discussions, where the teacher puts less effort in preparing the tasks. Classroom activities that demand the teacher puts more effort into task preparation are not used regularly. It is also important to note that learners are more likely to learn the dynamics of entrepreneurship when the teacher acts as a facilitator rather than as a dictator of what should transpire. The objectives of education are easily achieved if, in some instances, the teacher invites established business people into the classroom (Ruskovaara & Pihkala, 2013).

Arasti, Falavarjani and Imanipour (2011) maintain that teaching methods, such as project-based learning, problem solving and case studies are vital to teaching learners how to develop a business plan. It is also noted that content, such as marketing, is more likely to be learned better through the use of guest speakers, group projects and problem solving. This is important because projects provide learners with an opportunity to train in an enterprise context, where guest speakers are used to motivate and instil the spirit and culture of entrepreneurship in the learners. During problem solving, learners are likely to get a true picture of the challenges faced in business operations, which will stimulate learners' interest to learn about entrepreneurship.

Scholars have asked questions about the feasibility of teaching entrepreneurship because of a belief that entrepreneurs are born and not made. This query arises from the fact that researchers, such as Young and Sexton (1997), argue that a theoretical approach to a subject such as entrepreneurship is confusing because the nature of entrepreneurship entails an activity that deals with a practical component and experience, both of which cannot be attained using a conventional teaching approach. Ruskovaara and Pihkala (2013) maintain that traditional methods of teaching are less effective when attempting to convey the knowledge and skills required in entrepreneurship. On the other hand, the non-traditional methods of teaching seem to be more effective in delivering the content required for entrepreneurship, an argument which Young and Sexton 1997 dismiss (Henry, Hill & Leitch, 2005).

Tunisia has adopted a one-year programme, called the entrepreneurship track, which provides graduates with mentoring and training in business. One of the activities in this programme is to design business plans which are vital for establishing a new business. This method does not effectively combat the high unemployment rate; however, it has provided an increase in the number of small businesses. These practices provide the youth with an opportunity for empowerment and self-employment, thereby creating opportunities for employment (Premand, Brodmann, Almeida, Grun & Barouni, 2016).

The implementation of entrepreneurship education is still in the early stages in Europe and, as a result, it is difficult to identify which learning processes and teaching models are more appropriate (Fayolle & Gailly, 2008). The implication that arises from the above statement signifies the fact that the people who qualify to teach entrepreneurship are the entrepreneurs themselves, rather than trained teachers. The question is how would the delivery of the content happen without the background of philosophical approaches, since these approaches serve as vehicles to impart knowledge and skills to learners.

In addition, it is worth noting that the education system is designed in such a manner that topics such as entrepreneurship are less emphasised in high schools, unlike at tertiary level. However, there is a significant role that high school education plays in building an entrepreneurship culture in learners. This is important because at high school is where the learners start to realise their career paths. The nurturing of learners at this level of study is important so that they can make informed decisions about which career path is their passion. Entrepreneurship taught at high school has a long-term effect on the future performance of learners in their businesses, which is possible if learners are exposed to the real-life situations of how companies function by providing them with hands on activities. This further develops learners' entrepreneurial skills (Elert, Andersson & Wennberg, 2015).

Lautenschlager and Haase (2011) note that it is worthy for teachers to focus on nurturing learners' creative skills and critical skills throughout the activities. The practice is important because the necessity of acquiring these skills for successful entrepreneurship. As such, it is important that teachers use teaching methods that will enable learners to learn for entrepreneurship, rather than learn about entrepreneurship.

In the UK, the fostering of an entrepreneurship culture came about as a result of declining economic growth. Reduced economic growth led to an increase in adult and youth unemployment. The fostering of entrepreneurship was undertaken with caution as it is not easy to teach learners to be entrepreneurs. This process of teaching entrepreneurs requires more than the school setting for an entrepreneurship culture to be successful (Solomon and Matlay, 2008).

It is important to note that teaching someone to start an enterprise is easier with learners who have some business experience, for example from involvement in a family business, because they can relate to the content of entrepreneurship. The implementation of entrepreneurship education requires that learners should do both the practical and theoretical work. The problem-solving approach appears to be the leading approach as it provides learners with first-hand entrepreneurial experience (Timmon, Spinelli, & Tan, 2004; Peterman and Kennedy, 2003).

Seikkula-Leino (2011) emphasise the need for a change in the pedagogy used in the teaching of entrepreneurship. The study further stresses that teaching methods, such as project-based learning, problem-based learning, group discussions, peer discussions, role play and hands-on activities, remain some of the crucial methods to be employed in the development of entrepreneurial skills. These methods afford learners an opportunity to reflect and experience interactive learning. Furthermore, the methods encourage learners to construct knowledge together and to rectify each other's misconceptions. This study shows how delivery of the curriculum remains crucial in the development of necessary skills in learners.

Onstenk (2003) outlined the competencies for enterprise development. These competencies include, among others: the ability to identify and analyse market opportunities; the ability to create links with other business people; the ability to deal with the challenges in the business and, the ability to deal with challenges in the business world. These skills highlighted in the study can be manifested through the teaching methods that were highlighted by Seikkula-Leino (2011). Group discussions in a classroom setup help to develop learners' abilities to communicate, negotiate and persuade.

Bruce (1995) also pinpointed the importance of building community-school linkages. This is necessary because the curriculum that is constructed based on the community needs, is more likely to produce self-reliant learners. The student will easily relate to the curriculum. Furthermore, the classroom environment is also one of the essential elements that can create a negative or positive atmosphere in student learning. Classroom environment refers to different factors, such as sitting arrangement, desks and posters, that have a greater influence on classroom interaction between the teacher and learners. A conducive environment for developing learners' entrepreneurial skills is one that is flexible and encouraging; one that allow teachers and learners to interact freely. There is a need for a classroom to be designed based on the subject needs in order for learners to relate easily to the content being taught. The teacher should create an environment where learners are able to discover their abilities and talents (Lavery, Hanna, Haughey & Hughes, 2015)

2.5.2 Learning entrepreneurial skills from constructivist perspectives

In Ireland, teachers highlight the lack of teaching and learning resources as one of the problems that hinder the implementation of enterprise education. The disturbing fact is that most of the teachers involved in enterprise education are not adequately trained to convey the knowledge, skills, attitudes and values of entrepreneurship education (Birdthistle, Hynes & Fleming, 2007).

Raposo and Do Paco (2011) note that the educational system has the capacity to direct learners towards attainment of entrepreneurial knowledge, attitudes, values and skills. As such, it remains the responsibility of the teacher is to create an environment where learners can be exposed to, and be informed on, the dynamics of entrepreneurship across the disciplines that cater for entrepreneurial activity. The University of Glamorgan in Wales introduced a programme called the Diploma in Entrepreneurial Practice with a philosophical underpinning that emphasises the notion that entrepreneurship can be taught and learned in a traditional classroom setting (Jones-Evans, Williams & Deacon, 2000).

2.5.3 Assessment in the Agricultural Sciences classroom

Classroom assessment is an integral part of the teaching and learning process. Understanding the relationship between teaching and assessment has created a paradigm shift with regard to how one views learning. Furthermore, there is an increase in the knowledge teachers have on assessment and teaching, which has brought about a positive learning environment. Teaching and learning is now viewed as a social process where both the teacher and learners have equal responsibility in the classroom. In addition, learners have alluded to the fact that they are better positioned to explain the meaning of being a learner and also what it means to learn science (Cowie, 2005). In this study, Cowie (2005) indicates the importance of having increased knowledge on assessment and teaching it is important students learning.

In addition, Springer, Stanne and Dovovan (1991) support Cowie's (2005) study by noting that the learning of students in Science, Mathematics and Technology is influenced by the activities learners do in order to learn the basic concepts. A socially cultured classroom promotes learning activities such as small group discussions and collaborations. The exposure of learners to these activities offers them an opportunity to have the experience of working with other people.

Moreover, Knowbloch (2008) maintains that schools need to create learning experiences for learners. These learning experience should relate directly to the problems and projects in the community the learners come from. Good assessment practice stimulates eagerness among learners to learn more about the topic. The learners go through an inquiry-based process where they develop research and writing skills. These inquiries based activities help learners to apply the knowledge learnt in the classroom. If teachers can create inquiry based learning activities, learners would enjoy learning about natural resources, food and agriculture. The shaping of students' perceptions about Agricultural Sciences relies on the type of activities they are exposed to in the classroom.

The use of different assessment methods assists learners to better understand the concepts in science classroom. Some teachers use reflective journals in order to gather assessment data. The use of reflective journals has brought about an improvement in teachers Because teachers are able to adjust their teaching and the way they assess

during a lesson after analysis based on the learners' reflective journals. These reflective journals help teachers to adjust their methods, such as the use of animations which assist learners to critique, analyse and learn new concepts (Steward, Brumm & Mickelson, 2004).

Additionally, Klemmer, Walizek and Zajicek (2005) assert that hands-on gardening activities are best possible ways of improving students' performance in the teaching of Agricultural Sciences. The study further indicates that learners who were exposed to this method obtained high grade levels compared to learners who were taught using traditional methods. The study signifies that the teaching of science using practical work is effective since this leads to development of skills that can be used in the society.

Furthermore, the inquiry-based learning method has posited an important element in the teaching of science. Employing these methods enables learners to create knowledge through identification and sequent application of solutions to the problem. Inquiry-based learning affords learners an opportunity to research a topic, rather than just write reports on the results found. This process improves the reasoning and analytical ability of learners (Parr & Edwards, 2004), which indicates that there is a need for a pedagogical shift in order to enhance student learning.

The teaching and learning of science as an argument has a positive effect on the development of learners' communication skills, if implemented. A dialogue in the classroom creates an opportunity for learners to learn from their peers. This method can be used as one method of assessing learners in the classroom (Kuhn, 2010). The use of traditional teaching and assessment leads to low scores or performance by the learners. This practice often leads to learners obtaining low scores, causing a delay in the development of skills by the learners (Freeman, Eddy, McDonough, Smith, Okaraafor, Jordt & Wenderoth, 2014).

Meanwhile, assessment is inseparable from teaching; however, often teachers have difficulty in choosing the correct strategies for assessing learners. It remains crucial that every assessment method should assess the targeted skills, values and knowledge of the

learners. The outcomes of assessment will help teachers adjust the way they provide opportunities for learning in their classrooms (Masole, 2011).

The Agricultural Sciences curriculum was design to teach learners about the sustainability of natural resources and agriculture. The achievement of this aim lies in the assessment methods used in the classroom to assess this goal. The approach of the teacher in teaching and assessing the subject depends on the identity of the teacher. The teacher can either be teaching about agriculture or be teaching to engage in Agricultural Sciences (Peden, 2015). Furthermore, assessment methods used in the classroom have a great influence on the skills learners will acquire at end of the programme. Agricultural Sciences lessons should prepare learners with skills that will contribute to the agricultural industry. It is through practical work that learners are taught how to present, listen and carry-out instructions. However, skills are acquired in active learning classrooms (Andelt, Barrett & Bosshamer, 1997).

On the other hand, the attitude of learners towards the Agricultural Sciences subject is linked to the ability of the teacher to assess learners in the classroom. Teachers that create a conducive learning environment are likely to encourage learners to appreciate and like Agricultural Sciences. Similarly, the attitude of the teacher is influenced by the way they were trained in the training colleges (Kidane, 2013).

Moreover, the creation of an authentic learning environment for learners makes assessment much easier for teachers. In this environment, learners are given an opportunity to explore the dynamics of the agriculture curriculum. Authentic learning environments give learners a meaningful learning experience. An authentic learning environment provides learners with an opportunity to undertake inquiry-based activities. These activities empower learners with significant skills, where learners are likely to ask relevant and quality questions as a result of being exposed to inquiry-based activities (Hofstein, Shore, Klipnis, 2004).

Similarly, the hands-on assessment activities method in sciences education enables teachers to assess the ability of learners to communicate, order, infer, relate, manipulate and compare. Teachers can give learners assessment tasks which ask learners to

prepare a sheet on how to plant a maize crop. This exercise will test learners on their ability to manipulate and communicate results (Mabie and Baker, 1996). However, teachers need to be workshopped timeously on how best to improve their assessment practices in Agricultural Sciences. There are new developments in the teacher training and in how learners of the new millennium learn. Workshops on these new developments will help teachers to attain the skills needed to assess learners. The attainment of skills, knowledge and value by learners lies in the ability or attributes of the teacher (Harlin, Roberts, Dooley & Murphrey, 2007).

It is also vital to note that learners who attend well-resourced schools enjoy the benefits of learning agriculture through practical work. Some teachers have highlighted the fact that these hands-on activities have brought benefits to learners, namely motivation, eagerness and cooperation with other learners. However, laboratory activities demand preparation time, funding and equipment (Warner, Arnold, Jones & Myers, 2006).

Rieple and Chang (2013) maintain that the development of entrepreneurial skills in schools depends on the creation of a conducive classroom environment. This involves affording learners an opportunity to interact with real business people in real-life projects, which will bring about an eagerness to learn skills and a sense of confidence in learners. It is also important that schools create opportunities for skills training in a timely and structured manner.

Fayolle, Gailly and Lassac-Clerk (2006) maintain that learning by doing is the more relevant approach to entrepreneurship education. The inclusion of real-life situations, talks by entrepreneurs and the use of case studies in the teaching and learning of entrepreneurship may develop the right attitudes, values and skills in learners in schools. Exposure to learning activities, such as development of business plans using their own ideas for a business, is essential. These practices are likely to improve the perceptions and intentions of learners towards starting their businesses.

Furthermore, one of the effective ways of imparting entrepreneurial knowledge and skills is through the use of simulating video clips and by inviting guest speakers. These practices are likely to inspire the student, who may be assessed through group

assignments, including business written ups and case writing. However, what is also important is that timeous feedback be given to learners (Fulgence, 2015).

Donnellon, Ollila and Middleton (2014) allude to the fact that inspiring learners to be entrepreneurs does not only involve the acquisition of knowledge and skills on entrepreneurship; it is also imperative to train learners to act entrepreneurially and develop their entrepreneurial identity. This study further argues that, if the education objective is to learn to practice entrepreneurial, then, in the process of these activities, learners must find or develop their identity as entrepreneurs. However, Cunningham and Lischeron (1991) argue that entrepreneurs cannot be trained in a classroom set-up as the abilities and the desires to be an entrepreneur lie in the personality of the individual.

In contrast to Cunningham and Lischeron (1991), who argues that entrepreneurship cannot be taught, Garavan and Cinneide (1994) indicate that many aspects of entrepreneurship can be taught. However, the responsibility for teaching entrepreneurship cannot solely be shouldered by the teacher in a classroom set-up. The study further argues that, among the public, there should be the creation of an environment that motivates learners to become involved in entrepreneurial activities.

2.5.4 Teaching entrepreneurial skills in the context of South Africa

Lack of resources in schools is one of the demeaning factors that places constraints on teaching vocational subjects. Brown (2012) maintains that these resource constraints are prevalent in public schools, while private and Model C schools are better off as they perform their practicals and have the ability to call successful entrepreneurs to deliver motivational speeches to learners. Some schools have adopted a model called “R10 in the ten days”, where learners are provided with start-up money to practise entrepreneurship in their schools. This money is given to learners on Wednesdays and the Friday of the succeeding week they bring the R10 back, plus profit. This is the cheapest model that schools in South Africa can adopt to nurture entrepreneurship. Provision of seeds to learners to plant vegetables and sell the produce after school can also be used as a method to instil an entrepreneurial spirit among Agricultural Sciences learners.

Additionally, teaching of entrepreneurship that is combined with practical examples within the South African context has shown fruitful benefits for the learners in Business Studies because they can relate to what the teacher is talking about in the classroom. The International Labour Organization (ILO) (2017) indicates that the incorporation of teaching aids, such as audio-visuals, has brought improvements to learners' communication skills. In such classrooms, teachers bring video clips on how to run a business in South Africa. Showing of the clips will then be followed by interaction between learners on the content displayed in the clips. In addition, simulation exercises and entrepreneurship games are also useful methods for instilling entrepreneurial skills in learners when teaching the entrepreneurship curriculum. Learners in high schools have shown an interest in participating in entrepreneurship, where the development of authentic learning environments has been noted to be key elements in the development of knowledge and skills about business start-ups. Authentic learning enables, motivates and stimulates learners' interest in business activities (Nchu, 2015).

Curriculum design is one of the most prevalent phenomena that has influence over the final product. The entrepreneurship curriculum in United States of America is designed in the form of workshops. This design supports the delivery of a lesson in an experiential and interactive way. The manner in which curricula are designed influences how the teaching will be done. Authentic design changes the role of the teacher from one in which the traditional method of teaching is used (Kee, Rodriques, Kundu and Racine, 2007). This approach can be adopted in South Africa, where the design of the Agricultural Sciences curriculum can be in the form of workshops. The schools that have done away with formal teaching of the subject bring benefits to the development of entrepreneurial skills. Doing away with formal classroom, then, calls for creation of small farms in schools, where learners will be given worksheets to records all the practicals that need to be done. Teachers should just have guidelines that show the practicals that need to be done during the different school terms.

However, given that South Africa is a developing country unlike in America, such activities may be difficult to implement. The current state of south African schools is disheartening as most building and school furniture are rusty. Basic teaching and learning resource

such as textbooks, charts, are lacking in the schools (Taylor & Moyana, 2005). Most rural schools in South Africa have no access to clean water, good sanitation, electricity, and classrooms are in a terrible state. These identified issues have some negative implications on effective teaching and learning (Du Plessis & Mestry, 2019). The studies above clearly indicate that South African are not ready to implement innovative methods such as, workshops, competitions on the development of business plan and provision of mentorship to students. However, such initiatives can be achieved in future when the economic status of the country has improved.

Moreover, the successful implementation of the entrepreneurship curriculum lies in acknowledging that entrepreneurship education is interdisciplinary in nature. This calls for collaboration with teachers of other subjects to help learners develop entrepreneurial skills. Some of the skills that are needed to start businesses are general, which indicates that they can be developed in other subjects. Subjects with entrepreneurship elements may validate some of the business activities, such as development of business plans and also how to do budgeting for a business (Mkala & Wanjau, 2013).

The curriculum also calls for teaching methods, such as cooperative- and open-learning, which give learners the freedom to work either independently or in a team. This teaching methods teaches learners social skills which are vital in the business world (Hatak & Reiner, 2010). In addition, one of the important features of entrepreneurship that learners need to be train on is team work. Team work skills are important to cultivate the entrepreneurial spirit in learners. Giving learners assignments and projects that require them to work together helps them to develop these skills. Group discussions in a classroom can train learners to work in teams. The teacher needs to facilitate such discussions closely because participating in discussions helps the learners to learn to listen, negotiate, resolve conflict and care for others (Saska Chewan, 2004).

Furthermore, there is a profound change in globalisation and technology. This calls for a paradigm shift in the methods used to teach learners. The knowledge and skills learnt in the classroom should be compatible with globalisation and technology. The method of doing business 20 years ago may not necessarily apply in the current situation. Learners

need to be prepared for their future professional careers and to fulfil the requirements of self-reliance through entrepreneurship (OECD, 2015b).

Moreover, most agriculture teachers have moderate technological skills that can be incorporated in their teaching. These teachers emphasise that teaching with technology improved creativity skills of learners and also that most learners will be able to access the material easily. However, the demeaning factor is the expense of technology, hence most schools they cannot integrate it (Williams, Warner, Flowers & Croom, 2014). In addition, Alston, Miller and William (2003) note most teachers were undecided about the future use of technology in their teaching of agriculture programs. This is because of the costly equipment and software required. (Sulaiman, Hasan & Ishiyaka, 2015) also notes the use of modern instructional technology in the teaching of agriculture education would lead to learners acquiring critical thinking skills.

The use of modern technology in the teaching and learning of agricultural sciences creates a conducive learning environment. 88% of students allude attest that the use of modern technology improved their scores and it increases their interest in both theoretic and practical demonstration (Geta & Abera, 2015).

It is also important to note that there is a belief that “an entrepreneur is not born but made through a process of time” (Kumari, 2018). This study indicates stages that learners will need to go through to acquire entrepreneurial skills. Learners need to learn a basic understanding of the business environment; to develop competency awareness (speaking the language of business); the creative application of the competence; and, starting and growing the business (National Content Standard for Entrepreneurship Education, 2004). In contrast, these competencies can be achieved through extensive training when curriculum is designed as a workshop.

Pistorius (2011) maintains that the high level of unemployment in South Africa requires the country to look for other ways to alleviate unemployment rate and strategies are needed in order to increase youth participation in the economy. The low level of youth participation in the economy is mainly caused by a school system which does prepare learners to be functional in the economy. This type of school system may lead to learners

lacking important skills, such as livelihood skills, as well as numeracy and literacy, which inhibits their ability to participate in the South African economy.

The study above outlines the main elements of the level of literacy and numeracy of school leavers, which negatively affects the development of skills in Agricultural Sciences, skills required to help them to make budgets and income statements in order to improve their financial skills. However, most learners lack these skills, as Pistorius (2011) alludes to, indicating on the type of learner the university is likely to receive. This problem may lie in the instructional decisions taken in schools for imparting knowledge.

Tshabangu (2016) highlights the notion that entrepreneurial activities are promoted by entrepreneurial skills. This calls for the development of entrepreneurship in schools, so that the country will be able to promote more entrepreneurial activities which, in turn, will boost the economy. However, it remains important that the country equip people with skills to provide opportunities to those that are entrepreneurial by nature. In addition, Le Roux (2005) asserts that teachers in schools teach entrepreneurial skills and strategic skills, as well as innovation and creativity, which are taught to a limited extent. There is no practical exposure to entrepreneurship in many South African schools because of a lack of resources. This lack of practical exposure can derail the development of the necessary skills because the teaching of entrepreneurship requires approaches which are interactive in nature.

In addition, most of the entrepreneurship education is incorporated into other modules, rather than being taught as a stand-alone subject. This often leads to teachers not focusing purely on imparting the knowledge, skills and attitudes for entrepreneurship. The other issue in entrepreneurship education is that the training of the teachers, does not cater for the entrepreneurship curriculum. It is important that the entrepreneurship curriculum be treated as a separate module during teacher training, rather than being treated in blended form with other modules (Qoto, 2012).

The successful implementation of the entrepreneurship curriculum largely depends on linking theory with practice. Learners should be given an opportunity to engage in hands-on activities (projects). These hands-on activities will enable learners to understand the entrepreneurship process better. This hands-on approach also improves learners'

creativity and innovation (Buthelezi, 2012). Nel and Stevenson (2014) indicate at that, at this point of time, the educational system of South Africa does not encourage an entrepreneurial culture and spirit. The South African system prepares learners to enter the job market as employees rather than as employers. Antonites (2003) indicates that producing employees rather than employers is also caused by a lack of teaching and learning resources, such as tools and textbooks, and the ability to instil creativity in learners. Furthermore, Thobela (2007) alludes to the fact that, while the content of the South African curriculum is capable of instilling an entrepreneurship culture in learners, the major challenge lies in the implementation of the curriculum. This calls for an evaluation of how the curriculum is implemented in order to make schools more entrepreneurial.

Moreover, the socio-economic standing of south Africa has negatively affected the promotion of skills as set out in CAPS document (Schoeman, 2018). In addition, Mabunda (2002) have indicated that despite the introduction of curriculum 2005, school are still not prepared to foster entrepreneurship among learners. The curriculum 2005 has the capacity to inculcate necessary skills learners needed for self-employment. The delivery of lesson on curriculum seems to be contributing significantly to producing learners who are not ready to live life as independent. Lack of teaching and learning resources also had influence on the implementation of this curriculum.

Harry, Chinyamurindi & Mjoli, (2018) maintain that employability in South Africa is affected by poor education system, curriculum issues, poor socio-economic status. The study indicated that graduates prepares to work than to start their own business of the level of salaries the highly educated get and that the curriculum in school does not encourage self-employment as it should.

Matsheke (2017) indicates that there is a huge disparity between how the South African schools offer the curriculum and how the tertiary institutions in the country operate. The disparities are invisible in the form of assessment, teaching methods and curriculum design. In addition, the disparities between school and higher institution is that the other one are responsible for training student teachers and while the other uses the students' teacher. The university lecturers are tasked with doing reflections on their teaching so

that students teacher can deliver quality education in the school. They are accountable for quality teaching and that is going to be visible on the student teacher trained (Jensen, 2011). Higher institutions need to impart up to date pedagogy among these student teachers for the betterment of learners' skills.

Moreover, the dynamics of teaching and learning has changed, the era, the technology; hence there is a need for new skills. There seem to be slight disjuncture between schools and higher learning institution on responding to this technological changes in teaching. That is schools may lack resource to respond to the changes or vice versa. This disjuncture is more visible on the assessment methods and teaching methods used in both schools and higher learning institutions. This somehow have an effect on the quality of teaching (OECD, 2012).

The delivery of the lesson in higher learning institutions should take into consideration what is happening in teacher mind and also what is going on at the level of the programme. Departments are responsible to promote good practice. As quality teaching is an ongoing process which require collaboration between schools and higher learning institutions. The teaching and learning process should provision room for teacher to learn and also improve pedagogical skills (OECD, 2013).

Mamoudou (2013) also confirms that entrepreneurial activity by South African youth is low, because entrepreneurial intention is low because of a lack of motivation from the entrepreneurship curriculum. The entrepreneurial curriculum demotivates learners interest in learning more about the entrepreneurship and pursuing entrepreneurial actions in future. Qumza (2011) indicates that a lack of vital skills, such as computer and financial skills, also impacts on learners' intentions to start a business. Other external factors that lead to disinterest in entrepreneurship include a lack of legal knowledge on how new businesses are regulated and also a lack of financial support. Mare (1996) alludes to the fact the ability of learners to be self-reliant lies in the teachers' ability to prepare learners to be active and responsible citizens. Sathorar (2009) also notes that current teaching methods used in schools lack real-life contexts. This causes learners to experience difficulties in understanding the entrepreneurial process. The traditional approach does not encourage learners to engage in business activities or start their own businesses. The

practice of teaching entrepreneurship in South African schools is based on traditional methods, which negatively affects the development of business skills. Most teachers in the schools use the traditional textbook method prescribed by the Department of Basic Education (Vera Van Zyl, 2006). Nchu (2015) indicates that Grade 10 to 12 learners of Business Studies were ready to start their own business with the knowledge and skills obtained from classroom instruction. The study further indicated that small business owners alluded to the fact that problem-solving skills, creativity and self-reliance are some of the important attributes that should be incorporated into the high school curriculum in the teaching of entrepreneurship education.

Furthermore, Skosana (2012) notes that an entrepreneurial family background promotes entrepreneurial intentions in learners. Moreover, it remains crucial to incorporate integrated teaching methods that take into account the nature of the South African business environment in order to encourage an entrepreneurial culture in learners. It seems that there is lack of consensus on the content coverage of the training modules and curriculum in the discipline of entrepreneurship. There is a need to make sure that the curriculum design corresponds to the requirements of the practice (practitioners) (De Klerk, 2009).

Carayans, Evans and Hanson (2003) maintain that, if an entrepreneurial culture is taught, allowing one to better understand the attitudes towards learning the content is important. This is so in order to adapt pedagogical activities. The higher the education the more learners have positive attitudes towards entrepreneurial activities.

Jones and English (2004) noted that the skills that are taught in schools enable individuals to develop a new innovative play-school curriculum, with emphasise on the important function of running a business daily, rather than elements of creating a new business. The emphasis is more on knowledge rather than on personal development. This practice of emphasising more on knowledge in schools is what leads to learners not acquiring the necessary skills and to a lack of desire to start their own businesses. Current teaching does not put the learners into the real-life situations of business activities.

A student-centred strategy remains one of the more important strategies in the teaching and learning of entrepreneurial skills. The nature of a student-centred classroom affords

learners an opportunity to control how, when and where to learn. It stimulates them to take full responsibility for their own learning and promotes active learning. A student-centred approach exposes learners to different teaching strategies, such as problem-solving, experiential learning, project-based learning, action oriented learning and peer evaluation.

Miranda, Chamorro-Mera and Rubio (2017) noted that attitudes, subjective norms and perceived control have an effect on the entrepreneurial intent of learners. Entrepreneurial skills development can occur in many spheres, where the running of a business can be an alternative in case one does not find a job in the market. In sports management, learners can be trained to be entrepreneurs by using teaching methods, such as case studies, problem-based teaching and active learning. The project method seems to be more productive than any other teaching method (Nova, 2014).

2.5.5 Developing entrepreneurial skills in Agricultural Sciences

The notion that entrepreneurs are not born but trained through experience is questionable. Two of the skills needed for one to be an entrepreneur is to be a risk-taker and to be flexibility. Risk-taking is one of the pillars of the farming business because the agricultural sector is risky in nature. However, it is also important to note that being an entrepreneur is not limited to skills only. It also requires one to have entrepreneurial qualities (De Wolf & Schoorlemmer, 2008).

Nevertheless, Rezai, Mohamed and Shamudin (2011) maintain that informal educational training on entrepreneurship has a crucial role in developing entrepreneurial skills in farmers. Informal training requires an authentic context; hence it is much easier to develop skills. The authentic context can be adopted in the teaching of Agricultural Sciences, where fields of a small farm become classrooms in which to learn the knowledge and skills required for agriculture.

Meanwhile, learners often regard Agricultural Sciences as boring and a dirty subject that requires hard labour. However, this industry has quite a lot of opportunities along the value chain. This mind-set can be changed through the style of teaching the subject. The teaching of Agricultural Sciences in schools should be structured in a way that learners

realise the various choices of opportunities along the value chain (Entrepreneurship in African Agriculture, 2014).

Moreover, teachers should take time out to study the nature of the learners they have in a classroom. This will enable the teachers to identify students that have a love for agricultural entrepreneurship and to provide support to such students. Consequently, the availability of teaching and learning resources is one of the factors that affect the attitude of learners towards agricultural entrepreneurship (Keswa & Ngcobo, 2017).

Eboka and Mbanefo (2017) note that different teaching methods are used in training students to be self-reliant in the society. These instructional methods should be oriented towards the inculcation of attitudes and values that are needed in entrepreneurship. A combination of the modern and innovative methods assists in the acquisition of entrepreneurial skills and accompanying competence. In addition, Amadi (2012) affirms that the teaching and learning of Agricultural Sciences is constrained by factors such as the nature of the curricula, socioeconomic issues, lack of parental and peer support and, most importantly, inadequate policy framework.

Furthermore, Lans, Seuneke and Klerkr (2017) maintain that there is a need to change the curricula and pedagogies in order to instil entrepreneurial thinking in Agricultural Sciences learners. They found that historically used methods were not addressing the entrepreneurial spirit. Furthermore, society has painted a picture where, in the family, the father would pass the family farm to a son rather than to his daughters. This instilled negative attitude in female students as they would not receive support from the society. In addition, Amadi and Nnodim (2018) maintain that the constraints that inhibit agricultural education to develop entrepreneurship include insufficient training, a lack of equipment and insufficient research on agriculture. On the other hand, these skills are needed if a farm business is to be successful. Hence, it is important that current teachers of Agricultural Sciences train learners in this direction.

It is also important to note that teachers need to recognise the fact that there are two dimensions of entrepreneurship education training. Firstly, teachers need to look at the dimension of training learners to have an entrepreneurial attitude. Secondly, training should be based on the day to day activities of a farm business. This calls for teachers to

pay attention to detail when dealing with these dimensions in a classroom. The success of the learners to become entrepreneurs depends on the development of these dimensions. Learners need to be exposed to learning activities that talk about the day to day running of a farming business (Psysianen, Anderson, Mc Elwee, & Vesala, 2006). In addition, this calls for the construction of learning facilities that will enable learners to practise day to the day activities of a farm business. It is also crucial for government to create programmes that will support learners who are interested in entrepreneurship, since a lack of the entrepreneurial structure in schools demotivates learners and instils negative attitudes towards farming (Weor & Akorga, 2016).

Additionally, the teaching of the entrepreneurship curriculum demands that teachers be exposed to frequent workshops. This will assist the teachers to acquire the relevant skills and knowledge on how to go about implementing the curriculum. The attainment of quality education depends intensely on the competency of teachers as facilitators of the teaching and learning process (Okon, Stephanie & Agbor, 2017). Furthermore, Otuya, Kibas and Otuya, (2013) highlight the notion that teaching of entrepreneurship in schools should begin at pre-school and go on all the way to university, because the values of and attitudes towards entrepreneurship can be acquired at the formative stage. This implies that teachers of all grades should be trained in innovative pedagogies.

Moreover, Agommouh and Ndirika (2017) note the innovative methods that can assist science education to improve entrepreneurial skills include cooperative learning, classroom assessment techniques, case studies and dialogues. They further indicate that the use of entrepreneurial skills in the classroom can assist learners to understand the daily activities of agricultural entrepreneurship and the society at large.

In addition, Minneboo and Quiroga (2007) argue that one of the challenges facing the implementation of an entrepreneurship curriculum is lack of involvement in the design process of the curriculum. It remains crucial that reviews on the curriculum include the curriculum implementers (teachers) so that they can understand the educational goals and outcomes of the subject.

In South Africa, the knowledge and skills learned in an Agricultural Sciences classroom puts learners in a better position to assist communities with their problems. Learners will

help with community projects by carrying out some of the entrepreneurial tasks necessary, such as explaining the objectives of the project, clear communication of the organisation, agricultural practices, knowledge of planting seasons, understanding of global agricultural trends, use of ICT facilities and many more (Xaba, 2014). These are the potential skills required to run a farm business.

Isaac, David and Akwapa (2014) allude to the fact that, in secondary school, learners should be promoted to tertiary education if they are able to produce at least two field crops and rear two different animals which are suitable to the climate of their area. This sounds like the most effective means of gauging learners' abilities to practise agriculture. Knowledge about agricultural practices plays a vital role in uplifting the society.

Mujuru's (2014) views coincide with Xaba's (2014) view that learners can assist farmers in their local villages with knowledge gained in the classroom. Learners are exposed to the agricultural case studies which involve the farmers in their village. This signifies the need to teach agriculture sciences in the context of the village where the school is based. In addition, it is also important to note that there are, at times, radical changes in the agricultural environment. The structure of the teaching and learning should be in line with these radical changes. One needs to pay attention to the development of each of these agricultural entrepreneurship skills (Rudmann, 2008).

The development of entrepreneurial skills depends on the teacher's ability to interpret the given curriculum. These skills play a vital role in addressing problems in the agricultural sectors. Learners have the capacity to conduct research on an existing problem in the society. The abilities of learners to conduct research calls for continuous assessment in schools in order to continue to develop critical thinking in learners (EDUlink, 2013). However, in some cases the functionality of agricultural entrepreneurship is challenged by the level of corruption in countries. As corruption leads to schools not having the relevant teaching and learning resources. This unfortunate circumstance of corruption leads to learners not attaining the relevant skills and knowledge needed to solve community problems due to lack of relevant resources (Kayoma, 2011).

Bazhenov, Enseeva, Enseeva and Zilber (2018) maintain that sports training can be used as one of the methods or tools to develop innovative and entrepreneurial skills. Sports

training contains an element of the creative approach to solving problems within the precepts of innovative and entrepreneurial activities. Sports training further highlights coaching work as one of the complex tasks with different categories which require one to be innovative. Sports training has the ability to nurture a level of brain functionality.

Wu and Wu (2019) maintain that there is a strong relationship between social intelligence and entrepreneurial activity. The study further highlights that students with high social intelligence have the ability to manage other people and understand other people. They are also innovative in nature. The main aim of the Wu and Wu's study was to assess learners' entrepreneurial skills. The results indicated that learners' entrepreneurial skills were low. This calls for measures to improve the social intelligence of the students. In addition, it is important for different countries across the globe to create strategies or mechanisms to increase entrepreneurial activities and to foster an entrepreneurial spirit. It is also important to study the level of attitudes that people possess in order to identify suitable entrepreneurial activities that people will be interested in (Ward, Hernandez-Sanchez & Garua, 2019).

Furthermore, Hahn, Minola, Bisio and Cassia (2019) indicate that older students have a higher level of entrepreneurial skills than the younger students. It is also observable that the male students have a higher level of skill than their female counterparts. In addition, students who enter the institutions of higher learning with subjects like Business Studies and Economics have better entrepreneurial skills compared to those who did other subjects. In addition, Widiyant (2017) highlights the notion that the aim of vocational education is to develop learners to work independently. Furthermore, the study focused on the factors that increase entrepreneurial interest. It was observed that the external factors were more dominant than the internal factors. This shows that entrepreneurial skills can be learned in formal institutions and that the curriculum provides a good foundation. Implementation of entrepreneurial skills depends on the availability of entrepreneurial material and the ability to utilise the material in order to form concrete entrepreneurial actions in learners.

Lukasik (2018) emphasises the notion that the mission and vision of the schools should be to transform knowledge and skills during the learning process. The curriculum

designed for the schools indicates the skills that learners will have at the end of the programme. The achievement of this mission depends on the teaching ability of teachers, school engagement and parental support.

In Nigeria, technical and vocational education and training is put in place to increase the emphasis on entrepreneurial education, because this type of education has the ability to promote creativity and support poverty-alleviation mechanisms. The initiative is more likely to create job opportunities for graduates (Usman & Tasmin, 2015).

Greblikaile, Sroka and Gerulaitiene (2016) outlined the fact that, despite the introduction of entrepreneurial education in Poland, emphasis was placed on social entrepreneurship. Social entrepreneurship involves the discovery and exploitation of opportunities in order to increase social wealth by creating new ventures. This approach unites communities and business. Social entrepreneurship lacks a mechanism for generating opportunities because, without an opportunity, there is no entrepreneurship. This study further highlights the fact that, despite an emphasis on social entrepreneurship, not much has been done to activate this initiative of entrepreneurship, which is mainly attributed to the fact that the introduction of entrepreneurship was done with most unqualified teachers.

2.5.6 Factors that affect the development of entrepreneurial skills

Development of entrepreneurial skills in schools is affected by both external factors and internal factors. These factors can either be positive or negative towards the development of entrepreneurial skills. Lashgarara, Roshani and Najafabadi (2011) note that some of the factors that influence the development of entrepreneurial skills include personal skills, participation features and psychological characteristics. The study emphasised the notion that the development of skills is often affected negatively by unavailability of proper infrastructure in the training centres. Personal skills significantly affect the development of entrepreneurial skills.

Seuneke, Lans and Wiskerke (2013) noted that factors that drive entrepreneurial learning include, firstly, the restructuring of an entrepreneurial identity within the discipline of Agricultural Sciences; and, secondly, the availability of a family farm and going beyond the boundaries of agriculture. The study indicates that learners need to start to identify

themselves as entrepreneurs, because the acquisition of skills and knowledge alone does not make an entrepreneur. As a result, it is incumbent upon the facilitators in the classroom to instil an entrepreneurial spirit in learners. Teachers need to create a learning environment in which learners will begin to assume the identity of being an entrepreneur. Similarly, Shane, Locke and Collins (2003) allude to the fact that human actions are built on cognitive and motivational factors and exposing learners to established entrepreneurs would stimulate an interest in entrepreneurship in them.

Furthermore, Fayolle, Gailly and Lassas-Clerc (2006) view classroom assessment as an important factor in entrepreneurship education. The study adopted the framework for the assessment of entrepreneurship education programme (EEP). The framework plays a crucial role in entrepreneurial education as it measures more than the acquisition of skills and knowledge attained in a classroom. EEP also includes the assessment of entrepreneurial intentions and attitudes that will, in turn, build entrepreneurship behaviours that are linked to the ability of learners to integrate new entrepreneurship knowledge and learn new skills. In addition, Linan (2008) notes that the personal attitudes have a greater effect on the learners' intention to be an entrepreneur. The study further notes that motivational factors, such as subjective norms, perceived behavioural control and personal attraction, also play a crucial role on the development of entrepreneurial skills.

Moreover, Pérez-Pérez and Avilés-Hernández (2016) allude to the fact that personal desire for wanting to own your business is one of the factors that drive entrepreneurial intentions. The study goes further to note that facilitators have greater influence on the development of learners' entrepreneurial culture, while social support is also a prominent factor in the development of entrepreneurial skills. Among the factors that influence an individual's intentions to be an entrepreneurial personnel, attitude and perceived behavioural control seem to be the prominent. The study maintains that educational background has no effect on an individual's intentions to be an entrepreneur. However, behavioural control has an influence on the decision-making process (Sizong & Lingfei, 2008).

Additionally, Turker and Selcuk (2009) argue that educational and structural support are the important factors that influence the entrepreneurial intentions of an individual. It is

also important that the school environment should provide a support system in support of the development of the entrepreneurship intentions of an individual. A conducive learning environment stimulates interest in young people. The successful implementation of the entrepreneurship curriculum depends on structural support from all the stakeholders, including the society.

Furthermore, learners from an entrepreneurial background are more likely to follow in the footsteps of their parents. This is one of the environmental factors that influence the intention of the learners to become interested in learning about entrepreneurship. This factor is built on the notion of social learning theory, where people are likely to adopt what they observe in the society. Programmes that bring role models into the classrooms stimulate entrepreneurial intentions in learners and also assist in developing entrepreneurial skills (Sherer, Adams & Wiebe, 1989).

Oonsterbeek, Praag and Ijsselstein (2010) maintain that entrepreneurship education has no significant impact on the development of entrepreneurial skills. This idea arises from the notion that learners have to come to the realisation of what it takes to be an entrepreneur. The knowledge on how business work may generally minimise the traits of entrepreneurship intentions as it is not easy for one to be involved in the running of a business. Nonetheless, what remains important is that learners should be exposed to such a curriculum in order to support those that may use this knowledge and skills in their future careers. The curriculum is there to instil the right attitudes, intentions and motives in learners (Welsh, Tullar & Nemat, 2016).

Contrary to Welsh et al.'s (2016) study, Din, Anuar and Usman (2016) argue that entrepreneurship education has the capacity to develop entrepreneurial skills in learners. This study identifies business planning, risk thinking and self-efficacies as factors which can be nurtured by the entrepreneurship curriculum. The regression analysis of their data indicated that these factors are statistically significant at 0.183 ($p < 0.05$). The study strongly recommended that entrepreneurship training should begin at primary schools because this is where values and attitudes can be nurtured.

Furthermore, Ghina (2014) identifies social class, family background, ethnicity, informal education and experience as external environmental factors that create an opportunity

for learners to learn about entrepreneurship. These factors are important determinants of whether learners will become entrepreneurs in the future or not. The study further identifies adolescence as one of the critical stages for creating this business venture. In addition, Mahadea, Ramroop and Zewtoir (2011) identified factors that influence learners to venture in business in the future using a linear regression model. These factors include personal skills, having a role model, gender, ethnicity and background. Africans were perceived to have greater disposition to start a business than other races do. male learners had a greater chance of engaging in entrepreneurial activities than did females. Family business background was not statistically significant in explaining the relationship between students' entrepreneurial intention and independent factors.

Shinnar, Hsu and Powell (2014) support Mahadea et al. (2011) in the finding that male learners are more likely to start their own business than females. The mean for males increased from 17.02 to 17.38 while that of females decreased from 16.79 to 15.92. However, the variation between the two results were statistically significant in the sample size as a whole. This study implies that it will be of great help if the schools start to call on female businesswomen to motivate female learners to start their businesses. This is mainly because societal norms and customs grant males more opportunities in business than they grant to females.

Moreover, Harrison, Paul and Burnard (2016) maintain that challenges that influence people to engage in business include poor infrastructural facilities and inadequate capital. However, some entrepreneurs have managed to overcome these challenges because of personal traits, such as the ability to recognise an opportunity, risk taking and exploitation of opportunities. In addition, the level of engagement in entrepreneurial activities is often affected by several factors. Bohlman, Raunch and Zacher (2017) indicated that age is one of the factors that affect the level of entrepreneurial activities. The study further indicated that age affects entrepreneurial activities negatively because, entrepreneurial motivation normally changes with time.

Furthermore, Ibrahim and Mas'ud (2016) maintain that entrepreneurial orientation, entrepreneurial skills and environmental factors to influence one's entrepreneurial intentions. In addition, an environment that is rich in entrepreneurial munificence is likely

to influence the ability of an individual to engage in business-related matters. Thus, entrepreneurial munificence assists to improve entrepreneurial self-efficiency and risk-taking propensity (Bacq, Ofstein, Kickul & Gundry, 2017). Minimol (2017) notes that social entrepreneurs promote social innovation and transformation in many disciplines. Social entrepreneurship is an interparty to bring about radical changes to the existing countries.

2.6 Role of theory in the study

This study uses the social reconstructionism theory. This theory emphasises the notion that educational structures are an environment for implementing social change. The social-reconstructionist curriculum is built on learners' experiences, taking into consideration social action on problems affecting the community at large. These real-life problems include hunger, unemployment, inequality and inflation (Stanley, 1985). The theory highlights the notion that social problems can be solved by a sound education system, which requires teachers to expose the learner to the controversial issues. In the case of Agricultural Sciences, this implies that the classroom should be characterised by dialogue and inquiry in pursuit of the development of entrepreneurial skills. Social reconstructionism further highlights the notion that teachers should provide learners with assessment activities that require learners to solve problems outside the classroom. A social reconstructionist classroom is a transformative classroom that is learner-centred (Litzky, Godshalk, & Walton-Borgers, 2010). Social reconstructionism engages learners in solving real-life problems, ensuring that learners are actively involved in their own learning, which is important in shaping what happens to local communities and to the country. The assumptions of this theory encourage teachers to provide learners with activities that require them to solve problems that are current in society. Learners should be exposed to group discussions so that they can develop communication skills, which contributes to the development of entrepreneurial skills. In addition, exposure to field trips can enhance learners' entrepreneurial skills so that they can participate in agricultural projects in the community (Darcy, 2018).

The instructional decisions made by teachers are examined against the tenets of social reconstructionism. This study uses the theory to determine how learners should be taught and how they should be assessed in order to enhance effective learning. The theory is

useful for exploring how instructional methods, together with assessment strategies, should help learners to develop entrepreneurial skills in Agricultural Sciences classrooms.

Social construction views learning and teaching of entrepreneurship as a means through which society's problems can be resolved. This involves learners interacting with the community to better understand the urgency and validity of societal problems. Working with the community also involves an evaluation of the availability of resources in the community that can assist in the teaching and learning process. Social reconstruction theory advocates for a curriculum that solves community problems (Driver, 2016). In addition, Greblikaile et al. (2016), maintains that the important element in teaching of entrepreneurship is to first familiarise students with the local environment to develop their social skills and empathy, this assists learners to solve the problems of the community.

Fuchs, Werner and Wallau (2008) maintain that countries like Germany are not doing well when it comes to promoting self-employment as an attractive alternative. The design of the curriculum in Germany prohibits rather than encourages learners to be self-employed citizens. In addition, Seikkula-Leino, Ruskovaara, Ikavalko, Mattila and Rytkola (2010) allude to the fact that there is a need for coordination between different subjects that advocate for entrepreneurship in order to create a more entrepreneurial-oriented working community. Teachers seem to be confused by what the aims and practices of entrepreneurship education are.

Hegarty (2006) maintains that both teachers and learners are willing to engage in entrepreneurship subjects and also the exploration of modern teaching methods blended with traditional methods. It is also important to note that learners that grew up in cultures that advocate entrepreneurship do not view formal education as an engine towards the development of entrepreneurial intent or ability (Hegarty, 2006). Heinonen and Poikkijoki (2006) maintain that an entrepreneurial-directed approach seems to be one of the appropriate methods to instil entrepreneurial skills in learners. This approach allows learning to broaden the perspective of learners. The entrepreneurial-directed approach is successful in developing entrepreneurial behaviour and the requisite skills. However, some scholars are still debating about whether entrepreneurship can be taught or not. Some argue that the teaching process should involve both science and art. This implies

that, as an art, teaching develops innovative and creative thinking, whereas science suggests as the teaching of business competencies.

Jones and Iredale (2014) notes that there is a need for teachers to rise to challenges faced in imparting entrepreneurial knowledge and skills. A student that goes through the training should be able to solve challenges that are experienced in the entrepreneurial economy and the enterprising society. Therefore, putting more time into working with the teachers will assist in pedagogical delivery.

Ahmad (2013) maintains that not all job seekers will be successful in finding a job. This finding called on the Malaysian government to do training on entrepreneurship as early as possible to expose learners to the possibility of being job creators. In addition, Adeyemo (2009) notes that teacher training does not focus on acquisition and understanding of entrepreneurial skills. This justifies the notion that teachers have limited capabilities to train learners to be entrepreneurs, and then calls for the inclusion of entrepreneurial skills in teacher training. Middleton and Donnellon (2014) note that there is a correlation between the content of entrepreneurship education and how learning should be structured.

Bazhenov, Evseeva, Evseeva and Zilber (2018) maintain that the classroom environment should be designed in the manner to allows learners to be creative in order to solve societal problems, within the prescripts of entrepreneurial innovative activities. This creativity approach will offer learners an opportunity to develop skills needed in the running of a business. Tapung, Manyani, Lon, Payong and Supriatna (2018) note that learning material that focuses on social problems leads to a positive result in the attainment of learning outcomes.

Longworth (2018) outline the characteristics of entrepreneurial learning for enriching employability skills. These skills include, among others, creativity and thinking skills; teamwork; management and communication skills; learning to learn; applying new knowledge in practice; and, adaptability, versatility and flexibility. The social reconstructionist classroom comprises of learning that promotes employability skills. Learners need to be exposed to learning activities that enable them to think out of the

box. Furthermore, they should be taught teamwork, where they will receive and share information with others.

Communities that are faced with many social problems advocate for entrepreneurial education as a way of mitigating these problems. Kirui and Sang (2019) focused on rethinking the quality and relevance of university education. This study looked at the extent to which university education instil an entrepreneurial culture in prospective students. The study found that student engagement, feedback and an entrepreneurial environment are important considerations in the enculturation of an entrepreneurial culture. Hence, it remains important that the theory employed in a classroom should teach learners to solve social problems. Theory will assist in the enculturation of an entrepreneurial culture in students. This approach will also result in university education that is more relevant to the society.

Oyibe and Eluu (2015) maintain that many countries face social problems, such as unemployment, high rate of poverty and insecurity, as well as many other challenges which need practical oriented solutions. This further highlights the notion that educational entities can provide solutions to such problems. In addition, entrepreneurial education aims to develop entrepreneurial skills and attitudes that assist learners to attain the sort of personal qualities that encourages them to work towards being independent. This is only possible through an effective pedagogy (Farias & Balardini, 2018). The teaching of economic theories can be a remarkable shove. Hence, it is important that classrooms be treated as social structures where one teaches through real-life experiences. This will help learners to understand the environmental, economic and social crises in society.

Furthermore, modules in teacher training should afford learners an opportunity to explore the events of what occurs in a classroom in order to encourage students' full participation in the learning. It is important to incorporate meaningful and useful classroom experiences that research the dimensions of a society. This allows learners to appreciate the patterns that they are familiar with and appreciate the unknowns. The rapid development of information technology is constantly changing how people view the world and this also makes a significant change in the way learners are taught. There is a need to change classroom teaching because that is where several activities take place (Guan, 2016).

Inquiry-based teaching and learning is one of the crucial tenets of social reconstruction. This methodology allows students and teachers to work simultaneously as equal knowledge producers. Learners and teachers both have a role to play in constructing knowledge through dialogue and research. This approach is learner-centred, which allows learners to develop the necessary skills required to solve current societal problems. Teaching in a social reconstruction classroom stimulates skills development and knowledge construction, including the organisation, management and judgement of knowledge. Inquiry-based learning involves going through the scientific process, where learners observe what is happening around them and start to question why things are the way they are. This approach helps to create an authentic learning environment as it fosters important skills, learners' confidence and independent learning (Walker & Shore, 2015).

It is the norm that education is an individual entity and social practice. There seems to be lack of synergy between the two entities; hence, education is changing the society at a slow pace. It is important to note that the education of an individual is directed towards the achievement of societal goals. There should be a mutual and symbiotic relationship between what is happening in a classroom and what is happening outside of the classroom (Grootenboer, Edward, Groves & Choy, 2017). Moreover, Tabackova (2015) notes that all the universities across the globe regard critical thinking skills as an important skill which university graduates should acquire by end of the programme. Critical thinking is one of the important skills needed to start a business and to stimulate and interest in starting a business.

In addition, Zhong (2017) notes that the flipped classroom method can be effective in the teaching of modules. This method assists in shifting the pedagogy from traditional practice to modern methods in order to improve the ability of learners to learn life skills. The flipped classroom will further improve logical thinking, problem-solving skills and emotional experience, while, at the same time, establishing learning confidence. Moreover, social reconstructionist theory advocates that teachers should try to develop a supportive classroom environment in order to stimulate student participation in the classroom. It is also important that teachers are on their best behaviour and communicate

well with students in order to build a good relationship with their students (Zhao & Su, 2017). Furthermore, curriculum objectives are best achieved when all stakeholders actively participate to ensure an effective teaching and learning process because effective implementation of a curriculum depends on the availability of teaching and learning resources. Teaching materials provision aims to achieve different learning skills. In some instances, where schools are unable to provide teaching and learning resources, the community can assist with resources that are available in the society in order to improve the teaching and learning process (Pfennig, 2016). Science classrooms are classified as inquiry classrooms, where the scientific process is followed to investigate a particular phenomenon. This process allows learners to acquire skills such as independent learning, to boost the confidence of the learners and to nurture their values, attitudes and skills (Martin, 2016).

Moreover, Muresan and Pastiu (2016) note that the use of simulated enterprise in the entrepreneurship classroom creates a better learning environment. This approach aims to develop an entrepreneurship spirit in learners by integrating and applying knowledge from different disciplines in order to deepen practical skills in business. The idea of this method is to expose learners to real activities that occur in the running of a company or business, thereby developing the legal and economic knowledge that is needed to start a business. Learners are able to acquire both soft and hard skills from this type of experience.

Eidenberg, Thompson, Verduyn and Essers (2019) found instructional constraints to entrepreneurial activities. Their study indicates that people are reluctant to start businesses because of high taxes and insufficient access to public goods. The study further outlines findings that cultural, political and economic dimensions influence entrepreneurial activities.

2.6.1 Teaching, learning and assessing entrepreneurial skills from the social reconstructionist perspective

Education is seen as the engine for the reconstruction of countries or nations. Education has the ability to transform people's mind-sets and rebuild their social relationships. Teachers are regarded as important agents in changing people's lives. Education has the

capacity to inculcate attitudes and values into learners and helps to improve the wellbeing of a society. The things that the teacher does in a classroom tend to shape what learners learn. Thus, the teaching and learning process influences the identities of learners and motivates them to become self-reliant. Hence, it is important that teacher preparation is done properly in order to help learners to learn. Proper teacher training enables the teacher to comprehend the educational theories learned (Rubagiza, Umatoni & Kaleeba, 2016).

Social reconstructionists maintain that schools can be structured in a manner that would enable learners to reconstruct the society at large. Social reconstructionists base their interpretation on experimentalism, technology and science. Social reconstructionists believe that the social ills and problems in a society can be resolved through the application of science and technology. Science is based on inquiries that set out to resolve an identified problem. A social reconstructionist-informed classroom involves active participation, where learners learn by doing. The school is viewed as a community in which habits, attitudes and values are inculcated into learners through instruction. Social reconstruction provides learners with projects that relate to the problems faced by society (Pasek, 2017).

The important elements that should be taken into consideration are that social reconstructionism is not about:

- > the teacher choosing the course content for learners or problems of the society;
- >isolating learners from others by putting computer screens in front of them;
- >giving learners the same projects;
- >having learners to resolve problems which are not related to the society;
- >failing learners to challenge the cultures and values of the school;
- >teaching the agriculture entrepreneurship process in an uncritical manner;
- >permitting learners to do projects that satisfy their individual needs; and,

>determining the content that needs to be known by the learner in order to be successful adults thereby limiting the potential of the learner

Social reconstructionist is:

>involving learners in community and school life;

> developing learners for the improvement of the society and reconstruction; and,

>implementing a curriculum that has to be constructed through the social reconstruction theory (Zuga, 1992);

Education should facilitate the growth of learners by developing their life skills and instilling greater competency in them. Learning by doing should be at the centre of the curriculum because learners learn to write by writing and learn to reason by reasoning. Practices of this nature improve the learners' knowledge, skills and level of intelligence. The process of teaching and learning will then permit learners to solve the sort of social problems encountered in their social life because the social reconstruction theory is based on the ideology that human beings have the capacity to influence the environment around by applying the knowledge and skills that are learned in the schooling system.

Education can be used to increase learners' abilities by engaging them in activities that allow them to solve problems in order to develop problem-solving activities. The adoption of a social reconstruction curriculum ideology in schools is called for in order for science education to drive social transformation and to improve the wellbeing of society.

The Agricultural Sciences subject is one of these social transformation subjects. The subject has specific aims which need to be fulfilled in everyday teaching and learning activities. The specific aim of Agricultural Sciences as a subject is for learners to acquire farming skills and to be able to run a farm business. This process requires that certain activities and processes be performed in order to achieve the specific aim. One of the mechanisms indicated in the curriculum documents is that learning should be facilitated through activity-based learning. This involves learners being exposed to learning activities and experiential learning. This also implies that learners should be taught through assessment tasks and learning activities that help them to understand the agricultural

entrepreneurship concepts better. The understanding of the concepts can be followed by case studies that allow learners to analyse problems based on these agricultural entrepreneurship concepts. Case studies assist learners to develop their problem-solving skills, which are a core element of the social reconstructionist curriculum because this theory advocates that learners should help their communities to resolve social problems.

Science subjects train learners through inquiry. Inquiry requires that learners have a good understanding of the scientific process. As such, teachers need to teach learners the scientific process and give them experiments to do. Practical work also helps learners to develop an interest in the subjects. This is important in Agricultural Sciences because learners tend to have negative attitudes toward the subject since the subject is associated with getting one's hands dirty. Practical work has the ability to make learners appreciate and understand the concepts better. They will also understand the importance of Agricultural Sciences in solving social problems, such as a lack of food and unemployment. Emphasis on the importance of Agricultural Sciences will make learners want to learn more about the subject and to use this knowledge in their daily activities. The teaching of this subject also requires that teachers use examples from the local community, which helps learners to easily relate to the content taught and which may also stimulate an interest to experiment with the content learned in their households.

The instructional process in the Agricultural Sciences classroom

The instructional process in Agricultural Sciences is based on activity-based learning. This process involves learners learning by doing learning activities. The acquisition of knowledge and skills is fostered through the learning activities. This practice adopts a learner-centred approach in which learners are given activities to do and then they have to construct new knowledge in the process. Learning, in this case, is through engagement with the learning activities. Learners and teachers construct knowledge and develop skills in the process. These skills are essential for solving social problems. This instructional process requires extensive facilitation by the teacher in order to identify misconceptions and to look at learners' level of understanding of the activity given to them. The curriculum in South African schools is prescribed; however, it is incumbent upon the teachers and learners to reconstruct knowledge in order to nurture the elements of creativity in the

learners. Furthermore, the prescribed curriculum does not necessarily describe how the instructional process should be structured. Teachers still have the freedom to develop strategies that will help learners to learn the skills prescribed in the Curriculum Assessment and Policy Statement document. The context within which learners are taught is different according to area. The curriculum needs to be adjusted in a manner that suits identifying problems within the local area in which the school is situated, following which the education will be considered relevant to the society at large. The role of both the teachers and learners needs to be redefined in the instructional process.

The role of learners in teaching and learning within a social reconstructionist classroom

The teaching and learning of Agricultural Sciences is activity-based. Learners need to be given learning activities during instruction. This implies that the classroom is learner-centred. The teacher needs to facilitate such an activity, while learners need to work with others to construct knowledge and also work with the facilitator to get clarity on the learning activities given. Learners are taught to take responsibility for their own learning. They need to organise their school activities. This will teach them to work with responsibility. Learners need to work in groups and this will help them to develop teamwork skills (Bleazby, 2013). In addition, learners in social reconstructionist theory are tasked with using their critical thinking abilities to discover things that are happening in their communities and also coming with constructive solutions to societal problems. In this process of discovering the world around learners are mostly like to develop problem solving skills and also learn to make decisions. Learners become the driver of the social change and learning by doing becomes the focal point for their development (Mayne, 2014)

The role of teachers in the teaching and learning process

Teachers are tasked with designing a programme of classroom activities and assessment tasks. They give learners some instruction on the topic that will be discussed and also the sequence of events in the classroom. In teacher-centred classrooms, teachers are

regards as experts on the subject matter. The approach to teaching is through transmission of information from the teacher to the learner. This is followed by giving learners an assessment activity at the end of the lesson. Teachers also need to design the assessment techniques and tools. On the other hand, in learner-centred classrooms, teachers design learning activities and facilitate learners as they are busy with the activities and knowledge is constructed together. After the teaching and learning process is done, assessment follows to check whether the objectives of the lesson have been met. Assessment is used to determine the progress of learners. The information gathered from the assessment can be used to inform the teachers about the skills and knowledge the learners have learned. Continuous assessment helps to determine the abilities of learners because, in assessment activities, learners are given tasks to do and they are rated based on set objectives (Igwe, Rufai & Olufemi, 2013).

Rebuilding of a society is the primary goal of schooling. The classroom becomes the venue to address social objectives. Curriculum is based on problems affecting the community and this helps the learner to better understand the dynamics of living and surviving in their community while trying to solve the current problems faced by the community. Teachers need to take into consideration the values and attitudes that they need to inculcate into learners. Social reconstruction classrooms shape learners which, in turn, leads to learners who shape society (Parsons, 1986).

Viewed from the social reconstructionist theory point of view, the curriculum has the ability to change the society because, if learners are taught to appreciate natural resources in Agricultural Sciences and show them the importance of preserving nature, they will be able to use that knowledge in their daily lives. The curriculum needs to incorporate the needs of the society. The society is characterised by many social problems, such as unemployment, poverty, shortage of food, inadequate health care and illiteracy. Some of these problems can be addressed by instilling the importance of the Agricultural Sciences subjects and how it can be used to change the lives of the people in society.

Instructional procedures (events in a classroom)

- The teaching and learning process starts with learners bringing to the fore the problem that needs to be discussed;

- Problem identification is followed by delivery of information from different learners;
- Teachers act as facilitated to keep teaching and learning process in accordance with the subject matter;
- Agricultural Sciences learners can take educational trips to visit different farms;
- Each of the learners can be asked to explain their experience on the farm and how they can improve the farm going forward;
- Such instructional procedures can be repeated through role play, simulation, drama and story-telling; and
- The repetition of this instructional strategies will also help learners to collect more data on the matter being investigated because learners are more likely to be touched emotionally and intellectually when they discuss personal experiences.

Intense group discussion is a core element of social reconstructionism, where learners are tasked with finding ways to reduce poverty in rural communities. Group discussion grants learners an opportunity to expose their values to each other and to share their thoughts, which can lead to learners reconstructing their values as a result of the discussion. The role of the group discussion in this case can be whole classroom discussion, where the teacher can continue the discussions by asking intense questions about the issue under discussion. These intense discussions require feedback and also follow-up in order to consolidate the related problems or matters. The process will empower both teachers and learners to explore more meanings and values. The process provides learners with an opportunity to connect to the lesson. Learners are more likely to understand Agricultural Sciences quicker because the process relates directly to their lives. In social reconstructionism, education is viewed as a chain through which society is supported because a good society is not something that is provided by nature; it is built through the hands of the people. The involvement of community members will instil confidence among, since they will have the courage to solve their own societal problems rather than giving up on them. Schools are regarded as institutions where change in a society is initiated. Time needs to be spent on the analysis and understanding of society's social ills, which is then followed by creating a vision based on the data gathered from the process.

Learning through social reconstruction

Learning is viewed as a social act where a group of individuals come together to share views and reach an amicable consensus. This process can happen in any place, either formal or informal. Learning is normally perceived to occur in a classroom, whereas it may also occur in the setting of the community. Social reconstruction learning requires interactions between the school community and society at large. Learning is meaningful when it occurs inside and outside of a classroom. Learning is likely to occur where there is proper communication and greater understanding of the language. Learning through role play and group discussions transforms the traditional classroom. Learning requires that people be invested emotionally in the issue under discussion, where learners should interact with the environment because such interaction is more likely to create meaningful discussions.

Moreover, teaching through social reconstruction is based on the rebuilding of a society. The most important element of teaching is to motivate learners to have interest in restructuring the wellbeing of their community. Learners that are motivated by teaching are more likely to have interest in restructuring the wellbeing of their community. Learners who are motivated by teaching are more likely to connect to what is in their community with what they have learnt from the classroom. When this teaching occurs, a teacher is viewed as one of the participants rather than an expert. Both the teachers and learners have the same authority when issues or problems are being discussed. They both have something to share with each other. This is not a situation where the teacher talks and learners listen, rather teacher and learners are rather treated as equal partners. Teachers in a social reconstructionist classroom do not choose the content for learners, rather they both contribute to the content to be discussed through instruction. Both teachers and learners learn from one another. What is core in social reconstructionism is what the society perceives as being true is more important than what is regarded as true in an absolute sense. Knowledge does not create itself, however; it is constructed through social debate or deliberation. Knowledge created through deliberations, debates and discussions has meaning and value because it fits into the structure of the society (Schiro, 2007).

Social reconstructionist theory is based on the fact that teachers tend to identify the strength of learners rather than focus on their deficits. Another important element in this theory is that boundaries are set consistently and clearly for the smooth running of the schools. Teaching life skills to learners is crucial and necessary. Learners need to acquire these skills for their survival and sanity. These life skills include, among others, the ability to solve problems, the ability to communicate, the ability to resolve conflicts, to take decisions and work with others. For learners to achieve and develop these competencies, they should be exposed to learning activities that build these competencies. Teachers need to provide learners with more support and care because schools are regarded as entities where learners can be nurtured for meaningful participation in society (Bondy & Mckenzie, 1999).

The theory was used to explain:

- How teaching and learning (entrepreneurial teaching and learning) need to be structured according to the theory (the theory will inform the study by doing comparison of what teaching and learning entrepreneurial skills is);
- How classroom observations tally with the tenets of the theory;
- The process of learning entrepreneurial skills (learn to understand, become and be entrepreneurial) and what learning activities should be employed;
- The process of teaching and assessing entrepreneurial skills (which teaching and assessment methods to employ according to the theory);
- The content taught should address societal problems; and,
- How a lesson should strive to improve learners' self-efficacy (boosting confidence so that they strive to take risks and not be afraid to start their own businesses).

The instructional process then led to the following:

Exhibit 1

- ENTREPRENEURIAL BEHAVIOURS:
 - opportunity seeking and grasping;
 - taking initiatives to make things happen;
 - solving problems creatively;

- managing autonomously;
- taking responsibility for, and ownership of, things;
- seeing things through;
- networking effectively to manage interdependence;
- putting things together creatively; and,
- using judgement to take calculated risks.

Exhibit 2

- **ENTREPRENEURIAL ATTRIBUTES:**
 - achievement orientation and ambition;
 - self-confidence and self-belief;
 - perseverance;
 - high internal locus of control (autonomy);
 - action orientation;
 - preference for learning by doing;
 - hardworking;
 - determination; and,
 - creativity.

Exhibit 3

- **ENTREPRENEURIAL SKILLS**
 - creative problem solving;
 - persuading;
 - negotiating;
 - selling;
 - proposing;
 - holistically managing business/projects/situations;
 - strategic thinking;
 - intuitive decision making under uncertainty;
 - networking;
 - adaptability;
 - organisational and time management; and

➤ tech-savvy

2.6.2 The rationale for using social reconstructionist

- Social reconstruction theory advocates for a curriculum that solves community problems (Driver, 2016). Unemployment as one of the problem facing many communities. It is one of the social problems that can address in school by equipping learners with entrepreneurial skills. This theory serve as best lens on how entrepreneurial skills can be developed in Agricultural Sciences
- The theory further views learning and teaching of entrepreneurship as a means through which society's problems can be resolved. The theory will advocate that learners interact with the community to better understand the urgency and validity of societal problems.
- Learners are fully involved in solving real-life problems, learners are actively involved in their own learning, in the process it helps learners to shape local communities and the country (Darcy, 2018).
- It advocates for instructional strategies such as field trips which may help in enhancing learners' entrepreneurial skills so that they can participate in agricultural projects in their communities.
- Inquiry-based teaching and learning is one of the crucial tenets of social reconstruction. It advocates for inquiries which play a vital role in the process solving process. This methodology allows students and teachers to work simultaneously as equal knowledge producers as they both engage in research in quest of solving social problems (Walker & Shore, 2015).
- Social reconstructionist classrooms are designed in the manner that allows learners to be creative, within the prescripts of entrepreneurial innovative activities (Bazhenov, Evseeva, Evseeva and Zilber, 2018).
- Hence this theory was chosen as a lens for this study.

2.6.3 The shortfall of social reconstructionist

The social reconstructionist theory is based on analysis of problem encountered in a society. It focuses more on providing solutions for social problem experienced in communities. In some cases, these solutions that arises may be suffer from shallowness. It may be difficult to implement some of the tenets due to manner in which south African school are structured. Most South African schools are having difficulties in accessing the relevant teaching and learning resources. As such it may be difficult to practice or advocate for such a philosophy of teaching. However, the implementation of these theory can be beneficial if more support is provided to schools.

The theory makes remarks on the curriculum, the role of teachers and learners. It regards schools as agent for change. The theory basically politicizes the curriculum. It further counters the existing cultures of the schools. It questions the traditional nature of teaching in a classroom. The theory requires teachers to have vast background knowledge on the cultural and historical foundations on the issues under discussion. As such it may be difficult for teachers to implement such a theory. This is because teachers need to understand the issues fully before incorporating them in their teaching. The school will need to have research facilities so that teachers are fully prepared to present lesson from social reconstruction perspective (Higgins, 2010).

2.7 Chapter summary

The main purpose of this chapter was to provide an overview on previous studies regarding the development of entrepreneurial skills in the Agricultural Sciences classroom. The studies have indicated that most teachers used traditional methods when teaching and assessing learners, while other scholars advocated for innovative methods in teaching and assessment of the entrepreneurship curriculum. In this chapter, the researcher focused on the influence of instructional decisions made by teachers about the development of learners' entrepreneurial skills. Lastly, the researcher explored what social reconstruction theory is about and how it will be used to analyse the results of the study. In the next chapter. The researcher delves into the research methodology employed in this study and explains how data were collected and analysed. The

researcher will also outline the ethical matters that were considered in the process of the research.

CHAPTER THREE: RESEARCH METHODOLOGY

3. Introduction

The previous chapter dealt with a literature review and the theoretical framework. In the previous chapter the researcher emphasised the how other countries encourage entrepreneurship education and focused on how learners are taught and assessed in the process of developing entrepreneurial skills. This included a detail description on social reconstructionism. In this chapter, the researcher discusses the research methodology, beginning by outlining the research paradigm and the design that underpin the study; followed by data collection, sampling and analysis. In this chapter, the researcher also provides the rationale for using both qualitative and quantitative data collection approaches. Lastly, the researcher also includes a section on the quality criteria and the ethical issues that were observed during the research process.

3.1 Research paradigm

The research paradigm used in this study is pragmatism. This paradigm was chosen because its emphasis is on joint action and shared meaning. The paradigm is best suited for the mixed methods research. It is further noted that the mixed methods are mainly employed for complementing limitations between the two research approaches. These two approaches are combined so that one approach complements the advantages and disadvantages of the other. The pragmatic approach dwells on the things that make difference and also its ability to connect abstract matters, from the epistemological level to the methodological level (Shannon-Baker, 2016).

Morgan (2007) allude to the fact that pragmatism is based on creating the shared meaning. This implies that paradigm emphasize the element of complementary between quantitative and qualitative approaches. Both these approach have advantages and disadvantages, hence the two approaches are combined to account for the difference in each. In addition, pragmatism is based on experience that individuals have on certain things. This experiences are used to develop sound solutions to social problem. The approach connects abstract matters on the epistemological level to the methodology

level. The emphasis is put on change that will make a difference (Amon and Riechel, 2009).

McKim (2017) argues that mixed methods is advantageous in the investigation of the matters or issues where one approach is not sufficient. However, this type of approach requires a great deal of time because, in some cases, the first type of data collected must be analysed before collecting the second type of data. The mixed method approach requires more funding compared to other approaches. On the other hand, the mixed method approach increases the validity in findings and assists in determining how the secondary data should be collected. The quantitative part of the research can answer three research questions which cannot be addressed through the qualitative approach. The first phase involving the qualitative approach was to establish how Agricultural Sciences learners are taught entrepreneurial skills and to determine how learners are assessed in the process of instilling entrepreneurial skills. The second phase of the study which was quantitative, focused on the learners' attitudes towards learning agricultural entrepreneurship and the factors that lead to the development of entrepreneurial skills.

It remains important that a researcher employs paradigms that address the research question or relate to the nature of the phenomenon being investigated because the data set that is drawn from different frameworks may lead to results which are not easily interpreted and not meaningful to the other research data. Researchers need to carefully choose the framework that is best suited for their study (Rehman & Alharthi, 2016). In addition, paradigms are frameworks which inform the researchers how a particular social matter or issue can be viewed. They provide ways of looking at a phenomenon and provide sets of assumptions about the nature of reality (Perera, 2018).

Moreover, research paradigms such as positivism believe that valid knowledge is constructed through direct observation. Observations require the researcher to have the ability to record and measure exactly what is regarded as knowledge. However, positivists also note that there are things that cannot be observed, namely attitudes (heart-on) and thoughts (mind-on). Positivism is based on the fact that scientific knowledge is constructed by first proving or verifying the facts. On the other hand, interpretivism is based on studying and understanding people. This paradigm involves understanding

events that occur daily, social structures and documentation of experiences. Reality is interpreted through the values and meanings that people attach to a phenomenon (Chilisa & Kawulich, 2001).

3.2 Research design

This study used both qualitative and quantitative methods. The study employed a sequential exploratory design. This design divides the research process into two stages. During the first stage of the study, data were collected and analysed qualitatively. During the second stage of the study, data were collected and analysed quantitatively (Creswell, Plano Clark, Gutmann & Hanson, 2003). In this study, it was important to use mixed methods because this approach provided sound findings that reflected the complete picture of the research problem. As such, a combination of the two methods was more appropriate for application in the study.

3.2.1 Sequential exploratory design

This is a design approach where the researcher starts with qualitative data collection and analysis, which is followed by quantitative data collection and analysis. The design approach is mostly used when the qualitative approach is dominant over the quantitative approach. The idea behind employing this approach was to use the quantitative results to assist the researcher to explain and interpret the qualitative findings (Creswell, 2003).

This study used sequential exploratory design to explain the sequence of the events that were used in the collection and analysis of data. The study emphasised how teachers' instructional decisions affect the development of learners' entrepreneurial skills in the Agricultural Sciences classroom. A study of this nature requires one to look at many factors that might have an effect on the development of entrepreneurial skills. Hence, it was vital to use more than one research approach. A single research approach would not have answered the research objectives in their totality. The focus of the study was on what the teachers do in order to develop learners' entrepreneurial skills. However, it was also important to check the factors that impacted on the learners' attitudes towards learning agricultural entrepreneurship. This came from the notion that teachers may be doing all that is needed to be done for learners to develop entrepreneurial skills, while

learners become reluctant to receive the instructions. It was also important to explore the way teachers' deliveries influenced learners' attitudes and interests to learn the subject (Akinsola & Olowojaiye, 2008).

In addition, the decision to employ sequential exploratory design, instead of explanatory research design, was made because the first phase of the study started with the qualitative approach. The findings from the qualitative approach then predetermined the events in the second phase, which was quantitative (Terrell, 2012). In addition, Harrison and Reilly (2011) explained how mixed method design is implemented in marketing research. Their rationale for using the mixed methods includes providing support within the interpretations of the results. The mixed methods approach to data collection and analysis increases credibility in the marketing research discipline. This approach allowed the researcher to be holistic and flexible when trying to answer the main question of the research within the context of the study in question. This assisted the researcher to explain why learners did not have entrepreneurship skills.

In contrast, Tashakkori and Creswell (2007) put forward a worldview about whether research paradigms can be mixed or integrated in a mixed method study. In addition, Gilbert (2010) adopted a sequential exploratory design when conducting a study on the evaluation of graduates' training and development in the construction industry. The study adopted this method because the research questions of the study required the use of both methods so that the research questions could be answered completely. The first phase was to record the training activities that occurred, while the second phase involved getting the perspective of graduates on the training they undertook. A qualitative or a quantitative approach alone would not have been able to answer the research questions. The use of this is more visible in research projects that dwell on the evaluation of the school programmes or training workshops.

Similarly, Berman (2017) adopted a sequential exploratory approach where the first stage was data collection and analysis for qualitative purposes, While the second stage involved data collection and analysis for quantitative purposes, separately. The concluding remarks of the research process involved integrating the data for all the research questions in order to answer the central research problem. Furthermore, Vankova,

Creswell and Stick (2006) explain how the sequential explanatory design is applied in different studies. This type of research design is prevalent in studies that use the qualitative approach first, followed by the quantitative approach. In the final stage, the two data sets are connected and the results are linked in order to reach a conclusion about the research problem.

Furthermore, Doyle, Brady and Byrne (2009) emphasise the significance of using mixed methods in nursing studies. Their study showed that mixed methods allow researchers to overcome incomplete findings. This is likely to occur in studies where one single method cannot answer the research questions.

3.3 The rationale for using mixed method

The use of both approaches has become a dominant mechanism in recent studies. In most instances this approach is used because there is a need to integrate data collection methods or analyses. Thus, it is always beneficial to do integration when using these two approaches. In some instances, researchers may use these approaches separately for analysis in order to fully develop findings on each approach. Other researchers, however, use these two approaches in order to do triangulation so that they develop a deeper meaning and understanding of the phenomenon in question. Some researchers view the use of these approaches as possible outcomes of the results other than the ultimate goal because sometimes it might be possible that the researcher may not be able to know whether the end results require convergence or divergence. It is also possible that the use of this approach may be inseparable because of the nature of the results found (Maxwell, 2016).

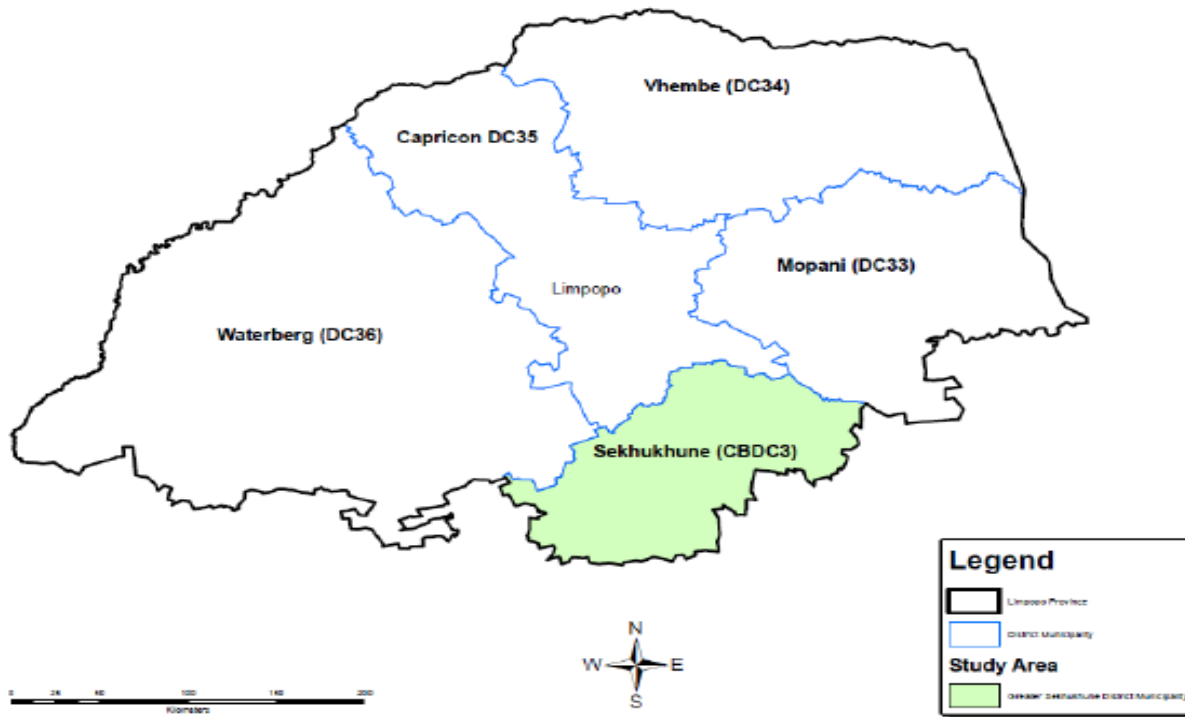
Moreover, completeness and confirmation are core elements of mixed methods research. Using the two approaches means that researchers have the ability to validate the findings of each approach, which is important in strengthening the research. An overemphasis on the ability of mixed methods to confirm the results of the other approach may silence or overwrite the possibility of divergence. This may lead to the research findings not being able to generate further understanding of a research question (Archibald, 2016).

Morse and Cheek (2014) highlight that the mixed method approach is defined as a situation where the quantitative and qualitative methods are linked in order answer the research question completely. The rationale for using the mixed method approach is to find a deeper and richer understanding of the important facets of the study. Furthermore, in some instances it is not clear why researchers use the mixed method approach in their studies. Some may argue that one approach is insufficient in exploring the phenomenon being studied. It can be argued that there is a need to explain the results of the study using both approaches so that what cannot be explored in one approach can be captured in another approach. Many researchers use convergent methods instead of concurrent ones. Under the convergent mixed method approach, the presentation of results depends on how the two data sets communicate or interact with each other (Fetters & Freshwater, 2015).

Ramlo (2016) maintained that there is a need for the use of the mixed methods approach in a case where a phenomenon cannot be investigated using one approach; for instance, when a study aims to determine the personality and attitudes, only one approach needs to be used to address such situations or phenomenon. The research aimed to determine how the instructional decisions of teachers influenced the learners' entrepreneurial skills in the Agricultural Sciences classroom. The study used a mixed methods approach in order to answer the set objectives. The use of these two approaches was adequate to address the research problem, which involved collecting data from the teachers and learners.

3.4 Study area

Figure 1: Location of the study area



Source: StatsSA (2015)

Figure 1 above shows the study area, namely, the Sekhukhune District in Limpopo Province, which is in the northern part of South Africa. Most of this district is rural and this district is located in the southern part of Limpopo Province, to the north-west of Mpumalanga Province. The district covers an area of 13 264 square kilometers. A small percentage, approximately 5%, of the population of the district live in urban areas. The district has 6 urban areas, namely, Jane Furse, Driekop, Burgersfort, Groblersdal, Steelpoort, Marble Hall and Ohrigstad, and villages dispersed throughout the district. Water is sourced mainly from rivers such as Elands, Olifants and Tubatse (Statistics South Africa [StatsSA], 2015).

Moreover, the major structures of the economy in this district are largely agriculture, tourism and mining. Most households survive through agricultural practices. The level of poverty in the region is high compared to other districts in the province. The overall estimated unemployment rate in Sekhukhune district is 53%, with the unemployment rate in the Makhuduthamaga municipality at 62,7%, in the Fetakgomo Tubatse municipality at 55,65%, the Elias Motswaledi municipality at 42.94% and the Ephriam Mogale municipality at 41,4%. The source of employment in this district is mainly agricultural

project initiatives. Agriculture accounts for 79% of the employment in the district, trade 13%, tourism 4% tourism and mining 5% (Sekhukhune District Municipality, 2019).

These statistics clearly indicate that the economy of this district is based on agricultural activities. Most of the agricultural projects in the district are subsistence in nature and most of the participants in this sector lack the entrepreneurial skills needed to grow business (Sekhukhune District Municipality, 2019). This situation may have a negative effect on the general growth of agricultural sector in the district, hence it was important to stimulate agricultural entrepreneurship in the learners from this district so they can transfer their knowledge and skills to the community at large

3.5 Sampling

This study adopted the QUAL-Quan mixed methods sampling technique. Purposive sampling and systematic sampling were used sequentially. The sample consisted of Grade 12 Agricultural Sciences learners in the Sekhukhune District in the Limpopo Province. Purposive sampling was chosen for this study based on the accessibility and willingness of the subjects to participate (Bernard, 2002). Class register was used to systematically select learners to participate in the Likert scale questionnaire. Nieto, Mendez and Carrasquilla (1999) highlight the notion that this type of sampling is more effective when one uses a mixed methods approach.

The quantitative approach focused on the objectivity of the study, where the data were measurable and hypothesis driven and findings as not influenced by the beliefs or values of the researcher. On the other hand, the qualitative approach is subjective and is often influenced by the values of the researcher and interpretations are driven in the direction of what the researcher deems as appropriate. The study used a sequential exploratory design in which the qualitative approach is dominant. In the qualitative approach, purposive sampling was adopted to select the participants, while in the quantitative, the researcher adopted systematic sampling, where learners were selected using predetermined criteria (Graff, 2011).

Furthermore, the qualitative approach enabled the researcher to create a blueprint about the context and further allowed the researcher to have first-hand experiences with the

participants. A great deal was discovered during data collection processes which may not have been the case if a quantitative approach had been adopted. Similarly, the quantitative approach was used to examine the relationships and to gather descriptive information in this study. Using this approach give a researcher the ability to quantify the collected data, unlike with a qualitative approach (Creswell, Carroll Klasen, Plano Clark & Clegg Smith, 2012). Hence, it was important that this study used both approaches. The mixture of these two approaches allowed the researcher to gather more information on the problem addressed in the study. The idea behind the use of the two methods was to integrate the data from both the approaches, rather than to separate them (Creswell & Plano Clark, 2011).

In addition, Onwuegbuzie and Leech (2006) maintain that research is cyclical in nature. The study further indicates that research questions are the crux of the study and careful consideration needs to be given when drafting research questions. Research questions narrow down the aim and objectives of the study. In mixed methods research, questions determine the method that will be used. However, this activity is more complex compared to the determination of questions when using one approach because the study needs to construct research questions to satisfy both approaches within the same inquiry. A study is also more complex because research questions are formulated using past studies and theories.

Furthermore, Collins, Onwuegbuzie and Jiao (2007) highlight the notion that there is a paradigm shift on how research is approached. There is an increase in the use of mixed methods as a way to better understand the research problem and reach more profound findings. However, the mixed methods approach, in some instances, is accompanied by challenges, one of which is the use of an inadequate sample size for the analysis of quantitative data. The challenge using the qualitative approach may occur when the study is related to lived experiences through text. In addition, the mixed methods approach involves the collection of data from different sources during the two approaches and analysis thereof. The results obtained from the two approaches will be integrated (Abbas, Tashkkori & Creswell, 2007).

Onwuegbuzie and Collins (2007) note that a sequential research design is not meant for triangulation purposes because sequential designs are more about the two phases of data collection and analysis. In most cases, the first stage in sequential design informs the second stage, which then enables the researcher to validate the findings found in one of the approaches. The analysis is done in such a manner that the findings complement each other in order to reach a conclusion. The study aimed at finding out why learners in high schools lack entrepreneurial skills. The first phase involved observations of how learners were taught and assessed, while the second stage involved documenting learners' attitude towards learning agricultural entrepreneurship. The findings from the two phases complemented each other because learners acquire attitudes through instructional activities in the classroom. However, the assumption was that there may be other factors that contribute to the problem.

Teddlie and Yu (2017) allude to the fact that there are new mixed methods sampling techniques which a researcher can adopt when conducting a mixed methods research. These sampling techniques include sequential mixed methods, multilevel mixed methods and concurrent mixed methods sampling. Mixed method sampling demands the use of both non-probability and probability sampling techniques in order to increase transferability and external validity.

Palinkas, Horwitz, Green, Wisdom, Duan and Hoagwood (2013) maintain that purposeful sampling is the most common approach to sampling used in qualitative research in order to select information rich case studies in the area of interest. The use of a single approach in health studies is regarded as a daunting and complex procedure. The nature of the discipline requires more than one research approach in order to obtain profound and sound findings. In addition, purposive sampling is a type of sampling that can be used when one wants to study a hidden population. This type of sampling accommodates small samples and is used in qualitative studies and the results in this type of approach cannot be generalised (Barrat, Ferris & Lenton, 2015).

Furthermore, probability sampling techniques are mainly adopted in quantitative research and involve the selection of more sample sizes from the entire population. On the other hand, non-probability sampling is adapted to the qualitative approach. Sample size is

extremely small and the selection of the sample is based on the purpose of research and is not like the purpose in the probability sampling. Non-probability sampling is purposive (Etikan & Bala, 2017). This study used sequential sampling, which is a type of sampling which is moves between phases however, they are determined according to the specifications of the study. The sequential sampling gives the study boundless chances of changing the research method and it also bring vigorous awareness of methods into the study (Etikan, Alkassim & Abubakar, 2016). In addition, systematic sampling is more reliable. This technique is more precise than simple random sampling and the sampling effort gives individual equal chance with no biasness (Anne-Lundberg & Strand, 2014). In addition, systematic sampling has improved data points compared to simple random sampling and is equally completed to the original population. A systematic sampling approach ensures equal probability for all members of a population to be included in the sample. This method of drawing a sample is easy and mistakes are minimal (Yang & Banamah, 2014).

3.5.1 Population and sample size

The education circuit under investigation in the Sekhukhune District had 10 schools and the study involved 4 of these 10 schools. In this population there was one school that did not offer Agricultural Sciences as a subject. In the other schools, the classes had a small number of learners, which would create a problem for the second phase of the study because the study needed to sample 25 learners from each classroom. Hence, the study used 4 out of 10 schools because of the constraints mentioned. The study sampled 4 teachers who were observed by the researcher when they taught and assessed learners in the process of developing entrepreneurial skills to determine how they taught and assessed learners. The sample size was appropriate because the data were qualitatively analysed. This study, in particular, is a phenomenological study and Creswell (1998) recommends that the sample size can range from 3 to 25 respondents, whereas Morse (1994) suggests a sample size of at least 6 participants. The sample size could be much smaller if the element of saturation emerged during data collection, which was not the case in this study. It was estimated how many participants were needed and, ultimately, the required number of participants depended on when saturation was reached. However, for the quantitative aspect of this study, the sample size was 100 learners and the

researcher selected 25 learners from the classrooms of each of the 4 schools where observations were done. 25 learners were selected from one class that was used for classroom observation in each school. The study was limited to 100 learners because this sample was used to complement the qualitative part of this study. For proper interpretation of the results on why Agricultural Sciences learners lack or have limited entrepreneurial skills, emphasis was also placed on the assumption that views and attitudes of the learners play vital role in their development; and that these attitudes are influenced by how Agricultural Sciences teachers teach learners. Hence it was important to select learners from the classrooms that were used for classroom observation in order to correlate the results from both data collection approaches. This provided a good base from which to address the problem of the study.

Moreover, the sample size was based on the fact that, since the study gathered information on how teachers taught and assessed learners, it was necessary to ask learners about their views with regard to agricultural entrepreneurship and the extent to which they used entrepreneurial skills to promote community development. The selection of the sample size was drawn from the population of the 4 classrooms where observations were done. On average, the number of learners in each classroom was fifty. The study used systematic sampling to select the learners who formed part of the sample. The selection was done using the class register, where even learners' numbers were selected.

3.6 Data collection

The data were collected using non-participant observation and a Likert scale questionnaire. During data collection, the observed activities that occurred in the classroom were guided by an observation inventory. The researcher only observed the actual activities occurring in the Agricultural Sciences classroom, without participating in the classroom activities (Schuh & Upcraft, 2001). Data collection also involved a document analysis of learners' tasks. After the completion of the observation process, learners were provided with a Likert scale semi-structured questionnaire in order to gather their views on agricultural entrepreneurship and on the extent to which they used the entrepreneurial skills learned in their daily activities.

Data collection in a qualitative approach normally uses interviews and observations, while quantitative data is collected using experiments, questionnaires, surveys and the like. This study used one method of data collection from each approach because it employed a mixed methods research approach. The non-participation observation method was used to gather the qualitative data. This method requires that the observer have the necessary skills to be able record the required information (data) (Canal, 2017). On the other hand, the quantitative data was gathered using the questionnaire, which is easy to administer, however the trick lies in the development of the questionnaire. The questionnaire needed to be designed in a manner that covered all the necessary content in order to achieve the objectives of the study (Langkos, 2014).

Moreover, a questionnaire should be designed in a manner that avoids the problem of unanswered questions. A questionnaire must to allow the researcher to gather accurate and complete data in order to achieve the research goals and objectives. Furthermore, questionnaires assist in making reliable conclusions on the findings. Classroom observations are also reliable if the researcher has planned in advance the events that need to be recorded (Abawi, 2013). In addition, the non-participant observation method affords the researcher the ability to provide more reliable information than is possible when one simply issues a questionnaire to the respondents. However, it is expensive to conduct observations as observations require the researcher to be physically available at the research site. Observations also require more time to gather the information needed and the researcher needs to have the ability to note important events (Chapman, Mac Luarin & Powell, 2013).

Questionnaires are most useful when a researcher wants to quantify the respondents' attitudes, perspectives and behaviours. It allows a researcher to reach a larger number of individuals in a short space of time. However, in most cases, a questionnaire has a poor response rate compared to interviews. The researcher is required to make frequent reminders to the respondent to complete the questionnaire, while observations require a length of time in order to complete the recording of the data required. The researcher needs enough time to engage with the participants before understanding the data collected. The respondents may change behaviour if they notice that they are being

observed. However, a researcher gets a first-hand experience during observations (Leedy & Ormrod, 2015).

Fox (1998) notes that, even though observations are time consuming, they allow the researcher to get the real activities, emotions and feelings on the issues under investigation. The use of a tape recorder is also beneficial in observations as the observer may miss some important information because the process is tiring. In addition, for one to use observation, one needs to be able to record exactly what is presented and it is important to have a clear plan on what needs to be recorded and for how long the observations will be taking place. Observations are a beneficial research tool when one needs to record meaning, values and a detailed description of the setting.

Reflections during data collection process

The study used four schools to collect both the quantitative and qualitative approach. At the beginning of the data collection on classroom observations. The researcher collected the data with other colleague. This was done to compare the notes at the end of the class. The rationale was to strength the ability to observe what need to be observed. We would have discussions about our field notes and just to check similarities and difference. This process helped a lot because it enables us to do reflections on the observed events and it has also strengthened the quality of the data. The activity also helped on the issue of biasness. The researcher had the time table slots for agriculture in all schools. The plan was then drawn using those time table. In some cases, four lesson were observed from four different school in day and in some days it will be from three schools. The schools were just few kilometre away from each other, as such it much easier to navigate throughout the day.

Pannucci and Wilkins (2011) maintained that biasness in research can occur in all stage of the research. Biasness can be avoided from the data collection and also during the process of data analysis. In this study data was initially collected by two persons and notes were compared afterwards. Data was also verified with more data source. Participant were also allowed to view the results.

3.6.1 Non-participant observation

Non-participant observation is the type of observation where the researcher does not participate in the activities done by the participants. The person collecting data was seated at the back of the classroom to observe the activities taking place in the classroom. This method was useful in this research because it gave the researcher an actual experience of the participants (Creswell, 2002). In addition, observation is not regarded as a reliable data collection method in other disciplines because the method is deemed to collect data that is inadequate compared to data that is collected using other research instruments. Observation is also a time-consuming method. This method is dominant in qualitative studies. However, it can also be used in quantitative studies where the themes generated can be structured for quantitative analysis. This method is mostly used in market research to gather information on consumers (Boote & Mathews, 1999).

Parke and Griffiths (2008) maintained that observations are useful in places where access to the research site is not easy. The method captures people's behaviour in all spheres and also assists in sensitive inquiries. Observations allow the researcher to study behaviour of participants in their natural setting. Parke and Griffiths (2008) were able to study the behaviours of people in gambling where the researcher could either be a non-participant or participant.

Furthermore, Nandhakumar and Jones (2002) noted that, when a researcher employs non-participant observation in their studies they should start by being engaged in a prolonged engagement with the research site in order to gain experience of the context. This minimises the problem of the participants changing behaviours because of the stranger in their environment. Vinten (1994) maintains that, where the researcher uses observation as a data collection method, it is important that one has the extensive background knowledge and a clear understanding of what is required. The researcher should also have the capacity to record significant activity.

Observing participants in a natural setting reveals information which cannot be obtained from self-report methods. This method is more prevalent in health contexts, where

observation enables the research to discover elements or activities that cannot be discovered from a questionnaire (Morgan, Pullon, Macdonald, Mckinlay & Gray, 2017).

Non-participant observations are meant to gather data without influencing the setting in order to get a true picture of activities taking place at the research site. This type of observation is useful when the researcher has no access to the research site. The data produced from the non-participant observations can either be in the form of words or numbers. Non-participant observation enables the researcher to record unforeseen circumstances while gathering the data. The researcher may consider using video or audio recordings to minimise the change of behaviours (Mougi, 2007).

Observation involves looking into details regarding the motivations and moods of the participant. In some instances, participants are likely to change their behaviour when they notice that they are being observed. Long-term engagement with participants prior to the observation works well (Matsuyama, Akuba, Fujie & Kobayashi, 2015). In addition, Krauss (2005) maintains that direct observation can be helpful in a research because it allows the researcher to get all the information from the participants. Observation allows the researcher to participate in the mind of the participant in order to obtain social knowledge.

On the contrary, Shah and Al-Bargi (2013) argue that it is important that the researcher maintains a distant and non-interactive position to avoid the influence the researcher may have on the procedure that is being followed. Their study further indicates that the use of mixed methods increases the credibility and validity of the research. Mixed methods also develops innovative ways of understanding the phenomena being studied and provides a clear understanding of the research problem. In addition, observation is important when collecting data where access is restricted. However, in some cases, the researcher may be confused as to how many observations are enough for one to draw inferences which can be generalised (Khaldi, 2017).

Participant observation in the qualitative approach is rated as the most powerful tool to collect data in social sciences. This type of research instrument requires of the researcher to have long-term engagement with learners. In observation, the researcher records

learners' collective experience. This may include observing the type of questions learners pose to the teacher and how other learners respond to the questions (Elliot, 2015). In addition, Patrick (2016) maintains that non-participant observation requires the researcher to have the ability to record interesting events. This may also involve writing down theories during the observation. It is also important not to rush to draw conclusions, but rather to wait for more evidence. The data from this instrument is more interesting when participants are not aware that they are being observed.

On the other hand, Shah (2017) argues that participant observation is potentially revolutionary, allowing the researcher to question the theoretical prepositions, which will assist the researcher to look into the experience of the participants and to develop theory. Furthermore, the advantage of non-participant observation is that it deals with all the biases that might occur in the study and shows the difference between what people say and what they actually do. Non-participant observation may, in some instances, demand little interference from the researcher. The researcher may also use the communication devices such as a voice recorder or video recorder (TISDD, 2014).

Zhao and Ji (2014) maintain that, when one uses observation as a method for collecting data, there is a need to prepare an observation sheet. The observation sheet would structure events the study is interested in checking or observing. The process that follows is used to attach meaning to the observed events. This involves first creating a description code with less interpretation. The description codes are used to develop general pattern codes. Lastly, the themes will be derived from the pattern codes.

Observation in qualitative research is one of the more dominant methods used. This type of data collection is used in a situation where the researcher studies a process, people or cultures. The method enables the researcher to learn about events or activities of the participants in a natural setting. It affords a researcher an opportunity to document who interacts with whom, how participants communicate with each other and how much time is spent on an activity. Some of these observed events include what the participants are not willing to share during an interview or through other means of collecting data (Kawulich, 2005). In addition, participant observation that is done without interaction between the observer and the observed. The researcher needs to have the ability to

record important events and might help to use communication devices, such as audio and video recorders (William, 2010).

Participant observation involves observing all the activities occurring as an active player in the process, while non-participant means that the researcher is passive and only documents what transpires in the process; each of these approaches has its own advantages and disadvantages. However, it remains important to use the approach that best helps to answer the research questions; the approach that would bring about a better understanding to the research problem (Jaimanga-Jones, 2014).

In this study, the researcher used non-participant observation to observe Term 3 of Grade 12 Agricultural Sciences classrooms. The observation was done in four different classrooms in the four different schools in the Sekhukhune District. The researcher observed all the classes that took place in Term 3. Term 3 of Grade 12 covered sections on agricultural economics and some parts of agricultural genetics. It is difficult to determine how many observations are sufficient. Some researchers predict that, when one does more observations, the researcher will gather more reliable information on how teachers teach and assess learners during the lesson (Shih, 2013). On the other hand, the National Research council (2004), alludes to the fact the number of the observations done is sometimes controlled by the time and budget available for that research.

The study opted to use non-participant observation only because the rationale of the study was to establish the teaching patterns in agricultural science classroom. The analysis is based on the effects of these teaching patterns on the development of entrepreneurial skills. non-participant observation allowed the researcher to unbiasedly discover this pattern. Participant observations would have led to biasness. As such non-participant observation was more fitted to accomplish the focal point of the study.

3.6.2 Likert scale questionnaire

A Likert scale is useful when the researcher wants to gather views, attitudes and feelings. Likert scale questionnaire deployment can reach many participants in a limited time. In this study, the researcher used a -5 point Likert scale questionnaire because of the nature of the statements. Data collected using a questionnaire can be used to compare qualitative

data collected using methods such as observation, open-ended questions and interviews (Nemoto & Beglar, 2014).

A Likert scale questionnaire enables the researcher to get data on respondents' perceptions and attitudes. However, in some instances the respondent is likely to tick the neutral option or the 'I don't know' option which, in some instances, does not give the researcher a clear picture of the perception or the attitudes that needs to be recorded (Brown, 2000). In addition, Nemoto and Beglar (2014) maintain that a Likert scale questionnaire contains multiple choices from which the participant can chose. The participant needs to indicate their feelings, attitudes and opinions on the phenomenon under study. Using this type of method, the researcher is able to gather information from a large population and it is easy to interpret such data, which can be used to complement observations. It is important that the researcher use simple language that participants understand in order to avoid unanswered questions. The design of such tools requires care because the inferences are based on the data gathered from items outlined by the researcher.

A Likert scale questionnaire plays a vital role in educational research and also medical education research. However, this tool has limitations which, in some instances, can lead the researcher to draw faulty inferences. The ordinal scale can be rated between the 'agree' and 'disagree' options. However, the distance between the responses cannot be used as a measure of central tendency because the categories: agree, strongly agree, disagree and strongly disagree (Gail & Artino, 2013).

A Likert scale questionnaire is a form of data collection instrument that uses statements on the matter under investigation during data collection. The respondents need to rate their level of agreement or disagreement on the questionnaire. The construction of the tool is based on the nature of the study or the goal of the researcher (Joshi, Kale, Chandel & Pal, 2015). In addition, a Likert scale questionnaire is mainly used in research where a researcher has an interest in measuring values and attitudes. It is also important to note that attitudes range from negative to positive, or positive to negative. The success of the

Likert scale questionnaire lies in the ability to position the participant on the right scale (John, 2016).

3.6.3 Semi-structured questionnaire

Semi-structured questionnaires contain both the open-ended and close-ended questions. The open-ended questions provide an opportunity for the respondents to give a full answer to the questions asked and the close-ended question gives the stance of the participant. A semi-structured questionnaire helps the researcher to understand why participants feel the way they do. The semi-structured questionnaire normally involves yes or no type of data. This type of instrument provides rich information, which helps the researcher to draw sound inference. By using this method, the researcher has the ability to overcome low response rates to the questionnaire. Semi-structured questionnaires are mostly used when exploring the attitudes, views and feelings of participants (Barribull & While, 1994). In addition, McIntosh and Morse (2015) indicate that semi-structured questionnaires provide data that is easily comparable and may be converted into codes which can be quantified.

3.6.4 Document analysis

Document analysis involves the analysis of documents that are gathered together for interpretation by the researcher. Using document analysis, the researcher gives meaning and voice around an assessment topic. Document analysis is mainly used in a situation where the researcher intends to seek data corroboration and convergence. It is used to complement other data sources. The use of qualitative sources and methods increases credibility (Cardno, Rosales-Anderson & McDonald, 2017). In addition, documents bring an advantage to the research findings because documents are manageable and practical in nature. In most cases, documents are easily accessible, reliable and can strengthen and support research (O'Leary, 2014).

Moreover, Bowen (2009) notes that document analysis is a situation or system where a researcher evaluates and reviews documents. These documents are analysed to develop a clear understanding and meaning of the phenomenon under investigation. Documents contain images and text which are readily available to the researcher. In some instances, document analysis can assist the researcher to develop more questions. Document

analysis involves reading a text and giving meaning or voice to the text under analysis. Document analysis in this study involved the collection of assessments tasks given during the lesson presentation, as well as test papers. These documents were used to analyse the level at which questions were pitched and also the type of questions asked because the assessment tasks given during the lesson presentation play a crucial role in developing learners' skills and knowledge.

Table 3.1 Summary of the methodology used in the study

Objectives	How the instruments answer the question	Analysis	Method of data collection
Objectives 1 and 2 are about how learners are taught and assessed in the development of learners' entrepreneurial skills	The researcher will observe lesson on how the instructional decision employed by the educators contributes toward development of entrepreneurial skills. Learners will be given the assessment task to check the effectiveness of these different instructional decisions.	The researcher will do content analysis. Analysis will be on the effectiveness of each instructional decision. Assessment tasks and responses will be analysed	Observational guide or sheet and document analysis
The views and attitudes of learners on agricultural entrepreneurship	Learners will give their views on agricultural entrepreneurship	Descriptive analysis	Semi-structured questionnaire
The factors that contribute to the development of entrepreneurial skills	Learners will provide possible factors and their significance will be tested using the model	Descriptive analysis and empirical analysis from the model	Likert scale questionnaire
The extent to which learners use the entrepreneurial skills to promote community development	Learners will explain how they use the skills in the community	Descriptive analysis	Likert scale questionnaire

3.7 Data analysis

The data were analysed using the Statistical Package for Social Sciences version 24.0 for quantitative data, whereas interpretive analysis was adopted for the synthesis and formulation of discursive themes for qualitative data. The first question was analysed using the interpretive analysis, while the second, third and fourth questions were analysed using multinomial logistic regression analysis.

3.7.1 Interpretive analysis

Interpretive analysis is an approach used in qualitative research to provide insights into how the researcher a study undertaken in a particular context attaches meaning to a given situation. Interpretive analysis is more about the experiences occurring in a particular event (Reid, Flowers & Larkin, 2005). The data were analysed using the four basic elements of interpretive analysis, namely, codes, categories, patterns and themes. Data were collected through non-participant observation, where the researcher identified concepts from the collected data using the multiple coding process. The second step involved the codes which were linked in order to create a category. In the third step, the researcher identified repeated units and these units were used to build themes (Creswell, 2007; Polkinghorne, 1995).

The data from the observations were analysed using interpretative analysis in order to formulate the theme. This data was analysed based on the theories, which included the theory that addresses how learners should be taught entrepreneurial skills in an Agricultural Sciences classroom. Gill (2015) highlights the fact that interpretative analysis explores the lived experiences of the participant. This approach of data analysis acknowledges that a dual hermeneutic process exists since it interprets the meaning of the lived experiences. A sample for this type of analysis ranges from 1 to 30 participants because the emphasis is not on the number of participants but rather on the richness of the data obtained from non-participant observation.

Moreover, Chapman and Smith (2002) assert that interpretative analysis seeks to explore how participants make sense of their experiences. This approach looks at the meaning these activities, behaviour and experiences hold for respondents. Interpretative analysis

also recognises that conceptions are needed so that the researcher can make sense of the participants' personal world. Emphasis is on what the respondents believe about the topic under question. In addition, Osborn and Smith (2015), note that interpretative analysis provides a detailed examination of the lived experiences of the participants and uses its own terms to provide an account of lived experiences, in the pre-existing theoretical preconceptions. Interpretative analysis recognises that this is an endeavour where the people are making meaning of the world they are living in.

An interpretative analysis permits the researcher to produce themes on the lived experiences of the participants. This approach is inductive in nature and the analysis involves steps, such as recognising the unique events in the participants, to describe the experiences, followed by an understanding of the points of view of the participants and lastly, personal meaning making within the research site (Cooper, Fleisher & Cotton, 2012).

3.7.2 The multinomial logistic regression

Multinomial logistic regression is a model that generalises logistic regression to a multi-classification of a problem where there are more than two outcomes. The model is used to predict probabilities of various outcomes that have a categorically dependent variable which is categorically distributed, provided by a set of explanatory variables (Greene, 2012). The model is also suitable for identifying factors that contribute to the development of entrepreneurial skills. With this model, the researcher in this study was able to determine factors that are significant in developing the learners' entrepreneurial skills.

The multinomial logistic regression model can be expressed as follows:

$$\ln(P_j/P_1) = \beta_{0j} + \beta_{1j}X_{1i} + \dots + \beta_{kj} X_{ki} + U_{ij} \dots\dots\dots$$

For $j = 2, 3$ and $i = 1, 2, \dots, n$ learners where:

\ln = natural logarithm

P_1 = the probability of learners having the interpersonal skill (it is a base)

P_2 = the probability of learners having the practical skills

P_3 = the probability of learners having the critical and creative skills

$\beta_1, \dots, \beta_{kj}$ are coefficients to be estimated and,

X_1, \dots, X_{ki} are the K^{th} explanatory variables describing the i^{th} learners in a school.

U_{ij} = error term

Table 3.2: Description of the variables

Variable	Description	Expected outcomes
Entrepreneurial skills	Entrepreneurial skills (critical and creative skills practical skills, interpersonal skills)	
Age of the learner	Age of the learner(years)	+/-
Gender	Dummy, 1 if the learner is female and otherwise	+
Teaching method	Dummy ,1 if discussions method and 0 otherwise	+
Assessment practices	Dummy, 1 if high order questions and 0 otherwise	+
Business experience	Dummy, 1 if learners have been involved in business and 0 otherwise	+
Classroom environment	Dummy, 1 if classroom environment is conducive and 0 otherwise	+
Experiential training	Number of practical learners	+
Farming experience	Farming experience(in years)	+/-
Family background	Dummy, 1 if learners are economically stable and 0 otherwise	+
Education	Dummy, 1 if learners attained necessary skills and 0 otherwise	+
Attitude of the society	Dummy, 1 if society is entrepreneurial and 0 otherwise t	+
Cultural values	Dummy, 1 if culture is economically oriented and 0 otherwise	+
Motives	Dummy, 1 if learners have motive and 0 otherwise	+
Attitudes	Dummy, 1 if learners have a positive attitude learning entrepreneurship and 0 otherwise	+
Pocket money	The amount given to the learner (Rand)	+
Family income	The level of family income (Rand)	+
Number of meals	Number of meals received per day	+

The multinomial response is used in instances where the dependent variable has more than one response category. This model caters for both nominal and ordinal data (Rodriquez, 2007). In addition, Lani (2010) notes that multinomial logistic model regressions are used to explain the relationship between the nominal dependent variable and continuous independent variable. This model was more appropriate in the analysis of quantitative data for this research because the dependent variable, which is the

entrepreneurial skills, is nominal and has continuous independent variables as indicated in the table above. This dependant variable cannot be quantified. EL-Habil (2012) confirms that the multinomial regression analysis allows the researcher to cater for nominal data. This model is mostly used in the health, educational and social disciplines. The selection of independent variables was based on the literature review provided in chapter 2 and the grouping of the categories is based on the previous studies. The decision on the grouping of the variable is also influenced the theoretical underpinning, the research aim and objectives. It is further influenced by the observed evidence informing the study.

The study used four instruments to collect data namely; non-participant observation, Likert scale questionnaire, semi-structured questionnaire and document analysis. The non-participant observation was useful in discovering teaching pattern in agricultural sciences and during this observation assessments activities were collected for document analysis. Learners attitudes, extent to which learners apply classroom knowledge and other factors that affect the development of entrepreneurial skills were also documented through semi-structured questionnaire and Likert scale questionnaires.

3.8 Quality criteria

3.8.1 Quality criteria for quantitative approach

In this study, the researcher ensured the reliability of the questionnaire by conducting a pilot study in non-participating schools. The validity of the questionnaire was confirmed by giving the questionnaire to an expert in the field (Le Comple & Goetz, 1982). Expert refers to the candidate who is well versed with agriculture education. The expert went through the questionnaire and the questionnaire was accepted as is. The content validity index (CVI) was administered in order to check the validity of the questionnaire. CVI results should be 0.78 or more for the instrument to be regarded valid (Polit, Beck & Owen, 2007). The reliability of data collection instruments was tested using the Cronbach Alpha. The instrument was regarded reliable when the test has a value of 0.7 or more (Cronbach & Shavelson, 2004).

3.8.2 Quality criteria for qualitative approach

In this study, the researcher looked into issues of credibility, transferability, dependability since it used qualitative data and analysis. The researcher indicated the actual data and credible instruments to ensure that the researcher measured what is stated in the research objectives. Credibility aspect is more concerned about repeatability of the respondents' accounts and the researcher's ability to record and collect data efficiently (Selltiz, Wrightsman & Cook, 1976). This means that the researcher must have the capacity to record or collect the same results over repeated periods. The researcher in this study ensured credibility by using a tape recorder, direct observation and prolonged engagement with learners.

Dependability: the rationale of the dependability test was to indicate consistency and stability in the research process (Yin, 2015). The respondents were given an opportunity to go through the observation transcripts and were able to listen to the recorded data so that they could change some of the information if the need arose.

Conformability: Conformability involves screening the data and also making sure that the inferences drawn from the data are logical during the process of data analysis (Lincoln & Guba, 1985). The test evaluates whether data interpretation is logical and objective (Miles & Huberman, 1994). The degree to which data is shaped by participants not the researcher (Amankwaa, 2016).

Transferability: Transferability involves providing detailed descriptions of the methods that are used in the study and the context in which the study took place. This assessment is achieved when there is an element of similarity on the data set when compared to other findings which is achieving analytical generalisation.

3.9 Ethical considerations

All researchers need to adhere to strict ethical principles in research. Gratton and Jones (2010) state that all researchers, regardless of research designs, sampling techniques and choice of methods, are subjected to ethical considerations. The following ethical aspects were adhered to in this study: teacher and learners' voluntary participation; informed consent, confidentiality and the dual role of the researcher.

Informed Consent

The researcher applied for ethical clearance from the University of Limpopo as the study involved interviewing people. Letters were written to the Limpopo Department of Education to the principals of the selected schools and to the parents to ask for permission to collect data.

Discontinuance

Participants were informed that they could withdraw from the study at any time.

Privacy, anonymity and confidentiality

The researcher ensured that participants and respondents would remain anonymous. A covering letter guaranteeing privacy and confidentiality was given to all the participants. Identifying markers were removed from the data so that information could not be linked to the participants and respondents. Pseudonyms were used to protect the identities of persons involved in this study.

Integrity

The respondents were all treated equally, irrespective of gender, race, ethnicity or other parameters, so that the integrity of the research was preserved. The researcher conformed to the culture and custom of the circuit where the schools are located.

3.10 Chapter summary

In this chapter, the researcher provided an overview of the methodology that was used to collect and analyse data. The researcher used discursive themes and the multinomial linear model to achieve the objectives of the study. In this study, the researcher intended to establish how learners are taught and assessed in the development of entrepreneurial skills in an Agricultural Sciences classroom. In the next chapter, about the researcher will deal with data presentation and interpretation.

CHAPTER FOUR: DESCRIPTIVE RESULTS AND INTERPRETATION

4.0 Introduction

In the previous chapter, the researcher presented the research methodology. The chapter began with the researcher outlining the research paradigm and design that underpinned the study. The researcher also explained how data collection, sampling and analysis was done. Further emphasis was placed on the rationale for using both qualitative and quantitative approaches and the chapter also included a section on the quality criteria and ethical issues that were observed during the research process.

In this chapter, the researcher will discuss the descriptive results and interpretation. The aim of the study was to investigate teachers' instructional decisions on the development of learners' entrepreneurial skills in the Agricultural Sciences classroom. The research objectives are outlined as follows: the first objective was to establish how learners are taught entrepreneurial skills in Agricultural Sciences classrooms and, to meet this objective, observation was used as the method of collecting data. This second objective was to determine how learners are assessed in Agricultural Sciences classrooms. This objective was achieved by documenting how often learners were assessed, what type of assessment activities were given to learners and what type of questions were asked. The third objective was to describe the views and attitudes of learners towards learning agricultural entrepreneurship and the data were collected using a semi-structured questionnaire and a Likert scale questionnaire. The fourth objective was to identify the factors that contribute to the development of learners' entrepreneurial skills. A questionnaire was used to document factors that affect the development of entrepreneurial skills. Lastly, the final objective was to determine the extent to which learners used the entrepreneurial skills in their daily activities and 5 point Likert scale was to document the responses. The chapter starts with the researcher outlining how each teacher presented the lessons in Agricultural Sciences, which is followed by the interpretation of the presented data.

4.1 How are learners taught entrepreneurial skills?

4.1.1 Non-participant observation

In this section, the researcher presents data on classroom observation. The data from the observations were used to describe how Agricultural Sciences is taught in schools to develop entrepreneurial skills. The development of rural communities is characterised by extreme levels of poverty. Hence, it was important to know how learners are shaped in their classrooms for the betterment of their communities. The rationale was to document the teaching methods that are used in the classroom in the teaching of Agricultural Sciences and how learners receive such knowledge. The observations were done on four different teachers who taught Agricultural Sciences at Grade 12 level and who had more than 15 years' experience teaching the subject. The researcher observed all the Term 3 lessons in order to understand the pattern which is used to present different lessons and how knowledge was built in learners. These observations were done in line with the school time table. The classroom observations were based on how the teacher introduced the lesson, presented the lesson and concluded the lesson. The focus of this aspect of data collection was on the type of activities given to learners and the level at which the activities were pitched. The rationale for this was to ascertain how learners were assessed during the lessons. Data collection through classroom observation also looked at factors such as what type of questions were asked, learners' responses to those questions and the type of questions asked by learners. This was done to ascertain the level of participation and interaction between the teacher and the learners. This was important because it was through the level of participation that the researcher could gather information on learners' attitude towards the subject matter. This information was useful during the data analysis of the quantitative approach, where the questionnaire was used to gather learners' views on agricultural entrepreneurship. The following scenario provides a picture of what events took place in an Agricultural Sciences classroom.

4.2 Classroom observation on the teaching of agricultural entrepreneurship

4.2.1 Teacher A

Lesson: A1

Topic: Factors of production

Duration: 60 minutes

Lesson objective: to identify four different types of factors of production

The teacher started by first greeting the learners, *good morning boys and girls*. This was followed by writing the topic on the board on factors of production. The lesson was introduced by putting a scenario on how agricultural products are produced.

They are important element that are needed in order to produce good agricultural products without this element there will never be any production of good. Agricultural sector as the producer of food. The production of food requires the four important factors of production which are land, labour, capital and management.

The teacher went on to ask the following questions:

- What is the main product of agriculture?
- What does it take for one to start a business?

Learners' responses:

- No response to the first bullet
- Money to buy stock, a place to build, workers and management

Learners continued to interact with the teacher throughout the lesson. The lesson was not concluded.

Teaching strategy: direct instruction (Question and answer method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: The teacher here was introducing a new chapter on agricultural economics. This is the fourth component of the Agricultural Sciences syllabus. The dominant method in this lesson was the question and answer method. This method is relevant when one introduces a new topic. Learners actively participated during the lesson. However, there was no class activity given to learners at the end of the lesson. This often leads to the teacher not having a clear picture on whether the objective of the lesson was met or not. A1

Lesson: A2

Topic: Land as factor of production

Duration: 60 minutes

Lesson objectives: to explain land as a factor of production

The teacher started the class by greeting learners and this was followed by the teacher outlining the topic on the board (land as a factor of production). The teacher introduced the lesson by asking learners to mention the four factors of production that were discussed in the previous lesson. Learners gave the four factors. The lesson proceeded where the teacher wrote notes on the board on land as a production factor. This was followed by an explanation from the teacher. The teacher used a relevant example to explain the economic characteristics of land. The example used related to real life experiences. After this interaction the teacher gave learners questions from the previous question papers (November 2015).

The following questions were asked during the lesson

- What are the four factors of production?
- What is the difference between assets and liabilities (this question arises from one of the economic characteristics of land which is that land appreciates overtime; which means that land is an asset)
- What is a loan?

The following were learners' responses:

- Land, labour, capital and management
- Assets are things that you own and liabilities are things that you owe
- The money you borrow from the bank

At the end of the lesson, learners were given a class activity on previous exam papers (November 2015 Annexure AA1 and November 2018 Annexure AA2). The AA2 activity was treated in the next lesson.

Teaching strategy: direct instruction (Lecture method);

Assessment strategy: written and oral questions;

Learning activity: Annexures AA1, AA2 and AA4

Interpretation of the lesson: The lesson promotes rote learning as the teacher focused on writing notes on the board and explaining to learners without interacting with them during learning activities. Even though the teacher asked questions during the lesson, there was no good measure of whether learners understood the topic introduced. There were general questions asked that did not address any particular objective. A2

Lesson: A3

Topic: Labour as a factor of production

Duration: 60 minutes

Lesson objective: to describe labour as a factor of production

The teacher began the lesson by asking learners the main points of the lesson (on land as a production factor). This was done in order to introduce the second production factor, labour. The teacher asked learners questions on land to introduce labour. The teacher gave learners notes on labour and also questions from the previous questions on labour (November 2018 Annexure AA2 and September 2018 Annexure AA4).

The following questions were asked during the lesson:

- What are economic characteristics of land (introduction)?
- Mention the characteristics of a permanent worker
- What is a contract?
- What are the aspects included in a contract?
- Mention five classes of labour

Learners' responses were as follows:

- Land is a primary factor of production, is passive (needs to be worked), appreciates and is fixed at a particular place
- No response on bullet two
- A contract is an agreement between the employer and employees (workers)
- Working hours and salary

- No response to bullet 5

Teaching strategy: direct instruction (Lecture method)

Assessment strategy: oral questions and written questions

Learning activity: Annexures AA2 and AA4

Interpretation of the lesson: In this lesson, learners showed the willingness to want to learn, they were eager to answer questions. At the end of the lesson, the teacher gave learners an activity on previous exam questions. Some learners seemed to have difficulty answering the question and this may have been due to a lack of learning activities to help them understand the topic better. A3

Lesson: A4

Topic: Problems associated with labour

Duration: 60 minutes

Lesson objectives: to explain problems associated with labour

The dominant aspect on this lesson was the question and answer method. The teacher started the lesson by asking learners questions on the previous topic which was labour as production factor. This lesson was a continuation of the previous lesson. On the introduction, the teacher asked learners the following questions:

- Name two types of temporary workers
- How would you explain poor management?

Learners' responses:

- Seasonal and casual workers
- Workers not paid on time

This was done to introduce learners to the topic on labour with labour legislation acts.

The teacher posed a question on why we should learn about labour laws or acts.

Learners' response was:

- So that workers know their rights and to protect the rights of workers

The teacher emphasised how learners should memorise the labour acts. The teacher further indicated that exam questions on these concepts will be to mention five labour legislations. The teacher wrote the acts on the board and explained them. Later during the lesson, the teacher introduced problems associated with labour.

Questions asked by the teacher on this lesson included:

- Mention two types of temporary workers (introduction)
- What is the difference between seasonal and casual workers (introduction)?
- How can a farm business owner improve the wellbeing of his/her workers?
- Why should we have labour legislation at the work place?
- What does the occupational health and safety act?

Learners' responses:

- Seasonal and casual workers
- Seasonal workers work based on the work that is taken seasonally e.g. harvesting period while casual workers' work is restricted, their work is repetitive
- By training them or giving them better salaries
- To protect the rights of workers by seniors at work place

Questions asked by learners:

- Learners asked a clarity question on what poor management is and the teacher attempted to answer the question.

And that marked the end of the lesson and learners were given homework (Annexure AA5)

Teaching strategy: direct instruction (question and answer method)

Assessment strategy: oral questions and written question

Learning activity: Annexure AA5

Interpretation of the lesson: In this lesson the teacher interacted with learners by asking learners more questions on the previous lesson. Most learners could relate to the issues concerning labour in South Africa. The question and answer method was dominant

throughout the lesson. Learners were given a homework activity at the end of the lesson.
A4

Lesson: A5

Topic: Continuation of labour

Duration: 60 minutes

Lesson objective: to discuss management on farm business

This lesson was still on labour as a production factors (the focus here was on managing labour at a workplace). The teacher started the lesson by asking learners what a supervisor is. The learners responded by saying it is someone who supervises workers on the field. The teacher explained the organogram at the work place using the following chart:

Manager —————> Supervisor —————> Worker

After the teacher explained this organogram, s/he asked the following question: what is to delegate? The emphasis on the lesson presentation was on the role of management in the farm business and how best to manage labour for the smooth running of the business. The teacher outlined the important elements of managing labour such as:

- keeping promises;
- dealing with grievances;
- delegation of responsibilities

Questions asked during the lesson included the following:

- What are grievances?
- What are conflicts?
- What do you do as a manager when you find your workers fighting: how will you solve the matter?
- If workers are striking for better salaries how would you address them?

The lesson proceeded to labour laws where the teacher asked learners who formulates law. The learners responded by saying it is the President. The teacher gave learners clarity on this question.

Policy makers are responsible for formulation of laws and this is done in the national assembly. The teacher preceded with the lesson where the laws were stated and explained by the teacher. On the skills development act the teacher explained what the act is about and further asked learners what is workshop. Learners responded by saying it is a training.

During this lesson the teacher asked learners if there were any questions of clarity on the topic. At the top of the lesson the teacher introduced capital as a factor of production. The teacher introduced this topic by asking learners what capital is (there was no response from the learners). The teacher provided learners with the definition. The lesson proceeded to the type of capital, sources of capital and this marked the end of the lesson.

Teaching strategy: direct instruction (question and answer method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: The teacher on this lesson asked learners key questions helped learners to understand how to manage labour conflicts when they are business managers. However, the idea could have been more reinforced if learners did a role-play using these scenarios. This would help the learners to be emotionally attached to the situations. The knowledge will forever remain within the learners. A5

Lesson: A6

Topic: Continuation of capital as a production factor

Duration: 60 minutes

Lesson objectives: to explain capital as a factor of production

The teacher introduced the lesson by listing and explaining problems associated with capital. Through the explanations the teacher emphasised the fact that capital is not only money but also the equipment used for production and there are different types of capital. The teacher was reading the problems from a textbook and giving explanations thereafter. This method was dominant throughout the lesson. Concepts such as credit and interest were emphasised during the lesson. The teacher explained interest by using an example where a person is buying a product on credit and paying through instalments. This example gave rise to the question where a learner asked the difference between lay-by and instalment. The question was phrased in this manner: Is lay-by the same as instalment payment? The teacher asked the following questions:

- What is scarcity?
- What is a silo?
- What is overdraft?
- What type of silos are available in your area?

Learners' responses:

- Something that is not easily available
- Storage for preserving silage
- No response to bullet 3
- Silos available are mainly for field crops such as maize

The teacher asked learners a question about the value of VAT in South Africa and learners responded by saying 15%. The teacher proceeded with the lesson by putting an emphasis on the importance for farmers to keep record on expenditure and income. This led to the introduction of financial documents in a farm business. The teacher outlined the following financial documents on the board: inventory book, cashbook analysis, balance sheet, and income statement. The teacher explained what each entails and also explained each document briefly by using an example.

The teacher just gave learners the explanations without taking them through the calculations of the financial documents. S/he continued to explain the implication of

positive and negative signs on the final answer. Then a learner posed a question to say if the financial statement of the farmer has a negative sign, is it possible to sell the farm business. The teacher posed a yes, saying provided the buyer pays the debt first otherwise it is impossible when there is a debt that needs to be paid.

Teaching strategy: direct instruction (textbook method)

Assessment strategy: oral questions and written questions

learning activity: Annexure AA3

Interpretation of the lesson: A lack of data response activities will result in learners not having the interpretation skills because they are not given an opportunity to identify what income and expenditure are. The teacher guessed an item and put a value on the board and asked learners to add value on both income and expenditure. After that the teacher asked learners to subtract expenditure from income, where the difference was either profit or loss. This type of practice promotes rote learning. A6

Lesson: A7

Topic: Agricultural marketing

Duration: 60 minutes

Lesson objectives: to describe agricultural marketing processes

This lesson was introduced by first explaining the basic concepts market and marketing. The lesson continued where the teacher took some time to try to explain the concepts of marketing and selling so that learners could differentiate between them. The lesson presentation was based on the process of agricultural marketing functions. The emphasis of the lesson was on how products move from one place to the other. The teacher continued with the lesson where the topic market equilibrium was introduced. Furthermore, the teacher explained these concepts by using a graph which showed the demand and supply curve.

The following questions were posed to learners during the lesson:

- What is a market?
- What is the other name for processing?
- Why do we add value to agricultural products?
- Describe equilibrium price
- How does the quality of agricultural products influence the demand for agricultural produce?
- What leads to undersupply of agricultural produce?
- How can we advertise agricultural products?
- What are the three types of marketing?

In this lesson, the teacher was trying to introduce the chapter of agricultural marketing holistically. The teacher introduced almost all aspects that should be dealt with in agricultural marketing.

Learners' responses on the questions were:

- No response to the first bullet
- Adding value
- To increase shelf life
- It is the price where demand and supply are the same
- No response to bullet 5,6,7 and 8

At the end of the lesson, learners were given an assignment on agricultural marketing.

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: The lesson was dominated by the lecture method where the teacher was the main driver of the lesson and there were no learning activities during the lesson. The level of participation by learners was low and most of the questions asked by the teacher were not answered. This type of practice may have a negative bearing on learners' performances. A7

Lesson: A8

Topic: Marketing functions

Duration: 60 minutes

Lesson objectives: to explain marketing functions

The teacher started the lesson by asking learners to recall the main points of the previous lesson. Learners were asked to explain the concept agricultural marketing and there were also asked to explain the exchange function and physical functioning of marketing on agricultural produce. Learners did summarise these functions. The teacher explained in detail what facilitation function is and also provided examples of facilitation function in agricultural business. The emphasis was put on the standardisation, grading and risk bearing. The lesson proceeded to cover the supply and demand of agricultural products. The teacher explained these terminologies: demand and the law of demand. This continued to the factors that affect demand. The teacher stated the factors and asked learners to explain how the factors affect demand.

Other questions that were asked during the lesson include the following:

- What are the functions of agricultural marketing?
- What is demand?
- How does price affect demand of agriculture products?
- How does quality of a product affect demand?
- How can tradition affect demand of agricultural products?
- How can one overcome the problem of oversupply of agricultural products?

Learners' responses:

- No response on bullets 1 and 2
- The higher the price, the lower the quantity would be demanded
- If the quality is good, the demand of a product will increase
- No response for bullet 5
- For bullet 6 learners were referred to page **278** of the textbook

After the teacher and learners engaged in the explanations of the factors affecting demand the lesson was concluded.

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions and written questions

Learning activity: Annexure AA6

Interpretation of the lesson: This lesson was dominated by the question and answer method. The teacher asked learners questions that aligned with the lesson objectives. The depth of the question helps learners to understand the concepts, even though the learners were not able to answer some of the questions. A8

Lesson: A9

Topic: Market equilibrium

Duration: 60 minutes

Lesson objectives: to explain market equilibrium

The lesson first focused on a summary of the previous lesson. The teacher did this activity by showing learners pictures on agricultural functions. The teacher asked learners to identify the function depicted in the picture. This was followed by an introduction to the concept market equilibrium. The teacher wrote the definition on the board. This was followed by explanations of market equilibrium through the use of a graph drawn on the board.

The following questions were asked during the lesson:

- Identify the functions depicted by these pictures
- What are those different buyers on the market?
- What are feedlots?
- What is it important to quarantine agricultural products?
- What are the ways of promoting/selling agricultural products?
- What is quantity equilibrium?

Learners' responses:

- On bullet state the bullet? Learners identified the function

- Bullet 2 and 3 had no response
- They checked whether there were no diseases on the product
- Bullet 5 and 6 had no responses

During the lesson learners were given class an activity on market equilibrium (12.1 to 12.3; 14.1 to 14.3).

Teaching strategy: direct instruction (question and answer method)

Assessment strategy: oral questions and written questions

Learning activity: Verbal

Interpretation of the lesson: The level of engagement in this classroom was moderate and the teacher gave the learners a learning activity. This helped the learners to understand how products move one from place to other. Learning activities play a vital role in shaping learners' skills and instil relevant attitudes. A9

4.2.2 Teacher B

Lesson: 1A

Topic: Factors of production

Duration: 60 minutes

Lesson objectives: to determine factors of production

The teacher started the lesson by asking learners the question: What is the product of agriculture? There was no response from learners, hence the teacher provided the answer: The main product of agriculture is food. The teacher proceeded with the lesson by simulating how business is run and emphasised the resources that are needed to start a business. The teacher then introduced the four factors of production. The teacher wrote the factors of production on the board and explained each one of them. The four factors were abbreviated to help learners to remember them. The lesson focused on land as a factor of production. The lesson also focused on the economic function and economic characteristics. The following questions were asked:

“When a farmer produces 30 bags and wants to produce more, what can the farmer do to increase the production”?

Learners’ responses:

One can use manure to increase production

This activity led to the introduction of the law of diminishing returns. The teacher stated the law and explained it using relevant examples and the learners copied the notes in their notebooks.

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: The teacher did not engage the learners. The learners were tasked with copying the notes and listening to the teacher. The learners’ level of understanding was not checked. Explanation and lecture method dominated the lesson. There was no class activity given to determine whether the objectives were achieved. B1

Lesson: B2

Topic: Land as a factor of production

Duration: 60 minutes

Lesson objectives: to explain land as a factor

The teacher introduced the lesson by writing on the board the economic characteristics of land. This was followed by extensive explanations and the use of relevant examples.

The following questions were asked by the teacher:

- What are the four factors of production?
- What is the difference between liability and asset?
- What is credit and interest?
- Which product is more productive in your area?

Learners’ responses:

- Land, labour, capital and management

- No response to bullet 2 and 3
- Maize and sorghum

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: This lesson was a continuation of land as a production factor started in the previous lesson. The teacher focused on explaining the economic characteristics without checking the understanding of the learners. An activity extracted from a previous exam paper was given to learners. Some of the learners were not concentrating on the lesson, meanwhile others were sleeping during the lesson. B2

Lesson: B3

Topic: Labour as a factor of production

Duration: 60 minutes

Lesson objectives: to discuss land as a factor of production

The lesson was introduced by first asking learners two questions which were: What is an asset, and What is collateral? These questions arose from the notion that land is an asset that can be used as collateral. The teacher was concluding the previous lesson on land as a factor of production. The second factor of production was introduced. The teacher wrote notes on the board about the definition of labour and continued to explain the key words in the definition. The lesson continued where the teacher wrote notes on the type of labour on the board. The following questions were asked:

- What is a contract?
- What is written on the contract?
- Which method can you as a farmer use to increase productivity?

Learners' responses:

- It is an agreement

- Leaves days, name of the employer, contact details of employer and employee and payment
- The use of fertilizer

That marked the end of the lesson.

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: The lesson was dominated by the lecture method. The teacher spent more time explaining to learners than giving them an activity to do. The emphasis of the lesson was on the concepts that appear most often in the question papers, rather than on general teaching of the topic. B3

Lesson: B4

Topic: Labour as a factor of production

Duration: 60 minutes

Lesson objectives: to differentiate labour laws

The teacher introduced the lesson by testing learners' prior knowledge as this was a continuation of the same topic. The teacher wrote notes on the board about measures that can be taken by farmers to increase productivity. The teacher explained each point. The lesson was proceeded by introducing the labour law. The following questions were asked:

- Name two type of temporary workers
- How would you explain poor management?
- Why should we learn about labour laws?
- What does the occupational health and safety Act 1993 entail?

The following were learners' responses:

- Seasonal and casual workers

- Paying worker salaries late
- To protect the rights of workers
- No response to bullet 4

At the end of the lesson learners were given an activity based on a previous exam paper (September 2018 section A paper 2).

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions and written questions

Learning activity: annexure BB1

Interpretation of the lesson: This lesson was dominated by the lecture and explanation method, where the teacher just wrote notes and explained concepts with no proper learning activities used to facilitate the learning. This process of teaching was followed by a class activity at the end of the lesson. Learners were asked random questions which were not exactly aligned to the lesson objectives. B4

Lesson: B5

Topic: Capital as a factor production

Duration: 60 minutes

Lesson objective: to explain problems associated with labour to explain capital as a factor of production

The lesson started when the teacher asked learners to state problems associated with labour as a factor of production. The teacher continued to summarise the main points on labour as a production factor. In this lesson's presentation the teacher emphasised the key concepts on this topic, including, among others, concepts such as loans, grants, interest, assets and liabilities.

The following questions were asked:

- Why do we have labour Acts?

- What is a grant or loan?
- What is the meaning of “land is durable”?
- What is the purpose of a dipping tank as a fixed capital in the farming business?

The learners’ responses were:

- This is because workers need to know what is expected of them
- Grant is money given as a gift and it will not be paid back

Questions asked by learners:

- How do we pay an overdraft?

The teacher emphasised the questions on this topic that were likely to arise in the exam, which was followed by the teacher giving learners an activity from a previous exam paper for the September 2015 EC paper. Some of the questions included were:

- Justify with one reason the need for labour legislation in a workplace

Teaching strategy: direct instruction (question and answer method)

Assessment strategy: oral questions and written question

Learning activity: Annexure BB4

Interpretation of the lesson: The teaching of the topic was mainly on the type of questions that are likely to be included in the exam paper. The teacher used the previous questions to facilitate the lesson. The teacher did not attempt to explain to learners’ concepts that did not appear on the question paper. The focus of this lesson was on mastering how questions are asked in exams and how they should be answered. B5

Lesson: B6

Topic: Continuation of capital as a factor of production

Duration: 60 minutes

Lesson objectives: to explain problems associated with capital

The teacher started the lesson by giving learners a class activity which covered labour and capital. Learners were able to answer the questions. After these activities the

teacher continued to teach about problems associated with capital. The teacher listed each problem on the board and explained concepts to learners using examples within the South African context. In this lesson, few questions were asked by the teacher during the lesson presentation, except for the activity given at the beginning of the lesson. However, learners asked the following questions:

- Is a car an asset or liability?
- Is overdraft the same as a credit card?

Teaching strategy: direct instruction (question and answer)

Assessment strategy: oral questions

Learning activity: Annexure BB5

Interpretation of the lesson: The main focus of the lesson was to give learners an activity based on the two topics that the teacher had already covered in the classroom. Some learners showed an understanding of the activity, while others were struggling to answer some of the questions. B6

Lesson: B7

Topic: Capital as factor of production: financial documents

Duration: 60 minutes

Lesson objectives: to describe capital as a factor of production

The teacher started the lesson by summarising the main points from the previous lesson. The teacher emphasised the subtopics that are likely to be asked in the final exam paper. The lesson presentation was mainly on teaching learners on how to prepare financial documents, such as a balance sheet. The teacher first explained what is meant by liabilities and assets. This was followed by giving learners an activity related to balance sheets. Learners were requested to study the activity and classify which item was a liability and which one was an asset (November 2014). The teacher asked the following question: what is an overdraft?

Teaching strategy: direct instruction (activity-based learning)

Assessment strategy: oral questions and written questions

learning activity: Annexures BB5(3.5) and BB6

Interpretation of the lesson: This topic on financial needed the teacher to facilitate teaching through activity-based learning because learners need to understand how the documents are constructed. The teacher did give learners an activity through which the teacher helped learners in making sure that they understand This process assisted learners to better understand the concepts. B7

Lesson: B8

Topic: Capital as factor of production: income statement and cash flow

Duration: 60 minutes

Lesson objective: to determine income statement and cash flow

In this lesson, learners were given an income statements and cash flow charts. The whole lesson was based on these activities. The teacher emphasised the fact that learners should first highlight which item was an expenditure and which one is income

The teacher asked the following questions:

- What is the difference between a balance sheet and an income statement?
- What is the difference between net income and net expenses?
- Learners were requested to answer one term questions from previous examinations (1.3.3, 14.2-14.3)

The following were responses of the learners:

- Balance sheet is the difference between an income statement and expenditure (the teacher corrected the learners as this answer is incorrect)
- Profit
- Capital, collateral, overcapitalization

The following question was asked by the learners: is rent for accommodation regarded as fixed even if the number of people increases (the electricity cost goes up).

Teaching strategy: indirect instruction (activity-based learning)

Assessment strategy: oral questions

Learning activity: Annexure BB9

Interpretation of the lesson: The facilitation of this lesson was similar to B7. B8

Lesson: B9

Topic: Capital as a factor of production

Duration: 60 minutes

Lesson objectives: to explain capital as a factor of production

The lesson was based on making corrections to a test paper(BB8). Learners participated actively and they showed an understanding of the factors.

The following questions were asked:

- What does b/f stand for

Learners' responses:

- Balance brought forward

Learners asked the following question:

- What is the implication of the sign (+/-) on the cash flow statement and income statement?

Teaching strategy: direct instruction (reflective discussion)

Assessment strategy: oral questions

Learning activity: Annexure BB8

Interpretation of the lesson: In this lesson, the teacher facilitated the lesson through activity-based learning. Learners were requested to discuss the answer based on the test

questions (BB8). Learners actively participated in this lesson. Each one of them was eager to learn more about the concepts presented. B9

Lesson: B10

Topic: Management as a factor of production

Duration: 60 minutes

Lesson objective: to describe management as a factor of production

The teacher introduced the lesson by first defining the term management. The teacher continued to explain why management is important in a farm business. Learners were taken through the principles of management. The teacher listed the principles on the board and explained each one of them.

The following questions were asked:

- What is the difference between intrinsic and extrinsic?
- Explain the phrase “entrepreneurs must have good human relations”
- Mention any component of management
- What is a strategy?
- What is a vision?
- What is the difference between a goal and an aim?

Learners’ responses:

- Bullets 1 and 2 had no responses
- Planning, decision making, organization
- Bullets 4-6 had no responses

Learners were given an activity on a cash flow annexure BB10 question 2.2.1 to 2.2.6 drawn from the textbook. The teacher asked learners to provide answers to the given activity. There was disagreement on the first question, which required learners to interpret a cash flow statement. Learners engaged on this issue and the teacher also explained some of the misconceptions that arose.

Teaching strategy: indirect instruction (reflective discussion)

Assessment strategy: oral questions and written activity

Learning activity: Annexure BB10

Interpretation of the lesson: In this lesson, the teacher used the lecture method and explanation method, which resulted in learners not paying full attention to what the teacher was saying. Most of the learners were making a noise during the lesson. However, the teacher continued to write notes and explain some key concepts. B10

Lesson: B11

Topic: Management as factor of production: forces influencing business management

Duration: 60 minutes

Lesson objective: to discuss the business management forces

The teacher introduced the lesson by summarising the main points of the previous lesson. The teacher emphasised the importance of the principle of management and why management is important in a farm business. The teacher proceeded with the lesson by introducing forces that influence business management. Notes were written on the board by the teacher, followed by an explanation. The teacher explained the notes using examples within the context of South Africa. Learners were given a class activity (November 2018, 3.7 (Annexure BB8)). No oral questions were asked during the lesson.

Teaching strategy: direct instruction (lecture method)

Assessment strategy: written questions

Learning activity: Annexure BB8

Interpretation of the lesson: The lecture method was dominant throughout the lesson and the teacher did not engage learners on the topic under discussion. Learners were coping notes written on the board. They were given a class activity at the end of the lesson. B11

Lesson: B12

Topic: Demand and supply

Duration: 60 minutes

Lesson objectives: to explain demand and supply

In this lesson learners were given an activity on demand and supply questions. These questions were extracts from a previous exam question paper (September 2016, BB11 (2.2.1-2.2.3)). During this lesson, the teacher facilitated the activity by moving around to check the work of learners. The teacher engaged with learners by asking them probing questions on the activity given. The whole of this lesson was based on this activity.

Teaching strategy: indirect instruction (activity-based learning)

Assessment strategy: Written questions

Learning activity: Annexure BB11

Interpretation of the lesson: The facilitation of the lesson was similar to B7 and B8. B12

Lesson: B13

Topic: Market equilibrium

Duration: 60 minutes

Lesson objective: to state and explain the law of demand and supply

The lesson was introduced by the teacher asking learners what the law of supply entails. The teacher proceeded to draw a graph that shows demand and supply. Learners were asked questions on which curve represented demand and which represented supply. These introduced learners to market equilibrium. The teacher explained market equilibrium in detail by showing learners the point of equilibrium using the graph. The teacher explained why people continue to buy products even if the price has increased. This was done to introduce learners to price elasticity.

The following questions were asked:

- What is the law of supply?

- What is a surplus?

Learners' response:

- The higher the price of a good, the more product will be supplied in the market.

Learners' question:

- Is the farmer a buyer/seller in a market?

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: In this lesson, learners attempted to engage with the teacher by discussing the patterns of demand and supply in South Africa. Learners easily related with the concept and their level of understanding was at a peak. The teacher used examples from the local area to explain the concepts. The lecture and discussion methods were dominant throughout the instruction. B13

Lesson: B14

Topic: Agricultural marketing

Duration: 60 minutes

Lesson objectives: to explain agricultural marketing processes

The teacher started the lesson by providing a definition of agricultural marketing. This was followed by the teacher asking learners to state the difference between marketing and selling. The teacher introduced the marketing function, using local examples, by writing notes on the board, which was followed by an explanation using relevant examples from within the local area. The lesson proceeded to deal with methods that can be used to promote agricultural products. Notes were written on the board and the teacher explained how each method works.

The lesson continued dealing with the functions of agricultural marketing, where the teacher emphasised that fact that these functions are grouped into three main categories. Notes were written on these functions and learners copied them down.

Teaching strategy: direct instruction (lecture method)

Assessment strategy: no assessment

No learning activity

Interpretation of the lesson: A topic of this nature requires learners to be fully engaged in the lesson. The teacher facilitated the lesson by writing down notes and explaining to learners the key concepts. Most learners were struggling to understand some of the concepts. Questions were asked during the lesson, however, most of these questions did not provoke an understanding of the concepts in the learners to the required level. It would have been more meaningful if learners were required to demonstrate one of the methods through simulation. This would have helped to develop their marketing a product skills and also their negotiation skills. B14

Lesson: B15

Topic: Problems that are related to marketing

Duration: 60 minutes

Lesson objectives: to explain problem associated with marketing

The teacher summarised the previous lesson and introduced the topic of the day, which was about problems related to marketing. The teacher started by writing notes on the board. As the teacher was busy writing the notes s/he requested learners to list the problems that they thought may affect marketing of agricultural products, besides those written on the board. Some learners attempted to answer the questions. After that, the teacher continued to explain the notes written on the board. This was followed by the teacher asking learners to state problems that may complicate the marketing process.

The teacher gave learners a class activity dealing with previous exam questions (November BB10), which marked the end of the lesson.

Teaching strategy: direct instruction (lecture method)

Assessment strategy: written questions

Learning activity: Annexure BB10

Interpretation of the lesson: In this lesson, the teacher explained concepts and gave learners a class activity. There was no engagement between the teacher and the learners. The lesson took place in the formal setting of a classroom, where the teacher talked, and learners copied the notes and listened to what is said. B15

Lesson: B16

Topic: Sources of risk

Duration: 60 minutes

Lesson objective: to explain different types of risk in farming system

The teacher started the lesson by asking learners to list problems associated with the marketing of agricultural products. Learners responded to the question. The teacher proceeded with the lesson and introduced the topic, namely, sources of risks. The teacher presented a scenario about the nature of agricultural industries. Notes on the type of risks and the strategies to mitigate the risks were written on the board. This was followed by an explanation from the teacher, who used relevant examples to explain the risks encountered in the farm business, which marked the end of the lesson.

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral question

No written learning activity

Interpretation of the lesson: The facilitation of this lesson was similar to B15, however, there was few questions that were asked by the teacher in B16. B16

Lesson: B17

Topic: Approaches to marketing

Duration: 60 minutes

Lesson objectives: to explain the sources of risks

The teacher started the lesson by wrapping up the previous lesson on sources of risks. The teacher continued the lesson by writing notes on the board about approaches to marketing and asked learners what a segment is. Learners positively responded to the question. The teacher explained each approach and emphasised how learners should differentiate between these approaches when formal assessment, such as tests and examinations, are written. The explanation on these approaches was done using examples from within the local area. Learners were then given a class activity from a previous exam paper (November 2018).

The following questions were asked:

- What is a segment?
- Give examples of mass marketing

Learners' responses:

- Grouping of the same things into one unit
- No response was given on bullet 2

Learners asked the following questions:

- If you are selling peaches in the form of a Jam and raw peaches to other people. Is that an example of mass marketing? And the teacher provided an explanation.

The teacher and learners engaged in a discussion and, after the discussions, the lesson ended.

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions

Learning activity: Annexure BB11(2.1.1 to 2.1.5)

Interpretation of the lesson: The level of participation in this lesson was moderate. Learners showed an interest in learning about these concepts. The classroom was attuned with a lot of discussion on these concepts. Some learners found it difficult to differentiate between the approaches. This raised lot of argument as a result. B17

Lesson: B18

Topic: Sustainable agricultural marketing

Duration: 60 minutes

Lesson objectives: to discuss sustainable agricultural marketing

This lesson commenced with the learners doing an activity on approaches to marketing and, after a few minutes, the teacher, together with the learners, made corrections to the activity. Furthermore, the teacher introduced the topic of sustainable agricultural marketing and asked the learners to outline the marketing mix elements. Notes were written on the board, which was followed by an explanation of the basic concepts.

The following questions were asked:

- What are the marketing mix elements?
- How do you identify products that are friendly to the market?
- Give examples of green marketing products.

Learners' responses:

- Promotion, placement, pricing and product
- No response to bullet 2

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions

No learning activity

Interpretation of the lesson: This lesson started well, by giving learners an activity which tested what was learnt in the previous lesson. After learners completed the activity, the teacher tried to link the previous lesson to the current one. The topic on sustainable agricultural marketing require the use of picture in order to enable learners to critically analyse the marketing mix. Even though Learners were also able to understand how the concepts were linked and such practice may lead to learners not being able to apply the knowledge on a different context. B18

Lesson: B19

Topic: Agricultural marketing chain

Duration: 60 minutes

Lesson objectives: to explain the agricultural marketing chain

The lesson started by the teacher emphasising the important elements of sustainable agricultural marketing. The teacher gave learners a short activity on the agricultural marketing chain. The topic was introduced when the teacher provided learners with a definition of concepts. Learners asked the teacher why the chain starts with the farmer. The teacher answered the question. After that the teacher asked learners questions about product preparation, the factors that hamper the marketing of agricultural produce and the advantages of processing.

These were learners' responses:

- It refers to the cleaning of a product, preparing boxes for package
- Agricultural products are perishable in nature
- Increases life span

The teacher spotted a question from a previous exam paper that relates to this topic and asked learners to provide answers to that question. After the deliberations the lesson ended.

Learner were given a class activity (EC September 2017(2.5) BB12)

Teaching strategy: direct instruction (question and answer)

Assessment strategy: oral questions

Learning activity: Annexure BB12

Interpretation of the lesson: This lesson was dominated by the question and answer method. The teacher facilitated the lesson by giving learners activities to do and also by asking probing questions to check whether the learners understood the activity. The classroom was characterised by intense discussion on factors that hamper the movement of a product from one point to the other. At the end of this debate, learners were given a class activity. On Agricultural marketing chain learners need to be conversant with business activities that occurs on different legs of the chain. This is possible if the teacher makes use of chart in order show learners how agricultural products move from point A to B. Inability to use a chart to explain this business activities on different stages of the chain may lead to learners not acquiring the necessary marketing skills. B19

Lesson: B20

Topic: Agricultural marketing system

Duration: 60 minutes

Lesson objectives: to explain agricultural marketing system

The teacher started the lesson by presenting a holistic summary of the marketing chain, approaches and problems. The teacher emphasised how this topic links to the topic on agricultural marketing systems. The teacher continued to write notes on the board about this topic and learners copied the notes. The teacher explained the notes and asked learners the following questions:

- What is discretion?
- What is livestock sales?
- What type of market is stock sales?
- What is an auction?
- What is the law of supply?

Learners' responses:

- Bullet 1 to 3 had no responses
- Things that are being used before (used products being resold)
- The higher the price the higher the supply

Learners asked the following questions:

- What if I write group marketing as cooperative?
- Does the farmer (as a free marketer) pay tax
- What are middlemen?

Teaching strategy: direct instruction (question and answer)

Assessment strategy: oral questions

No learning activity

Interpretation of the lesson: In this lesson, learners actively participated, they engaged with the teacher throughout the entire lesson. Learners showed a lot of interest in learning the concepts. They asked the teacher a few questions when they encountered problems. The question and answer method, together with the lecture and discussion methods, were used interchangeably throughout the lesson. Even though learners were engaged throughout the topic such as marketing system require some form of demonstration in order to reinforce learning among learners. This practice on this lesson promotes rote learning. B20

Lesson: B21

Topic: Agricultural management and marketing

Duration: 60 minutes

Lesson objectives: to discuss agricultural management and marketing

Learners were given an activity on previous questions about agricultural management and marketing. The teacher facilitated the activity and asked learners the following question:

- What is the disadvantage of internet marketing?

Learners' response:

- People may not have access to the internet and the product displayed may not be a true reflection of the original product

At end of the lesson learners were given an activity based on a previous question paper (September 2017(BB14) and November 2015(BB15)).

Teaching strategy: direct instruction (activity based)

Assessment strategy: oral questions and written questions

Learning activity: Annexures BB14 and BB15

Interpretation of the lesson: In this lesson, learners were given more activities and less teaching took place. The teacher facilitated the activities to check their understanding. Learners did not show any difficulties when doing the activity. B21

Lesson: B22

Topic: Entrepreneurship and business plan

Duration: 60 minutes

Lesson objectives: to explain agricultural entrepreneurship to draw business plan

The teacher introduced this topic by asking learners a set of questions. These questions included what an entrepreneur is and what entrepreneurship is. The lesson continued where the teacher wrote notes on the board about the success factors of entrepreneurship. The teacher asked learners to explain each of the factors listed on the board. Learners deliberated on these factors and the teacher also provided some examples. The teacher posed this question: what do you need to start a business? The lesson proceeded with the introduction of a new concept, the concept of business

planning. The teacher provided a definition of business planning. Learners were asked to explain the difference between an agricultural plan and a business plan. The teacher continued to explain the reasons for drawing up a business plan and problems associated with drawing an agri-business plan. The lesson continued to deal with a SWOT analysis. The teacher explained the four elements of a SWOT analysis.

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions

No learning activity

Interpretation of the lesson: the topic of entrepreneurship and business planning it is an important component for learners who would like to start their own businesses in future. However, the teacher did not take learners through the development of a business plan. The lesson was presented traditionally, using the lecture method, coupled with the question and answer method. Topic of this nature require that the teacher give learners a platform where they are able to develop business plan for different agricultural enterprise. The use of traditional method may deprive learners the ability to develop business plan. B22

4.2.3 Teacher C

Lesson: C1

Topic: Labour as a factor of production

Duration: 60 minutes

Lesson objectives: to describe labour as a factor of production

The lesson was started with the teacher introducing learners to the concept labour and the teacher explained to learners what labour is and also gave them notes on the type of labour we have in a place of work. This was followed by explanations and the use of relevant examples within the market labour of farm business. In some instances, during the lesson, the teacher would ask learners to provide explanations on the concepts

under discussion. The notes written on the board were prepared by the teacher using the textbook. The lesson proceeded to highlight the problems associated with labour. The teacher wrote down the notes on the board and explained some of the concepts.

The following questions were asked during the lesson presentation:

- Give examples of things that will make the farm less attractive
- What is to migrate?
- How can a farmer increase land productivity?
- How does HIV/AIDS make the farmer to lose skills (Employees)
- What is the meaning of land durability?
- What is the difference between part-time and temporary?
- Explain the law of diminishing returns.

Learners' responses:

- No response on bullet one
- Movement of people from rural to urban areas
- No response from bullet 3-8

Learners' questions:

- Does durability of land mean that it is permanent?

After this discussion the teacher gave the learners an activity from a previous question paper (November 2018 (CC3)).

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions and written question

Learning activity: Annexure CC3

Interpretation of the lesson: In this lesson the question and answer method was visible throughout the lesson and the teacher also used the lecture method to explain some of the concepts. The use of lecture method on this may have led to learners not being able answer some of the questions. C1

Lesson: C2

Topic: Labour and capital as factor of production

Duration: 60 minutes

Lesson objective: to describe capital as a factor of production

On this day learners were given a test (CC1 & CC2) to check their knowledge on land and labour as factors of production. As the learners were busy writing a test (CC1 & CC2), the teacher would move around to look at learners' responses without engaging them. This test (CC1 & CC2) contained questions, such as case studies, where they were required to read and answer questions that followed. These types of questions gave learners an opportunity to gain problem-solving and analytical skills.

Teaching strategy: direct instruction (activity based)

Assessment strategy: written questions (TEST CC1 and CC2)

Lesson: C3

Topic: Capital as a production factor

Duration: 60 minutes

Lesson objectives: to explain capital as a factor of production

There was no formal introduction to the lesson because it was a continuation of the previous lesson. The teacher started by writing notes on the board about sources of finance for farming in South Africa. The emphasis was on the key concepts, namely, grants, credit, interest and collateral. The teacher highlighted the importance of learning these concepts.

The following questions were asked during the lesson:

- What is credit?
- What is the meaning of the scarcity?

Learners' response:

- There was no response to the questions

The teacher requested learners to study the cash book analysis in the textbook.

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: In this lesson, the teacher introduced learners to financial concepts. The teacher used the lecture method, and a little of the question and answer method to explain these concepts. There were no learning activities given to learners, not even a class activity at the end of the lesson. The teacher asked learners to study the cash book analysis from the textbook without allowing the learners to understand the transactions that go inside the documents. A topic of this nature requires that one goes through the transactions in order for them to master the financial documents. C3

Lesson: C4

Topic: Capital as a factor of production

Duration: 60 minutes

Lesson objectives: to explain financial documents such income statement and cash flow

The teacher introduced the lesson by first writing notes on the board, which was followed by asking learners a set of questions. The teacher continued to explain the key concepts in detail. Learners were then given an activity to draw up a budget for farm enterprises. The lesson continued where the teacher explained some of the financial documents required, such as cash flow projections and income statements. Learners were requested to study the example of an income statement and cash flow projection from the textbook. After this exercise, the teacher introduced management as the fourth factor of production. The teacher explained what management is and also wrote on the board the management skills needed to run a farm business.

The teacher gave learners a sum of money and asked them to divide it across all the expenses incurred by the farm business. This activity was given to assist learners to understand concepts.

The following questions were asked:

- How do you understand budget (introduction)?
- Who loses when there is a strike among farm workers?
- What is implementation?
- What is decision making; when do you make decisions?

The following were learners' responses to the questions:

- Is saving money
- Both the employer and employee lose
- No response to bullet 3
- When you are in a situation that requires one to take decisions

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: The articulation of the lesson was similar to C3 where, the teacher not was taking learners through the transaction that are involved in drafting income and cash flow statements step by step and this is how the teaching and learning should take place on this type of topics. The lecture and traditional explanation methods were used to present the lesson as results learners may not acquire the relevant skills. Activity on drafting the budget was useful because it provides learners with relevant life skills that can be used in their daily activities. C4

Lesson: C5

Topic: Strategic management (management as a factor of production)

Duration: 60 minutes

Lesson objectives: to discuss management as a factor of production

The teacher started the lesson by explaining to learners what management is and the importance of management in the running of the daily activities of a farm business. The lesson's emphasis was on developing a business strategy. The teacher explained what a business strategy is. Thereafter, the teacher asked learners whether they understood the concept and there were no questions posed by the learners. The teacher proceeded with the lesson and explained management skills. Notes on management skills were written on the board and explained by the teacher. The learners copied the notes into their notebooks, which marked the end of the lesson. No questions were asked during the lesson.

Teaching strategy: direct instruction (lecture method)

Assessment strategy: no assessment

No learning activity

Interpretation of the lesson: This lesson did not involve interaction between the teacher and learners during its presentation. Furthermore, there were no questions asked. The lecture method was dominant throughout the lesson and no learning activities were given. Such practice may have a negative effect on the development of important life skills. C5

Lesson: C6

Topic: Management as factor of production: keeping records

Duration: 60 minutes

Lesson objectives: to explain different forms of record keeping

The teacher introduced the lesson by explaining the importance of keeping records in a farm business. The teacher continued to emphasise the importance of records the farmers should keep in order to check the viability of the farm. The teacher took a few minutes to motivate learners. This was done to explain the concepts; goal and objectives of a business. The emphasis was on the skills farmers need to run a business smoothly.

The following questions were asked:

- What is record keeping?
- What is an entrepreneur?
- Who determines prices in the farm?
- Why does the price of the same product differ?
- What is currency?
- Which currency is used in South Africa?

Learners' responses:

- No response to bullet one
- The person who runs a business and a person who recognizes any business opportunity
- The farm owner
- No responses to bullet 4 and 5
- Rands

Teaching strategy: direct instruction (question & answer)

Assessment strategy: oral questions

No Written learning activity

Interpretation of the lesson: The teacher used both the lecture method and question and answer method throughout the lesson. There was interaction between the teacher and learners throughout the lesson, even though some questions were not answered because of lack of understanding on some of the concepts on the part of the learners. This may be attributed to lack learning activities during the lesson. C6

Lesson: C7

Topic: Demand and supply

Duration: 60 minutes

Lesson objectives: to explain factors affecting demand and supply

The teacher started the lesson by asking learners questions about demand, supply and quantity. This was followed by the teacher drawing a graph on the board which showed learners the relationship between price and quantity. The lesson proceeded to address factors affecting demand. In this subtopic, the teacher named the factors and asked learners to explain how these factors affect demand. The lesson ended with the teacher telling learners about the next topic, which would deal with supply and its factors.

The following questions were asked during the lesson:

- What do you understand by consumer preference?
- How does fashion affect demand?

The following were learners' responses:

- No response to bullet 1.
- People buy what is trending at that particular time. The demand will be higher for those products.

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: The articulation of the lesson was similar to C6. C7

Lesson: C8

Topic: Marketing function

Duration: 60 minutes

Lesson objective: to describe function of marketing

The teacher started the lesson by explaining, holistically, what agricultural marketing is and how products move from one place to another. In this lesson the emphasis was on the marketing function. The teacher explained the general functions of marketing and continued to explain the advantages of processing as one of the functions of marketing. The following were the questions asked:

- What do you understand by the word processing?
- What is oversupply of a product?
- What is product design and promotion?
- What do you understand by grading?
- What do you understand by risk-bearing?
- How can we overcome oversupply?
- What do you understand by standardization?

Learners' responses:

- Changing the form of a product, for example maize kernels can be taken to a silo to be converted into maize meal.
- No responses for bullet 2 to 7

Learners asked the following questions:

- Does shelf not refer to the physical entity where we put the product? This was derived from the question about what learners understood by longer shelf life.

Teaching strategy: direct instruction (question& answer method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: This lesson was dominated by the question and answer method, even though most of the questions were not answered. There was some interaction between the teacher and learners, where most learners showed that they were not conversant with the topic under discussion. This caused some of the learners to not concentrate fully on the teacher. C8

Lesson: C9

Topic: Market equilibrium

Duration: 60 minutes

Lesson objective: to explain market equilibrium

The teacher introduced the lesson by first explaining the concepts of demand and supply. This was followed by introduction to the topic of the day, which was market equilibrium. The teacher wrote a definition of market equilibrium on the board and also drew a graph showing the equilibrium price. Then, the teacher explained these concepts using the graph. The lesson continued with the development of market equilibrium.

The following questions were asked:

- How can change in production cost lead to the shift in supply?
- Who is the supplier of the agricultural products?
- How will technology affect the shift in supply?
- How will consumer income affect shift in the demand curve?
- How will consumer preference and taste affect shift in the demand curve?
- How does population size and compositions affect demand and supply?

Learners' responses:

- No response from bullet 1 to 5
- When the population increases demand will increase.

Teaching strategy: direct instruction (question and answer method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: This lesson was dominated by the question and answer method. Learners showed an interest in learning about the topic, however, they had difficulties in answering the questions asked by the teacher during the lesson. They paid attention as the teacher drew on the board and explained the graph of demand and supply. There was no class activity given at end of the lesson. The difficulty in answering the questions may be attributed by lack of learning activities. C9

4.2.4 Teacher D

Lesson: D1

Topic: Factors of production

Duration: 60 minutes

Lesson objectives: to describe four factors of production

The teacher introduced the lesson by presenting a scenario about the factors of production, holistically. Learners were given a strategy they could use to memorise the management skills needed by the farmer. They were given examples of how exam questions about management skills would be asked. 'The teacher alluded the notion that, in most cases, the examiner will give a scenario were the learners' need to identify the skills represented in the scenario'.

The following questions were asked at the beginning of the lesson:

- Why do you need to draw the budget?
- What financial records should a farmer have or possess?

The teacher then directed the lesson to the first factor of production, which is land. The lesson continued with the teacher dealing with the economic function of land and its characteristics. The teacher assisted learners about how they could best memorise the functions.

The following questions were asked during the lesson:

- Name the four factors of production
- Why do we need to draw a budget?
- How do we increase productivity?
- What farm management skills does a farmer need?
- What is land, land as asset what does that mean?

Response of the learners:

- The farmer would not make enough profit (What would happen if the farmer is not productive?)

Learners' questions:

- Is a borehole on a farm an asset to be used as a collateral in case of unpaid debt?

That marked the end of the lesson.

Assessment strategy: oral questions

Teaching strategy: indirect instruction (reflective discussion)

No written learning activity

Interpretation of the lesson: The lesson was used to introduce the fourth strand of the Agricultural Sciences syllabus, which is agricultural economics. The teacher introduced learners to almost all the topics that are covered in this strand. Nonetheless, the methods that were dominant throughout the lesson were the question and answer method and the textbook method. Lack of clear focus on the lesson confuses learners and they may be misalignment on knowledge built-up. D1

Lesson: D2

Topic: Land as the factor of production

Duration: 60 minutes

Lesson objective: to discuss land as a factor of production

The teacher introduced the lesson by first explaining the provisions required for improving land productivity. This was a continuation of the previous lesson. Emphasis was placed on how questions are asked in an exam paper. The teacher introduced the law of diminishing returns. The teacher stated the law and gave a practical example, which caused learners to pay attention to the lesson. Learners were given tips on how to memorise the concepts. The teacher emphasised the key word that learners needed to spot on each concept. The teacher proceeded with the lesson by asking learners to provide strategies that can be used to resolve labour problems.

The following questions were asked during the lesson:

- “Restoring land potential” explain the phrase.
- State the law of diminishing return.
- What makes the land not to be used productively?
- What are the problems associated labour?

After these deliberations the teacher ended the lesson.

Teaching strategy: direct instruction (question& answer method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: The teacher used the question and answer method and used examples from the local community to explain some of the concepts. This increased the learners' concentration level. Since the teacher was busy teaching using the textbook, some of the subtopics were not tackled. The focus of the lesson was on what and how the examiner sets exam papers. The lesson focused on way that topics that are frequently included in the exam paper and these topics were emphasised by the teacher. Learning in this case is not geared towards development of skills. D2

Lesson: D3

Topic: Labour as a factor of production

Duration: 60 minutes

Lesson objective: to describe land as a factor of production

The teacher greeted learners and they responded. The teacher introduced the lesson by simulating a scenario about labour, which was followed by posing the following questions:

Why do we have a high unemployment rate in South Africa? The learners' responded by saying: *this is due to lack of jobs.*

The teacher asked learners to open page **230 (Agricultural Sciences textbook focus)** and started to read from the textbook, explained what was read.

Teaching strategy: direct instruction (textbook method)

Assessment strategy: oral questions and written questions

No written Learning activity

Interpretation of the lesson: In this lesson, learners were taught using the textbook method. Throughout the lesson, the teacher was reading from the textbook and explaining the text to the learners. Even the activities given at the end of the lesson were from the textbook. Such practice promotes rote learning and affect development of skills negatively. D3

Lesson: D4

Topic: Labour laws

Duration: 60 minutes

Lesson objective: to describe labour laws

The teacher introduced the lesson by asking the learners a set of questions. These questions included the following:

- Where are laws formulated and who formulates the laws?

The teacher continued the lesson by presenting a scenario about labour problems. Learners were asked to open page **236 (Agricultural Sciences textbook focus)** where the labour laws that affect employers and employees are dealt with. The teacher read the labour laws and also provided learners with a short explanation so that they could remember them easily. The explanation of the laws was done using examples in the South African context and also within the context of the farming business. The teacher further asked learners to explain the phrase “no work no pay”.

The following questions were asked during the lesson:

- Who loses when workers are striking in a farm?
- What do you call workers that relieve permanent workers?
- What leads to other workers losing their jobs?
- How did the established business people start their business?
- The following were learners’ responses:
- Both parties will lose

- Temporarily workers
- Stealing and too much absenteeism
- Some started by being hawkers and saved money.

The following problem was given to learners:

Some people want to start businesses but they lack knowledge and skills. How can we assist such a person? It is also observable that most agricultural projects have dismally failed. What is the cause of the problem?

At the top of the lesson, the teacher introduced the topic of capital as a factor of production and learners were asked to turn to page **240 (Agricultural Sciences textbook focus)**. The teacher proceeded to explain what capital, using the text, mentioning types of capital. Learners asked a question as the teacher was busy explaining the types of capital: where does a storage room fall, is it a fixed or moveable capital. The teacher responded to the question and that marked the end of the lesson

Teaching strategy: direct instruction (textbook method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: The lesson presentation was dominated by the use of both the textbook and the question and answer methods. During the lesson presentation, the teacher emphasised how learners should memorise the concepts. This type of practice raises a concern about the level of knowledge learners will have at the end of the programme. A lot of time is spent on reading from the textbook. Some of the subtopics are not dealt with, which is an issue of concern. D4

Lesson: D5

Topic: Capital as a factor of production

Duration: 60 minutes

Lesson objectives: to discuss capital as a factor of production

This lesson dealt with financial documents in the agriculture business. The teacher listed all the financial documents found in a farm business and explained each one of them. The emphasis was on key concepts, such as grants, loans, collateral, credit and interest. The teacher gave learners the following task:

learning activity: Learners were given a calculation of interest rate on the loan of the farmers. A loan of R280,000 was borrowed from the bank by the farmer with an interest of 25%. Calculate the interest. The teacher did the calculation for learners.

Teaching strategy: direct instruction (lecture method)

Assessment strategy: oral questions

Interpretation of the lesson: In this lesson the teacher just gave learners a definition and an explanation of the financial documents, without doing the actual calculations. Lack of these activities may lead to a deprivation of skills, such as the ability to answer the data response questions and also the ability to interpret. D5

Lesson: D6

Topic: Agricultural marketing

Duration: 60 minutes

Lesson objectives: to discuss agricultural marketing

The teacher introduced the lesson by asking learners to differentiate between marketing and selling, using their own words. The learners attempted to differentiate between the two concepts. The teacher then asked learners to turn to page **268 (Agricultural Sciences textbook focus)**. The teacher continued to explain the three main functions of agricultural marketing. The teacher read from the textbook and explained the text to the learners. Some learners wrote notes while others were just listening to the teacher. The following questions were asked:

- State functions of facilitation in marketing.
- What is demand and supply?

Learners' responses:

- Grading, standardization, finance, promotion

Teaching strategy: direct instruction (textbook method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: The articulation of this lesson was the same as D4. There was no activity given to learners during the lesson and also at the end of the lesson. D6

Lesson: D7

Topic: Demand and supply

Duration: 60 minutes

Lesson objective: to explain factors affecting demand and supply

The teacher started the lesson by asking learners what demand and supply entails. Learners attempted to answer the questions. The teacher assisted learners by explaining the concepts using the law of demand and supply. The teacher stated the law and explained it to learners, using relevant examples. This led to the introduction of factors affecting demand and supply. The teacher continued to emphasise how exam questions on the topic are set. The teacher continued to show learners how demand and supply look like by drawing the curves on the board.

The following questions were asked:

- What is demand and supply?
- What is the law of supply?
- Give examples of compliments?
- Give examples of inelastic products

Learners' responses:

- Demand is all products the buyer is willing and able to buy whereas supply is all products that the farmer is willing to supply.
- The higher the price the more goods will be supplied.
- Tea and sugar.
- No response to bullet 4

After the deliberations between the teacher and learners the lesson was ended. With no conclusion.

Teaching strategy: direct instruction (question and answer method)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: The lesson was dominated by the use of both the question and answer method and also the textbook method. The teacher also emphasised the type of questions asked in an exam and how learners should prepare for tests and the exams. Learners showed a greater understanding of the concepts as they responded well to the questions asked during the lesson. However, the lesson was promoting rote learning. D7

Lesson: D8

Topic: Capital as a factor of production

Duration: 60 minutes

Lesson objective: to explain capital as a factor of production

This lesson was activity based. The teacher gave learners an activity on the previous question paper (September 2018(DD1)). Learners engaged with the questions, which required learners to do calculations on the cash flow statement and the income statement.

The following questions were asked:

- What would be the opening balance for August?

- What is the importance of financial records?

Learners' responses:

- No response to bullet one
- For financial reasons
 - To show all the amount that are received and paid
 - To check the viability of the farm business

Teaching strategy: indirect instruction (activity-based learning)

Assessment strategy: oral questions and written questions

Learning activity: Annexure DD1

Lesson: D9

Topic: External and Internal forces affecting farm business

Duration: 60 minutes

Lesson objective: to determine external and internal forces affecting farm business

The teacher introduced the lesson by presenting a scenario about a problem that affects farm business. This type of introduction encouraged the learners to pay attention to the topic presented. The teacher proceeded with the lesson and introduced the type of market forces. The emphasis was on learners being able to differentiate between the two forces. The teacher read the definition of each force from the textbook and explained them using relevant examples.

The following questions were asked:

- Explain the ethical force as one of the external forces.
- Give examples of socio-cultural forces that may affect the farm business.
- How does the educational level affect the farm business?
- How does lifestyle affect farm business?
- Why are imported goods a threat to local farm business?

Learners' responses:

- People may not like to buy your product.

- They gave examples on race, religious, gender (There may be products that people don't consume as a result of religious beliefs).

- Because the products are much cheaper as compared to the local products.

In concluding the lesson, the teacher gave learners classwork from **page 257** of the textbook. Learners were required to identify the external and internal forces.

Teaching strategy: indirect instruction (reflective discussion)

Assessment strategy: oral questions and written activity

Learning activity: Annexure DD4

Interpretation of the lesson: This lesson was introduced using a real-life situation which grabbed the attention of learners. This encouraged the class to engage in intense discussions on the topic. Most of them were easily able to relate to the concepts because of the use of relevant examples given from within the local area. D9

Lesson: D10

Topic: Business plan

Duration: 60 minutes

Lesson objective: to draw a business plan

The teacher introduced the lesson emphasising the importance of having a business plan and explaining its uses. The teacher asked learners to turn to page **272 (Agricultural Sciences textbook focus)**. The lesson continued with the teacher reading from the textbook and explaining concepts to learners, without writing any notes on the board. The teacher started by reading about the reasons to draw up a business plan, which was followed by the format of a business plan. The teacher read each step of developing a business plan and explained to learners what is needed in each step. The lesson proceeded to address problems that are encountered when drawing up a business plan. No class activity was given; the class was based on explanations on the topic. The following questions were asked during the lesson:

- What is collateral?
- What is a business plan?
- Which business does not need a skill?
- Does herding of livestock need a business skill?
- What is a slogan; what slogan does Shoprite, Pep, KFC use to attract customers?
- Where can you get the history of a business?
- What is an inventory?
- What is a human resource plan?
- What is SWOT analysis?
- What could be a threat to a broiler business?
- What problem could arise when starting a business plan?

Learners' responses:

- Bullet 10: disease outbreak may lead to fatality of broilers.
- The learners attempted the other questions through a class discussion.

Teaching strategy: indirect instruction (reflective discussions)

Assessment strategy: oral questions

No written learning activity

Interpretation of the lesson: The business plan is one of the crucial components of a farm business, which needs to be tackled in detail so that learners are able to understand the concept. In this lesson, the teacher had a whole class discussion with the learners on the questions that were asked during the lesson. Most of the learners showed interest in learning about business plans. The participation level was high. However, there were no learning activities during and after the lesson presentation. This may have a negative effect on learning of learners. D10

Lesson: D11

Topic: Agricultural entrepreneurship

Duration: 60 minutes

Lesson objectives: to discuss agricultural entrepreneurship

The lesson was introduced by concluding the previous lesson, which was on business planning. The teacher summarised the main points of the business plan. The rationale was to try to link the previous topic with the current one. Agricultural entrepreneurship was then introduced as the topic of the day. Learners were asked to open page **308** of their textbook. The lesson was continued when the teacher read from the textbook and explained concepts to the learners. The teacher firstly focused the lesson first characteristics of entrepreneurs, followed by the four stages of the entrepreneurial process that need to be followed when one starts a business.

The following key questions were asked:

- What is SWOT analysis?
- What is the difference between an entrepreneur and entrepreneurship?
- Why is entrepreneurship important in South Africa?
- Give reasons why farmers and other people living in rural areas today have to be entrepreneurs.

Learners' responses:

- No response on bullet 1,2 & 3.
- Due to the high unemployment rate in South Africa and for economic growth.

After these deliberations the teacher asked learners to refer to a case study on page **308 (DD7)** of the textbook on entrepreneurship. The teacher's instructions were to read the case study and single out skills the entrepreneur requires from the extract. Learners were requested to turn to page **312(DD3)** and do activity 3.

Teaching strategy: direct instruction (textbook method)

Assessment strategy: oral questions and written questions

Learning activity: Annexures DD7 and DD3

Interpretation of the lesson: In this lesson, the teacher used the textbook and explanation method to explain the concepts of entrepreneurship. The teacher read from the textbook and explained the content without giving learners any learning activities during the lesson presentation. Learners were given a class activity at the end of the lesson. Lack of learning activities may create boredom and also may make learners to lose interest in the lesson. D11

Lesson: D12

Topic: Agricultural marketing chain

Duration: 60 minutes

Lesson objectives: to explain agricultural marketing chain

The lesson was introduced by asking learners to define the marketing chain and to also name the stages in the marketing chain. The teacher then proceeded to give learners pictures that demonstrate how products move from one place to the other. Learners were requested to study the picture and explain what is depicted in those pictures. Learners tried to share their own understanding, meanwhile the teacher assisted them by providing more explanations on the key concepts under discussion. After these deliberations, the teacher continued to explain, holistically, how products move from the farmers to the final consumer and the emphasis was also put on the effect of economic problems encountered along the marketing chain. The learners had a discussion on the types of marketing chain.

Learners were asked the following questions during the lesson:

- Will there be a change in price if the truck transporting agricultural products experience an accident?
- What would happen if goods are stolen in the process of transporting?

After these discussions, the teacher asked learners to open page 299 and do activity 18 and 19 on page **301**.

Teaching strategy: direct instructions (reflective discussions)

Assessment strategy: oral and written questions

Learning activity: Annexures DD5 and DD6

Interpretation of the lesson: The lesson was dominated by the learners. They showed a great deal of interest in learning this topic. The teacher and learners engaged in discussions throughout the lesson. Most learners showed that they understood the topic under discussion. They actively explained the pictures demonstrated by the teacher which led to intense discussion on the topic in question. This practice triggered learners to want to learn more on the topic. D12

Lesson: D13

Topic: Cooperative marketing and controlled marketing

Duration: 60 minutes

Lesson objectives: to describe cooperative marketing and controlled marketing

The lesson was introduced by explaining to learners what cooperatives and controlled marketing entail. The teacher asked learners to open page **323 (Agricultural Sciences textbook focus)**. The teacher proceeded with the lesson by explaining to learners the role played by cooperative marketing in the marketing of agricultural produce. These roles were also read from the textbook and explained by using relevant examples from within the context of a farm business. The teacher asked the following question: Give the types of cooperatives in the farm business and explain their functions. This task marked the end of the lesson.

Teaching strategy: direct instruction (textbook method)

Assessment strategy: oral questions

No written learning activity:

Interpretation of the lesson: The articulation of the lesson was similar to D10. Throughout the lesson the teacher was reading from the textbook and explaining to learners. No activities were given. Learners were not given enough instruction in order to fully understand the key concepts. D13

Lesson: D14

Topic: Market equilibrium

Duration: 60 minutes

Lesson objective: to explain market equilibrium

The lesson started by giving learners a supplementary exam paper from 2019 and the teacher asked the learners to answer the section on cooperative marketing. The learners attempted to do the activity; however, some learners were having difficulty in answering the questions. The teacher then introduced the approaches to a marketing. The lesson proceeded when the teacher explained the different types of approaches to marketing and also notified learners about the key words on each concept. The teacher further provided learners with examples. The explanations were clearer to the learners as they seemed to understand these concepts. The lesson proceeded to cover sustainable agricultural marketing. The following question was asked during the lesson: give examples of green products.

Teaching strategy: indirect instruction (activity-based learning)

Assessment strategy: oral questions

Learning activity: Annexure DD4

Interpretation of the lesson: In this lesson the teacher gave learners a supplementary question paper in order to prepare them for the common tests. Most of the learners had difficulty in providing responses to the questions. This may imply that there was lack of understanding by the learners of the basic concepts during lesson presentation of the

topic. This could also mean that the learners were under prepared in terms of the activities they needed to be engaged in during the lesson. D14

Table 4.1: Brief summary on the teaching strategies emerged from observed lessons

Teaching strategies	How often strategy is used	Comments
Question and answer (A1, A4, A5, A9, B5, B6, B19, B20, C6,C8,C9,D2,D7,D8)	14 of the 54 observations	This practice promotes rote learning
Discussion method (B9,B10,D1,D9,D10,D12,)	6 of the 54 observations	Promote 21 st century skill of communication
Lecture method (A2,A3,A7,A8,B1,B2,B3,B4,B11, B13, B14, B15, B16, B17, B18, C1,C3,C4,C5,C7,D5)	21 of the 54 observations	This practice regards learners as passive recipient of information
Textbook method (A6,D3,D4,D6,D11,D13)	6 of the 54 observations	Promotes rote learning
Activity based learning (B7,B8,B12,B21,C2,D8,D14,)	7 of the 54 observations	Promote communication skills, problem solving skills

4.3 Assessment activities: How are learners assessed in Agricultural Sciences classroom?

4.3.1 Learners' activities during lessons

All learners have a subject portfolio where their assessments are documented. A sample of the documented assessment tasks were used to analyse the type of assessments learners are exposed to in the teaching of Agricultural Sciences. The teachers would

share the activities with the researcher during the lesson observations. This was followed by the researcher compiling the learners' activities and the rationale for this was for the researcher to check how learners were assessed. The focus on learners' activities was on how often learners are assessed, type of activities that are given to learners during a lesson presentation and the methods used to assess. Samples of these assessment activities are attached on the annexure section where AA represents activities used by Teacher A, BB represents activities used by Teacher B, CC represents activities used by Teacher C and DD represents activities used by Teacher D. The study found that, in 25 of the 54 lessons observed, learners were not given any written assessment activities. Furthermore, in 29 of the 54 lessons, learners were given assessment activities, 25 of which were extracted from previous exam papers and 4 were extracted from the Agricultural Sciences textbook.

Moreover, the results of this study found that Teacher A mostly assessed learners at the end of the lesson. In some cases, learners were randomly asked questions in the first five minutes of the class and during the lesson. The teacher employed self-assessment in this classroom, which meant that the teacher would give learners a classroom activity and they would mark it themselves. However, the challenging issue here is the fact that learners were not monitored as to whether they wrote the activity or not. Learners may in some instance write the activity on the time when the teacher is giving whole class feedback on the activity. This may lead to a lack of useful information on the progress of the learners and also on areas of the lesson that teachers need to improve.

The outcomes of this study further found that Teacher B was always making sure that learners were assessed in at stages of the lesson. The teacher would also give learners homework activities at the end of the lesson and, during the next lesson, learners were required to provide feedback on the homework activity. This was done during the first 10 minutes of the lesson. The teacher engaged learners using baseline assessment, where learners were required to summarise the previous lesson, by asking learners a set of questions. The researcher also discovered that, in all the lessons given by Teacher B, learners were asked questions and a class activity was used at each and every stage of a lesson. These questions were extracted from previous examination papers (Annexure

BB1-BB15). The type of questions in BB1 to BB15 are meant to assess learners for progression purposes and, as result, the development of learners during the lessons were ignored. This implies that learners were taught for test and examination purposes, since they were not engaged in learning activities to instil deep learning. Teacher B always made sure that learners understood the questions from the classroom activity. The class was somehow used as an opportunity to emphasise what was deemed important for control tests and examinations. Meanwhile the study found that Teacher C hardly provided any class activities. However, learners were asked random questions to ascertain their baseline knowledge on the topic under discussion. There was no learning activity given to prepare learners for achieving the lesson objectives. Only once were learners given a class test. This lack of learning activity-provision during the lesson caused the learners to struggle with the summative assessments.

The study findings revealed that Teacher D assessed learners during the lesson by asking them random questions to get their opinions on the matter under discussion. This teacher predominantly used the textbook to teach and also used the activities from the textbook to assess learners at the end of the lesson. However, in most cases learners did not get any feedback from the teacher about these activities. Thus, in such classrooms, it may be difficult to gauge learners' understanding and readiness for assessment.

4.3.2 Description of the activities

It is evident from annexures AA, BB, CC and DD that most of the classroom activities that were given by the teachers were extracted from previous examination papers. The questions asked in these activities ranged from the low level to medium level questions. The action verbs used in these questions included, among others, name (AA2), explain (AA5), identify (AA1) and describe (BB5). These findings suggest that learners were not given activities that challenged their abilities. This practice makes it difficult to achieve the desired curriculum objective. The findings also revealed that there were instances where the questions asked learners to provide justification for their stances (BB6). However, these types of questions were rare in the class activities. In addition, the study findings also revealed that, in other questions, learners were requested to study pictures (AA1-AA4, AA6, BB4, BB9, BB13, BB14 and DD3) and answer questions based on these

pictures. Class activities also included data response questions (BB3, BB5-BB10, BB13 and CC1). These data response questions were based on calculations and required learners to draw graphs. Most of the teachers that were observed did not make use of data response questions, which implies that learners in the classroom were deprived of acquiring essential business skills.

Moreover, some of these activities included one term type of questions (DD1-DD2 and BB15). These questions were asked in two forms, that is, where learners would be given a statement so that they can provide the term that suits the description; and, where learners were given a statement and a term which would be underlined and learners would be requested to rectify the underlined word. This type of activity encourages the development of learners' knowledge of basic concepts, however, they have minimal effect on the development of skills and attitudes. This type of activity does not promote creativity and critical thinking skills, which are key skills in agricultural entrepreneurship.

4.4 Learners views and attitudes on learning agricultural entrepreneurship from the questionnaire.

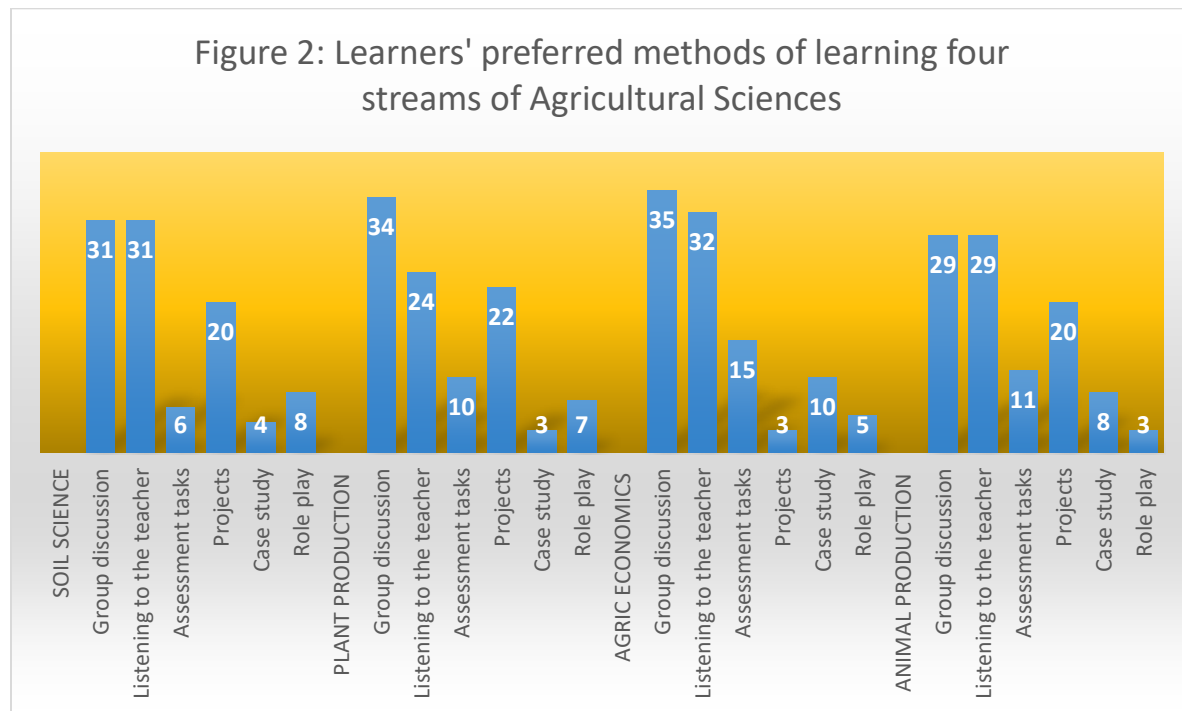


Figure 2 above indicates the methods which learners prefer when learning the four streams of Agricultural Sciences. The four streams are soil sciences, plant production, agricultural economics and animal production. The figure indicates student preferences for interactive methods of learning, such as group discussion, projects, case study and role play; and non-interactive methods of learning, such as listening to the teacher. It is observable from the figure that majority of learners preferred interactive methods to learn Agricultural Sciences, which may be attributed to the fact that interactive methods afford learners an opportunity to organise their views and to reflect on their abilities. This figure, in particular, indicates that in the plant production stream, 76% of the learners preferred to learn through interactive methods, while a mere 24% preferred to learn through non-interactive methods. This may be linked to the fact that interactive methods stimulate interest in learners and it causes learners to perceive the value of the subject matter, which may lead to an improvement in learners' performance and the level of commitment to their school work may also increase.

Figure 3: Factors that motivates learners to start thier own business

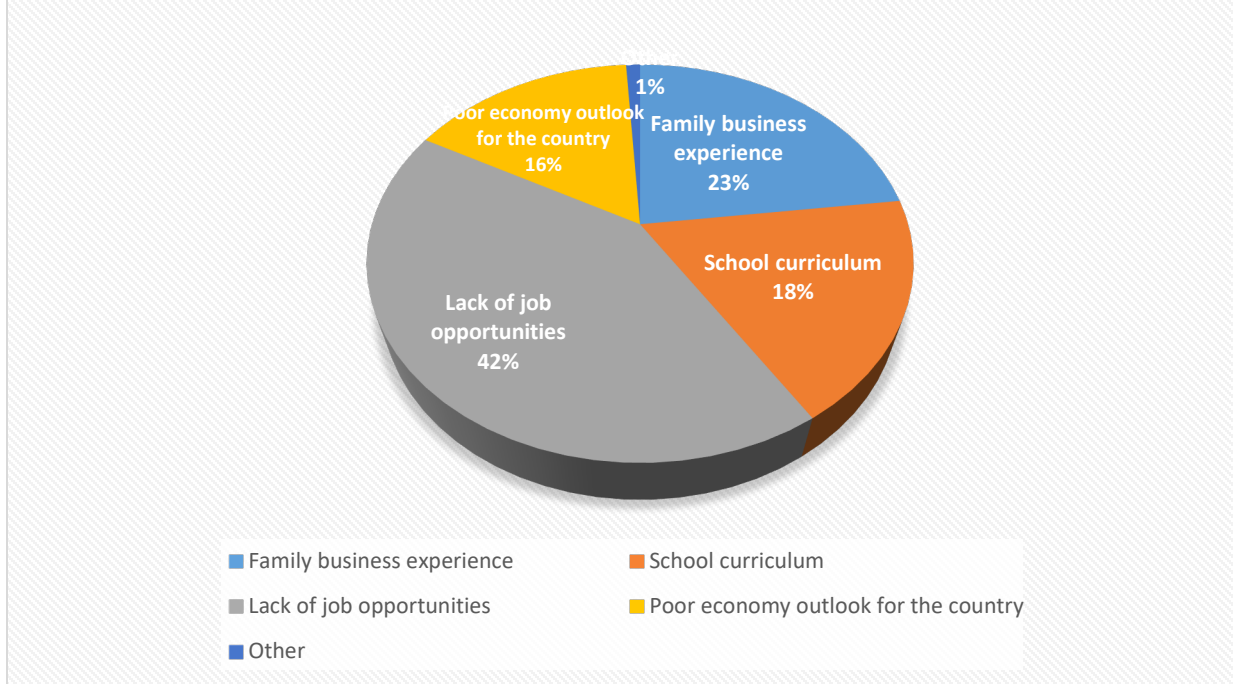


Figure 3 above indicates the factors that motivate learners to start their own businesses after schooling. It is observable from the figure that the majority of learners are motivated to start their own business because of lack job opportunities (42%). The second factor that motivates learners to start their own businesses is the family business experience, at 23% of the participants. It is interesting to note that school curriculum contributes 18% towards motivating learners to start their own businesses, followed by poor economic outlook at 16%. This result may suggest that the school curriculum has little effect in instilling an interest in learners to engage in business in the future. The small contribution made by school curriculum may also be linked to instructional decisions made by the Agricultural Sciences teacher as outlined in the above discussion on classroom lessons.

Figure 4: Challenges that stop unemployed individuals to start thier own business

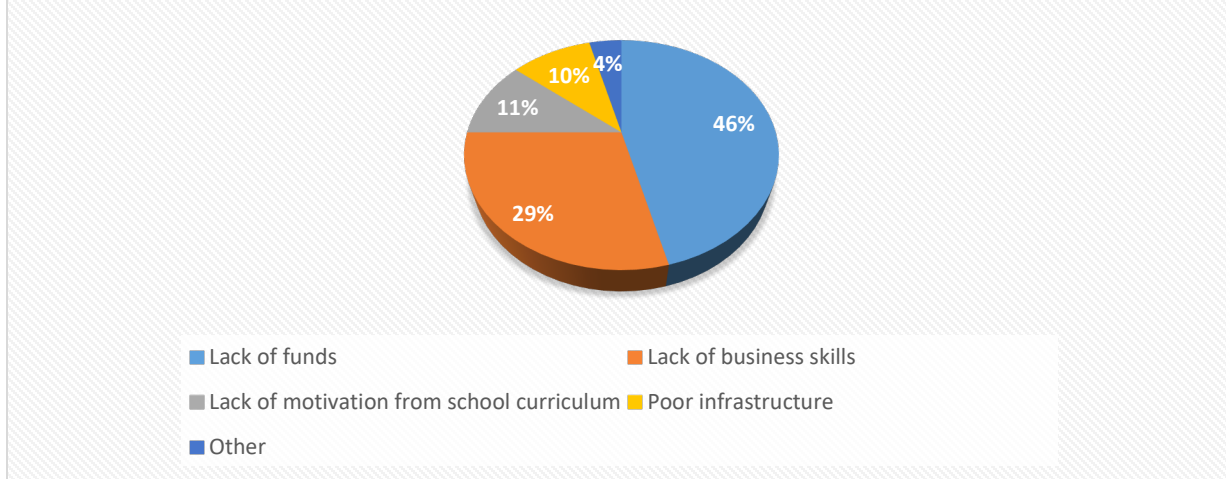


Figure 4 above indicates the challenges that prevent unemployed individuals from starting their own business. It is interesting to note from the figure that a lack of funds is the major contributor towards individuals not starting their own business, at 46% of the participants. The figure further indicates that 29% of the learners indicated that a lack of business skills plays a major role in preventing an individual from starting their own business. A lack of motivation from the school curriculum is the third challenge that demotivates learners to start their own business, followed by poor infrastructure, at 10% of the participants. These results suggest that the availability of start-up funds may play a vital role in motivating individuals to start their own business. The results further suggest that the instructional decisions of Agricultural Sciences teachers affect instilling relevant business skills.

Figure 5: Solution to unemployment

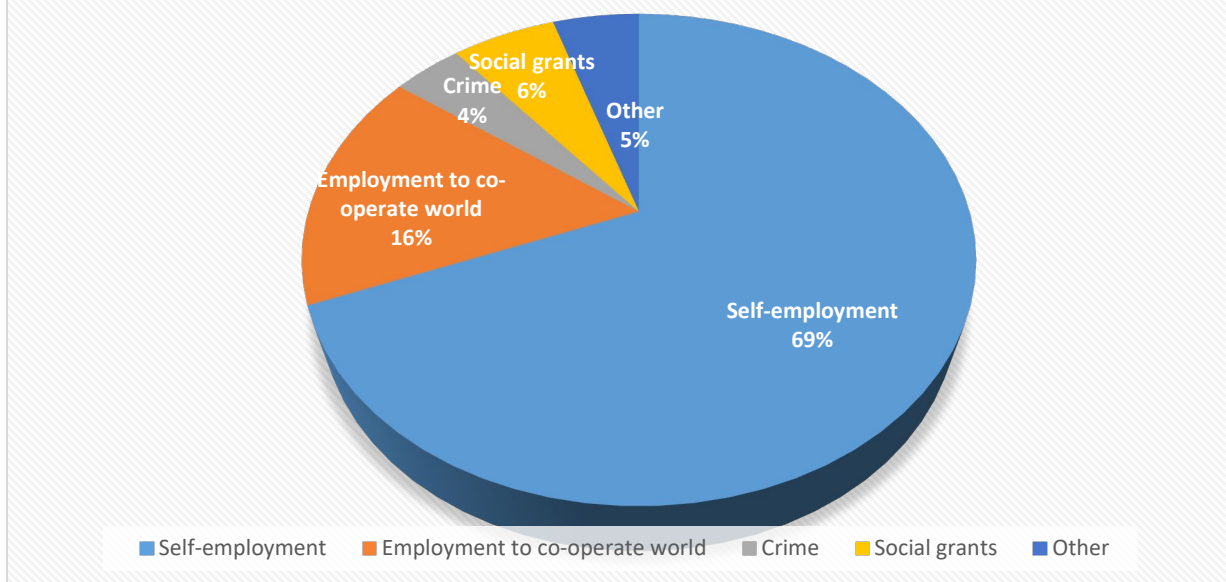


Figure 5 above indicates learners' views on solutions to unemployment. It is interesting to note that, besides the challenges identified in Figure 4, the majority of learners (69%) believe that self-employment is a good solution to the rising unemployment rate. On the other hand, 16% of the learners believe that employment in the cooperate world may help to combat unemployment, followed by social grants and crime as solutions to unemployment, at 6% and 4%, respectively. The results suggest most learners have an interest in starting their own business in the future.

Table 4.2: Learners attitudes towards learning agricultural entrepreneurship

Age range	Frequency	Percent
16-19	59	59
20-24	41	41
Gender		
Female	67	67
Male	33	33
Do you think the content taught in Agricultural Sciences motivates you to start your own business?		
Content taught motivates	68	68
Content taught does not motivates	32	32
Would you like to start your own business? (SYOB)		
Willingness to start	75	75
Not willing to start	25	25
If the National Youth Development Agency (NYDA) were to provide funds for you to start a small enterprise, would you like to take the opportunity? (NYDAF4SE)		
Yes	88	88
No	12	12
What prohibits the unemployed youth from starting their own businesses? (PUYSOB)		
Lack of funds	46	46
Lack of business skills	29	29

Most learners agreed that self-employment is a viable choice in the current state of the economy. Seventy-five percent of the learners agreed that they would like to start businesses, while agreement on the idea of starting a business increased to 88% if start-up funds were provided. It was interesting to note that 46% of learners perceived a lack of funds as the major factor preventing a majority of them from starting their businesses, while 29% of the learners believed that a lack of business skills was a contributing factor to preventing them from starting their own business. Furthermore, 11% agreed that a lack of motivation from the curriculum could also be the root cause preventing them from starting a business, while 10% believed that starting a new business would depend on the availability of infrastructure. In addition, 76% of the learners believed they could be motivated by knowledge and skills in the classroom, whereas 24% disagreed with the notion. Oluseye, Adebayo Olulanu, Adesola and Omonike, (2017) who note that the entrepreneurship curriculum is good and it has a positive effect on the initiatives of self-

employment. They further indicate that the interest of students on entrepreneurship can be triggered by encouraging them to train in local businesses as part of their school activities.

Table 4.3: Learners views on learning about agricultural entrepreneurship

Do you enjoy learning about Agricultural Economics? (LAE)		
Motivated to learn agric econ	83	83
Not motivated to learn about agric econ	17	17
Would you actively participate in school projects that are business related? (PSPB)		
Willingness to participate	82	82
Not willing to participates	18	18
If your school or community was to start a vegetable garden, would you actively participate? (SCSVGP)		
Willingness to participate	82	82
Not willing to participate	18	18
Would you be willing to sell farm (produced) vegetables from the garden? (WSFVG)		
Willingness to sell farm product	80	80
Not willing to sell	20	20
Do you benefit from the knowledge and skills you have learnt in Agricultural Sciences, especially Agricultural Economics? (BKSASEAE)		
Yes	81	81
No	19	19
Would you voluntarily share the business knowledge and skills you have learnt in Agricultural Economics with members of your community? (VSBKAEC)		
Willingness to share business knowledge	86	86
Not Willingness to share business knowledge	14	14
Have you ever participated in any Agricultural projects at your school or within your community? (PIAP)		
Willingness to participate in agricultural project	48	48
Not willing to participates in agricultural projects	52	52
Do the skills and knowledge gained in the Agricultural Sciences classroom motivate you to start your own business? (SKGASCMSOB)		
Motivation to start business	76	76

Not motivated to start business	24	24
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It was noted with great interest that 83% of the learners enjoyed learning about agricultural economics. Assumedly, of this 83%, 82% would happily participate in school projects that would permit them to apply what they learnt in the classroom. while 17% of the learners had no interest in learning about agricultural economics and, consequently, 18% of the learners had no interest in participating in school projects. In addition, it is important to note that the 82% of the learners that would have liked to participate in the projects were willing to start a vegetable garden in their school. Eighty percent of these learners were also willing to sell the farmed products in the nearest community because 81% of the learners believed that the knowledge and skills learned in the classroom were very beneficial to the development of their community, while 19% believed it was not beneficial. Eighty-six percent of the learners were willing to share the knowledge with community members, while 14% showed no interest in sharing the information. Learners were most likely to show an interest in agricultural entrepreneurship when the teacher employed innovative methods in the classroom. Read, Derrick and Ligon (2014) maintain that, for learners to have positive attitudes towards entrepreneurship and also to learn entrepreneurial skills, it is important that teachers allow learners to practise entrepreneurship. The study further emphasises the notion that, allowing learners to lead in a classroom, provides them with an opportunity to engage in the creative process. This type of practice is mostly likely to increase learner interest in entrepreneurship.

Furthermore, it is also observable from the Table 4.3 that 48% of the learners had participated in the agricultural projects in their respective schools and communities, while 52% had not participated in any agricultural projects, which may be due to the fact that, in some of these areas, projects were not available. It was noted earlier that 82% of learners were willing to participate in projects. A lack of projects that emphasise entrepreneurship may lead to little interest in pursuing such careers. Mamum, Che Nawi, Dewiendren and Shamsudim (2016) maintain that it is important for the school curriculum to allow students to engage in projects. Projects allow learners to recognise opportunities that generate income. Such practices increase students' entrepreneurial intentions.

Table 4.4: Learners' attitudes toward learning about agricultural entrepreneurship from the 5-point Likert scale questionnaire

CD	Statement (Teaching methods)	SA	A	N	SD	D
D1	I am passionate about learning agricultural entrepreneurship	20	44	16	9	11
D2	I learn agricultural entrepreneurship better when I do practical work	53	36	5	1	5
D3	Doing a project on business planning allows me to understand the concept better	30	49	14	4	3
D4	Subsistence farming in my home helps me understand the concepts better	29	41	17	7	6
D5	Putting theory of agricultural entrepreneurship into practice is fun and helpful	45	37	10	6	2
D6	Practical on agricultural entrepreneurship helps me to remember the basic concepts	43	42	5	8	2
D7	I prefer role playing because it stimulates my interest in the learning of agricultural entrepreneurship	46	42	7	2	3
D8	Group projects on farm business develop positive attitude in me	36	45	13	4	2
D9	Simulation on farm business enhances my knowledge	41	45	10	4	0
CE	Statement (Learning environment)	SA	A	N	SD	D
E1	Observing people in the community doing business motivates me to want to learn more on agricultural economics	35	48	8	3	6
E2	My community does not offer entrepreneurial opportunities and that discourages me to start my own business	20	44	16	9	11
E3	In my culture business is encouraged as prominent means for providing for the family	28	42	15	9	6
E4	Our family business has helped me to understand the concept agricultural economics	27	44	17	6	6
E5	I learn entrepreneurship better when desks are arranged in groups because we are able to discuss	33	45	13	5	4

E6	Good classroom ventilation intrigues me to want to learn more	26	42	23	5	4
E7	I cannot easily concentrate when the classroom is over crowded	20	28	6	30	16
E8	Seeing posters on established farm business inside the classroom increases my interest on business	26	37	9	13	15
E9	The class size is reasonable hence we are able to ask the teacher to check our work	42	37	13	6	2
E10	The teacher is able to provide individual attention in order to improve our understanding	38	37	14	8	3

Table 4.4 above presents the learners' level of interest in learning about agricultural entrepreneurship. Statement D1-D9 represents learners' interest on learning about agricultural entrepreneurship based on the how they are taught in a classroom. It is with interest to note that 64% of the learners were passionate about learning agricultural entrepreneurship, while 16% were neutral and 20% had no interest in learning about entrepreneurship. This is because 68% of the learners preferred to learn this section through interactive methods, such as group discussion, assessment tasks, projects, case study and role playing, as indicated in Figure 2, while 32% preferred to learn through listening to the teacher. This is also visible from the classroom observations, where teachers predominantly used non-interactive methods, such the lecture and textbook methods, which may have led to some of the learners not showing any interest in learning about agricultural entrepreneurship. The success of instilling entrepreneurial intentions in learners depends on the level of engagement between the teacher and learners in a classroom. When students are engaged in a classroom, they are able take full responsibility of their own learning, which gives them an opportunity to engage in dialogue with their peers, assisting them to improve their communication abilities (Rambe, Ndofirepi & Dzansi, 2015).

Moreover, it is also observable from the above table that 81% of the learners believed that agricultural entrepreneurship is learned better through practical work, while 5% were neutral and only 6% disagreed with the statement. On the other hand, it is important to

note that 79% of the learners preferred doing projects involving the business plan, 14% were neutral, whereas 7% did not prefer business plan projects. Interestingly, lessons **B22** and **D10** from the classroom observations show that teachers used the lecture method and textbook method to deliver lessons on business plans. Salem (2014) notes that entrepreneurial schools are likely to produce students who are self-reliant because entrepreneurial schools afford learners an opportunity to learn through practice.

Furthermore, it is also notable from Table 4.3 that 70% of learners believed that practicing the knowledge gained on family farms helped them to understand the concepts better, while 17% were neutral and 13% disagreed with the issue. This is because 82% of the learners believed that putting theory into practice is fun and helpful, while 10% were neutral and 8% disagreed. Similarly, 85% of the learners agreed that practical work involving agricultural entrepreneurship helps them to remember the basic concepts, 5% were neutral and 10% disagreed. In addition, role playing was also regarded as a preferred method, since 88% the learners agreed with the statement, 7% were neutral and 5% disagreed. Learners also preferred to work in groups when doing the projects, as 81% agreed with this statement, 13% were neutral and 6% disagreed. It is also notable from the above table that simulation was regarded as a powerful tool to enhance the knowledge of learners and this is evident in that 86% of the learners agreed with the statement, 10% were neutral and 4% disagreed. Muresan and Pastiu (2016) maintain that the use of simulated enterprise in the entrepreneurship classroom enhances student learning and also provides first-hand experience of business-related issues.

Social reconstructionists believed that the community is one of the important elements to consider when developing the curriculum because education is an engine through which the lives of members of a society can be enhanced. Learner behaviour, attitudes and views are moulded by their surrounding circumstances or situations. It is interesting to note that 83% of the learners agreed that observing people doing business in the community motivated them to want to learn more about agricultural entrepreneurship, while 8% were neutral and 9% disagreed. In addition, learners were discouraged by communities who were not entrepreneurial as 64% agreed with this statement, 16% were neutral and 20% disagreed. Learner engagement in the family business was regarded as

important and 67% agreed with this statement, while 17% were neutral and 12% disagreed. Entrepreneurship is a social intervention that can be used to resolve some of the societal problems. It remains important that, in the classroom, teachers should create a context which will induce entrepreneurial action in learners (Royo, Sarip & Shaari, 2014)

Learning environments: Classroom environments are regarded as important because they are the platform from which learners may be motivated or demotivated to learn. The learning environment refers to the arrangement of desks; ventilation; number of learners; available teaching and learning resources; and, mobility in the classroom. It is interesting to note that 78% of learners believed that they learned better when desks in the classroom were arranged in groups, 13% were neutral and 9% disagreed. Jones (2010) and Hietanen (2014) maintained that conducive learning environment enables learners to fully develop their abilities.

It is also notable that 66% of the learners believed that good classroom ventilation helped them to want to learn more, while 23% were neutral and 9% disagreed. Learners also perceived overcrowded classrooms as one of the factors demotivating their learning. It is observable from the above table that 48% of the learners believed that overcrowded classrooms are a barrier to learning about entrepreneurship, while 6% was neutral and 46% disagreed. These responses from learners on this category are unusual as it is expected that larger percentage will agree on this. The availability of posters in a classroom brings life to the classroom. Sixty-three percent of the learners believed that posters increased their interest in learning about business matters, 9% were neutral and 28% disagreed. Teachers teaching entrepreneurship classroom can gain the attention of learners by introducing innovative methods to encourage a level of passion about the entrepreneurship curriculum. Optimistic and passionate teachers are mostly likely to instil positive attitudes in learners (Stadler & Smith, 2017).

About 79% of the learners believed that when the class size was reasonable the that the teacher was able to check their work, 13% were neutral and 8% disagreed. Learners alluded to the fact that they were is able to give them individual attention, with 75% agreeing to this statement, 14% were neutral and 11% disagreed. Adimonyemma,

Akachukwa and Igboabuchi (2018) indicate that a large class size affects students' learning negatively.

4.5 The extent to which learners used entrepreneurial skills in their daily lives

Table 4.5: Descriptive analysis on the extent to which learners use entrepreneurial skills in their lives.

Key: Always (A), Sometimes (S), Never (N)

CG	Statement	A	S	N
G1	I share my knowledge and skills with my community members	30	61	9
G2	I have developed a vegetable garden with the knowledge gained from Agricultural Sciences.	30	47	23
G3	I participate in agricultural projects in my community	17	51	32
G4	I value the knowledge gained in the Agricultural Sciences classroom	55	43	2
G5	I help my community members with development of business plans	25	44	31
G6	I create a budget for our family household expenses	30	44	26
G7	I often explain agricultural legislation to project coordinators of agricultural projects	30	41	29
G8	I often explain to my family members about the dynamics of supply and demand of agricultural products	33	55	12
G9	I explain to people in the community why agricultural products are expensive in the supermarket and cheaper in markets on the street.	38	43	19
G10	I often explain to my family members how they can best utilize hired labour during weeding.	29	45	26
G11	I assist my family members in determining the prices for their agricultural products.	36	42	22

G12	I often provide information to my household members about how one can mitigate risks in agricultural production.	27	56	17
G13	I often tell my community members about how agricultural products move from one place to another.	37	49	14
G14	I often tell my community members why some fruits and vegetables become cheaper one season and expensive in another.	39	47	14
G15	I have developed a small farming business using the knowledge from the Agricultural Science classroom	31	32	37
G16	One day I would like to start my own farming business	55	30	15
G17	I have a desire to develop a business plan for a farming business	49	35	16
G18	I enjoy sharing with my family about different types of agricultural production systems we can create in our backyard garden	54	37	9
G19	I often tell my community members how to use some of the agricultural equipment	34	44	22
G20	I often share with the community members how to successfully manage a farm.	32	50	18

Learners' interest in the subject may be measured by their ability to use and share the knowledge gained in the classroom with other people in a society. Table 4.5 indicates that 30% of the learners always shared their knowledge and skills with the community, while 61% sometimes shared their knowledge and 9% hardly did. It is interesting to note that 30% of the learners always worked in their home gardens using the knowledge gained in the Agricultural Sciences classroom, while 47% said that they sometimes used this knowledge and 23% said that never engaged in such activities.

Furthermore, 30% of the learners indicated that, with the knowledge they gained from the classroom, they were able to draw up budgets for their families all the time, while 44% did that sometimes and 26% never entertained such thoughts of drawing up a budget. In addition, it is also important to note that from Table 4.5 that 30% of the learners were

always willing to explain some of the legislation that governs agricultural projects to the community members.

Furthermore, there are economic circumstances that lead to drastic changes in the economy because of fluctuations in the inflation rate. Some would wonder why some products are cheaper in certain seasons and more expensive in others. In this regard, it is observable from Table 4.5 that 33% of learners explained to their family members the dynamics of demand and supply of agricultural products, while 55% did that sometimes and 12% never engaged in such activities. Thirty-eight percent of the learners always explained the seasonal nature of agricultural products to their communities, while 43% did this sometimes and 19% never took some time to involve themselves in such economic issues. In addition, 29% of the learners always explained to their community members how best to utilize hired labour during weeding time, whereas 45% did that sometimes and 26% never engaged in such matters. Consequently, the above table highlights that 36% of learners always helped in pricing of the commodities, while 42% did that sometimes and 22% never involved themselves in such tasks. Many youths tended to have little interest in the field of agriculture because of the nature of the job (Holz-Clause & Jost, 1995), hence, many of the learners showed little interest in using the content learnt in the classroom.

Moreover, it is observable from the table above that 27% of learners explained the strategies used to mitigate risks when producing agricultural products. The knowledge of why agricultural products price fluctuate also depends on the movement of products along the marketing chain. It is observable from the table above that 37% of learners always explained to their community members how agricultural products move from one place to the other, while 49% did that sometimes and 14% never engaged in such activities. Furthermore, it is of interest to note that about 31% of learners developed small farming businesses using the knowledge gained from Agricultural Sciences classrooms, whereas 32% did that sometimes and 37% never engaged in such activities. The above table also highlights that 54% of the learners were always willing to share the knowledge on the type of production system available in agriculture, whereas 37% did that sometimes and 9% never involved themselves in this matter. These findings are complemented by Boleman

and Burrell (2003) who indicate that Agricultural Sciences programmes empower students with knowledge of how agriculture is part of their daily lives. This type of programme brings a positive learning experience to agriculture students and stimulates their interest to implement such knowledge.

Furthermore, it is interesting to note that 34% of the learners always explained to community members who are engaged in farming about how certain equipment work, while on the other hand, 44% of the learners did that sometimes and 22% never engaged in such activities. In addition, 32% of the learners helped farmers on how best to manage their farm, while 50% did that sometimes and 18% never engaged in such activities. The knowledge on agricultural resources used to help farmers to become more productive and saves agricultural inputs. The sharing of knowledge between Agricultural Sciences learners and farmers remains important because lack of knowledge may lead to wastage on the farm. This finding emerged from a study by Luckey, Murphrey, Cummins and Edwards (2013) who noted that programmes, such as Adventure, which are introduced in agricultural schools had the ability to influence student knowledge and their perceptions about the subject. The knowledge gained from the programme can be used to improve lives in the community.

4.6 Summary of the Chapter

This chapter was based on the presentation of results and a discussion of the descriptive results and interpretation. The results were presented according to the research objectives. In the next chapter, the researcher deals with the discussion of results in relation to the social reconstructionist theory. The chapter will also include an empirical analysis of other factors that contribute to the development of entrepreneurial skills in the Agricultural Sciences classroom.

CHAPTER FIVE: DISCUSSION OF FINDINGS IN RELATION TO THE THEORETICAL FRAMEWORK

5.0 Introduction

In the previous chapter, the researcher dealt with a presentation of raw data and a holistic interpretation of the data. This presentation of the data was done according to the research objectives. The study had five research objectives and the data were presented on each objective. In this chapter, the researcher focuses on a discussion of findings in relation to the theoretical framework. The social reconstructionist theory was used to explain how teaching and learning should be structured in order to shape learners for the betterment of their communities. This theory was mainly used as a lens through which to view objectives 1 and 2, respectively. The analysis was underpinned by the theory in order to explain the events which need to occur in a classroom in order to develop entrepreneurial skills. Objectives 3, 4 and 5 were analysed using multinomial logistic regression and descriptive analysis respectively. With respect to the first and second objectives, the study began by outlining the perspective of the theory supporting how teaching is done, followed by the realities occurring in the Agricultural Sciences classroom and the implication of such practices on learners developing entrepreneurial skills.

5.1 How learners are taught entrepreneurial skills in the Agricultural Sciences classroom

5.1.1 Teaching methods

Theoretically, the “teaching methods employed in a classroom are the ones that predetermine learning as a social process, where the focal point of the lesson is to develop learners’ life skills. This will then imply that learning by doing should be at the centre of the curriculum” (Kolb, 2009). The notion above insinuates that, for learners to develop entrepreneurial skills, they need to be taken through a teaching and learning process that permits learning by doing. Lesson **A1 to A5** promoted rote learning, where learners are obliged to copy the notes from the board without a proper interaction with the teacher. The dominant methods of teaching were the question and answer, lecture and explanation methods, with the discussion method employed in rare cases. All these

methods are meant for reproduction practices which disregard the development of skills. Kolb and Kolb (2009) emphasise that, for learners to develop the essential life skills, it is important for the pedagogy to shift from the traditional lecture led practice to active experiential, project-based, problem-solving learning, accompanied by peer evaluation.

Lesson **A6** dealt with the calculations of financial documents used in the farming business. The teacher used the traditional classroom methods, such as the lecture and explanation methods, to explain the concepts and gave examples of the financial documents. Learners in this lesson were requested to study some of the financial documents from the textbook. There was no proper procedure followed where learners were be exposed to the transactions related to the farm business. The learners' activities should begin by first explaining what liability or assets are, and also to differentiate between revenue and expenditure. A list of transactions needs to be given to the learners where they indicate which is income and which expenditure. This practice of not following all the steps required when undertaking these calculations may lead to learners not acquiring the necessary life skills. Many schools are striving to produce learners who are critical thinkers and this implies that the teaching method employed in the classroom should go beyond knowledge comprehension. Developing critical thinking calls for a learning process that is dominated by a higher level of learner engagement and undertaking more learning activities during teaching. These learning activities should put learners at the level of evaluation, synthesis and interpretation (Prince, 2004).

Lesson **A7** was dominated by the lecture and the question and answer methods throughout. The teacher would write notes on the board and explain them to the learners. This lesson introduced 3 topics in a period of 60 minutes. Because of the number of topics tackled in this lesson, there were many questions which were asked by teacher and most of them were not answered by the learners because there was no proper development of the lesson stages. Passivity in a classroom leads to distortion of learning events (Cutler, 2007). Learners, in some instances, showed signs of exhaustion and confusion. There was no learning activity given during the lesson. Bell (2015) maintains that the use of experiential learning affords learners an opportunity to be exposed to real entrepreneurial activities which, will in turn, develop the learners' entrepreneurial skills, such as

innovation, being proactive, risk-taking and self-efficacy. Subsequently, lesson **A8** engaged learners in discussions, where a set of questions were asked. These stimulated the learners to engage dialogue with their peers. The teacher also contributed by providing learners with examples from within the local area, which led to learners asking more questions based on the arguments presented. Even though some of the questions were not answered, the depth of questions led to learners wanting to learn more from the teacher. The **A9** lesson was a continuation of **A8**, which started by giving learners activities where they were requested to show the functions of agricultural marketing, as depicted in the pictures. Learners successfully completed the activity and each one of them was able to provide the correct answer to those functions. Learners showed an interest by being busy with the activity, unlike on other days when they were requested to write classwork at the end of the lesson. Engaging learners in the classroom plays a crucial role in student learning and makes it much easier to assess learners' abilities. Hence, in such classrooms, teachers are able to develop new strategies in order to improve on the older strategies (Kuh, 2001).

With respect to lessons B1-B5, the teacher would come into the classroom and greet the learners. The topic of the day was written on the board, followed by writing a series of notes on the board and learners would be busy copying the notes. The teacher would continue with the lesson, where the written notes would be explained in detail with the use of examples. In most cases when the teacher presented explanations of the notes; the teacher would pose some questions to ascertain the learners' understanding of the topic under discussion. After these deliberations, learners would be given an activity to do. The activity was extracted from a previous examination paper. All the activities were extracted from the June, trial and final year examination papers. The teacher did not develop the activities from scratch. The selection of topics to be taught was influenced by the questions that are frequently asked by examiners of Agricultural Sciences. Emphasis was placed on topics that are used to set examination. In each of these lessons, the teacher would highlight how questions are set. Teaching was skewed towards the content of tests and examinations, as reflected in use of traditional methods such as explanation, question and answer, lecture and discussion. Teaching learners' life skills is part of the core values on learners' well-being because learners need these skills for their survival

and sanity. Learners in the lessons above (**B1-B5**) were exposed to rote learning, which results in learners not being able to develop skills such as the ability to solve problems and to work with others. From the social reconstructionist perspective, schools are entities where learners are groomed for the betterment of society (Bondy & McKenzie, 1999). Shiro (2007) alludes to the fact that, in a classroom, knowledge is constructed through social interactions. Both the teacher and learners are powerful tools of knowledge. More time needs to be spent discussing the social ills of the society. Therefore, classroom practices need to contribute towards shaping learners for community development.

Contrary to what transpired in **A6**, in lesson **B6, B7, B8** and **B9**, the teacher introduced the topic, namely, capital as a factor of production, by giving learners notes on what capital is, types of capital, sources of capital and problems associated with capital. In dealing with these topics, the lecture and explanation methods were employed to facilitate learning and learners were regarded as passive, whereas they are supposed to be equals with teachers in a social classroom. There was a lack of learner engagement in the classroom, which creates a barrier to the development of entrepreneurial skills. Heaslip, Donovan and Cullen (2014) maintain that learners understand the material better when there are interactions in the classroom. The level of interaction increases in the classroom where the use of technologies such as clickers occurs because there is an element of anonymity on the responses.

The lesson continued on the topic, capital as a production factor, focussing was on financial documents used in the farm business. The teacher switched from the lecture method to the activity-based learning approach. The lesson focused on calculations in an income statement, cash flow projection, balance sheet and cash book analysis. The teacher compiled questions from previous examination papers and used them as activities to facilitate the lesson. The teacher started by providing the definition of the concepts. Some of the questions posed by the teacher came in the form of a case study, where learners were requested to read the case study, single out a transaction and state whether it was an income or expenditure; or, liability or asset. This was done step-by-step until all learners recorded the transactions in their work books. The teacher asked the learners to group the transactions and write them on the board. Some learners were

confused about the type of transactions that need to be recorded as income. The teacher provided clarity on how one spots whether a transaction is income nor expenditure. This type of practice allowed learners to engage with other learners and this helped them to understand the calculations. Mwanzia and Mwangi (2016) maintain that giving learners activities where they are able to interact with their peers helps them understand the concepts and also stimulates deep learning. The analysis of these financial documents afforded learners the opportunity to gain practical experience on funds that are used in a farm business and they learnt about the ability to check farm viability. These placed learners in a better position to transfer such skills to community agricultural projects. Parson (1986) maintains that rebuilding of the community is the primary goal of schools.

Moreover, lessons **B10-B22** were clouded by the use of teaching methods such as question and answer, explanation and discussion, as well as the lecture method. These lessons were based on agricultural marketing, which involves many subtopics. The teacher always made a point of ensuring that, in all the topics, learners were given notes. These notes were developed by the teacher. In some instances, the teacher would allow the whole class to be involved in discussions. The teacher would ask learners questions which stimulated the learners to engage in a debate. In each of the lessons, learners were able to interact with the teacher, however, the teacher was still the main source of information in all of the activities that took place and s/he compiled the class activities. At the end of each lesson, the learners were given a class activity and, in some instances, learners were even given homework activities. Before the next lesson commenced, the teacher would start by providing learners with answers to the activities done in the previous lesson. Each learner was allowed to mark their own work, while the teacher would mark the test and examination scripts only. Even though Bidabadi, Isfahani, Rouhollahi and Khalili (2016) maintain that peer and self-assessment boosts the confidence of learners and encourages them to take full charge on their learning, a lack of monitoring in terms of making sure that learners have written the work before marking is important because it would be difficult to gauge learners' progress if they would simply do the activity, while some of the peers provided the answers. After the process of marking the activities, the teacher would, in some instances, sign their work books. Bondy and McKenzie (1999) note that the role of the teacher in the classroom is to identify the

strengths of learners. rather focus on their weaknesses. The teacher needs to provide more support and care in order to build learners' competencies. As such, it remains important for teachers to monitor learners' works before giving feedback in order to gauge the learners' progress; this informs the teacher where learners need to improve. However, without proper monitoring, this may not be achieved. Igwe, Rufai and Olufemi (2013) maintain that continuous assessment helps to determine the ability of learners.

With regards to **C1-C4**, teaching in this classroom was structured using the traditional methods. The teacher would get to the classroom and write notes on the board, explaining the meaning of the written notes. In some instances, the teacher would only be writing the notes and ask the learners to explain them. Learners were actively engaged with the teacher on topics that they understood and on the topics that related to their real-life situations. Furthermore, during the lesson presentations the teacher would request learners to state where they had difficulties in understanding the concepts under discussion. In most cases the teacher would simply teach, without giving learners a class activity at the end of the lesson. In addition, it was also noted that there were no learning activities given during the lesson which promoted reproduction practices. Mei-Nan and Xin (2017) note that careful consideration should be taken when designing teaching and learning activities in order to avoid a classroom that promotes reproduction of facts. Classroom activities should be meaningful, where learners are able to apply the knowledge gained in a different context. It is important that the learning environment stimulates the learners to take full responsibility for their own learning. Masole (2011) also alludes to the fact that assessment is inseparable from teaching. As such, a lesson without activities may not contribute much to the acquisition of knowledge and development of skills.

Moreover, the **C3** lesson, which is similar to the **A6** lesson, the teacher would ask learners to study financial documents from the textbook, without giving them an activity where they could actually do the calculations. The teacher simply made sure that learners understood the definitions only. Teaching without assessment activities leads to faulty data on the type of skills, knowledge and values the learners may have obtained during the teaching

process. Mabie and Baker (1996) maintain that assessment activities enable the teacher to assess abilities of learners.

In **C5-C9**, most of the lessons were facilitated using the question and answer, explanation and lecture methods. In some instances, the teacher would get to the classroom, greet the learners and write the topic of the lesson on the board, providing learners with the definitions of the keywords of the topic. This would be followed by some explanation and more writing of notes on the board. Learners would passively copy the notes on the board. In other instances, the teacher only asked learners whether they understood and there were no questions from the learners. The lesson would continue where the teacher would provide the learners with more explanations, without interacting with them. Some learners would tend to lose interest and do other things which did not involve agricultural science. This type of practice hinders the development of life skills. Moreover, in cases where the teacher attempted to give learners a few questions to answer during the lesson, the learners would begin to show interest and they paid attention. Another important element which was lacking in the classroom was classroom and homework activities. This led to the learners experiencing difficulty in answering the class tests. As Rubagiza, Umatoni and Kaleeba (2016) note that education has the capacity to inculcate relevant skills and values if the learners are exposed to learning activities that allow them to interact with real-life situations in the society. However, Adeyemo (2009) notes with caution that teachers are not trained to teach of entrepreneurial skills because, while the curriculum may be relevant, the major activity relies on the ability of the teacher to deliver lessons that target particular skills.

The **D1-D6** lesson presentations were mainly dominated by the textbook method. The teacher would start the lesson by first asking learners to open their textbooks and they would be instructed to open a particular page on which the lesson would be based. The methods used in these lessons were mainly the question and answer and the textbook methods. The teacher would read about the topic from the textbook and explain the keywords using the examples. This would occur throughout the lesson. No notes were written on the board for the learners. There was no chronological order in the lesson presentation since the teacher would just randomly pick topics s/he believed to be

important for the learners to learn. The teacher emphasised the topics on which an examiner would most probably ask questions. The teacher would pick a topic and choose certain subtopics within the larger scope of the main topic. The design of lessons was based on the topics that were deemed important from an examination point of view. This raises a concern as this approach may have a negative effect on the building of learners' knowledge and also on the development of the required skills. The teacher would, in some instances, give the learners a class activity from the textbook and, in most cases, feedback was not provided. Tukundane, Minnaert, Zeelen and Kanyandago (2015) maintain that such classroom practice does not prepare learners for livelihood opportunities and for labour. It remains important for the teacher to incorporate methods such as collaborative learning, learning by doing and industrial training in order to enrich learners' experiences. These experiences will assist them to do well in the job market in the later stages of their lives.

The **D7-D14** lessons were dominated by the use of the question and answer and the discussion methods. The teacher used the question and answer method to facilitate most of the lessons. Learners actively participated and tried their best to answer the questions. During the deliberations, the teacher formulated other questions. Most learners showed an interest in learning about agricultural marketing because they could relate to the topic. The teacher emphasised the type of questions that were likely to be asked in common tests and examinations. In some instances, the teacher would bring a previous examination question paper to the class and the learners would be requested to provide answers to the questions. Learners had difficulty in responding to most of the questions, which may be because of a lack of learning activities during lesson presentation. Oluwasanya (2016) alludes to the notion that the entrepreneurship classroom is classified as a class that engages learners in high profile thinking activities. This approach involves learners being actively involved in entrepreneurial activities, such as having discussions on important business activities and practices because entrepreneurship involves keeping the mind active in the classroom. This type of paradigm shift affords learners an opportunity to develop passion, confidence and creativity. Such learners are likely to engage in entrepreneurship activities in the future because they would have had first-hand experience gained in the classroom.

During the lesson, learners spent a great deal of time trying to come up with solutions to activities for which they were not properly prepared. Even though the question and answer method is effective in bringing life to a classroom, it is still a traditional method that promotes reproduction of facts, which may have a negative bearing on the development of entrepreneurial skills. Most learners prefer to learn by doing. This allows them to take charge of their own learning and enables learners to perform particular activities. Reproduction practices do not develop learners for the betterment of their community (Zuga, 1992). Moreover, Muresan and Pastiu (2016) highlight the notion that the development of entrepreneurial skills in learners lies in exposing learners to real-life activities with respect to how businesses are run. This will help to develop the economic knowledge of learners.

The teacher could have given learners learning activities that would enable them to experience the real context of running a farm business and how they could resolve some of the challenges that are faced by farm businesses. This approach could have prepared learners to start thinking about starting their businesses. Using traditional teaching methods in a topic of this nature deprives learners of essential skills that are needed in the 21st century.

5.1.2 The teaching and learning process

Teacher A, B, C and D's classrooms were characterised by the use of traditional teaching methods in delivering lessons in Agricultural Sciences. Ideally, it is expected that vocational subjects like Agricultural Sciences be taught using learning by doing and activity-based learning approaches (DBE, 2011). Teachers are expected to implement a learner-centred approach, where learners are divided into social groups in order to have debates about social ills, which includes learners taking part in the process of planning the classroom activities.

It was, however, observed that teachers would get to a classroom, write a topic on the board and explain the keywords. At this stage of the lesson a teacher should strive to do a baseline assessment of the level of knowledge learners have about the topic. In most lessons, prior knowledge was not tested. Some teachers introduced the lesson using a set of questions, while others went straight to the lesson presentation, without asking any

questions. There are different methods that can be used to introduce a lesson; for instance, a lesson can be introduced by narrating a story, using a real-life object or by using pictures. This concept is important because the introduction of a lesson should appeal to and motivate the learners. This part of a lesson highlights the importance of learning about the topic. The manner in which lessons were introduced did not grab the attention of learners, which often led to some of the learners not focusing on the lesson, making noise and, in some cases, even sleeping. Fayolle (2013) maintains that learners should not be treated as passive in entrepreneurial classrooms but that all the activities in the classroom should work towards achieving the purpose of the curriculum. This then implies that teachers should strive to engage learners as much as possible, affording learners an opportunity to construct knowledge together with the teacher because learning is not just about the transmission of knowledge from one person to the other, it is also about organising and analysing situations in the classroom. Daniel, Costa, Pita and Costa (2017) emphasise the notion that creating an atmosphere where learners can actively participate is fruitful for skills development. Learners learn much from this experience.

Theoretically, a lesson introduction should be done by using scenarios, pictures, videos and real objects, followed by a set of questions based on the story or on pictures. Teachers should introduce the lesson with caution in order to avoid unconsciously moving into the lesson presentation. The use of questions at the beginning of the lesson should be the main source of deducting prior knowledge from learners. In social reconstructionist classrooms, learners and teachers should work together to actively engage in extracting prior knowledge. Some teachers did not even introduce the lesson. They simply started with the lesson presentation. It remains crucial for learners' comprehension to be checked at every stage of the lesson so that possible intervention can take place when necessary (Cooper, Bottomley & Gordon, 2004).

During lesson presentations, teachers A, B, C and D used the traditional mode of delivery. The common methods used were the explanation, lecture, question and answer, and discussion methods. The teacher would normally get to the classroom and straightaway present the introduction which, in most cases, would be equivalent to the lesson

presentation. There was no clear distinction between the lesson presentation and the introduction. The linking of the learners' prior knowledge to the new topic was not clearly visible in the lesson presentation. This had a negative bearing on the stage development of the lesson, minimising knowledge acquisition by learners. This approach may also cause problems for learners if they are not motivated to learn because, at their age, they are still trying to find out what path they will pursue after high school, since because most of them are not aware of the capabilities they have. Increasing classroom engagement may assist learners to identify their potential at that level (Hadi, Wekke & Cahaya, 2015).

The teacher would present the lesson by first writing notes on the board and then explain each point as a written thereon. Some of the explanations would give rise to questions. These questions would be posed to learners and the learners would actively respond to them. The lesson would continue where the teacher would write notes on the board and the learners would copy them in their workbooks. This would be followed by an intense explanation. In most cases, the teacher would simply explain, without asking learners whether they understood what was being presented. Intense explanation would be followed by giving the learners a class activity at the end of the lesson. However, some teachers did not give activities during the lesson, which makes it difficult for the teacher to gauge how far learners are in terms of their acquisition of knowledge and skills (Syam, Akib, Yunus & Hasbiah, 2018).

The teacher should take into account that lesson presentation needs to be done using teaching aids in order to stimulate learners. The use of teaching aids reduces boredom in the classroom. The facial expressions of the learners should not be ignored. The fact that some learners were sleeping during the lesson presentation, while others were making a noise, should prompt the teacher to engage them so that they concentrate on the lesson. Moreover, the shaping of learners for the betterment of their society involves lesson presentations that use pictures, real objects, videos or any other aid that would stimulate student learning. The lesson presentation should be based on the social ills of a society and should capacitate learners in a way that they are able to reconstruct their communities. This calls for use of simulations in the classroom, where learners are taken through a set of activities on how agricultural business operates, what challenges are

likely to occur and how one can solve such problems. This approach is important because learners learn better through experience (Cope & Watts, 2000).

The lesson presentation should be about the use of objects and videos to instil business or farming skills in the learners. The current practices of the teachers involved in this study do not promote the development of these skills, instead they encourage the reproduction of facts. This situation was exacerbated by a lack of learning activities. Furthermore, most of the teachers did not conclude their lessons after the presentations, they simply highlighted the topic for the next lesson. Other teachers would present a lesson conclusion in the first five minutes of the new lesson by asking learners a set of questions. In a social classroom, a lesson conclusion involves tabling the achievements in the matter under discussion and discussing how the next matter would be tackled. This is done to encourage the building of knowledge. The entrepreneurial culture is most likely to be achieved in a hands-on classroom because entrepreneurial learning occurs at all stages of the entrepreneurial process. Learners should be given activities that will allow for the creation of a tangible product at the end of the learning process, which includes engaging learners in projects that would instil an entrepreneurial culture in them (Secundo, Del Vecchio Schiuma & Passiante, 2017).

5.1.3 Relating a lesson to reality

During the study, the researcher discovered that lesson presentations were simply based on traditional methods of teaching, which resulted in a minimal relationship between the topic and reality. In most cases, when the teachers were busy explaining some of the concepts, they would use examples from the local area and from within the South African context. Learners were motivated to learn whenever the teacher explained concepts using the examples that they could relate to. The use of local examples in classroom discussions accelerates knowledge acquisition by learners because, in social classrooms, learners are taught in the context of their social ills. The syllabus should relate directly to the problem encountered by the community, since it is easier for learners to relate to such knowledge. This type of classroom engagement affords learners an opportunity to be independent and to develop essential 21st century skills. Learners showed a greater understanding of the topic and were eager to learn more about the topic

when they engaged with the topic. This engagement was prompted by the use of examples from the local area, which the learners were familiar with.

Teachers in schools can develop learning activities that relate directly to real-life situations. Learners can be given a project to work on, for instance, giving learners a project on developing a business plan using the type of business active in that area. This type of practice will not only increase the level of learners' interest, but will also contribute towards the development of learners' entrepreneurial skills. This authentic learning environment has the ability to initiate deep learning in learners (Gibb, 1997). In addition, the use of experiential learning in the entrepreneurship classroom helps learners to relate to the real-life situations. This type of classroom practice motivates learners to want to learn more (Wu, Wang, Tseng, Wu, 2009).

5.1.4 Learning engagement and participation

During the lesson presentation, learners participated effectively throughout whenever the teacher started with a set of questions and provided a scenario. Most of the learners were eager to respond to the questions and share their views with their peers. There were instances where participation was low because of lack of learner stimulation, such the teacher changing the topic into a debatable one and where there were no questions asked by the teacher. Learners enjoyed class discussions, especially when the teacher used examples from the local community compared to examples from within the South African context. This is an indication that a curriculum that focuses on the needs of the community can contribute meaningfully to student learning. It remains important that learners should be engaged in learning activities that significantly contribute to their farming/entrepreneurial skills because learners had shown interest. Wu, Wu and Li (2019) maintain that, in order for learners to develop entrepreneurial skills, exposure to technological devices, such as a classroom response system, are needed because these devices can potentially create a classroom that is highly interactive. A classroom response tool is an effective of supporting learners to interact with content, which is likely to increase their entrepreneurial capability. In addition, Seikkula-Leino, Satuvuori, Ruskovaara and Hannula (2015) advocate for the use of experiential learning, practical descriptions of a situation and problem-based learning in the entrepreneurship classroom.

5.1.5 Teachers instructional decisions and learners' views on the preferred methods

Table 4.1: Brief summary of the teaching strategies that emerged from observed lessons

Teaching strategies	How often strategy is used	Comments
Question and answer (A1, A4, A5, A9, B5, B6, B19, B20, C6,C8,C9,D2,D7,D8)	14 of the 54 observations	This practice promotes rote learning
Discussion method (B9,B10,D1,D9,D10,D12,)	6 of the 54 observations	Promote 21 st century skill of communication
Lecture method (A2,A3,A7,A8,B1,B2,B3,B4,B11, B13, B14, B15, B16, B17, B18, C1,C3,C4,C5,C7,D5)	21 of the 54 observations	This practice regards learners as passive recipient of information
Textbook method (A6,D3,D4,D6,D11,D13)	6 of the 54 observations	Promotes rote learning
Activity based learning (B7,B8,B12,B21,C2,D8,D14,)	7 of the 54 observations	Promote communication skills, problem solving skills

Figure 6: Learner's preferred method of learning agricultural economics

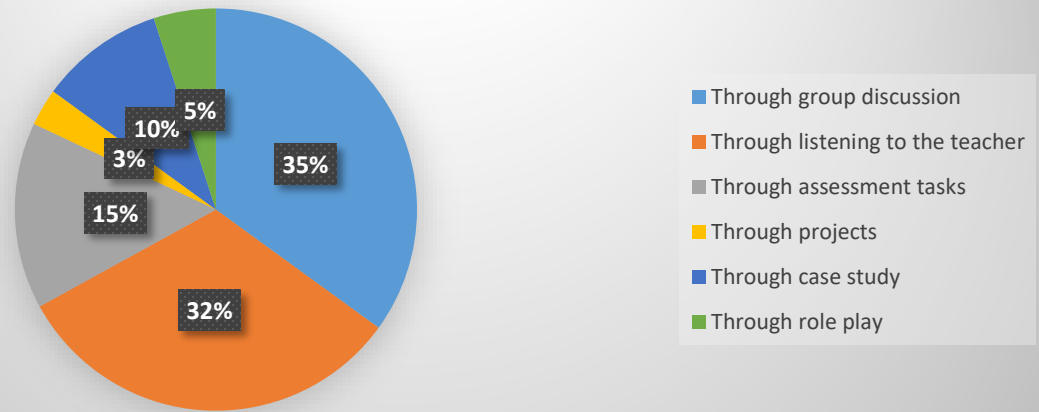


Table 4.1 above indicates the teaching methods that emerged from the classroom observations. Figure 6 indicates the learning methods that learners prefer when learning agricultural economics topics, which embrace the development of entrepreneurial skills. Table 4.1 indicates that majority of the lessons were dominated by traditional teaching methods, such as the lecture method, the textbook method and the question and answer method. These methods are teacher-centred and are methods that are less in line with developing the 21st century skills, such as collaboration, creativity, communication and critical-thinking skills. While, on the hand, learners have indicated they prefer to learn through interactive methods, such as projects, case studies, role play and group discussions. These methods play a vital role in instilling entrepreneurial skills in learners. In this study, the researcher found that 68% of learners prefer to learn entrepreneurial skills through interactive methods while, on the hand, teachers use traditional methods to deliver lessons in Agricultural Sciences. Only 32% of learners prefer to learn through the lecture method.

These findings may signify that learners learn better through methods that actively involve them, since the learners' preferred method of learning is in agreement with Ruskovaara and Pihkala (2013), who emphasises the notion that traditional methods are less effective in developing entrepreneurial skills and knowledge. Traditional practice often leads to

learners achieving low scores (Freeman, Eddy, Mc Donough, Smith, Okaraafor, Jordt & Wenderoth, 2014). The use of modern methods of teaching improves the learning abilities of learners (Zhong, 2017).

5.2 The determination of how learners are assessed in Agricultural Sciences

5.2.1 The effect of classroom activities on the development of learners' entrepreneurial skills

Social reconstructionist theory advocates for methods such as discussion and inquiry-based methods. Critical to this theory is the notion that both teacher and learner are experts in the classroom. A Social reconstructionist classroom was characterised by intense discussions and these discussions involved giving learners activities that would capacitate them to solve social problems. It is also important for learners to get feedback on these activities because this is crucial for the development of the learners. Teachers A, C and D would, in some instances, give learners activities without providing any feedback. This type of practice denies learners an opportunity to deeply explore the issue under discussion. Learners' progress was inadequately recorded because of unmarked work (Sherman, Sebor, & Digman, 2008). Continuous feedback on learners' activities creates a fruitful learning environment because feedback assists learners to be aware of their mistakes made in the activities. Identification of these mistakes gives learners an opportunity to learn more about the issues under discussion. Classroom activities allow the connection of classroom knowledge with realities outside the classroom. This practice is more likely to increase learners' interest and improve their skills. Teachers' feedback on learning and assessment activities increases learners' ability to solve problems and improves their understanding of the basic concepts. Singh, Thambusamy and Ramly (2014) note that communication skills and teamwork are important attributes required by employers in workplace. Learning activities in a classroom should strive to develop such skills.

Moreover, the section on agricultural economics in the Agricultural Sciences syllabus grants learners an opportunity to learn how to run a farm business. The process of imparting these skills to learners requires that they should analyse and discuss situations about farm businesses and should have intense discussions on the problems associated

with farm business. In these discussions, learners should discuss how they can transform farm business for the betterment of their communities. This implies that the classroom activities should be pitched at a level that allows learners to develop the necessary life skills required for the running of a farm business. Projects, case studies and simulations should be at the centre of Agricultural Sciences classrooms, as outlined in social reconstructionist theory. The rationale behind Agricultural Sciences subjects is to develop learners into farmers (DBE, 2011).

The teaching and learning activities in Agricultural Sciences classrooms should strive to address development of learners farming abilities. Most of these lessons were based on rote learning and there were little classroom discussions and no follow-ups on the activities undertaken by the learners. Learners were given assessment activities, in most cases, and there were no learning activities provided to help learners acquire the requisite set of skills and knowledge. The manner in which learners were taught was mainly preparing them for control tests and examinations. They were taught to pass summative assessment. There was little attention on the development of skills. Most of the class activities were extracted from previous examination papers in order to prepare learners for examinations (Annexures AA, BB, CC and DD). Meanwhile, formative assessment was not given much attention. The classroom activities were not focused on the development of skills and the level at which the questions were pitched does not develop learners' abilities to solve problems and to communicate. These types of activities may have a negative impact on developing learners' critical and creative skills because teaching is skewed towards learners how to recall information, rather than how to perform a particular activity. The questions were dominated by a naming and explaining approach (Annexures AA2-4, BB6, BB11 and CC3). These types of questions do not train learners to invent and reinvent solutions to issues affecting their lives. The social reconstruction theory is based on placing learners at the centre of their learning, through which activities given allow them to develop themselves. Rote learning may diminish learners' interest in the subject and their abilities. Ahmad, Krogh and Gjotterud (2014) allude to the fact that many schools at all levels of education direct all their efforts to getting good marks, rather than on developing learners' skills. Classroom practice is skewed towards passing examination so that learners can move to the next level, which is contrary to training

learners to be self-reliant and they are likely to enter the job market with no marketable skills.

Furthermore, classroom activities should foster the development of learners so that they can make a difference in their communities. Learners need to be shaped in way that they are able to solve problems in their communities. Unemployment is one of the major issues experienced by many countries. The development of learners' entrepreneurial skills remains key to solving the unemployment challenge. These skills may be nurtured through intense discussions in the classroom, focusing on how to resolve issues that affect the agricultural industry. The design of these activities should strive to address entrepreneurial skills. It is through school participation that learners can be made to understand how their contribution to communities is important. It is important that learners are trained on these issues. Discussions about these issues do not only increase their knowledge, they also develop critical skills such communication, negotiation and critical thinking skills. The above classroom practice is classified as learner-centred learning, which implies that learners should be motivated to assist their communities in their areas of need. The teacher, in this case, is supposed to give learners activities that will channel learners towards attainment of entrepreneurial skills. The teacher can make learners aware of what is happening in their communities so that learners may come up with solutions.

According to Reeve (2013), assessment questions need to be designed in a manner that allows learners to voice their opinions on the issue under discussion. These types of activities that allow learners to voice their opinions will also improve learners' communication skills, which implies that learners should not be exposed to activities that only require them to name and explain content, since this type of practice may deprive them of the essential skills needed in the farm business. Theoretically, learners should be exposed to writing essay questions, providing short notes to questions and to justify why their answers are correct. These practices are more likely to give learners essential life skills.

Race (2010) maintains that assessment of learning methods should place more emphasis on learning outcomes, rather than on the evaluation of learning. Assessment in a

classroom is primarily an assessment of learners' skills. Learners should be able to reflect on their own learning, which may lead to them possibly building an enterprise. On the other hand, peer assessment assesses the product rather than the process. Faherty (2015) discovered that peer assessment and the provision of feedback can contribute to the development of enterprise skills.

The use of relevant assessment practices plays a vital role in nurturing learners' skills, attitudes and values. The findings of this study show that, during the lesson presentation, learners were inadequately assessed. This practice of not making assessment an integral part of teaching and learning may have a negative bearing on the development of entrepreneurial skills in learners. Igwe, Rufai and Olufemi (2013) note that continuous assessment provides teachers with information about the abilities of learners. A lack of frequent learning activities in a classroom deprives learners of an opportunity to learn and develop important skills.

It was also observable in the lessons that learners were mostly assessed by posing oral questions and minimal use was made of written learning activities. This implies that learners were given little opportunity to interact with entrepreneurship content, which may lead to learners not developing entrepreneurial skills.

5.3 Factors that affect the development of entrepreneurial skills

Table 5.1 below shows results obtained from the multinomial logistic regression model. The table illustrates the coefficient and the marginal effects of each contrast. The model estimated the results for development of entrepreneurial skills in Agricultural Sciences classrooms. The table also shows the results of the goodness-of-fit of the model and pseudo R^2 . The model-fitting information suggests that the log-likelihood is 11,434 and Wald X^2 of 99,638 at the significance of < 0.05 . The goodness-of-fit model shows an estimated deviance X^2 of 111,43 and Pearson of 115,69 at a degree of freedom of 120. The significance level of 5% implies that the model best fits the data. The likelihood of learners developing interpersonal skills is 67%, while the likelihood of learners developing creative skills and critical thinking skills is 50.5% and 48.9%. respectively.

Table 5.1: Presentation of multinomial results on factors that affect the development of entrepreneurial skills

Explanatory variables	Ln(P2/P1) Creative skills vs Interpersonal skills			Ln(P3/P1) critical thinking skills vs interpersonal skills		
	Contrast 1			Contrast 2		
	Coefficient	Marginal effects		Coefficient	Marginal effects	
		dy/dx	P-value		dy/dx	P-value
Constant	13.426 (5.296)	0.022		14.731 (4.516)	0.002	
Age	-0.022 (0.058)	-0.002	0.354	-0.032 (0.040)	-0.002	0.213
Gender	-1.800 (1.672)	-0.092	0.564	-2.836** (1.242)	-0.192	0.011
Household size	-1.314 (2.264)	-0.060	0.281	-2.456** (1.306)	-0.128	0.030
Number of practical	-2.786* (1.676)	-0.194	0.049	-3.084*** (1.258)	-0.182	0.007
Farming experience	0.258 (0.362)	0.014	0.952	0.054 (0.268)	0.002	0.420
Years of farming	-1.584 (1.710)	-0.108	0.177	0.700 (1.378)	0.046	0.306
Family business	-0.00004 (0.000)	0.00002	0.390	-0.004 (0.004)	-0.0002	0.0875
Type of business	-0.112 (0.764)	-0.010	0.442	0.924* (0.506)	0.058	0.034
Method of teaching	-15.882*** (2.264)	-0.838	0.000	-12.142*** (2.388)	-0.688	0.000
Classroom environment	-4.197 (2.264)	-0.23	0.234	-3.914** (1.714)	-0.226	0.011
Entrepreneurial classroom	0.381 (1.508)	0.064	0.801	0.477 (1.304)	0.134	0.714
Entrepreneurial intention	-0.713 (0.535)	-0.071	0.183	-0.007 (0.479)	-0.000	0.988

Learning entrepreneurs hip	-0.112 (1.468)	0.006	0.939	-0.436 (1.270)	-0.118	0.731
Level of participation in family business	-0.420 (1.499)	-0.079	0.779	-0.671 (1.296)	0.268	0.605
Number of assessment tasks	-0.030 (0.534)	0.003	0.954	-0.283 (0.481)	-0.345	0.557
Adequate knowledge	-0.762 (3.016)	0.128	0.401	0.954 (2.608)	0.268	0.357
Type of questions	1.426* (1.070)	-0.142	0.092	-0.014 (0.296)	0.0002	0.494
Entrepreneurial community	-0.224 (2.936)	0.012	0.470	-0.872 (2.540)	0.236	0.366
Pocket money	-0.840 (2.998)	0.158	0.390	-1.420* (2.592)	0.536	0.303
Household income	-0.060*** (1.068)	0.006	0.477	0.566*** (0.962)	0.690	0.279
Meals per day	-0.364 (0.562)	0.420	0.517	0.445** (0.515)	-0.746	0.388
<p>Diagnostics Base category = Interpersonal skills (P1) Number of observations= 100 Wald χ^2 statistic = 99.638*** Log likelihood= 111.234 Pseudo-R²= 0.642 Deviance χ^2 (120) = 111.43 and Pearson χ^2 (120) = 115.69 (significant level=1.000) Classification accuracy (correctly predicted) Interpersonal skills = 67%; creative skills = 50.5%; critical skills = 48.9%; overall model = 71% dy/dx is for discrete change of dummy variable from 0 to 1 standard errors are in parentheses Notes:*, **, *** means statistically significant at the 10.5 and 1% level</p>						

Table 5.1 above indicates the results on the factors affecting the development of entrepreneurial skills in Agricultural Sciences learners. The results indicate that age in

both contrasts is negative, which signifies that a one-unit increase in age decreases the probability or likelihood of creative skills and critical skills being acquired relative to the interpersonal skills (base category). The table also indicates that the coefficient of gender is negative in all the contrasts, which implies that a unit increase in male learners, as opposed to the female learners, will decrease the probability or likelihood of the acquisition of creative or critical skills relative to interpersonal skills. This is not unusual because studies indicate that male learners are more likely to engage in family business compared to female learners. However, gender is statistically significant in the second contrast. These findings concur with Hahn, Minola, Van Gils and Huybrechts (2017) who found that the coefficient for gender and age is negative. For gender, this implies that male students tend to have better entrepreneurial learning outcomes compared to females' while for age this implies that the impact of entrepreneurial learning is stronger on younger learners.

Moreover, the coefficient of household size is negative in all contrasts; and statistically significant in the second contrast. This result signifies that, as the learners' household size increases by one unit, there is a decrease in the probability of learners developing critical thinking and creative skills relative to interpersonal skills. This may be because the learners will have more disruptions of their school work and they may be unable to perform some of the school projects because of the large number of people in the house. The marginal effect on household size is also negative in all contrasts. These figures indicate that a one-unit increase in the size of the household reduces the probability of learners developing creative and critical thinking skills relative to interpersonal skills by 6% in the first contrast, and by 12% in the second contrast. This finding concurs with the findings of Maralani (2008), who indicates that pupils who have fewer siblings in their household are more likely to receive more education than those with more siblings. There is a negative relationship between family size and children's education.

Furthermore, the table indicates the number of practicals learners undertook during the school calendar. Practical afford learners an opportunity to develop motor skills and cognitive skills. The estimated coefficient of the number of practicals is negative in both contrasts and is statistically significant in both situations. This result implies that one-unit

increase in the number of practicals will significantly decrease the probability of learners' creative skills and critical thinking skills relative to interpersonal skills. The negative relationship between these two variables was not expected as one would expect that learning by doing helps learners to develop skills, in concurrence with the theory that suggests that, through experience, learners are able to learn better and accumulate skills such as teamwork, collaboration and communication. Learners are able to relate to the content taught better through practicals than other methods. The result infers that a unit increase in the number of practicals decreases the probability of learners developing the creative and critical thinking skills by 19% and 18%, respectively, relative to the interpersonal skills, which implies that practical work may have a greater effect on learners' knowledge and skills. This finding concurs with the findings of Popescu, Bostan, Robu, Maxim and Diaconu (2016) who discovered that students who went through high school in-services were statistically more significant than students with high school in humanities because students' in-services are exposed to adequate personal development opportunities.

Moreover, the results further indicate that the coefficients of family business are negative and statistically significant in the second contrast. This implies that the more a learner's family engages in business, the likelihood of the learner acquiring creative and critical thinking skills will decrease relative to interpersonal skills. It is interesting to note that the marginal effects on this likelihood is are low in both contrasts, which may imply that family business background does not significantly influence the development of entrepreneurial skills, creative skills and critical thinking skills. This is, however, unexpected because family business experience may help learners to easily relate to the content taught in agricultural entrepreneurship. Subsequently, the table further indicates that learners' participation in the family business is negative in both contrasts and they are both statistically significant. These results suggest that the more learners participate in their family business the more likely it is that they will acquire creative skills and critical skills relative to interpersonal skills. The marginal effect for these variables indicates that the probability of learners developing these skills will decrease by 83% for creative skills and 69% for critical thinking skills. The findings concur with the findings of Munir, Mohamad and Idrus (2015) that learners whose parents are self-employed are more likely to start

their own businesses. Self-efficacy is significantly related to occupational choice and interest.

The results above indicate the effect of an entrepreneurial community on the learners' development entrepreneurial skills. The coefficient for this variable is negative in both contrasts and is statistically significant in the second contrast. This implies that the more the community is entrepreneurial the higher the probability for learners to acquire creative skills and critical thinking skills relative to interpersonal skills. This result is unexpected because learners may be expected to learn better through first-hand experience and if they actively participate in businesses. The marginal effect suggests that the probability of learners acquiring this skill will reduce by 23% in the first contrast and by 26% in the second contrast.

Moreover, the results further indicate the effect of learners' interest in learning about agricultural entrepreneurship. The coefficient for this variable is positive. This result suggests that the more learners become interested in learning about agricultural entrepreneurship, the probability of them acquiring creative and critical thinking skills relative to interpersonal skills will increase. However, the variable is statistically significant in both contrasts. In addition, the results also indicate the effect of teaching method on the development of learners' entrepreneurial skills. This variable is negative, implying that the more teachers use the discussion method in the classroom, the probability of learners developing creative and critical thinking skills will decrease by 7% in the first contrast and by 27% in the second contrast. The variable is statistically insignificant. Kailer (2009) maintains that the development of entrepreneurial interest by students requires innovative activities. Schools can host competitions on the development of business plans, use workshops and boot camps and provide mentorship to students. Mamabolo, Kerrin and Kele (2017) maintain that there are a variety of skills required in entrepreneurship, including interpersonal, leadership, business management and marketing skills. This can serve as a baseline for teachers in schools on what learning activities need to be employed in order to develop learners' entrepreneurial skills. Harms (2015) maintains that group learning is statistically significant to the development of entrepreneurial skills

compared to self-regulated learning. The skills developed during group learning include the ability to work with other people as an important skill in business.

Furthermore, the results also indicate the effect of the type of questions used in the classroom on the development of learners' entrepreneurial skills. The variable is positive, implying that the more the teachers exposed learners to higher order questions, the probability for them to acquire the creative and critical thinking skills would increase. The marginal effect suggests that the likelihood of learners acquiring creative and critical thinking skills would increase by 1.2% in the first contrast and by 24% in the second contrast, relative to interpersonal skills. Active participation in entrepreneurship education increases innovative and general entrepreneurial skills of the learners, which is most likely to increase the likelihood of learners starting their own business in the future (Storen, 2014). In addition, the results indicate that the coefficient for pocket money is negative, which implies that a one-unit increase in the amount of pocket money received will decrease the probability of learners acquiring creative and critical thinking skills relative to interpersonal skills. This infers that, when learners are given more money, they may not concentrate in the classroom and may also not take school work seriously. This finding surfaced in a study undertaken by Barnet-Verzat and François-Charles (2008), who maintain that there is a negative relationship between pocket money and child effort in class. The relationship between these two variables is not statistically significant, which implies that the amount of pocket money learners receive has little effect on them learning or concentrating on their school work.

Moreover, the table further shows that the coefficient of household income is negative, which implies that a one-unit increase in the amount of household income would decrease the likelihood of learners acquiring creative and critical thinking skills relative to interpersonal skills. This suggests that learners who come from high-income households are more likely to put in less effort at school. This outcome is not expected, as one will assume that increase income will increase learning material for such learners. However, these finding are in line with Drajea, & O'Sullivan (2014) who indicates that learners from high income household are most likely to perform bad because their parent put less effort on their school work. Such learners may be demotivated to learn in a classroom. In

addition, the table suggests that the coefficient for the number of meals received is negative and statistically significant in both contrasts, which signifies that a one-unit increase in the number of meals will decrease the likelihood of learners acquiring creative and critical thinking skills. This may be because more meals will result in learners falling asleep in class and reduce their level of concentration. Millman, Li, Matlay and Wong (2010) note that household income and gender have a positive relationship to the learners' intention to engage in entrepreneurship.

Syam, Akib, Yunus and Hasbiah (2018) found out that the relationship between entrepreneurship motivation and entrepreneurship learning has a correlation of 0.849 at the p-value $0.000 < 0.05$. These findings infer that there is a strong relationship between these two variables. Minola, Donina and Meoli (2016), found that students who registered at an emerging university may have higher probability of entrepreneurial engagement; as well as those from classes that have a lower number of students. In addition, Mustapha and Selvaraju (2015) indicate that factors, such as entrepreneurial education, personal characteristics and family influence, have a positive effect on learners' intention to engage in entrepreneurship. On the other hand, gender does not have a significant influence on learners to be entrepreneurial.

5.4 Attitudes and views of learners towards agricultural entrepreneurship

Learners' attitudes to learning about agricultural entrepreneurship may have a negative bearing on their learning. It is important for the teachers to motivate learners during lesson presentation. Motivation is affected by a variety of factors. Figure 2 in Chapter 4 clearly indicates that learners preferred to learn agricultural entrepreneurship through the interactive method. These findings suggest that the use of non-interactive teaching methods may lead to learners being unwilling to learn agricultural entrepreneurship. Learner disinterest in the concept of agricultural entrepreneurship may lead to learners not developing agricultural entrepreneurship skills. This finding concurs with Martin 2016, who notes that the use of inquiry-based learning plays a vital role in learners learning science because the method takes learners through the scientific process, which is essential in order to instil relevant attitudes and values in the learners. The social

reconstructionist theory emphasises notion that the use of modern classroom methods, such as inquiry-based learning, tends to shape and to transform people's mindsets.

Assessment tasks during lesson play an important role in instilling entrepreneurial attitudes and values in learners. Rubagiza, Umatoni and Kaleeba (2016) allude to the fact teacher activities have the capacity to shape learners' attitudes and values. Theoretically, schools are viewed as entities where attitudes and values are instilled in learners through instruction (Pasek, 2017). Teachers' instructional decisions have an influence on the development of learners' entrepreneurial skills. Figure 3 in Chapter 4 indicated the learners' views on solutions to unemployment, where 69% of the learners agreed that self-employment can help to combat unemployment. This finding infers that a school can play an important role by ensuring that learners acquire entrepreneurial skills so that they can actively participate in creating small farm businesses. Table 4.2 also indicates that 75% of the learners are willing to start their own farm business, however, such intentions may be derailed by a lack of motivation from their lessons as teachers are using non-interactive methods and also because of a lack of learning activities, which has significant effect on the development of entrepreneurial skills and attitudes. Table 4.3 indicates that 82% of learners were willing to participate in school projects that are related to business. A lack of assessment activities in a classroom may demotivate learners because, as Johnmark, Munene and Balunywa (2016) maintain, pedagogy and content are positively related to entrepreneurial action ($\beta=0.36$, $P<0.01$). Employing pedagogy has the capacity to motivate or demotivate learners' attitudes towards entrepreneurial action.

Jabeen, Faisal and Katsioloudes (2016) maintain that the youth in the UAE ranked entrepreneurship as their first choice of employment. It is also discovered in this study that environmental and individual factors also have an effect on the entrepreneurial mindset. Popescu, Bostan, Robu, Maxim and Diaconu (2016) maintain that creativity has no influence on students' intentions to start a business. A unit increase in the value of achievement dimension leads to an increase of 0.917% in the probability of and individual starting a business under the influence of a studied programme. A unit increase in the value of the risks dimension leads to an increase of 1.532% in the probability of and

individual starting a business under the influence of a studied programme (relative to master's degree level).

Clarke, Cornes and Ferry (2020) note that most students are undecided on what careers to pursue, while others have strongly self-assessed themselves on their weaknesses, strengths and passions. Hence, some students will frequently change their courses when they reach college in the midst of trying to find a suitable career path. This calls for teachers to start engaging learners in more learning activities. This will help learners to start acting proactively in making decisions about their career paths and to have a positive attitude towards the entrepreneurship curriculum. Lee, Krieser, Wrede and Kogelen (2018) noted that learners who come from families which are involved in entrepreneurship have a higher entrepreneurship intention. This type of learner has a positive attitude towards entrepreneurship learning because individual attachment to entrepreneurship and family business values are among the factors that motivate learners to pursue self-employment.

The learning environment remains important when teaching learners particular attitudes. The learning environment is made up of social relationships, physical environment and psychological factors. For learners to develop the right attitudes, it is vital for learners to have good relationships with the teachers because learning environments are enablers of learner development (Jones, 2010). In addition, the learning environment should afford learners the freedom to learn at their own pace and give learners an opportunity to explore their potential. Hietanen (2014) conducted an experiment where learners were given the platform to learn at their own pace in order to account for diversity of learners. The role of the teacher, in this case, was to make sure that each learner received the support that they needed. Learners actively participated in their learning by asking specific questions on the activities given them, which increased learner interest in the learning about agricultural entrepreneurship.

The preparation of learners to become entrepreneurs in the future depends on the entrepreneurial learning competencies and the right attitude. Ernest, Matthew and Samuel (2015) identified knowledge of entrepreneurship, entrepreneurial skills and entrepreneurial attitudes as important competencies that can be developed through the

entrepreneurship curriculum because competencies can contribute massively to job creation and economic growth. In addition, Fayolle, Verzat and Wapshott (2016) maintain that entrepreneurship teaching involves the holistic development of learners in all dimensions. It also involves preparing learners to make choices about their career life.

5.5 The extent to which learners use the entrepreneurial skills for community development

The participation of learners in the entrepreneurship programmes motivates them to want to learn more about entrepreneurship and creates positive attitudes. Learners who have an interests in entrepreneurship are more likely to utilise entrepreneurship in their daily lives (Gimmon, 2014). The findings of this study, as indicated in Table 4.4, show that learners also indicated that, whenever there was a project in their community, they would participate, consequently. 17% of the learners always participated in community projects, 51% participated sometimes and 32% were not interested at all. These findings agree with the findings of Okiror, Matsiko and Oonyu (2011) who maintain that the teaching method used in the Agricultural Sciences classroom has a significant influence on learners' attitudes to learning and the use of knowledge acquired in their daily activities. Gwija, Eresia-Eke and Iwu (2012) highlight the factors that inhibit entrepreneurship, which include a lack of support structure, awareness on start-up capital and accessibility to start-up capital.

Moreover, it is interesting to note that about 55% of the learners valued the knowledge gained in the Agricultural Sciences classroom, while 43% valued it under some circumstances and 2% did not value the knowledge at all. The table also shows that 25% of the learners helped their community to develop business plans whenever the need arose, while 44% did so sometimes and 31% never engaged in this activity. These findings concur with Riedmiller (2002) who notes that the availability of gardens in schools is one of the important factors that instil positive attitudes in learners towards the subject. School gardens also have the capacity to influence the knowledge and skills learners learn in the classroom.

Fatoki (2014) highlights the notion that business students have a high possibility of engaging in entrepreneurship in the future. The study also alludes to the fact that it is

important to start teaching entrepreneurship as early as primary schools. Choto, Iwu and Tengeh (2014), maintain that the hesitance towards engaging in business is caused by a lack of skills, training, funding and poor support.

5.6 The proposed framework for entrepreneurial learning and teaching

5.6.1 Curriculum

The Agricultural Sciences curriculum is based on the fact that learners are able to engage in a farm business. The curriculum is offered from Grade 10 to Grade 12. This curriculum is divided into four main components, which are soil science, plant studies, animal studies and agricultural economics. Each component of the curriculum complements the other and are interrelated between each grade. In every grade, new content is built on previous content. In this curriculum, learners develop problem-solving mechanisms within the context of agricultural production, processing and marketing practices. These skills enable learners to be self-reliant and creates an awareness in them to be responsible citizens who respect the environment at large and who have knowledge of indigenous agricultural practices. It is within the scope of the curriculum that learners develop entrepreneurial skills.

5.6.2 Teaching

It is observable from the findings of this study that Agricultural Sciences teachers use the traditional methods of teaching to deliver the Agricultural Sciences curriculum. This practice comes with negative implications for the end products of the process, the learners. Learners who are taught how to reproduce facts rather than to develop their skills may result in the curriculum not reaching its goals, as stated in the CAPS. The theory used in this study posits that, for learners to acquire the necessary skills, it is important that they go through the following process:

a) Creation of real context

Teaching and learning involves bringing the real world into the classroom and taking the classroom into the real world. This brings both learners and teachers into the construction of knowledge and skills. This method emphasises a learning environment, which is

effective in the learning of entrepreneurial skills, values, attitudes and knowledge. The learning environment for the entrepreneurship curriculum should be designed in a manner that teachers challenge learners to do extraordinary activities. Teachers and learners should build a relationship that allows them to engage in an open dialogue for collaborative learning purposes. The learning environment should stimulate the learners to manage their own learning (Farias & Balardini, 2018).

b) Engaging learners in productive learning activities

Martin (1994) alludes to the fact that there have been debates about educational reform in teacher education institutions; debates about the need to switch the roles of teachers and learners. In social reconstructionist education, efforts have been made to turn learners into be teachers because the methodology used in the classroom no longer caters for the needs of millennial learners, since the level of diversity has increased. It is, therefore, important to reform educational activities in order to address the current state of affairs. Social reconstructionist education advocates for future teachers to be trained differently from the old way of doing things. Future teachers and learners should be exposed to activities that enable them to challenge social stratification and to take an active role in developing the society. The possibility of transforming our education system starts with the proper training of teachers in order to survive in the different environment. Social reconstructionist theory emanates from critical theory; hence, it is important for teachers to become familiar with this theory. Learners should be taught how to analyse, and the in the what and how lesson are delivered. Therefore, emphasis should be placed on analysis and how we can fundamentally change the teaching and learning process.

c) The use of active teaching methods

The reconstructionist classroom uses teaching methods that allow learners to gain practical experience of the subject matter. This method involves doing research in groups, small-group discussions, analysis of reports and current issues, roleplay, reading, writing and debate. This method helps learners to understand the concepts better and the process also fosters deep learning. The methods used are likely to grab the attention of learners and to cause them to put their hearts and minds to the issues being discussed. The role of the learner in this type of a classroom is to be an active participant. Learners

in this classroom are given an opportunity to invent and reinvent solutions to issues around them for the betterment of society (Mwanzia & Mwangi, 2016).

Mei-Nan and Xin (2017) maintain that a careful design of teaching and learning activities is crucial to the teaching and learning process. It is important that teachers in some classrooms expose learners to activities that enable the learners to provide a detailed analysis and interpretation of a given theory. After classroom teaching, learners should be given homework that offers them an opportunity to use the knowledge gained during class time to analyse situations. This practice allows learners to do the actual training. It is crucial for teachers to emphasise the theoretical analysis and to avoid activities that ask for the reproduction of facts. Role play also grants learners an opportunity to understand the basic concepts and undertake an analysis thereof, so that learners become interested in the concept being discussed.

Moreover, a classroom in which a social reconstruction curriculum is advocated for normally uses methods such as projects, teamwork and assessment of social problems. In using the project method, learners were tasked to identify the types of markets they would like to operate in. Secondly, they were asked to draft a report in the form of a business plan. These activities were conducted to ascertain whether the business was profitable or not. They were also asked to perform a SWOT analysis on the chosen company. A social reconstructionist curriculum will start a year by forming project teams and each individual will be assigned a role in a business. In some instances, when it comes to the assessments of the social problems, problem-based activities would be employed, where learners are given a scenario or problem a company is experiencing. The learners will then work in their project teams to attempt to provide a sustainable solution to the given problem or scenario (Pasek, 2017). This approach is taken because the development of critical thinking skills involves exposing learners to engaging in activities that builds on their ability to solve problems, tests their reasoning capacity, their decision making and their interpretation of information. Critical thinking means thinking systematically and precisely, which is followed by scientific and logic reasoning.

Furthermore, in every classroom, learners should gather to discuss how the knowledge learned in the classroom can be used to change the lives of the community members. If

the solutions come from the learners, this will motivate them to practice what they have learned. Communication about the problem with learners is key, rather than lecturing them about a problem that they are encountering on a daily basis. The classroom could make use of storytelling, singing, group discussions and drama as a means of bringing people together into social groups, which would lead them to a better understanding of the problem and to come up with workable solutions. This approach would call for the removal of formal classrooms in schools. The schools should introduce practicals and seminars on issues affecting the community. This approach would promote the spirit of working together, since people learn to solve problems as a society rather than individually.

5.7 In projecting the working model for entrepreneurial learning and teaching in Agricultural Sciences the following prospects were developed:

Entrepreneurial teaching and learning requires the use of non-traditional methods for the development of skills to be successful. The process may begin by allowing learners to choose the agricultural enterprise which they would like to engage in or allow learners to work in groups and let them choose their enterprises. The second step that one may follow is, when teachers introduce concepts on running farm business, each group should determine how this would work in their own chosen enterprise. For instance, when the teacher introduces the concept business planning, both the teacher and the learners should engage in an explanation of concepts. When they are done with these classroom discussions, each group should present a structure of how they would plan for their respective businesses or enterprises. The learner groups should engage with a project that would permit them to draw their own business plan for their enterprise. The role of the teacher, in this case, would be to facilitate the process of each group coming up with their business plan and to diagnose learning barriers. The third step would be for the groups to implement their ideas, depending on the concepts under discussion. This practice could be repeated for the whole syllabus. In every topic, learners should be able to modify their business ideas or their business in general. If, for example, the concept management is introduced to their groups, they should draw up a structure of the management of their farm business and explain how they would best utilise the other

factors of production. The execution of these types of learning activities would also require the provision of small farms and laboratories. This type of practice may not only provide learners with the necessary skills, but may also develop positive attitudes towards learning agricultural entrepreneurship in the learners and stimulate an interest in them to start businesses in the future.

The development of entrepreneurial skills in a classroom requires instruction that is different from normal day-to-day lessons because the attainment of entrepreneurial skills is about enabling learners to create something new. There should be a relationship between instruction and the outcomes of learners. For learners to develop skills in a classroom set-up, there is a need for tasks that would enable them to develop these skills. Whenever a learner is able to perform a particular task creditably, then a skill has been acquired. The acquisition of entrepreneurial skills in an Agricultural Sciences classroom can be nurtured through employment of the social reconstruction theory. The process of acquiring entrepreneurial skills may start by first providing motivation of the learners and, secondly, by creating an enabling learning environment where learners are exposed to suitable business scenarios.

Providing motivation for learners mainly refers to the teacher emphasising the importance of entrepreneurship in the country and also inviting well established business people to come and share experiences. This is one model used in china in order to motivate learners. These established entrepreneurs are invited into the classroom to discuss real-life case studies about the dynamics of business (Zhou & Xu, 2012). For this type of model to be sustainable in south Africa teachers can invite local business woman and man. Creation of an enabling learning environment also play an important in motivating learners to be interested in business (Sousa & Almeida, 2014). Learning by doing is also one of the important model used to motivate student (Rudmann & Jackel, 2008). As such this authentic social environment has the ability to motivates learners intrinsically (Stuetzer, Obschonka, Davidsson & Schmitt-Rodermund, 2013).

Learning new skills, in some instances, requires one to follow a communicable set of instructions. The teaching of skills allows learners to follow guiding principles. The

experiences that learners gain through involvement in this process affords them an opportunity to fuse together all that has been learned in order to perform a particular task. When learners are busy with such activities given in a classroom, they are more likely to develop or learn behaviours which are vital in entrepreneurship is because, for Agricultural Sciences learners to acquire entrepreneurial skills, a set of behaviours need to be developed in them. The acquisition of skills requires that learners be exposed to particular knowledge and, that during the process, learners be actively engaged. This will assist learners to acquire the skills necessary to run a farm business. The social reconstruction theory is based on the fact that learners should acquire skills that will help society or the community at large.

Teachers and learners need to be attached to the process of training in order for skills to be developed. It is also crucial that the teacher possesses the necessary entrepreneurial skills so as to be able to transfer them to learners through instruction. This will not only help learners acquire skills but it will also increase the employability of learners at end of the programme. The teacher must be well versed in what it means to operate a farm business. The expectation is that teachers who have taught Agricultural Sciences should possess skills, such as administrative skills, time management skills, financial skills and sale and marketing skills, which will help the teacher to draw on the relevant experience and to deliver lessons using appropriate examples of running a farm business in the South African context.

There are a set of pedagogical strategies that are important to developing entrepreneurial skills in sciences education. These teaching methods include cooperative learning, classroom assessment, questioning technique, discussion method, conference style and written assignments. The social reconstruction theory alludes to the fact these instructional strategies are more likely to develop learners' entrepreneurial skills, as well as other skills in general because the methods employed allow for active participation, where learners are often likely to develop a hierarchy of behaviours, attitudes and interest in whatever they are learning.

A clear understanding of how learners acquire entrepreneurial skills in a classroom set-up helps both teachers and learners improve their approaches. Teachers also should be

acquainted with what it means to run a farm business. This will help them to deliver the lesson with confidence and passion. The confidence and passion of Agricultural Sciences teachers will stimulate learners to learn more about farm business. The teachers need to be entrepreneurial in nature in order to transfer the spirit of farming to the learners in the classroom. Most teachers are not acquainted with skills because of the way their teacher training course we designed. The curriculum for teacher training in most cases is general and it seems not to be targeting specific skills for a particular subject. Lack of emphasis on the doctrine of different course/ modules during the curriculum design somehow have impact on the implementation. As Kee, Rodriques, Kundu and Racine (2007) allude to the fact that one need to be careful in designing the curriculum because the manner in which curriculum is designed influences delivery.

It was observable from the lesson presented that most teachers are reluctant to use teaching method such as cooperative learning, classroom assessment, discussion method and conference style. This reluctance may be attributed by the pressure to finish the syllabus. Tallvid (2016) alludes to fact that teacher in most cases are concerned about time and discouraged by insufficient teaching material.

5.7 Summary of the chapter

In this chapter, the researcher focused on an empirical analysis of the influence of teachers' instructional decisions on the development of learners' entrepreneurial skills in Agricultural Sciences classrooms. The researcher used narrative analysis for classroom observations and the analysis done in relation to the theoretical framework. The researcher further used a descriptive analysis for learners' attitudes and views on learning about agricultural entrepreneurship, which focused on the extent to which learners use entrepreneurial skills in their daily activities. In addition, the researcher used the multinomial logistic regression model to identify other factors that contribute to the development of learners' entrepreneurial skills. The dependent variables were the entrepreneurial skills, which were grouped into interpersonal skills, creative skills and critical thinking skills. The independent variables included the demographic factors, institutional factors and socioeconomic factors. The chapter ended with the researcher

proposing a model for teaching entrepreneurial skills in the Agricultural Sciences classroom. The next chapter focuses on the implications of the findings, the conclusion and recommendations emerging from the study.

CHAPTER SIX: IMPLICATIONS OF THE FINDINGS, RECOMMENDATIONS AND CONCLUSION

6.0 Introduction

In the previous chapter, the researcher focused on the empirical analysis of the results and on a discussion of the findings in relation to the theoretical framework. In this chapter, the researcher looks at the implications of the findings and draws conclusions. Finally, the researcher focuses on recommendations for how instructional decisions may be improved in order to develop learners' entrepreneurial skills.

6.1 Implications of the findings

The aim of the study was to investigate the influence of teachers' instructional decisions on the development of learners' entrepreneurial skills in the Agricultural Sciences classroom. The first objective of the study was to establish how learners were taught entrepreneurial skills and it was observed from the classroom that most teachers used the lecture, the textbook and the question and answer methods to deliver their Agricultural Sciences lessons while, on the hand, learners indicated that they preferred to learn agricultural entrepreneurship through methods such as role play, group discussions, projects and case studies. The use of traditional methods, such as the lecture and textbook methods, may have had a negative bearing on the development of learners' entrepreneurial skills, which also influences learners' attitudes. Learners were exposed to surface learning, which emphasised the acquisition of knowledge, not the development of skills because there were limited learning activities provided that would encourage active participation by learners in the classroom. The second objective of the study was to determine how learners were assessed in Agricultural Sciences classrooms. The findings of this study indicate that learners were inadequately assessed during the lessons as most teachers did not prepare any learning activities for learners to use during class. In some instances, learners were given class activities at the end of the lesson, with some of the learners struggling to do the activities. The assessments given were skewed towards preparation for examinations rather than the development of learners, which may have also contributed to learners not acquiring entrepreneurial skills. The third objective of this study was to identify other factors that contribute to the development of

entrepreneurial skills. These factors included teaching methods, assessment methods, practical work, classroom environment, age and family business background as some of the factors that influence the development of learners' entrepreneurial skills.

The fourth objective of the study was to determine learners' views and attitudes towards learning about agricultural entrepreneurship. Most learners had an interest in learning about entrepreneurship, however, the methods used in the classroom demotivated learners. Most of these learners indicated that they were more prepared to learn through practice than to sit in the classroom every day. The fifth objective of the study was to determine the extent to which learners used the entrepreneurial skills in their daily activities. Most learners indicated that they used these skills in some of their activities but that this did not happen every day. Learners believed that, if the knowledge was used appropriately, it could make a difference in the community.

The findings of this study showed that most of the teachers' advocate for reproduction of facts compared to the application of the knowledge learned in class. This type of teaching practice may prevent learners from developing the skills required in the agricultural sector. Learners seemed to show an interest in topics which were delivered using the discussion method as well as the questions and answer method. It was also observed from the factors that affect development of entrepreneurial skills that teaching methods, types of questions and the learning environment play a vital role in student learning. These factors are statistically significant in their influence on the development of entrepreneurial skills. The lecture method created boredom in the classroom, as some of the learners were sleeping. while those who were listening to the teacher showed no interest in what was being taught. This situation led to some learners having difficulties in doing the class activities given to them. Most of these learners encountered difficulties when doing calculations and answering questions that required them to provide reasons. This is an indication that the learners lacked the basic skills that are outlined in the school curriculum.

The results show that most learners had an interest in learning about agricultural entrepreneurship, however, most of them preferred to be taught through practical work or

projects because using these methods would allow them to interact with their peers, where they could strive to do their best in order to outshine others.

6.2 Conclusion

Based on the findings of the study the following conclusions were drawn:

The study investigated the influence of teachers' instructional decisions on the development of learners' entrepreneurial skills. The findings of the study indicate that the practice of most of the teachers were rooted in the traditional methods of teaching and assessment. There is also an indication that the teachers had not been taken through new methods of teaching and learning Agricultural Sciences. Teaching methods used in the classroom to teach Agricultural Sciences learners included the lecture method, also known as talk and chalk, the question and answer method and the textbook method. There was no element of creativity or proper planning of the events that needed to take place in the classroom to make explicit a particular topic. Learners were taught with no clear indication of what skills they needed to acquire at the end of the lesson. There was no proper introduction of the lessons, which make it difficult for the learners to connect to their prior knowledge about the topic at hand. In some classrooms, there were no learning activities in place to direct learners towards achieving the objectives of the curriculum.

Moreover, engagement between the teachers and learners was moderate in the classes. Learners were mostly engaged when the teachers tried to turn a topic into a debatable one or when teachers used examples from the local area. Use of these examples intrigued learners and stimulated them to learn about the topic, which indicates that learners understand the topic better when teaching is done from the perspective of the community problems. It is also important that teachers use teaching methods such as discussions, projects, learning by doing and inquiry-based learning, so that learners can develop entrepreneurial skills. In addition, another aspect that diminishes teacher-learner interaction in the classroom is the lack of learning activities. Most of the teachers did not develop learning activities, which made it difficult to gauge the learners' understanding of the concepts under discussion. Learners were given heaps of notes which they were required to copy, followed by the teacher's explanation of the notes given to the learners.

Most of these lessons were dominated by this type of practice, which may have had a negative bearing on the development of learners' entrepreneurial skills.

Learners, in some instances, were given class activities at the end of the lesson, most of which were not marked. This created problems because learners were not able to identify their mistakes, which could lead to them missing an opportunity to learn. These activities were mostly extracted from previous examination papers. Teachers did not develop their own class activities. In addition, the other aspects of this research focused on the factors that influence the development of entrepreneurial skills, other than just teaching and assessment methods. This objective was analysed using the multinomial logistic regression model. The researcher found out that variables such as gender, household size, number of practicals, teaching method, assessment method and the classroom environment were statistically significant in their influence on the development of learners' entrepreneurial skills.

Moreover, the researcher further explored learners' attitudes towards learning about agricultural entrepreneurship. It was observed from the findings that learners' attitudes towards learning about agricultural entrepreneurship were mostly influenced by the teaching and assessment methods. The creation of a conducive learning environment has an effect on learners' attitudes towards the subject. Learners showed more interest in topics where there were discussions between the teacher and learners. In addition, most of these learners indicated that they used the knowledge and skills learned in the classroom in their daily activities, which could be a clear indication that the learners had positive attitudes towards agricultural entrepreneurship. Learners indicated that they either used the knowledge to draw their own budget for their family or provided insightful explanations to family members on how agricultural markets operate.

What remains important in the delivery of the entrepreneurship curriculum is that the teaching strategy should be one that enables the learners to go through the entrepreneurial process itself. An emphasis on the construction of business plans, how to grow a business, how to find capital, how to launch a business idea and on harvesting strategies are important aspects that allow individuals to go through the process of entrepreneurship.

6.3 Recommendations

The study has noted that most lessons were delivered through traditional teaching methods such as the lecture method and the question and answer method, which may have a negative bearing on the development of entrepreneurial skills. Therefore, the study recommends the Department of Basic Education should encourage teachers to attend staff development workshops in order to nurture innovative teaching methods in them, methods that do not focus on reproduction of facts only but also on the development of skills. The introduction of a learning by doing approach may actually help in developing learners' entrepreneurial skills. The use of teaching methods such as inquiry-based learning, the activity-based method and project method could make a difference in developing the entrepreneurial skills of Agricultural Sciences learners. With respect to the practice of using these methods, the Department of Basic Education, in conjunction with higher learning institutions, should create a platform where teachers can be trained on how to implement these methods. The school circuits should ensure that teachers are frequently trained on these methods.

The researcher has also found out that learners were not given learning activities and that there was no proper outline of what would transpire in the classroom. A lack of learning activities in classroom creates boredom in learners and causes learners to lose concentration and interest in learning about agricultural entrepreneurship. In some instances, learners were given class activities which were not properly monitored with no feedback given to learners. Lack of feedback creates a hostile situation because it is difficult to gauge learners' progress daily. Therefore, the study recommends that teachers should do a continuous assessment and that monitoring of learners' activities should be done in order to identify information about the topics that learners are struggling with. The school management team should monitor if learners are given assessment properly in order to ensure that teachers comply. The Department of Basic Education's school management at a national level, the school management team at the provincial level and the school management team at the specific school must see to it that teachers develop a comprehensive lesson plan and that this lesson plan should also indicate clearly how learners are assessed. There should be a committee in schools that monitors the quality

of classroom activities to ensure that these activities target the skills that the policy embraces. The committee should also determine whether learners are given timeous feedback in order to rectify their misconceptions. The type of questions that learners are given during class plays an important role in developing learners' entrepreneurial skills. As such, teachers should be trained on how to set quality questions and each of their lessons should have a clear set objectives and a mini-plan on how each objective will be achieved.

It was also observed that most of the teachers viewed the classroom as the only place where teaching and learning could take place. The use of the classroom limits the activities that teachers can provide to the learners, therefore, the researcher recommends that schools make it compulsory for learning and teaching to occur in other areas, such as on a farm and in agricultural laboratories, other than in the classroom. Schools could take one of the calendar days and make that day about agricultural entrepreneurship and encourage learners to make gardens in the schools. The 'one school one garden' approach should be compulsory in all schools that offer Agricultural Sciences. Schools should train learners in such a manner that they are able to apply and transfer the skills learned in their daily life activities, without imitating how they were taught. A lack of an authentic learning environment in schools paints a stereotyped picture, which learners bring into their future careers. Therefore, the study recommends that the Department of Basic Education should provide schools with agricultural teaching and learning resources so that teachers can create authentic learning environments for learners to be able to explore different types of learning.

A limitation of this study was not being able to accommodate a reasonable number of schools so as to develop a common understanding how most school teachers deliver lessons in the Agricultural Sciences. The Sekhukhune District was chosen as the study area mainly because the most households in this district survive on agricultural practices and the emphasis on agricultural entrepreneurship in schools is important in order to expand growth in these businesses. However, the researcher recommends that this issue be further explored in the other 4 districts in Limpopo, using different research methods.

REFERENCES

- Abawi, K. (2013). Data collection instruments (questionnaire & Interview). Geneva workshop, 2013.
- Adaeze, O.C. (2019). Reducing unemployment rate in Nigeria through entrepreneurship development: a study of selected small businesses in Ambra state. *European Journal of Research and Reflection in Management Sciences*, 7(1), 21-34.
- Adeyemo, S.A. (2009). Understanding and Acquisition of Entrepreneurial Skills: A Pedagogical Re-Orientation for Classroom Teacher in Science Education. *Journal of Turkish Science Education*, 6(3), 57-65.
- Adimonyemma, N.R., Akachukwa, E.E., & Igboabuchi, N.A. (2018). Impact of class size on students' academic performance in biology in Idemili north local government area of Anambra state. *International Journal of Education and Evaluation*, 4(8), 22-32.
- Agommouh, P.C., & Ndirika, M.C. (2017). Strategies for promoting entrepreneurial skills in science education students for poverty eradication. *Journal of Research & Method in Education*, 7(3), 45-49.
- Ahmad, A.K., Krogh, E., & Gjotterud, S.M. (2014). Reconsidering the philosophy of education for self-reliant (ESR) from an experiential learning perspective in contemporary education in Tanzania. *Educational Research for Social Change*, 3(1), 3-19.
- Ahmad, S.Z. (2013). The need for inclusion of entrepreneurship education in Malaysian lower and higher learning institutions. *Education + Training*, 55(2), 191-203.
- Ahmad, Z., & Khan, J. (2016). An analysis of the causes and consequences of unemployment in District Peshawar. *Journal of Social Sciences and Humanities*, 1(1), 114-127.

- Ahn, N., García, J.R., & Jimeno, J.F. (2004). The Impact of Unemployment on Individual Well-Being in the EU. Enepri Working Paper No. 29/July 2004. Retrieve from, <http://www.enepri.org>, accessed on 15 October 2017.
- Akinsola, M.K., & Olowojaiye, F.B.(2008). Teacher Instructional Methods and Student Attitudes towards Mathematics. *International Electronic Journal of Mathematics Education* 3(1), 1-12.
- Albert, F., Sclascia, S., & Poli, A. (2004). Entrepreneurship Education: Notes on an ongoing Debate. Proceeding of the 14th annual Intent Conference, University of Napoli Federicoll, Italy, 4-7 July.
- Aldelt, L.L., Barrett, L.A., & Bosshamer, B.K. (1997). Employer assessment of the skills preparation of student from college of Agricultural Sciences and natural resources. Univery of Nebraska Lincoln. *Implication for Teaching and Curriculum*, 41(4), 47-53.
- Aleksandra, G. (2010). The Relationship between Entrepreneurship and Unemployment in the Business Cycle. *Journal of International Studies*, 3(1), 59-69.
- Alston, A.J., Wade MW., & Williams, DL. (2003). The future role of instructional technology in agricultural education in North Carolina and Virginia. *Journal of Agricultural Education*, 44(2), 38-42.
- Amadi, N.S., & Nnodim, A.U. (2018). Role of Agricultural Education skills in entrepreneurship development in Rivers State. *International Journal of Innovative Social and Science Education Research*, 6(1), 1-9.
- Amadi, U.P.N. (2012). Agricultural entrepreneurship developments for youth empowerment in Nigeria: constraints and initiative for improvements. *Journal of Educational and Social Research*, 2(10), 104-114.
- Anne-Lundberg, L., & Strand, G. (2014). Comparison of variance estimation method for use with two dimensional sampling of land use and cover data. *Environmental modelling & software*, 61(2014), 87-97.

- Antonites, A.J. (2003). An action learning approach to entrepreneurial creativity, innovation and opportunity finding, DCom thesis, University of Pretoria.
- Anumnu, S. (2014). Knowledge management and development of entrepreneurial skills among students in vocational technical institutions in Lagos, Nigeria. *The Electronic Journal of Knowledge Management*, 12(2),144-154.
- Arasti, Z., Kiani Falavarjani, M., & Imanipour, N. (2011). Teaching methods in entrepreneurship education: the case of business students in Iran. In *Proceedings of the 6th European Conference on Innovation and Entrepreneurship*, 1, 92-98.
- Archibald, M.M. (2016). Investigator triangulation: A collaborative strategy with potential for mixed methods research. *Journal of Mixed Method Research*, 10(3), 228-250.
- Arnon, S., & Reichel, N. (2009). Closed and open-ended question tools in a telephone survey about “the good teacher.” *Journal of Mixed Methods Research*, 3(2), 172-196.
- Audretsch, D.B., Carree, M.A., & Thurik, A.R. (2001). Does Entrepreneurship reduce Unemployment? Tinbergen Institute Discussion Paper, No. 01-074/3, Tinbergen Institute, Amsterdam and Rotterdam.
- Azanza, G., Grama,S., & Bono, G. (2017). Entrepreneurship education in business schools. Equal report for orientation of entrepreneurship activity on business schools in Europe.
- Bacq,S., Ofstein, L.F., Kickul, J.R., & Gundry, L.K. (2017). Perceived entrepreneurial munificence and entrepreneurial intentions: A social cognitive perspective. *International Small Business Journal: Researching Entrepreneurship*, 35(5), 639-659.
- Balan, P., & Metcalfe, M. (2012). Identifying teaching methods that engage entrepreneurship students. *Education+ Training*.
- Barba Sanchez, Z., & Antienza- Sahuquillo, C. (2018). Entrepreneurial intention among engineering students. The role of entrepreneurship education. *European Research on Management and Business Economics*, 24(2018), 53-61.

- Barnet-Verzat, C., & François-Charles, W. (2008). Pocket money and child effort at school. *Economics Bulletin*, 9(13), 1-10.
- Barrat, M.J., Ferris, J.A., & Lenton, S. (2015). Hidden population online purposive sampling and external validity. Taking off the blind folder. *International Journal of Drug and Policy. Field Method*, 27(1), 3-21.
- Barribull, K.L., & While, A. (1994). Collecting data using a semi-structured interviews: A discussion paper. *Journal of Advanced Nursing*, 19(1), 328-335.
- Bazhenov, O.V., Enseeva, O.A., Enseeva, S.A., & Zilber, I.A. (2018). Sport training as a way of development of entrepreneurial and innovative skills. *The European Proceedings of Social and Behavioural Sciences*, 131(2), 1217-1227.
- Bell, R. (2015). Developing the next generation of entrepreneurs: Giving students the opportunity to gain experience and thrive. *The International Journal of Management Education*, 13(2015), 37-47.
- Berman, E.A. (2017). An exploratory sequential mixed methods approach to understanding researchers' data management practices at UVM: integrated findings to develop research data services. *Journal of E-sciences Librarianship*, 6(1), 1-24.
- Bernard, H.R. (2002). *Research methods in anthropology: Qualitative and quantitative approaches*. 3rd Alta Mira Press; Walnut Creek, CA: 2002.
- Bidabadi, N.S., Isfahani, A.N., Rouhollahi, A. & Khalili, R. (2016). Effective teaching methods in higher education: requirement and barriers. *Journal of Advances in Medical Education and Professionalism*, 4(4), 170–178.
- Birdthistle, N., Hynes, B., & Fleming, P. (2007). Enterprise education programmes in secondary schools in Ireland. *Education+ Training*.
- Bleazby, J. (2013). *Social reconstruction learning: Dualism, Dewey and philosophy in schools*. Routledge.

- Bohlman, C., Raunch, A., & Zacher, H. (2017). A lifespan perspective on entrepreneurship: perceived opportunities and skills explain the negative association between Age and entrepreneurial activity. *Frontiers in Psychology*, 8(2015), 1-11.
- Boleman, C.T., & Burrell, F. (2003). Agricultural science fairs: Are students truly learning from this activity? *Journal of Extension*, 41(3), 3RIB4.
- Bondy, E., & McKenzie, J. (1999). Resilience building and social reconstructionist teaching. A first year teacher's story. *The Elementary School Journal*, 100(2), 129-150.
- Boote, J., & Mathews, A. (1999). Saying is one thing and doing is another: the role of observations in marketing research. *Qualitative market research: An International Journal* 2(1), 15-21.
- Bowen, G.A. (2009). Document analysis as a qualitative research method. *Qualitative Research Journal*, 9(2), 27-40.
- Bradshaw, J., Cooke, K., & Godfrey, C. (1993). The impact of unemployment on the living standards of families. *Journal of Social Policy*, 12(4),433-452.
- Brown, J.D. (2000). What issues affect Likert scale questionnaire formats. JALT testing & evaluations SIG newsletter, 4(1), 27-30.
- Brown, M.J.M. (2012). Entrepreneur education assessment in secondary schools. University of Pretoria. Master Thesis.
- Bruce, M. (1995). The Role of Rural Schools in Community Development: Policy Issues and Implications. Program Report. Northwest Regional Lab., Portland, OR. Rural Education Program.
- Burdo, H. (2018). Positive negative effects: positive and negative effect of unemployment. Bureau labour statistics, the unemployment situation in 2018.
- Buthelezi, L.C. (2012). Towards a model for linking theory and practice in the teaching of entrepreneurship skills in schools. University of Zululand.

- Byerlee, D., De anvry, A., & Sadoulet, E. (2009). Agriculture for development: towards new paradigm the annual. *Review of Resource Economics* 1(1), 15-31.
- Canal, L. (2017). Instrument for gathering data in E. Moore & M. Dooly (Eds), *Qualitative approached to research on plurilingual education* (390-401). Research publishing net.
- Carayans, E.G., Evans, D. & Hanson, M. (2003). A cross-cultural earning strategy for entrepreneurial education; Outline of key concepts and lesson learned from a comparative study of entrepreneurship student in France and the United States. *Technovation*, 23 (2003) 757-771.
- Carcamo-Solis, M.D., Arroyo-Lopez, M.D., Alvarez-Castano, L.D., & Garcia-Lopez, E. (2017). Developing entrepreneurship in primary schools. The Mexican experience of my first enterprise: Entrepreneurship by playing. *Teaching and Teacher Education* ,64 (1),291-304.
- Cardno, C., Rosales-Anderson, N., & McDonald, M. (2017). An emergent bricolage method for culturally responsive qualitative research. *Mai Journal*, 6(2), 144-152.
- Chapman, B.J., Mac Luarin, T., & Powell, D.A. (2013). Video observation and data collection coding methods. *International Association for Food Protection*, 33(3), 146-156.
- Chapman, E., & Smith, J. (2002). Interpretative phenomenological analysis and new genetics. *Journal of Healthy Psychology*, 7(2), 125-130.
- Charney, A., & Libecap, G.D. (2008). Impact of entrepreneurship education. The Kauffman research series. The Kauffman Centre for entrepreneurial leadership.
- Che Mat, S., Mistima Maat, S., & Mohd, N. (2015). Identifying Factors that affecting the entrepreneurial intention among Engineering technology students. *Social and Behavioural Sciences*, 2111 (2015), 1016-1022.

- Chilisa, B., & Kawulich, B. (2001). Selecting a research approach: paradigm, methodology and methods. *International Journal of Qualitative Studies in Education*, 21(3), 1-21.
- Choto, P., Iwu, C.G., & Tengeh, R.K. (2014). Daring to survive or to grow? The growth aspirations and challenges of survivalist entrepreneurs in South Africa. *Environmental Economics*, 5(4), 93-101.
- Clarke, A.P., Cornes, C., & Ferry, N. (2020). The use of self-reflection for enhanced enterprise education: a case study. *Education + Training*.
- Collins, K.M.T., Onwuegbuzie, A.J., & Jiao, Q.G. (2007). A mixed method investigation of mixed method sampling design in social and health sciences research. *Journal of Mixed Method Research*, 1(3), 267-294.
- Conroy, C.A., Deborah, J., & Johnson, D. (1999). Agriculture as a Rich Context for Teaching and Learning, and for Learning Mathematics and Science to Prepare for the Workforce of the 21st Century. *Transitions from Childhood to the Workforce Teaching and Learning Conference September 17-19, 1999*. Cornell University Ithaca, NY. Trumbull Cornell University, University of Arkansas.
- Cooney, T.M. (2012). Entrepreneurial skills for growth-oriented and skills development. report for workshop skills development for SME and Entrepreneurship
- Cooper, R., Fleisher, A., & Cotton, F. (2012). Building connections: An interpretative Phenomenological analysis of Qualitative research students learning experiences. *The Qualitative Report*, 17(7), 1-16.
- Cooper, S., Bottomley, C., & Gordon, J. (2004). Stepping out of the classroom and up the ladder of learning: An experiential learning approach to entrepreneurship education. *Industry and Higher education*, 18(1), 11-22.
- Cope, J., & Watts, G. (2000). Learning by doing: An exploration of experience, critical incidents and reflection in entrepreneurial learning. *International Journal of Entrepreneurial Behavior and Research*, 6(3), 104-124.

- Cowdrey, R. (2012). Creating an entrepreneurial mindset. Ventus publishing, 5-56, bookboon. First edition.
- Cowie, B. (2005). Student commentary on classroom assessment in Sciences: A socio-cultural interpretation. *International Journal and Science Education*, 27(2), 199-214.
- Creswell, J. W. (1998). Qualitative inquiry and research design: Choosing among five traditions. Thousand Oaks, CA: Sage Publications.
- Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative* (pp. 146-166). Upper Saddle River, NJ: Prentice Hall.
- Creswell, J. W., Plano Clark, V. L., Gutmann, M., & Hanson, W. (2003). *Advanced mixed methods research designs*. In a Tashakkori & C. Teddlie (Eds.), Handbook of mixed methods in social & behavioural research (209-240). Thousand Oaks, CA: Sage.
- Creswell, J.W. (2003). Educational research: planning, conducting and evaluating qualitative and quantitative research. Upper saddles rive. NJ: Merrill Pearson.
- Creswell, J.W. (2007). Qualitative inquiry and research design: Choosing among five approaches (2nd ed.). Thousand Oaks, CA: Sage.
- Creswell, J.W., & Plano Clark, V.L. (2011). designing and conducting mixed methods research. (2nd Ed) thousand Oaks CA: Sage.
- Creswell, J.W., Carroll Klasen, A., Plano Clark, V.L. & Clegg Smith, K. (2012). Best practices for mixed method research in health sciences. *Office of Behavioural and Social Sciences Research (OBSSR)*, 1-37.
- Cronbach, L.J., & Shavelson, R.J. (2004). "My Current Thoughts on Coefficient Alpha and Successor Procedures". *Educational and Psychological Measurement*, 64 (3), 391–418.
- Cunningham, J.B., & Lischeron, J. (1991). Defining entrepreneurship. *Journal of Small Business Management*, 29(1), 45-61.

- Cutler, A. (2007). Creeping passivity. *Journal of College Science Teaching* 36(1), 6–7.
- Daniel, A.D., Costa, R.A., Pita, M., and Costa, C. (2017). Tourism education: what about entrepreneurial skills? *Journal of Hospitality and Tourism Management*, 30(2017), 65-72.
- Darcy, A. (2018). Developing entrepreneurial skills: an educational and intercultural perspective, National university of political studies and administration.
- De Klerk, N. (2009). Analysing entrepreneurial and marketing development skills for small tourism enterprises in the Vaal triangle region. North-West University. PHD thesis.
- De Wolf, P., & Schoorlemmer, H. (2008). Exploring the significance of entrepreneurship in Agriculture. *Applied Plant Research Report*.
- Dejaeghere, J. (2013). Education skills and citizenship: An emergent model for entrepreneurship in Tanzania. *Journal of Comparative Education*, 49(4), 503-519.
- Department for business innovation and skills. (2015). Entrepreneurship skills, literature and policy review, hull university business schools.
- Department of Basic Education(DBE), (2011). Curriculum Statement Policy Statement for Agricultural Sciences. Government printers, Pretoria.
- Department of Basic Education(DBE), (2017). NCS diagnostic report for Agricultural Sciences. Government printers, Pretoria
- Dilanchiev, A. (2014). Relationship between entrepreneurship and unemployment: The case of Georgia. *Journal of Social Science*, 3(2), 5-9.
- Din, BH., Anuar, A.R., & Usman, M. (2016). The effectiveness of the entrepreneurship education program in upgrading entrepreneurial skills among public university student. *Social and Behavioural Sciences*, 224(2016), 117-123.
- Diraditsile, K., & Maphula, P. (2018), "Entrepreneurship as a mechanism for addressing youth unemployment in Botswana: A reality of idealism?" *International Journal of Development and Sustainability*, 7(3), 836-847.

- Donnellon, A., Ollila, S., & Middleton, K.W. (2014). Constructing entrepreneurial identity in entrepreneurship education. *The International Journal of Management Education*, 12 (2014), 490-499.
- Doyle, L., Brady, A., & Byrne, G. (2009). An overview of mixed method research. *Journal of Research in Nursing*, 14(2), 175-185.
- Drajea, A J., & O'Sullivan, C. (2014). Influence of parental education and family income on children's education in rural Uganda, 1 (3). 149-166.
- Draylott, M., & Rae, D. (2011). Enterprise Education in schools and the role of competency framework. *International Journal of Entrepreneurial Behaviour and Research*, 17(2), 127-145.
- Driver, M. (2016). Never social and entrepreneurial enough exploring the identity work of social entrepreneurs from a psych analytic perspective. *SAGE Organization*, 24(6), 715-736.
- Du Plessis, P., & Mestry, R. (2019). Teachers for rural schools – a challenge for South Africa. *South African Journal of Education*, 39(1), 1-9.
- Dugassa, T.G. (2012). "The context of entrepreneurship education in Ethiopian universities", *Management Research Review*, 35(4), 225 – 244.
- Dumstrup, V.L. (2014). The Effects of Youth Unemployment: A Review of the Literature. *Health Systems Research*, 167-183.
- Dvoulety, O. (2017). Relationship Between Unemployment and Entrepreneurship Dynamics in the Czech Regions: a Panel Var Approach. Faculty of business administration, University of Economics in Prague, 65(3), 987–995.
- EduLink project. (2013). Reference manual on teaching skills for Agriculture in higher institution. Department of Agricultural and Technology.
- Eidenberg, E.L., Thompson, N.A., Verduiyin, K., & Essers, C. (2019). Entrepreneurial activities in a developing country an institutional theory perspective. *International journal of Entrepreneurial Behavior and Research*, 25(3), 414-432.

- Elert, N., Andersson, F.W., & Wennberg, K. (2015). The impact of entrepreneurship education in high school on long-term entrepreneurial performance. *Journal of Economic Behavior & Organization*, 111, 209-223.
- EL-Habil, A.M. (2012). An approach on multinomial logistic regression model. *Journal of Statistics and Operation Research*, 7(2), 271-291.
- Elliot, M.L. (2015). What do you think we should do? relationship and reflexivity in participant observation. *Occupation, Participation and Health*, 35(3), 33-41.
- Elmuti, D., Khoury, G., & Omran, O. (2012). does entrepreneurship education have a role in developing entrepreneurial skills and ventures 'effectiveness? *Journal of Entrepreneurship Education*, 15, 83.
- Entrepreneurship in African Agriculture (2014). Agriculture for impact Montpellier panel June 2014. Small and Growing.
- Ernest, K., Matthew, S.K., & Samuel, A.K. (2015). Towards entrepreneurial learning competencies: the perspective of built environment students. *Higher Education Studies*, 5(1), 20-30.
- Etikan, I., & Bala, K. (2017). Combination of probability random sampling with non-probability random sampling method. (sampling versus sampling method). *Biometrics and Biostatistics International Journal*, 5(6), 1-5.
- Etikan, R., Alkassim, R., & Abubakar, S. (2016). Comparison of snowball sampling and sequential sampling technique. *Biometrics and Biostatistics International Journal*, 3(1), 1-2.
- Faherty, A. (2015). Developing enterprise skills through peer-assessed pitch presentations. *Education + Training*, 57(3), 290-305.
- Farias, C., & Balardini, F. (2018). Teaching social economic: bringing the real world into the classroom and taking the classroom into the real world. *International Journal of Social Economics*, 1(1), 1-18.

- Fatoki, O. (2014). Entrepreneurship intention of undergraduate students in South Africa: the influence of entrepreneurship education and previous work experience. *Mediterranean Journal of Social Science*, 5(7), 294- 399.
- Fayolle, A. (2013). Personal views on the future of entrepreneurship education. *Entrepreneurship and Regional Development International Journal*, 25(8), 692-701.
- Fayolle, A., & Gailly, B. (2008). From craft to science. *Journal of European Industrial Training*.
- Fayolle, A., Gailly, B., & Lassas-clerk, N. (2006). Assessing the impact of entrepreneurship education programmes: A new methodology. *Journal of European Industrial Training*, 30(9), 701-720.
- Fayolle, A., Verzat, C., & Wapshott, R. (2016). In quest of legitimacy: the theoretical and methodological foundations of entrepreneurship education research. *International Small Business Journal*, 34(7), 895-904.
- Fetters, M.D., & Freshwater, D. (2015). Publishing a methodological mixed methods research article. *Journal of Mixed Method Research*, 9(3), 203-213.
- Fox, N. (1998). How to use observations in a research project? Institute of General Practices Trent focus group.
- Frank, A.I., (2005). Developing Entrepreneurship Skills in the Context of Higher Education. Centre for Education in the Build Environment (CEBE). Build Environment Education Symposium: Building the future 5/6 September 2005.
- Freeman, S., Eddy, S.L., McDonough, M., Smith, M. K., Okoroafor, N., Jordt, H., & Wenderoth, M. P. (2014). Active learning increases student performance in science, engineering, and mathematics. *Proceedings of the National Academy of Sciences*, 111(23), 8410-8415.
- Fuchs, K., Werner, A., & Wallau, F. (2008). Entrepreneurship Education in Germany and Sweden: what role do different school system play? *Journal of small business and Enterprise Development*, 15(2), 365-381.

- Fulgence, K. (2015). Assessing the status of entrepreneurship education courses in higher learning institutions: The case of Tanzania education schools. *Education + Training*, 57(2), 239-258.
- Gail, M.S., & Artino, A.R. (2013). Analysis and interpreting data from Likert scale. *Journal of Graduate Medical Education*, 1(1), 541-544.
- Gamede, B.T. (2018). Entrepreneurship: Solution to unemployment and development in rural communities. *Journal of Entrepreneurship Education*, 21(3), 1-12.
- Ganescu, M. (2014). Entrepreneurship, a solution to improve youth employment in the European Union. Constantin Brancoveanu, University of Pitesti. 580-588.
- Garalis, A., & Strazdiene, G. (2007). Entrepreneurial skills development via simulation business enterprise. *Socialiniai Tyrimai*, 10, 39-48.
- Garavan, T.N. & Cinneide, B.O. (1994). Entrepreneurship Education and training programmes: A review and evaluation part 1. *Journal of European Industrial Training*, 18(8), 3-12.
- Geta, T., & Abera, B. (2015). Comparative advantages of using modern technology for teaching-learning process in agricultural sciences in Jigjiga University, Ethiopia. *Journal of Agricultural Biotechnology and Sustainable Development*, 7(3), 19-24.
- Ghina, A. (2014). Effectiveness of Entrepreneurship education in higher education institutions. *Social and Behavioural Science*, 115(2014), 332-345.
- Gibb, A. (2007). Creating the entrepreneurial university: do we need a wholly different model of entrepreneurship. *Handbook of Research in Entrepreneurship Education*, 1, 67-103.
- Gibb, A.A. (1997). Small firm training and competitiveness. Building upon the small businesses as a learning organization. *International Small Business Journal*, 15(13), 13-29.

- Gielen, P. M., Hoeve, A., & Nieuwenhuis, L. F. (2003). Learning entrepreneurs: learning and innovation in small companies. *European Educational Research Journal*, 2(1), 90-106.
- Gilbert, G.L. (2010). A sequential exploratory mixed methods evaluations of graduate training and development in the construction industry. School of Health Sciences, Science, Engineering and Health college.
- Gill, M.J. (2015). Elite identity and status anxiety: an interpretative phenomenological analysis of management consultant. *Organizations*, 22(3), 306-325.
- Gimmon, E. (2014). Mentoring as practical in higher education of entrepreneurship. *Education+ Training*, 56(8/9), 814-825.
- Graff, J.C. (2011). Mixed method research. *Jones & Bartlett learning*. 45- 64.
- Gratton, C., & Jones, I. (2010). *Research Methods for Sports Studies*. London: Taylor & Francis
- Greblikaile, J., Sroka, W., & Gerulaitiene, N. (2016). Involving young people in polish and Lithuanian social enterprises by fostering entrepreneurial skills and abilities as entrepreneurial opportunity at university. *Entrepreneurial Business and Economic Review*, 4(3), 131-152.
- Greco, V., & Denes, C. (2017). Benefits of entrepreneurship education and training for engineering students. *Matec web of conference* 121 (2017).
- Green, F. (2013). Youth entrepreneurship: A background paper for the OECD Centre for Entrepreneurship, SMEs and Local Development.
- Greene, W.H. (2012). *Econometric Analysis* (Seventh ed.). Boston: Pearson Education. 803–806.
- Grootenboer, P., Edwards G.C., & Choy, S. (2017). Practice theory and Education: diversity and contestation. *Springer Nature, Singapore*, 4(1), 1-20.

- Guan, J. (2016). Study on the imbalance and reconstruction of college English classroom under information ecology. 4th international education economics social sciences, arts sport and management engineering conference (IEESASM).
- Gwija, S.A., Eresia-Eke, C., & Iwu, C.G. (2012). Challenges and prospects of youth entrepreneurship development in a designated community in the Western Cape, South Africa. Cape Peninsula University of Technology and University of Pretoria, 10-20.
- Hadi, C., Wekke, I.S., & Cahaya, A. (2015). Entrepreneurship and education: Creating business aware for students in East Java Indonesia. *Social and Behavioral Sciences*, 177(2015), 459-463.
- Hahn, D., Minola, J., Bosio, G., & Cassia, L. (2019). The impact of entrepreneurship education on university students' entrepreneurial education on university students' entrepreneurial skills: a family embedded perspective. *Springer Small Business Economics*, 1-23.
- Hahn, D., Minola, T., Van Gils, A., & Huybrechts, J. (2017). Entrepreneurial education and learning at universities: exploring multilevel contingencies. *Entrepreneurship and Regional Development: An International Journal*, 29(9), 945-974.
- Harlin, J.F., Roberts, T.G., Dooley, K.E., & Murphrey, T.P. (2007). Knowledge, skills and abilities for Agricultural Sciences teacher: A focus group approach. *Journal Agricultural Education*, 48(1), 86-96.
- Harms, R. (2015). Self-regulated learning, team learning and project performance in entrepreneurship education: learning in a lean startup environment. *Technological Forecasting and Social change*, 100(2015), 21-28.
- Harrison, C., Paul, S., & Burnard, K. (2016). Entrepreneurial leadership in retail pharmacy developing economy perspective. *Journal of Workplace Learning*, 28(3), 150-167.
- Harrison, R.L., & Rielly, T.M. (2011). Mixed methods design in marketing research. *Qualitative Market Research: An International Journal*, 4(1), 7-26.

- Harry, T., Chinyamurindi, W.T., & Mjoli, T. (2018). Perceptions of factors that affect employability amongst a sample of final-year students at a rural South African university. *SA Journal of Industrial Psychology/SA Tydskrif vir Bedryfsielkunde*, 44(0), a1510.
- Hatak, I. & Riener, E. (2010). Entrepreneurship education in secondary: institute for small business management and entrepreneurship Vienna University of Economics and Business. Augasse 2-6, 1090 Vienna Austria.
- Heaslip, G., Donovan, P., & Cullen, J.G. (2014). Student response systems and learner engagement in large classes. *Active Learning in Higher Education*, 15(1), 11-24.
- Hegarty, C. (2006). It's not an exact science? teaching entrepreneurship in Northern Ireland, *Education + Training*, 48 (5), 322-335.
- Heinonen, J. & Poikkijoki, S. (2006), Entrepreneurship and entrepreneurial -directed approach to entrepreneurship Education. Mission impossible? *Journal of Management Development*, 25(1), 80-94.
- Henry, C., Hill, F., & Leitch, C. (2005). Entrepreneurship education and training: can entrepreneurship be taught? Part I. *Education+ Training*.
- Hietanen, L. (2014). Entrepreneurial learning environments: supporting or hindering diverse learners? *Education + Training*, 57 (5), 512-531.
- Higgins, R. (2010). Teaching world cultures. Learn NC. Retrieved from <http://www.learnnc.org/lp/pages/6390>
- Hofstein, A., Shore, R., & Kipnis, M. (2004). Providing high schools chemistry students with opportunities to develop learning skills in an inquiry-type laboratory: case study. *International Journal of Science Education*, 26(1), 47-62.
- Holz-Clause, M., & Jost, M. (1995). Using focus groups to check youth perceptions of agriculture. *Journal of Extension*, 33(3), Article 3FEA3

- Horn, G. (2006). Education solutions to improve the employability of senior high school learners. *South African Journal of Education*, 26(1), 113-128.
- Houghton, C., Casey, D., Shaw, D., & Murphy, K. (2013). Rigour in qualitative case-study research. *Nurse researcher*, 20(4).
- Ibrahim, N.A., & Mas'ud, A. (2016). Moderating role of entrepreneurial orientation on the relationship between entrepreneurial skills, environmental factors and entrepreneurial intention: A PLS approach management Science letters 6(2016),225-236.
- Igwe, RO., Rufai, S.A., & Olufemi, A.G. (2013). Social reconstruction through religions education: A survey on Nigeria. *Humanity and Social Science Journal*, 8(1), 10-18.
- International Labour Organization (ILO). (2017). Educating entrepreneur: Can in-school youth be taught to start a business? Evidence from South Africa.
- Isaac, O., David, A.A., & Akwapa, C. (2014). Entrepreneurial skills required by secondary school graduates for economic success in cocoa production in Ikom local government. Area of cross River State, Nigeria. *Journal of education and practice*, 5(16), 174-183.
- Isaacs, E., Visser, K., Friedrich, C., & Brijlal, P. (2007). Entrepreneurship education and education at the further Education and training level in South Africa. *South African Journal of Education*, 27 (1), 613-629.
- Jabeen, F., Faisal, M., & Katsioloudes, M.I. (2016). Entrepreneurial mindset and the role of universities as strategic drivers of entrepreneurship. *Journal of Small Business and Enterprise Development*, 24(1), 136-157.
- Jaimanga- Jones, D. (2014). Utilizing ethnography and participants' observation in festival and event research. *International Journal of Events and Festival Management*, 5(1), 39-55.
- Jensen, JL. (2011). higher education faculty versus high school teacher: does pedagogical preparation make a difference? Department of Biology, Brigham Young University, 37(2), 30-36.

- Jianping, L., & Chao, W. (2011). Objectives and approaches of entrepreneurship education in Chinese colleges and universities. School of Law, Wuhan university. Proceedings of the 7th international conference on innovation & management.
- John, R. (2016). Likert items and scales. Survey question bank: methods fact sheet. University of Strathclyde. 1-11.
- Johnmark, D.K., Munene, J.C., & Balunywa, W. (2016). Robustness of personal initiative in moderating entrepreneurial intentions and actions of disabled students. *Cogent Business & Management*, 3(2016), 1-16.
- Jones, B., & Iredale, N. (2006). Developing an enterprise life skills summer school. *Innovation in Education and Teaching International*, 43(3), 233-244.
- Jones, B., & Iredale, N. (2014). Enterprise and entrepreneurship education: towards a comparative analysis. *Journal Enterprising Communities*, 8(1), 34-50.
- Jones, C. (2010). Entrepreneurship education: revisiting our role and purpose. *Journal of Small Business and Enterprise Development*, 17(4), 500-513.
- Jones, C., & English, J. (2004). A contemporary approach to entrepreneurship education. *Education +Trainings*, 46(819), 416-423.
- Jones-Evans, D., Williams, W., & Deacon, J. (2000). Developing entrepreneurial graduates: an action-learning approach. *Education+ Training*.
- Joshi, A., Kale, S., Chandel, S., & Pal, D.K. (2015). Likert scale: explored and explained. *British Journal of Applied Science and Technology*, 7(4), 396-403.
- Kailer, N. (2009). Entrepreneurship education: empirical findings and proposal for the design of entrepreneurship education concepts at universities in German speaking countries. *Journal of Enterprising Culture*, 17(2), 201-231.
- Kangasharju, A & Pekkala, S. (2001). The role of education in self-employment success. *RePEc, Growth and Change*, 33(2), 1-10.

- Karimi, S., Chizari, M., Biemans, H.J.A., & Mulder, M. (2010). Entrepreneurship Education in Iranian Higher Education: The Current State and Challenges. *European Journal of Scientific Research*, 48 (1),35 - 50.
- Kawulich, B.B. (2005). Participant observation as a data collection method. *Qualitative Social Research*, 6(2), 1-20.
- Kayoma, F.O. (2011). Entrepreneurship and functionality Agricultural Sciences education as means of achieving the vision 2020 In Nigeria. *Journal of Research development*, 17(1): 1-11.
- Kee, J., Rodrigues, P., Kundu, S., & Racine, J.L. (2007). Entrepreneurship curriculum. Project report for JIP grant.
- Kennedy, E. (2013). The roles of entrepreneurship education in ensuring economic empowerment and development. *Journal of Business Administration and Education*, 4(1), 35-46.
- Keswa, S.E.M., & Ngcobo, S. (2017). An investigation into Graduates perception of entrepreneurial opportunities at an Agricultural College. *Journal of Research and Method in Education*, 7(4), 58-74.
- Khalidi, K. (2017). Quantitative, qualitative or mixed research: which research paradigms to use. *Journal of Educational and Social Research*, 7(2), 15-24.
- Kharyn, S., Yaghoubi, J., & Yazdanpanah, F. (2011). Investigating barriers to enhance entrepreneurship in agricultural higher education from the perspective of graduate students. *Journal of Science Direct*, 15(2011), 2818-2822.
- Kidane, T.T. (2013). Dimensions of Agricultural Educational training in formal education centres: in the case of Kwa- Zulu Natal, South Africa. University of Kwa-Zulu Natal PHD thesis.
- Kirby, D.A. (2004). Entrepreneurship education can business schools meet the challenge? *Education + Training*, 46 (819). 510-519.

- Kirui, J.K., & Sang, H.C. (2019). Rethinking the quality and relevance of university education in Kenya from entrepreneurial perspective. *Journal of Education and Practice*, 10(9), 27-34.
- Klemmer, C.D., Walizek, T.M., & Zajicek, J.M. (2005). Growing minds: The effects of a school gardening program on the Science achievement of elementary students. Texas, state University. *Hart Technology*, 15(3), 448-452.
- Knowbloch, N.A. (2008). Factors of Teacher beliefs related to integrating agriculture into elementary Agriculture into elementary schools' classroom. *Agriculture Human Value (springer)*, 25(1), 529-539.
- Kolb, A., & Kolb, D. (2009). Experiential Learning Theory: A dynamic holistic approach to management learning, education and development. In: Armstrong, SJ and Fukami C (eds), *Handbook of Management Learning, Education and Development*, London: Sage Publications, 42–68.
- Kourisky, M. (1995). Entrepreneurship Education: Opportunity in Search of Curriculum center for entrepreneurial Leadership, 1-21.
- Krauss, S.E. (2005). Research paradigm and meaning making: A primer. *The Qualitative Report*, 10(4), 758-770.
- Kuh, G.D. (2001) Assessing what really matters to student learning: Inside the National Survey of Student Engagement. *Change: The Magazine of Higher Learning* 33(3),7-10.
- Kuhn, D. (2010). Teaching and learning sciences as argument. Columbia university, New York teachers' colleges. *Science Education*. 810-824.
- Kumari, N. (2018). Entrepreneurs are Made, Not Born. *Not Born (March 19, 2018)*.
- Kunze, L., & Suppa, N. (2017). The effect of unemployment on social participation of spouses - Evidence from plant closures in Germany, SOEP papers on Multidisciplinary Panel Data Research, No. 898, Deutsches Institute fur Wirtschaftsforschung (DIW), Berlin.

- Kuttim, M.K., Kallaste, M., Vanesaar, U., & Kiis, A. (2014). *Social and Behavioural Sciences*, 110(2014), 658-668.
- Lackeus, M. (2014). An emotion base approach to assessing entrepreneurial education. *The international Journal of Management Education*, 12(2014), 374-396.
- Langkos, S. (2014). Data collection and Research tools. Mediterranean College, University of Derby. Master thesis.
- Lani, J. (2010). Conduct and interpret a multinomial logistic regression, statistic solution retrieved from, [Http:// www. Statistics solution. Com](http://www.Statistics solution. Com), accessed on 03/03/2019.
- Lans, T., Seuneke, P., & Klerkr, L. (2017). Agricultural entrepreneurship. Springer Science, Encyclopedia of creativity innovation and entrepreneurship. 1-7.
- Lashgarara, F., Roshani, N., & Najafabadi, M.O. (2011). Influencing factors on entrepreneurial skills of rural women in Ilam city, Iran. *African Journal of Business Management*, 5(14): 5536-5540.
- Lautenschläger, A., & Haase, H. (2011). The myth of entrepreneurship education: seven arguments against teaching business creation at universities. *Journal of Entrepreneurship Education*, 14, 147.
- Laverty, G., Hanna, L., Haughey, S., & Hughes, C. (2015). developing entrepreneurial skills in pharmacy students. *American Journal of Pharmaceutical Education*, 79(7), 1-9.
- Le Comple, M.D., & Goetz, J.P. (1982). Problems of reliability and validity in ethnographic research. *Review Educational Research*, 52 (1), 31-60.
- Le Roux, I. (2005). Economic and management science learning area of Curriculum 2005 and entrepreneurial orientation. University of Pretoria. MPhil dissertation.
- Lee, Y., Krieser, P.M., Wrede, A.H., & Kogelen, S. (2018). University-based education and the formation of entrepreneurial capabilities. *Entrepreneurship Education and Pedagogy*, 1(4), 304-329.

- Leedy, P.D., & Ormrod, J.E. (2015) *Practical research planning and design*, Pearson Educational International, New York.
- Leffler, E. (2009). The many faces of entrepreneurship a discursive battle for the school arena. *European Educational Research Journal*, 8 (1), 104-116.
- Leffler, E., & Svenberg, G. (2005). Entrepise learning: A challenge to education? *European Educational Research Journal*, 4(3), 219-227.
- Limpopo Department of Agriculture (LDA) (2012). Annual report on agricultural industry in Limpopo province. Provincial department, Polokwane.
- Linan, F. (2008). Skills and value perceptions: how do they affect entrepreneurial intentions? *International Entrepreneurship Management*, 4(1), 257-272.
- Lincoln, Y., & Guba, C. (1985). Naturalistic inquiry. Beverly Hills: Sage. *Magazine*, 44(5),115 – 119.
- Litzky, B.E., Godshailk, V.M., & Walton-Borgers, C. (2010). Social Entrepreneurship and community leadership. *Journal of Management Education* 14(1), 142-162.
- Longworth, N. (2018). Attributes of an entrepreneurial learning city region. University of Southampton Stirling, Edinburg napies, Sheffield hallam, UNESCO, 3-24.
- Luckey, A.N., Murphrey, T.P., Cummins, R.L., and Edwards, M.B. (2013). Assessing youth perceptions and knowledge of agriculture: the impact of participating in an Agventure program. *Journal of Extensions*, 51(3), 1-10.
- Lukasik, B. (2018). Developing students' skills in todays, modern schools. Conference proceedings 5th international multidisciplinary scientific conference on social sciences and arts SGEM 2018. 175-180.
- Luke, B., Verreyne, M., & Kearins, K. (2007). Measuring the benefits of entrepreneurship at different levels of analysis. *Journal of Management & Organization*, 13(4), 312–330.

- Mabie, R., & Baker, M. (1996). A comparison of experiential instructional strategies upon the sciences process skills of urban elementary students. *Journal of Agricultural Education*, 37(2), 1-6.
- Mabunda. NP. (2002). the role of the school in preparing school leavers for self-employment. University of South Africa, Faculty of Education. PHD thesis.
- Mahadea, D., Ramroop, S., & Zewotir, T. (2011). Assessing entrepreneurship perceptions of high school learners in Pietermaritzburg, Kwazulu-Natal. *South African Journal of Economic and Management Science*, 14(1), 66-79.
- Makaringe, S.C. (2018). The effect of unemployment on economic growth in South Africa (1994-2016). *Journal of Social Sciences and Humanities*, 1(1), 1-15.
- Malindi, M.M. (2014). Impact of entrepreneurship Education and entrepreneurial intent at further education and training (FET) colleges in South Africa.
- Mamabolo, MA., Kerrin, M., & Kele, T. (2017). Entrepreneurship management skills requirements in emerging economy: A South African outlook. *The Southern African Journal of Entrepreneurship and Small Business Management*, 9(1), 1-10.
- Mamoudou, H. (2013). The influence of students' perceived happiness on their entrepreneurial intention at a higher educational institution in South Africa. Nelson Mandela Metropolitan University Faculty of Business and Economic Sciences.
- Mamum, A.A., Che Nawi, N.B., Dewiendren, A.A., & Shamsudim, S.F. (2016). Examining the effects of entrepreneurial intention. *Mediterranean Journal of Social Sciences*, 7(2), 119-127.
- Maralani, V. (2008). The Changing Relationship Between Family Size and Educational Attainment Over the Course of Socioeconomic Development: Evidence from Indonesia. *Demography*, 45(3), 693-717.
- Mare, C.F. (1996), A Manual for Entrepreneurs: The Road to a Successful Career, Kagiso, Bloemfontein.

- Maresch, D., Harms, R., Kailer, N., & Wimmer-Wurm, B. (2016). the impact of entrepreneurship education on the entrepreneurial intention of students in sciences and engineering versus business studies university program. *Technological Forecasting and Social Change*, 104(2016), 172-179.
- Mariana-Cristina, G. (2014). Entrepreneurship, a solution to improve youth employment in the European Union. *Management Strategies Journal*, 26(4), 580-588.
- Mars, M. M., & Torres, R. M. (2014). Enhancing agricultural leadership education through the inclusion of entrepreneurial principles and practices. *NACTA Journal*, 58(4), 282.
- Martin T. (2016). Understanding of teachers' reluctance to the pedagogical use of ICT in the 1:1 classroom. *Educ Inf Technol* (2016) 21, 503–519.
- Martin, J. (2016). The grammar of agency: studying possibilities for students' agency in science classroom discourse. *Learning Culture and Social Interaction*, 10 (2016), 40-49.
- Martin, R.J. (1994). Constructivism and other approaches to teacher education. *Teacher education quarterly, summer*, 21(3), 77-89.
- Masole, T.M. (2011). Enhancing the quality of performance assessment in agriculture in Botswana schools. PhD thesis, University of Pretoria, Pretoria.
- Matlay, H., & Hannon, P.D. (2006). Teaching pigeons to dance: sense and meaning in entrepreneurship education. *Education+ Training*.
- Matsheke, O.T. (2017). The influence of entrepreneurial-related programmes on student intentions to venture into new business creation. Vaal University of Technology, Faculty of Management Sciences.
- Matsuyama, Y., Akuba, I., Fujie, S., & Kobayashi, T. (2015). Four- participant group conversation: A facilitation robot controlling engagement density as the fourth participant. *Computer Speech and Language*, 33(2015), 1-24.

- Mavhungu, A.P. (2004). Factors influencing the performance in Agricultural Sciences in some schools in the Limpopo Province. Faculty of Natural and Agricultural Sciences, University of Pretoria.
- Maxwell, J.A. (2016). Expanding the history and range of mixed method research. *Journal of Mixed Method Research*, 10(1)12-27.
- Mayne, H. (2014). The social reconstructionist approach to teacher education: a necessary component to achieving excellence and quality education for all. *Research in Comparative and International Education*, 9(1),48-55.
- Mbanefo, M.C., & Eboka, O.C. (2017). Acquisition of innovative and entrepreneurial skills in basic science education for job creation in Nigeria. *Science Education International*, 28(3), 207-213.
- Mc Elwee, G. (2006). Farmers as entrepreneurs: developing competitive skills. *Journal of Developmental Entrepreneurship*, 11(03), 187-206.
- McClelland, A., & Macdonald, F. (1998). The social consequences of unemployment. For the Business Council of Australia July 1998.
- McKim, C.A. (2017). The value of mixed method research: A mixed method study. *Journal of Mixed Method Research Method Research*, 11(2), 202-222.
- McIntosh, M.J., & Morse, J.M. (2015). Situating and constructing diversity in semi-structured interviews. *Global Qualitative Nursing Research*, 1(1), 1-12.
- Mei-Nan, L.V., & Xin, L.I. (2017). The study of classroom teaching method of social role theory- it is based on personal tailor. *Advance in Social Sciences, Education and Humanities Research*, 90(1), 382-390.
- MENA, (2017). Strategies for eradicating poverty to achieve sustainable development for all united nation, New York, 10-11 May 2017. Education and entrepreneurship to address youth unemployment in MENA region.

- Middleton, K.W., & Donnellon, A. (2014). Personalizing entrepreneurial learning: A pedagogy for facilitating the know why. *De Cruyler*, 4 (2), 1-5.
- Miles, M.B., & Huberman, M. (1994). *Qualitative data analysis: An expanded sourcebook*. sage.
- Miller, P., & Rose, N. S. (2008). *Governing the present: administering economic, social and personal life*. Cambridge: Polity.
- Millman, C., Li, Z., Matlay, H., & Wong, W. (2010). Entrepreneurship education and students' interest entrepreneurship intention: evidence from Chinese HEI. *Journal of Small Business and Enterprise Development*, 17(4), 569-590.
- Minimol, M.C. (2017). Linkage between entrepreneurial competency and social entrepreneurship. *Asian Social Science*, 13(10), 31-42.
- Minneboo, E., & Quiroga, G. (2007). *Young Professionals' for Agricultural Development (YPARD)*.
- Minola, T., Donina, D., and Meoli, M. (2016). Students climbing the entrepreneurship ladder: does university internationalization pay off? *Small Business Economics*, 47(2016), 565-587.
- Miranda, F.J., Chamorro-Mera, A., & Rubio, S. (2017). Academic entrepreneurship in Spanish universities. An analysis of the determinants of entrepreneurial intention. *European Research on management and Business Economics*, 23 (2017), 113-122.
- Mkala, D.M., & Wanjau, K. (2013). Transforming implementation of entrepreneurship education programme in technical training institutions in Kenya.
- Morgan, D. (2007). Paradigms lost and pragmatism regained: Methodological implications of combining qualitative and quantitative methods. *Journal of Mixed Methods Research*, 1(1), 48-76.

- Morgan, S. L., Marsden, T., Miele, M., & Morley, A. (2010). Agricultural multifunctionality and farmers' entrepreneurial skills: A study of Tuscan and Welsh farmers. *Journal of Rural Studies*, 26(2), 116-129.
- Morgan, S.J., Pullon, S.R.H., Macdonald, L.M., Mckinlay, E.M., & Gray, B.V. (2017). Case study observation research: A framework for conducting case study research where the observational are the focus. *Qualitative health research*, 27(7), 1060-1068.
- Morse, J. M. (1994). Designing funded qualitative research. In Denizin, N. K. & Lincoln, Y. S., *Handbook of qualitative research* (2nd Ed). Thousand Oaks, CA: Sage.
- Morse, J.M., & cheek, J. (2014). Making room for qualitatively-driven mixed method research. *Qualitative health research*, 24(1), 2-5.
- Morshedi Estahbanaty, S.S. (2014). How to increase agricultural entrepreneurial skills. *European Online Journal of Natural and Social Sciences: Proceedings*, 2(3) 1232-1244.
- Mougi, P. (2007). Non-participative observations in Political research: the poor relation. *Political studies associates.*, 27(2), 108-114.
- Mujuru, J.T. (2014). Entrepreneurial agriculture for human development: A case study of Dotito Irrigation Scheme, Mt Darwin. *International Journal of Humanities and Social Science*, 4(4), 121-131.
- Munir, Z.A., Mohamad, S.S., & Idrus, S. (2015). The effectiveness of entrepreneurial motivational training programme among University students. *International Journal of Social Sciences and Humanity*, 5(5), 487-490.
- Muresan, M., & Pastiu, C.A. (2016). Simulated enterprise: A CLIL reaching method for developing students' entrepreneurial skills and language competence. *Journal of Linguistic and Intercultural Education*, 9(3), 119-132.
- Mustapha, M., & Selvaraju, M. (2015). Personal attributes, family influence, entrepreneurship education and entrepreneurship inclination among university students. *Research Gate Kajian Malaysia*, 33(1),155-172.
- Muyia, F. (1998). Entrepreneurial skills development programs for unemployed youth in Africa: A second look. *Journal of Small Business Management*, 36(1),100-103.

- Mwanzia, R.M., & Mwangi, S.N. (2016). Reconstructionist analysis on the relevance of secondary school learning opportunity in promoting National cohesion among students in machakos town sub-country, Kenya. *Journal of Education and Practice*, 7(32), 216-222.
- Mzizi, J.N. (2017). A qualitative study of the impact of unemployment in Mazakhele KwaZulu-Natal. Master thesis, Department of psychology, University of South Africa.
- Nandhakumar, J., & Jones, M. (2002). Development gain participant observation in interpretive management information system research.
- Narian, N. (2003). The fostering of entrepreneurship at secondary schools in the North Durban regions. Durban Institute of Technology, Department of economics and quantitative methods. Master thesis.
- National content Standard for Entrepreneurship Education. (2004). Preparing youth and adults to succeed in an entrepreneurial economy. Consortium for entrepreneurship Education.
- National research council. (2004). How students learn: mathematics in the classroom. Washington DC: National academic Press.
- Nchu, R.M. (2015). The effectiveness of entrepreneurship education in selected high school in the Cape Town Metropolitan. Cape Peninsula University of Technology, Department of entrepreneurship and business management, Faculty Business and Management Science. Master Thesis.
- Nel, E., & Stevenson, T. (2014), "The catalysts of small town economic development in a free market economy: case study of New Zealand. *Local Economy*, 29(4/5), 486-502.
- Nemoto, T., & Beglar, D. (2014). Developing Likert scale questionnaire. In N Sonda and a, Krause (Eds), Jait 2013 conference proceeding. Tokyo: Jait.
- Nieto, T., Mendez, F., & Carrasquilla, G. (1999). Knowledge, beliefs and practices relevant for malaria control in an endemic urban area of the Colombian Pacific. *Social Science and Medicine*, 49(1), 601-609.

- Nieuwenhuis, L. F. (2002). Innovation and learning in agriculture. *Journal of European Industrial Training*.
- North, E. (2002). A decade of entrepreneurship education in South Africa. *South African Journal of Education*, 22(1), 26-27.
- Nova, J. (2014). Developing the entrepreneurial competencies of sport management studies. *Social and Behavioral Sciences*, 174 (2015), 3916-3924.
- O'Leary, Z. (2014). *The essential guide to doing your research project* (2nd ed.). Thousand Oaks, CA: SAGE Publications.
- OECD. (2012). *Fostering quality education in higher education: policies and practices. Institutional management in higher education*.
- OECD. (2013). *Learning our lesson: review of quality teaching in higher education, institutional management in higher education*.
- Ofoha, D. (2011). *Assessment of the implementation of the secondary school skill-based curriculum to youth empowerment in Nigeria*. National Open University of Nigeria. PhD thesis.
- Okiror, J.J., Matsiko, B.F., & Oonyu, J. (2011). Just how much can school pupils learn from school gardening? A study of two supervised agricultural experience approaches in Uganda. *Journal of Agricultural Education*, 52(2), 24-35.
- Okon, U.A., Stephanie, B., & Agbor, G.E. (2017). Training skills needs for Agricultural Sciences teachers and animal husbandry trade curriculum implementation in secondary schools. *International Journal of Educational Benchmark*, 8(2), 88-95.
- Oluseye, A.M., Adebayo, K.F., Olulanu, O.I., Adesola, O.O., & Omonike, A.O. (2017). Effect of entrepreneurship education on self-employment initiatives among Nigerian science and technology students. *Journal of Education and Practice*, 8(15), 44-51.
- Oluwasanya, A.T. (2016). *Enabling and stimulating entrepreneurship education in higher education institutions: Catalyst for venturesome youths and sustainable development*

- in Nigeria. *International Journal of Information, Business and Management*, 8(2), 289-306.
- Onstenk, J. (2003). Entrepreneurship and vocational Education. *European Educational Research Journal*, 2(1), 74-89.
- Onwuegbuzie, A.J. & Collins, K.M. (2007). A typology of mixed methods sampling designs in social sciences research. *The Qualitative Report*, 12(2), 281-316.
- Onwuegbuzie, A.J. & Leech, N.L. (2006). Linking research questions to mixed method data analysis procedure 1. *The Qualitative Report*, 11(3,) 474-498.
- Oonsterbeek, H., Praag, M. & Ijsselstein A. (2010). The impact of entrepreneurship education on entrepreneurial skills and motivation. *European Economic Review, Science Direct*, 54(1) ,442-454.
- Organisation for Economic Co-operation and Development (OECD). (2015 a). Entrepreneurial learning environment and changed roles for teachers. This thematic paper was prepared for the Entrepreneurship360 initiative of the OECD (LEED Programme) and the European Commission (DG Education and Culture) retrieved from, <http://www.oecd.org>. accessed on 19 July 2017.
- Organisation for Economic Co-operation and Development (OECD). (2015b). Entrepreneurial learning environment and a changed role for teacher. Entrepreneurship 360 thematic paper, Helena Sagar, 2015. Part 2. This thematic paper was prepared for the Entrepreneurship360 initiative of the OECD (LEED Programme) and the European Commission (DG Education and Culture) retrieved from, <http://www.oecd.org>. accessed on 12 February 2018.
- Organisation for Economic Co-operation and Development (OECD). (2013). 'OECD economic surveys: South Africa', March 2013, retrieved from, <http://www.oecd.org>. accessed on 19 July 2017.
- Osborn, M., & Smith, J.A. (2015). Interpretative phenomenological analysis as a useful methodology for research on the lived experiences of pain. *British Journal of Pain*, 9(1), 41-42.

- Otuya, R., Kibas, P., & Otuya, J. (2013). A processed approach for teaching entrepreneurship education in Kenya. *Journal of Education and Practice*, 4(8), 204-209.
- Oyibe, O.A., & Eluu, P.E. (2015). Integrating entrepreneurial education skills in social studies pedagogy for poverty reduction and sustainable development in Nigeria. *Journal of Education and Training*, 2(1), 192-199.
- Palinkas, L.A., Horwitz, S.M., Green, C.A., Wisdom, J.P., Duan, N., & Hoagwood, K. (2013). *Administration Policy Mental Health*, 42(1), 533-544.
- Pannucci, CJ & Wilkins, EG. (2010). Identifying and avoiding bias in research. *Plastic and Reconstructive Surgery*, 126(2), 619-625.
- Parke, J., & Griffiths, M. (2008). Participant and non-participant observation in Gambling environment. *Enquire*, 1(1), 1-14.
- Parr, B., & Edwards, M.G. (2004). Inquiry- based instructions in secondary Agricultural Education problem-solving – an old friend re-visited. *Journal of Agricultural Education*, 45(4), 106-117.
- Parsons, J. (1986). Social reconstructionist and the Alberta social studies curriculum. Department of secondary education, University of Alberta, Edmonton Alberta.
- Pasek, Z.J. (2017). Assessment of entrepreneurial skills: experience from a joint engineering-business class experiment. Canadian engineering education association (CESA). Conference University of Toronto, June 4-7, 2017, 1-7.
- Patrick, H.A. (2016). Observation: non participant and participant. *SAGE*, 6(2016), 1-8.
- Peden, M. (2015). Education for sustainable Agriculture the old and new curricula for Agricultural Science in South African schools. *Journal of Education*, 60(1), 64-96.
- Perera, S. (2018). Research paradigms. Workshop on research methodology. Department of demography, university of Colombo.
- Pérez-Pérez, C., & Avilés-Hernández, M. (2016). Explanatory factors of female entrepreneurship and limiting elements. *Suma de Negocios*, 7(2016), 25-31.

- Peterman, N.E., & Kennedy, J. (2003). Enterprise education: Influencing students' perceptions of entrepreneurship. *Entrepreneurship Theory and Practice*, 28(2), 129-144.
- Pfennig, A. (2016). Inverting the classroom in an introductory material science course. *Social and Behavioural Sciences*, 228(2016), 32-38.
- Pistorius, Z. (2011). Entrepreneurship competence of Economic Management Science teachers in the Kenneth Kaunda District. Business Administration at the North-West University, Master thesis.
- Plehn-Dujowich, J.M. (2011). The dynamic relationship between entrepreneurship, unemployment and growth: Evidence from U.S. industries. Plehn analytical economic solution, LLC Willow Grove PA 19090.
- Polit, D.F., Beck, C.T., & Owen, S.V. (2007). Is the CVI an Acceptable Indicator of Content Validity? *Appraisal and Recommendations*.
- Politis, D. (2005). The process of entrepreneurial learning: A conceptual framework. *Entrepreneurship theory and practice*, 29(4), 399-424.
- Polkinghorne, D.E. (1995). Narrative configuration in qualitative analysis. *International Journal Qualitative Studies in Education*, 8(2), 5-23.
- Popescu, C.C., Bostan, I., Robu, I., Maxim, A., & Diaconu, L. (2016). An analysis of the determinants of entrepreneurial intentions among students: A Romanian case study. *Sustainability*, 8(771), 1-22.
- Powell, A. (1993). Consequences of unemployment. *Age counts*, 3(2), 50-70.
- Premand, P., Brodmann, S., Almeida, R., Grun, R., & Barouni, M. (2016). Entrepreneurship education and entry into self-employment among university graduates. *World Development*, 77, 311-327.
- Prince, M. (2004). Does Active Learning Work? A Review of the Research. *Journal of Engineering Education*, 93(3), 223–231.

- Psysianen, J., Anderson, AR., Mc Elwee, G., & Vesala, K. (2006). Developing the entrepreneurial skills of farmers: Some myths explored. University of Lincoln, Lincoln business Schools.
- Qoto, N.M. (2012). Assessing entrepreneurship education programmes in secondary schools. Nelson Mandela Metropolitan University Faculty of Business and Economic Sciences. PHD Thesis.
- Qumza, T.V. (2011). Barriers to entrepreneurship: assessing NMBM school leavers for business enterprise. Nelson Mandela Metropolitan University, Faculty of Business and Economic Sciences.
- Race, P. (2010). Making enterprise happen. *Assessment, Teaching, and Learning Journal*, 8(1), 27-29.
- Rae, D. (2006). Entrepreneurial learning: A conceptual framework for technology-based enterprise. *Technology Analysis & Strategic Management*, 18(1), 39-56.
- Rambe, P., Ndofirepi, T.M., & Dzansi, D.Y. (2015). Influence of entrepreneurial education and technological creativity on entrepreneurial intentions of students in Zimbabwe: A Theoretical perspective. *Research gate* (2015), 576-584.
- Ramlo, S. (2016). Mixed method lesson learned from 80 years of Q methodology. *Journal of Mixed Method Research*, 10(1), 28-45.
- Ramsey, J.W., & Edwards. M.C. (2011). Entry-level Technical Skills that Agricultural Industry Experts Expected Students to Learn through Their Supervised Agricultural Experiences: A Modified Delphi Study. *Journal of Agricultural Education*, 52(2), 82-94.
- Raposo, M., & Do Paço, A. (2011). Entrepreneurship education: Relationship between education and entrepreneurial activity. *Psicothema*, 23(3), 453-457.
- Read, A., Derrick, D.C., & Ligon, G.S. (2014). Developing entrepreneurial skills in IT courses: The role of agile software development practices in producing successful

student initiated products. Hawaii International Conference on System Science 47th, 201-209.

Reeve, J. (2013). How students create motivationally supportive learning environments for themselves: The concept of agentic engagement. *Journal of Educational Psychology*, 105(3), 579–595.

Rehman, A.A., & Alharthi, K. (2016). An introduction to research paradigms. *International Journal of Educational Investigation*, 3(8), 51-59.

Reid, K., Flowers, P., & Larkin, M. (2005) Exploring lived experience: An introduction to Interpretative Phenomenological Analysis. *The Psychologist*, 18(1), 20-23.

Rezai, G., Mohamed, Z., & Shamsudin, M.N. (2011). Informal Education and developing entrepreneurial skills among Farmers in Malaysia. *International Journal of Social Behavioural, Educational, Economic, Business and Industrial Engineering*, 5(7), 906-913.

Riedmiller, S. (2002). Primary school agriculture: What can it realistically achieve? *Entwicklung und Laendlicher Raum*, 3(28), 9-13.

Rieple, A., & Chang, J. (2013). Assessing students' entrepreneurial skills development in the project. *Journal of Small Business and Entrepreneur Development*, 20(1), 225-241.

Roberts, T.G. (2006). A philosophical examination of experiential learning theory for Agricultural educators. *Journal of Agricultural Education*, 47(1), 17-29.

Robinson, J.S., Garton, B.L., & Terry, R. (2007). Identifying the employability skills needed in the workplace according to supervisors of college of Agriculture, food and Natural Resources graduates. *Journal of South agricultural Education Research*, 57(1), 1-15.

Rodriquez, G. (2007). Multinomial Response models. Chapter 6, Revised September 2007.

- Royo, M.A., Sarip, A., & Shaari, R. (2014). Entrepreneurship traits and social learning process: an overview and research agenda. *Social and Behavioral Sciences*, 171(2015), 745-753.
- Rubagiza, J., Umatoni, J., & Kaleeba, A. (2016). Teacher as agents of change promoting peacebuilding and social cohesion in schools. *Rwanda, education as change*, 20(3), 202-224.
- Rudmann, C. (2008). Entrepreneurial skills and their role in enhancing the relative independence of farmers. Results and recommendation from the research project developing entrepreneurial skills of farmers. Research Institute of organic Agriculture Frick Switzerland.
- Rudmann, C., & Jackel, J. (2008). Developing strategies and tools to promote the development of entrepreneurial skills. 29-60.
- Rudmann, C., Vesala, K.M., & Rocket, J. (2008). Putting the farmer into context – factors influencing the learning of entrepreneurial skills. Research Institute of organic Agriculture Frick Switzerland.
- Ruskovaara, E., & Pihkala, T. (2013). Teachers implementing entrepreneurship education: classroom practices. *Education and training*, 55(2), 204-216.
- Salem, M.I. (2014). Higher education as a pathway to entrepreneurship. *International Business and Economics Research Journal*, 13(2), 289-294.
- San Tan, S., & Ng, C.F. (2006). A problem-based learning approach to entrepreneurship education. *Education + Training*, 48 (6), 416-428.
- Saska chewan. (2004). Entrepreneurship 30 curriculum guide: a practical and applied art.
- Sathorar, HH. (2009). Assessing entrepreneurship education at secondary schools in the NMBM. Nelson Mandela Metropolitan University, Faculty of Business and Economic Sciences.
- Schiro, M. (2007). Social reconstruction ideology. *Curriculum theory*, 133-173

- Schoeman, R. (2018). The role of CAPS in preparing school learners for responsible leadership: An exploration of learner experiences at three high schools in the Western Cape University of Stellenbosch, Faculty of Education, Department of Education Policy Studies. Master thesis.
- Schuh, J. H., & Upcraft, M. L. (2001). *Assessment Practice in Student Affairs: An Application Manual. The Jossey-Bass Higher and Adult Education Series*. Jossey Bass Publishers, 350 Sansome St., San Francisco, CA 94104.
- Secundo, G., Del Vecchio, P., Schiuma, G., & Passiante, G. (2017). Activating entrepreneurial learning processes for transforming university students' idea into entrepreneurial practices. *International journal of Entrepreneurial Behavior and Research*, 23(3), 465-485.
- Seikkula-Leino, J. (2011). The implementation of entrepreneurship education through curriculum reform in Finnish comprehensive schools. *Journal of Curriculum Studies*, 43(1), 69-85.
- Seikkula-Leino, J., Ruskovaara, E., Ikavalko, M., Mattila J., & Rytkola, T. (2010). Promoting entrepreneurship Education: the role of the teacher. *Education + Training*, 52 (2), 117-127.
- Seikkula-Leino, J., Satuvuori, T., Ruskovaara, E., & Hannula, H. (2015). How do finnish teacher educators implement entrepreneurship education. *Education + Training*, 15(2015), 87-96.
- Sekhukhune district municipality (2019). Integrated Development Plan (IDP) review for 2018/19 final. Retrieved from www.sekhukhunedistrict.gov.za. Accessed on 12 September 2020.
- Selltiz, C., Wrightsman, L.C., & Cook, W.S. (1976). *Research methods in social relations*. 3rd edition. New York: Holt Rinehart & Winston.

- Seuneke, P., Lans, T., & Wiskerke, J.S.C. (2013). Moving beyond entrepreneurial skills: key factors driving entrepreneurial learning in multifunctional Agriculture. *Journal of Rural Studies*, 32(1), 208-219.
- Shah, A. (2017). Ethnography participant observation, a potentially revolutionary praxis. *Journal of Ethnographic theory*, 7(1), 45-59.
- Shah, S.R., & Al-Bargi, A. (2013). Research paradigms researcher world view, theoretical framework and study designs. *International per reviewed journal*, 4(4), 252-264.
- Shane, S., Locke, E.A., & Collins, C.J. (2003). Entrepreneurial motivation. *Human resource management review*, 13(1), 257-279.
- Shannon-Baker, P. (2016). Making paradigms meaningful in mixed method research. *Journal of mixed method research*, 10(4),319-334.
- Sherer, RF., Adams, J.S., & Wiebe, F.A. (1989). Developing entrepreneurial behaviours: A social learning theory perspective. *Journal of organization change management*, 2(3), 16-27.
- Sherman, P.S., Sebor, T., & Digman, L.A. (2008). Experiential entrepreneurship in the classroom: effects of teaching methods on entrepreneurial career choice intentions. *Journal of Entrepreneurship Education*, 11, 29.
- Shih, J.C. (2013). How many classroom observations are sufficient: empirical findings in the context of a longitudinal study. *Middle grade research journal*, 8(2), 1-4.
- Shinnar, R.S., Hsu, D.K., & Powell, B.C. (2014). Self-efficacy entrepreneurial intentions and gender: Assessing the impact of entrepreneurship education longitudinally. *The international Journal of management education, Science Direct*, 12(2014), 561-570.
- Singh, P., Thambusamy, R.X., & Ramly, M.A. (2014). Fit or unit? Perspective of employers and instructors of graduates' generic skills. *Social and Behavioral Sciences*, 123(2014), 315-324.

- Sizong, W.U. & Lingfei, W.U. (2008). The impact of higher education on entrepreneurial intentions of university student in China. *Journal of Small Business and Enterprise Development*, 15(4), 752-774.
- Skosana, B. (2012). A study of entrepreneurial intentions of students at FET colleges in South Africa. Faculty of Commerce, Law and Management, University of the Witwatersrand.
- Solomon, G., & Matlay, H. (2008). The impact of entrepreneurship education on entrepreneurial outcomes. *Journal of Small Business and Enterprise Development*.
- Sousa, M.J., & Almeida, M.D.R. (2014). Entrepreneurial skills development. *Recent Advances in Applied Economics*, 135-139.
- Spais, G. (2010). Building adult educational programs in entrepreneurship based on Mezirow: the case of agricultural entrepreneurship. *Global perspectives on educational leadership reform: The development and preparation of leaders of learning and learners of leadership*, Bingley: Emerald Group Publishing Ltd, 323-356.
- Springer, L., Stanne, M.E., & Dovovan, S.S. (1991). Effects of small group learning on undergraduates in science, Mathematics, Engineering and Technology: A Meta-analysis. *Review of Educational Research*, 69(1), 21-51.
- Stadler, A., & Smith, A.M.J. (2017). Entrepreneurship in vocational education: A case study of the Brazilian context. *Industry and Higher Education*, 31(2), 81-89.
- Stanley, W.B. (1985). Social Reconstructionism for Today's Social Education. *Social Education*, 49(5), 384-89.
- Statistics South Africa. (2015). Report on Sekhukhune district municipality. Retrieved from www.statssa.gov.za. Accessed on 12 September 2020.
- Statistics South Africa. (2016). Report on employment and unemployment rate. Retrieved from www.statssa.gov.za. Accessed on 27 July 2017.

- Steward, B.L., Brumm, T.J., & Mickelson, S.K. (2004). Formative and summative assessment in Agricultural engineering and technology courses. Iowa state University. Agricultural and Biosystem engineering.
- Storen, L.V. (2014). Entrepreneurship in higher education: impacts on graduates' entrepreneurial intentions, activity and learning outcome. *Education + Training*, 56(8/9), 795-813.
- Stuetzer, M., Obschonka, M., Davidsson, P., & Schmitt-Rodermund, E. (2013). Where do entrepreneurial skills come from? *Applied Economics Letters*, 20(12), 1183-1186.
- Sulaiman, L., Hassan, H., & Ishiyaku, B. (2015). A framework for utilisation of modern instructional technology in teaching agricultural education. Being a paper presented at Malaysian Technical Universities Conference on Engineering and Technology (MUCET), held at KSL Resort Hotel, Johor Baharu, Malaysia, 11-13 October, 2015.
- Sutinen, A. (2014). Social reconstructionist philosophy of education and George S. Counts. *International Journal of Progressive Education*, 10(1), 18-31.
- Syam, A., Akib, H., Yunus, M., & Hasbiah, S. (2018). Determinants of entrepreneurship motivation for students at educational institution and education personnel in Indonesia. *Journal of Entrepreneurship Education*, 21(2), 1-7.
- Taatila, V. P. (2010). Learning entrepreneurship in higher education. *Education+ Training*.
- Tabackova, Z. (2015). Outside the classroom thinking inside the classroom walls. Enhancing students critical thinking through reading literary texts. *Social and Behavioural Sciences*, 186(2015), 726-731.
- Tapung, M., Maryani, E., Lon, YS., Payong, M.R., & Supriatna, N. (2018). Developing the value of "lonto leok" in manggarai culture to empower the skills of social problem-solving in social-sciences learning of junior-high school. In Proceedings of the Annual Conference on Social Sciences and Humanities (ANCOSH 2018) - Revitalization of Local Wisdom in Global and Competitive Era, 316-320.

- Tashakkori, A., & Creswell, J.W. (2007). The new era of mixed method. *Journal of Mixed Method Research*, 1(1), 3-7.
- Taylor N., & Moyana, J. 2005. Khanyisa Education Support Programme: Baseline study part 1: communities, schools and classrooms. Johannesburg: JET Education Services.
- Teddlie, C., & Yu, F. (2017). Mixed method sampling: A typology with examples. *Journal of Mixed Methods Research*, 1(1), 77-100.
- Terrell, S.R. (2012). Mixed method research methodologies. *The Qualitative*, 17(1), 254-280.
- Thobela, M.T. (2007). The new curriculum statement and its contribution towards entrepreneurial stimulation amongst high school learners. University of Limpopo, Faculty of Management and Law.
- Thurik, A.R., Carree, M.A., Van Stel, A., & Audretsch, D.B. (2008). Does self-employment reduce unemployment? *Journal of Business Venturing*, 23(2008), 673-686.
- Timmons, J.A., Spinelli, S., & Tan, Y. (2004). *New venture creation: Entrepreneurship for the 21st century* (Vol. 6). New York: McGraw-Hill/Irwin.
- TISDD. 2014. Non-participant observation. Method of non-participant observation chapter 5 research methods, 40-43, retrieved from, www.Tisdd.Com. Accessed on 12 May 2019.
- Tshabangu, B.M. (2016). Investigate entrepreneurial skills of contingent employees in small retail businesses in Roodepoort as job security determinant. University of South Africa, Master thesis.
- Tukundane, C., Minnaert, A., Zeelen, J., & Kanyandago, P. (2015). Building vocational skills for marginalized youth in Uganda: A SWOT analysis of four training programmes. *International Journal of Educational Development*, 40 (2015), 134–144.
- Turker, D., & Selcuk, S.S. (2009). Which factors affect entrepreneurial intentions of university students. *Journal of European Industrial Training*, 33(2), 142-159.

- Uka, N.K. (2015). Developing entrepreneurial skills in secondary school students through effective mathematics education in abba, Nigeria. *International Journal of Education, Learning and Development*, 3(7), 1-11.
- Undiyaundeye, F.A. (2015). Entrepreneurial skills acquisitions and the benefits amongst the undergraduate students in Nigeria. *European Journal of Social Sciences*, 2(3), 9-14.
- United Nation Industrial Development Organization (UNIDO). (2014). Conference on fostering entrepreneurial youth. Retrieved from, www.unido.org, accessed date 10 September.
- United Nation Industrial Development Organization (UNIDO). (2016). Entrepreneurship for inclusive growth. Conference on fostering entrepreneurial youth. Retrieved from, www.unido.org, accessed date 11 September.
- Usman, A.S., & Tasmin, R. (2015). Entrepreneurial skills development strategies through the mandatory students' industry work experience scheme in Nigeria. *Social and Behavioural Sciences*, 204(2015), 254-258.
- Vankova, N.V., Creswell, J.W., & Stick, S.L. (2006). Using mixed method sequential explanatory design: from theory to practice. *Field methods*, 18(1), 3-20.
- Vera van Zyl, E. (2006). The role of school managers in developing entrepreneurial skills of grade 9 learners. University of South Africa.
- Vesala, K.M., & Jarkko, P. (2008). Understanding Entrepreneurial Skills in the farm context.
- Vesper, K.H. (1993). Entrepreneurship Education. Entrepreneurial Studies Center, UCLA, Los Angeles, CA (1993).
- Vinten, G. (1994). Participant A model for organization investigation. *Journal of Managerial Psychology*, 9(2), 30-38.

- Walker, C.L., & Shore, B.M. (2015). Understanding classroom roles in inquiry education: linking role theory and social constructivism to the concept of Rok diversification. *SAGE open*, 1(1), 1-13.
- Ward, A., Hernandez-Sanchez, B., & Sanchez-Garua, J.C. (2019). Entrepreneurial intentions in students from a transnational perspective. *Administrative sciences*, 9(37), 1-13.
- Warner, W.J., Arnold, S., Jones, D.W.W., & Myers, B.E. (2006). The use and design of Laboratory instruction in secondary Agric-science classroom. *Journal of Southern Agricultural Education Research*, 56(1), 125-135.
- Welsh, D.H.B., Tullar, W.L., & Nemati, H. (2016). Entrepreneurship education: process method or both? *Journal of innovation and knowledge*, 1(2016), 125-132.
- Weor, D.U., & Akorga, M.J. (2016). Entrepreneurial skills in Agriculture: A strategy for grassroot youth employment in Nigeria. *Journal of college of education*, Katsina Ala, Benue state.
- Widiyant, F.T. (2017). Need analysis in developing the entrepreneurial interest of vocational education students. AIP conference proceeding 020072-020072-4.
- William, A. (2010). Non-participant observation. Research gate. Nanyang technological university. 561-562.
- Williams, MR., Warner, WJ., Flowers, JL., & Croom, DB. (2014). Teaching with technology: North Carolina agriculture teachers' knowledge acquisition, attitudes, and identified barriers. *Journal of Agricultural Education*, 55(5), 1-15.
- Wronka-Pospiech, A. (2016). The identification of skills and competencies for effective management in social enterprise. *Management*, 20(1), 40-57.
- Wu, J., & Wu, L.Z. (2019). Evaluation of medical colleges students' entrepreneurial skills and its relationship with social intelligence. *Open Journal of Social Sciences*, 7(1), 13-23.

- Wu, L.Y., Wang, C.J., Tseng, C.Y., & Wu, M.C. (2009). Founding team and start-up competitive advantage. *Managing Decision*, 47(1), 345-358.
- Wu, Y.C.J., Wu, T., & Li, Y. (2019). Impact of using classroom response systems on students' entrepreneurship learning experience. *Computers in Human Behavior*, 92(2019), 634-645.
- Xaba, G.G. (2014). Identifying entrepreneurial skills required by south African black farmers: An entrepreneurial model. University of the Witwatersrand, Faculty of Commerce, Law and Management, Master thesis.
- Yaghoubi, J. (2010). Study barriers to entrepreneurship promotion in agriculture higher education. *Procedia-Social and Behavioral Sciences*, 2(2), 1901-1905.
- Yang, B., & Lester, D. (1994). The social impact of unemployment. *Applied Economics*, 1(1), 223-226.
- Yang, K., & Banamah, A. (2014). Quota sampling as an alternative to probability sampling? An experimental study. *Sociological research*, 9(1), 1-11.
- Yin, R.K. (2015). *Qualitative research from start to finish*. Guilford publications.
- Young Professional Platform for Agricultural Research for Development. (2007). Skills gaps in informal higher agricultural education: A youth perspective.
- Young, J.E., & Sexton, D.L. (1997). Entrepreneurial learning: a conceptual framework. *Journal of Enterprising Culture*, 5(03), 223-248.
- Yusuf, H.O. (2013). Infusing Entrepreneurial Skills into the Reading Curriculum for Basic Education in Nigeria. *International Journal of Humanities and Social Science*, 3(3), 193-199.
- Zahra, A.Z., & Wright, M. (2015). Understanding the social role of entrepreneurship. Enterprise Research Centre (ERC). ERC research paper no 33.
- Zhao, M., & Ji, Y. (2014). Challenges of introducing participant observation to community health research. Hindawi publishing corporation.

Zhao, Y., & SU, H. (2017). Students participation in the college classroom: the construction of supportive classroom climate. 2017 4th international conference on advanced education technology and management sciences, 9(1), 396-400.

Zhong, M. (2017). The application of flipped classroom in the teaching of programming courses. 2017 3rd annual international conference on modern education and social sciences, 186 (2017), 562-566.

Zhou, M., & Xu, H. (2012). A review of entrepreneurship education for college students China. *Administrative Sciences*, 37(2), 82-98.

Zuga, K.F. (1992). Social reconstruction curriculum and technology education. *Journal of Technology Education* ,3(2), 48-58.

ANNEXURES



Teacher A activities

AA1 (lesson A1)

Agricultural Sciences/P2 9 NSC DBE/November 2015

QUESTION 3: PRODUCTION FACTORS
Start this question on a NEW page.

3.1 The photographs below show different types of labourers who work on a farm.



PHOTOGRAPH A **PHOTOGRAPH B**

3.1.1 Identify the type of farm labourer represented by PHOTOGRAPHS A and B. (2)

3.1.2 Motivate the answer to QUESTION 3.1.1. (2)

3.1.3 State TWO challenges associated with farm labour that may cause the farm labourer in PHOTOGRAPH A to look for work in other industries. (2)

3.1.4 Explain how the farmer could address the challenges in QUESTION 3.1.3. (2)

3.1.5 State the labour legislation that regulates the safety of the labourer in PHOTOGRAPH A. (1)

3.1.6 Identify TWO types of capital in PHOTOGRAPH A. (2)

3.2 Land as a production factor has economic characteristics that need to be considered to ensure productivity.

3.2.1 Identify the economic characteristic of land associated with each of the following:

- (a) A housing scheme built on land previously used for maize production (1)
- (b) Increased application of green manure which is not proportional to the yield (1)
- (c) A farmer still produces cotton on land that was used for the same purpose by his great grandfather (1)
- (d) A farmer experienced a drop in yield due to monoculture and after changing to conservation farming, the yield increased (1)

3.2.2 Suggest TWO ways in which a farmer may improve the productivity of land. (2)

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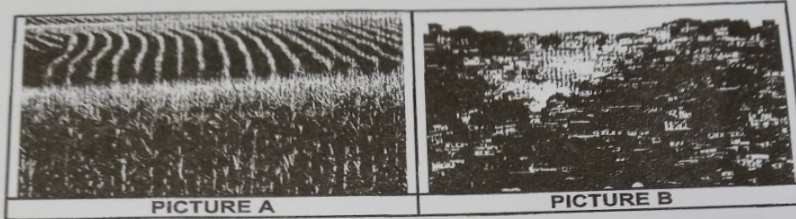
LIMPOPO

AA2 (Lesson A1 and A3)

QUESTION 3: PRODUCTION FACTORS

Start this question on a NEW page.

3.1 The pictures below show the functions of land as a production factor.



- 3.1.1 State the economic functions of land associated with PICTURE A and PICTURE B. (2)
- 3.1.2 Name ONE method that could be applied in PICTURE A that farmers could use to benefit the human population in PICTURE B. (1)
- 3.1.3 State an economic benefit of land for a farmer trying to source finances from a financial institution. (1)
- 3.2 Name the economic characteristics of land represented by EACH of the statements below:
- 3.2.1 Land is needed to build more houses due to an increase in the human population in the last few years. (1)
- 3.2.2 The farmer has lived and produced on this farm for 50 years. (1)
- 3.2.3 In 1952 the farmer's parent bought a 500 ha farm for R700 and now the value of the farm is R8 350 000. (1)
- 3.3 Farm labour is a crucial factor of production.
- 3.3.1 Name the type of temporary farm worker that is employed for non-repetitive tasks. (1)
- 3.3.2 State TWO characteristics of a permanent farm worker. (2)





- 3.4.1 Occupational Health and Safety Act. (1)
- 3.4.2 Part-time workers are employed during peak season. (1)
- 3.4.3 Permanent workers usually live on farm. (1)
- 3.4.4 Industries attract skilled workers. (1)
- 3.4.5 Farm workers need regular training. (1)
- 3.4.6 Workers have certain rights to striking. (1)

3.5 During the period from 01-03-2014 to 28-02-2015, the following transactions took place in a farm business:

TRANSACTIONS	AMOUNT
1. Electricity payments	R 15 000
2. Chicken sales	R120 000
3. Contractor costs	R 5 000
4. Bank charges	R 1 000
5. Manure sales	R 7 500
6. Depreciation	R 5 500
7. Sale of old tractor	R 50 000
8. Insurance	R 6 900
9. Salaries	R 70 000
10. Interest earned	R 10 000

- 3.5.1 Explain what an Income Statement is. (2)
- 3.5.2 Draw the table, sort the transactions above into Farm Income and Farm Expenditure and then calculate the profit or loss of this farming enterprise. (7)

(9)

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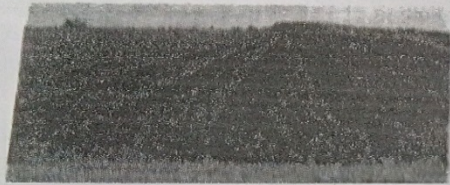
AA4 (Lesson A2)

QUESTION 3: PRODUCTION FACTORS

Start this question on a NEW page. *This was done in class*
15/07/2019

3.1 Study the illustrations and identify one which represents each of the descriptions below by write the correct letter

A



B



C



D



- 3.1.1 Land provides minerals. *B* (1)
- 3.1.2 Land provides space for farming *A* (1)
- 3.1.3 Land is a source of food for human and animals *D* (1)
- 3.1.4 Land provides raw materials which are then processed. *C* (1)

AA5 (Lesson A4)

3.2.2 Match the legislation Acts mentioned in 3.2.1 above, to the descriptions in the Table below:

Description	Legislation
The legislation governs relations, trade unions, and the right to strike, prevent unfair labour practices and provide procedures for the resolution of labour disputes.	a.
Aims to develop and improve the skills of the South African workforce.	b.
Applies to employers and employees who are injured, disabled or killed as a result of a workplace accident or disease.	c.
Intended to ensure that fair labour practice exist. This include method of payment, minimum wages, hours of work, overtime, leave and working on Sunday and public holidays.	d.
Deals with safety in the workplace. It ensures that the working environment is safe, workers are provided with protective clothing and trained to operate machinery.	e.

(5)

3.2.3 In his pursuit of ensuring long-term sustainability, the farmer aim to maximise profitability by effectively combining and coordinating human, physical and financial resources.

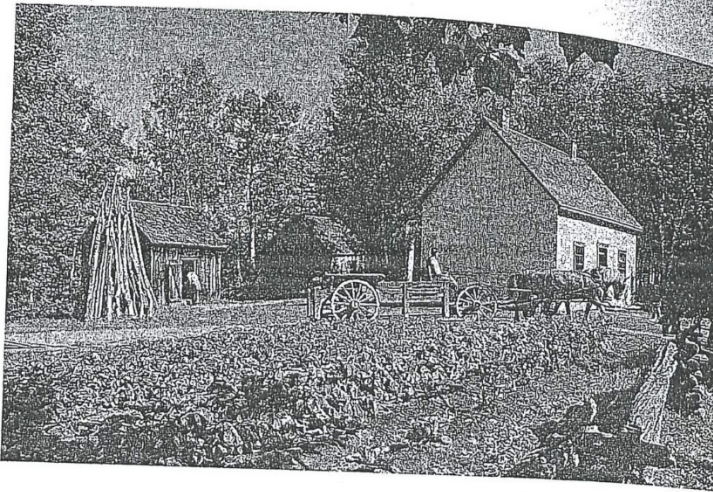
- (a) Identify the agricultural production factor that is best explained by the description above? (1)
- (b) Explain TWO main principles or functions of the production factor mentioned in (a) above. (4)

(20)

Class activity

30/07/2019

Different forms of capital utilised on farms are shown in the illustration below.
Answer the questions based on this illustration.



29.1 Name the examples of the types of capital that ...

29.1.1 would require long-term credit to acquire.

29.1.2 would require medium-term credit to acquire.

(2)

29.2 List **two** problems associated with the types of capital in Question 29.1 above.

(2)

Question 30

Name the problem of capital associated with each of the following statements:

30.1 A farmer bought three tractors and two luxurious bakkies, which are underutilised.

(1)

30.2 Drastic changes in the climate resulted in a drop in the expected yield.

(1)

30.3 Short-term credit is used to pay labourers.

(1)

30.4 A farmer sold a tractor bought five years ago at a lower price.

(1)

TEACHER B ACTIVITIES

BB1 (Lesson B4)

3.2 The table below shows the types of labour in South African farms:

Farm workers		
A	B	C
Live on the farm and enjoy certain rights and privileges.	Employed at peak periods.	Employed to do a particular task.

- 3.2.1 Based on the description given in the table above, CLASSIFY farm workers in A. (1)
- 3.2.2 Suggest TWO rights or privileges enjoyed by farm workers in A. (2)
- 3.2.3 Give TWO peak periods in South African farms that appeal for the employment of farm workers in B. (2)
- 3.2.4 Suggest TWO tasks that farm workers in C could be employed to perform. (2)
- 3.2.5 The following questions are about the connection between farm workers in B and C in the Table above:
- (a) Identify ONE common aspect about farm workers in B and C? (1)
- (b) Identify the difference between farm workers B and C? (2)

BB2(Lesson B2)

QUESTION 3: PRODUCTION FACTORS

Start this question on a NEW page.

3.1 The table below indicates soil needs for a particular fertiliser in order to achieve maximum crop production.

Year	Inputs =LAN fertiliser (kg)	Outputs = Maize yield (tones)	
1	2011	50	10
2	2012	150	40
3	2013	250	50
4	2014	450	70
5	2015	600	80
6	2016	700	80
7	2017	800	80

- 3.1.1 Draw a line graph showing inputs (X axis) and outputs (Y axis). (6)
- 3.1.2 Explain the relationship between the inputs and outputs during the fifth, sixth and seventh years of production. (2)
- 3.1.3 Identify the crop and input represented by the line graph in question 3.1.1. (2)
- 3.1.4 State and describe the law indicated by the graph in question 3.1.1. (3)
- 3.1.5 One of the economic characteristics of soil is that it is "DURABLE". Explain the statement. (2)
- 3.1.6 Land provides space for economic activities. Identify the economic activity represented by the table above. (1)

BB3 (Lesson B4)

3.2.2 Match the legislation Acts mentioned in 3.2.1 above, to the descriptions in the Table below:

Description	Legislation
The legislation governs relations, trade unions, and the right to strike, prevent unfair labour practices and provide procedures for the resolution of labour disputes.	a.
Aims to develop and improve the skills of the South African workforce.	b.
Applies to employers and employees who are injured, disabled or killed as a result of a workplace accident or disease.	c.
Intended to ensure that fair labour practice exist. This include method of payment, minimum wages, hours of work, overtime, leave and working on Sunday and public holidays.	d.
Deals with safety in the workplace. It ensures that the working environment is safe, workers are provided with protective clothing and trained to operate machinery.	e.

(5)

3.2.3 In his pursuit of ensuring long-term sustainability, the farmer aim to maximise profitability by effectively combining and coordinating human, physical and financial resources.

- (a) Identify the agricultural production factor that is best explained by the description above? (1)
- (b) Explain TWO main principles or functions of the production factor mentioned in (a) above. (4)

(20)

BB4 (Lesson B5)

(SEPTEMBER 2014)

AGRICULTURAL SCIENCES P2

11

QUESTION 3: PRODUCTION FACTORS AND MANAGEMENT

Start this question on a NEW page.

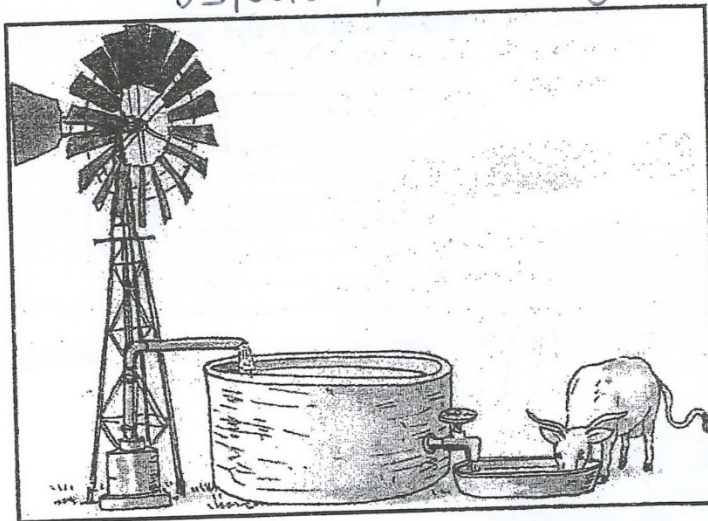
3.1 One of the economic characteristics of land is that, land is subject to the law of diminishing returns.

3.1.1 Briefly explain the implication of the underlined statement in production. (2)

3.1.2 List TWO other economic characteristics of land apart from the underlined statement in QUESTION 3.1. (2)

3.1.3 Describe THREE techniques/methods to increase the productivity of land. (3)

3.2 The illustration below indicates some materials on a farm that have monetary value. *25/06/2019 done during a lesson*



3.2.1 Identify the TWO types of capital depicted in QUESTION 3.2 with examples. (4)

3.2.2 Justify your answer in QUESTION 3.2.1. (2)

BB5 (Lesson B7)

- 3.3 An emerging farmer drew an estimated *income and expenditure plan* of his/her farm enterprise. The estimated plan included the following information:

Sale of sheep	R27 500,00
Wages of farm workers	R13 400,00
Payment of <u>overdraft</u>	R 3 700,00
Interest from savings	R 1 800,00

- 3.3.1 Draw an *income and expenditure plan* using the information in QUESTION 3.3 above. (4)
- 3.3.2 Calculate the farmer's expected profit or loss in QUESTION 3.3 above. (3)
- 3.3.3 Define the underlined description in QUESTION 3.3 above. (2)
- 3.4 A young livestock farmer kept several stocks on a field, without taking proper care of them. Most of the livestock contracted diseases and died. Other animals that survived were either stolen, or they got lost. The farmer heard that the demand for vegetables was lucrative and decided to go into intensive vegetable production. The farmer approached you as an agricultural sciences learner for advice on how to develop strategies that could help him/her to be successful.
- 3.4.1 Suggest THREE strategic management components the farmer should adopt for the new vegetable production. (3)
- 3.4.2 State TWO risk management practices to prevent any future loss. (2)
- 3.4.3 Indicate THREE external forces that affect the management of a business. (3)
- 3.5 In the workers' contract of employment, termination of employment is one of the conditions. Some workers are dismissed by farmers without any valid reason. Farm workers consult their unions and the CCMA to apply the appropriate labour laws and to find solutions to illegal dismissals.
- 3.5.1 Briefly explain the underlined condition in the worker's contract. (2)
- 3.5.2 Mention TWO labour legislations applicable when a worker's employment is terminated. (2)
- 3.6 Indicate ONE role played by the unions and CCMA. (1)

[35]

- 3.4 The table below shows a record with the estimated income and expenditure for an enterprise for a financial year.

EXPENDITURE (R)		INCOME (R)	
ITEM	AMOUNT	ITEM	AMOUNT
Water	10 300	Roses (floral shop)	50 000
Manure	22 345	Roses (nursery)	20 000
Labour	24 500	Compost	7 500
Electricity	13 308		
Potting soil	8 800		
Vegetative material	45 555		
Chemicals	18 756		
TOTAL		TOTAL	R77 500

- 3.4.1 Identify the financial record illustrated in the table above. (1)
- 3.4.2 Give a reason for the answer to QUESTION 3.4.1. (1)
- 3.4.3 Use a formula and calculate the possible net income of this enterprise. (4)
- 3.4.4 Identify the problem that this enterprise is likely to experience. (1)
- 3.4.5 State TWO possible ways in which this farmer can make the enterprise viable. (2)

Farming businesses in some parts of South Africa have been experiencing a drought since 2017, while flash flooding has been occurring in other parts since 2018. As a result of the poor weather conditions, the quality of production is negatively affected and it has resulted in a loss of profits.

- 3.5.1 Identify THREE types of risk in the farming industry. (3)
- 3.5.2 Name ONE skill a manager needs to be able to identify the risks in QUESTION 3.5.1. (1)
- 3.5.3 Name TWO strategies that farmers can employ to reduce the risk impact stated in the scenario above. (2)
- 3.5.4 List THREE main principles for the successful management of a farming enterprise. (3)
- [35]**

3.3

A farm manager may experience an oversupply of produce to the market if there is a similar supply of produce by other farmers. This may lead to a drop in the price of the produce and a subsequent loss of profit.

- 3.3.1 Identify the external force that may lead to the situation in the scenario above. (1)
- 3.3.2 State the type of risk that may be encountered by the manager in the scenario above. (1)
- 3.3.3 Give a reason for the answer to QUESTION 3.3.2 by referring to the information in the scenario above. (2)
- 3.3.4 State TWO management strategies that this manager could apply to lower the risk in QUESTION 3.3.2. (2)
- 3.3.5 Suggest TWO main components of management that could make the farm manager in the scenario successful. (2)

3.4

The table below indicates a list of capital items and costs for a livestock enterprise.

This was done 27/06/2019 during lesson

ITEM	COST (IN RAND)
Cattle sales	110 500
Marketing levy	42 350
Telephone bill	22 500
Sheep sales	80 900
Electricity	20 000
Grain feed	12 500

- 3.4.1 Classify the items in the table above under the following headings: (2)
- (a) Income (2)
- (b) Variable costs (2)
- (c) Overhead costs (2)
- 3.4.2 Use a formula to calculate the net income of this enterprise. (4)

[35]

3.5 HIV/AIDS is impacting negatively on farm productivity. Mention FOUR actions the farm manager can take to reduce the scourge of HIV/AIDS on farm productivity. (4)

3.6 To sustain the farm business, the farm manager must keep records of all the financial transactions on a daily basis. Study this financial record carefully before you answer the questions that follow. *This was 28/06/2019 B*

RECEIPTS							
Date	Details	Rec No.	Amount	Balance b/f	Loans	Livestock sale	Vegetable sale
01 Jan	Cash in hand	-	1000	1000			
03 Jan	Loan	500	9 500		9500		
27 Jan	Sale of oxen	501	7000			7000	
28 Jan	Sale of spinach	502	350				350
31 Jan	Total		17 850	1000	9500	7000	350

PAYMENTS							
Date	Details	Rec No.	Amount	Salaries	Seed	Fertiliser	Stationery
03 Jan	Stationery	1	25				25
05 Jan	Maize seed	2	650		650		
07 Jan	Fertiliser	3	3 450			3 450	
27 Jan	Salary	4	2000	2 000			
31 Jan	Total		6 125	2 000	650	3 450	25

3.6.1 What does this financial record represent? (2)

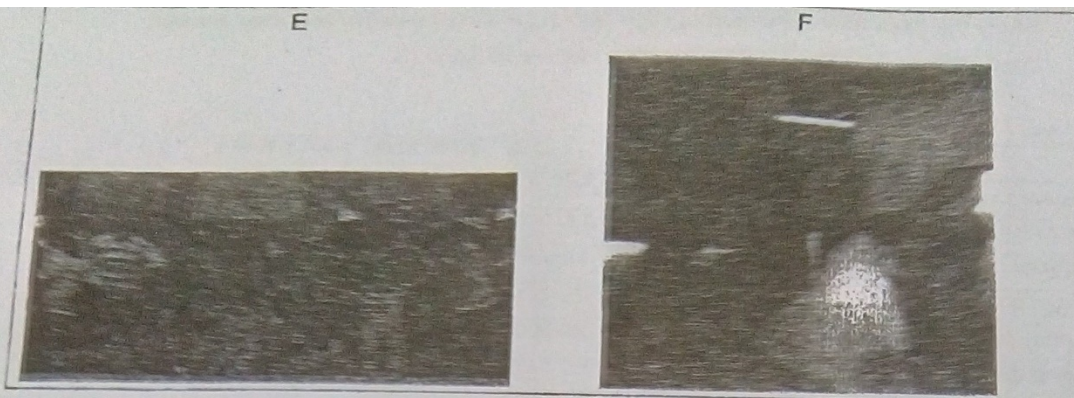
3.6.2 What does b/f stand for? (2)

3.6.3 Explain in detail what happened on the following dates: 03 January and 27 January. (4)

3.6.4 Calculate the profit/loss for the month. (3)

3.7 One cannot run a farm business without proper skills. List any FOUR management skills required to manage a farm business. (4)

[35]



- 3.4.1 Occupational Health and Safety Act. (1)
 - 3.4.2 Part-time workers are employed during peak season. (1)
 - 3.4.3 Permanent workers usually live on farm. (1)
 - 3.4.4 Industries attract skilled workers. (1)
 - 3.4.5 Farm workers need regular training. (1)
 - 3.4.6 Workers have certain rights to striking. (1)
- (6)**

3.5 During the period from 01-03-2014 to 28-02-2015, the following transactions took place in a farm business:

TRANSACTIONS	AMOUNT
1. Electricity payments	R 15 000
2. Chicken sales	R120 000
3. Contractor costs	R 5 000
4. Bank charges	R 1 000
5. Manure sales	R 7 500
6. Depreciation	R 5 500
7. Sale of old tractor	R 50 000
8. Insurance	R 6 900
9. Salaries	R 70 000
10. Interest earned	R 10 000

- 3.5.1 Explain what an Income Statement is. (2)
 - 3.5.2 Draw the table, sort the transactions above into Farm Income and Farm Expenditure and then calculate the profit or loss of this farming enterprise. (7)
- (9)**

Question 2

- 2.1 A farmer has a mixed farming enterprise. He makes use of different types of labour. The farmer encountered a range of problems with his labour force. He was advised to look at the workers' economic conditions because the cost of living is very expensive.
- 2.1.1 Name the three main types of labourers used on farms. (3)
- 2.1.2 Discuss two possible problems that the farmer could have encountered with the labour force. (2)
- 2.1.3 List five ways the farmer was advised to improve the workers' economic conditions. (5)

2.2 Study the cash flow statement.

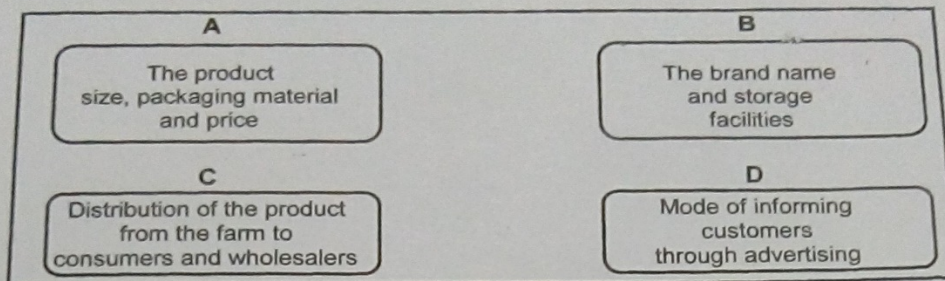
	Jan	Feb	March	April	Total (Jan–April)
INCOME					
Operating income (from sale of crops and livestock)	-	-	13 000,00	30 000,00	43 000,00
Capital sales (from sale of machinery and breeding livestock)	-	2 000,00	-	1 000,00	3 000,00
Non-farm income (e.g. wages from doing book-keeping)	2 000,00	2 000,00	2 000,00	2 000,00	8 000,00
Total income	2 000,00	4 000,00	15 000,00	33 000,00	54 000,00
EXPENDITURE					
Operating expenses (wages, inputs)	2 800,00	6 000,00	6 000,00	3 500,00	18 300,00
Capital expenditure (purchase of breeding livestock and machinery)	-	-	17 000,00	-	17 000,00
Non-farm expenses (e.g. school transport costs)	2 000,00	2 000,00	2 000,00	2 000,00	8 000,00
Total expenditure	4 800,00	8 000,00	25 000,00	5 500,00	43 300,00

CASH FLOW SUMMARY					
Opening balance	10 000,00	7 200,00	3 200,00	-6 800,00	
Total income	2 000,00	4 000,00	15 000,00	33 000,00	
Total expenses	4 800,00	8 000,00	25 000,00	5 500,00	
Profit/loss (income - expenses)	-2 800,00	-4 000,00	-10 000,00	27 500,00	10 700,00
Closing balance (opening balance + profit/loss)	7 200,00	3 200,00	-6 800,00	20 700,00	

- 2.2.1 *done 13/07/2019* Why do you think no income was generated from January to February? (2)
- 2.2.2 Name one financial source that the farmer may have used to run the business from January and February. (1)
- 2.2.3 Calculate the total profit made for the 1st and 4th months. Show all your calculations. (2)
- 2.2.4 Why did the farmer not make a profit during March? Give a reason for your answer. (2)
- 2.2.5 List two solutions that a farmer could implement to increase the profit. (2)
- 2.2.6 What were the total expenses that farm had over the period from January to April? (1)

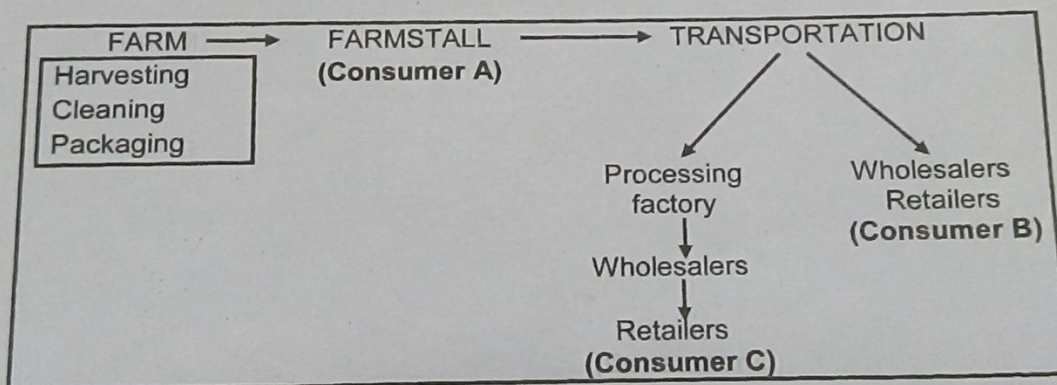
2.2 A farmer produced maize only to feed the family. This farmer decided to increase production and to sell the surplus to local communities.

In the diagram below the farmer's concerns and questions about the new business venture are stated.



- 2.2.1 Refer to the diagram above and identify TWO functions of marketing. (2)
- 2.2.2 Identify the marketing system the farmer intends using. (1)
- 2.2.3 Give a reason for the answer to QUESTION 2.2.2. (1)
- 2.2.4 Advise the farmer about TWO problems which may be experienced with the marketing system identified in QUESTION 2.2.2. (2)

2.3 The flow diagram below represents a marketing process.



- 2.3.1 Refer to the flow diagram above and identify the marketing process. (1)
- 2.3.2 Indicate which consumer (A, B or C) pays the highest price for the product. (1)
- 2.3.3 Give TWO reasons for the answer to QUESTION 2.3.2. (2)
- 2.3.4 Name TWO factors during transportation that could hamper the marketing of the product. (2)



BB12 (Lesson A19)

10 AGRICULTURAL SCIENCES P2 (EC/SEPTEMBER 2017)

2.5 The illustration below represents the distribution of milk from a dairy farm to the consumer.

```
graph TD; Farmer[Farmer] --> PAV[Processors adding value]; Farmer --> PD[Processors/distributors]; PAV --> Retailers[Retailers]; PD --> Retailers; Retailers --> Consumers[Consumers];
```

2.5.1 State THREE major marketing costs that could increase the price of the product to the consumer. (3)

2.5.2 Mention TWO major factors that can hamper the marketing of the milk by the distributor. (2)

2.5.3 Recommend TWO ways to improve and streamline the agric-business chain. (2)

2.6 State TWO possible problems that may arise when compiling an agri-business plan. (2)

[35]

BB13 (Lesson B11)

QUESTION 2: AGRICULTURAL MANAGEMENT AND MARKETING

Start this question on a NEW page.

- 2.1 The picture below illustrates a type of marketing commonly used in the agricultural sector.



- 2.1.1 Identify the type of marketing illustrated in the picture above. (1)
- 2.1.2 Give a reason for the answer to QUESTION 2.1.1. (2)
- 2.1.3 Name the channel of marketing illustrated in the picture above. (1)
- 2.1.4 State TWO advantages of the marketing channel in QUESTION 2.1.3 for the consumer. (2)
- 2.1.5 Suggest THREE problems that may hamper the type of marketing in the picture above. (3)

- 2.2 The table below shows the price, supply and demand of pockets of oranges over a five-week period.

	WEEK 1	WEEK 2	WEEK 3	WEEK 4	WEEK 5
Price (in rand)	10	15	20	25	30
Supply	5	10	15	20	25
Demand	25	20	15	10	5

- 2.2.1 Refer to the table above and explain the relationship between the price, supply and demand. (3)
- 2.2.2 Draw a line graph to illustrate the supply and demand of oranges. (6)
- 2.2.3 Explain why there was a higher demand for oranges in Week 1 than in Week 5. (2)

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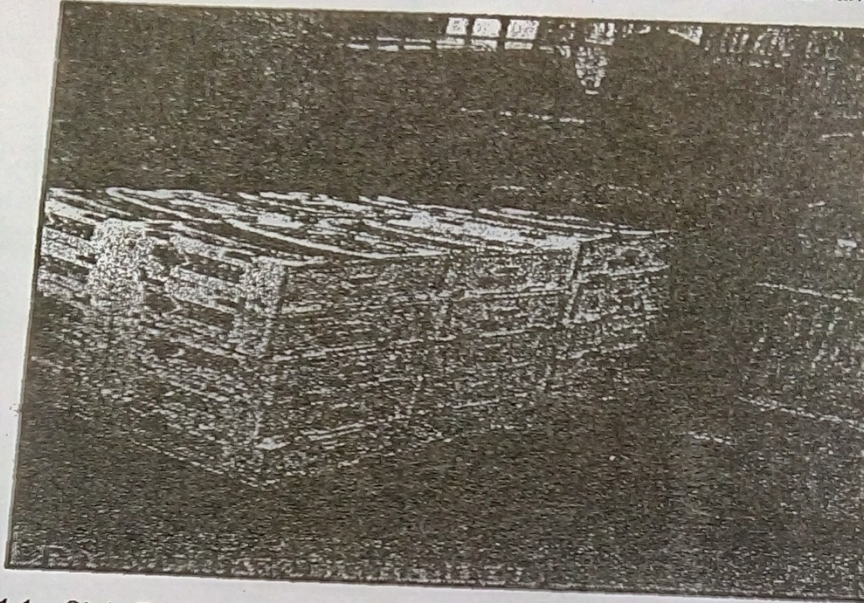
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SECTION B

QUESTION 2: AGRICULTURAL MANAGEMENT AND MARKETING

Start this question on a NEW page.

2.1 The picture below shows the packaging of tomatoes on a commercial farm.



- 2.1.1 State TWO reasons why the tomatoes are protected in boxes. (2)
- 2.1.2 Mention TWO important packaging information that could attract tomato buyers. (2)
- 2.1.3 Give ONE reason why materials used for packaging must not contain chemicals. (1)

2.2 The connection between the price of goods and the quantity of goods supplied to the market, is known as the supply relationship. The price at which a product is eventually sold, is a reflection of both supply and demand. If prices are high, farmers and suppliers are likely to offer more goods for sale.

- 2.2.1 Deduce the law of supply from the scenario in 2.2. (2)
- 2.2.2 State TWO factors that can affect the supply of meat in South Africa. (2)
- 2.2.3 State how the following factors can affect the demand of a product:
- (a) Advertisement (2)
 - (b) Quality of a product (2)

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This June 23/07/2019

- 1.3 Give ONE term for each of the following descriptions. Write only the term next to the question number (1.3.1–1.3.5) in the ANSWER BOOK.
- 1.3.1 The management action where short-term and long-term strategies are developed for a farm business
- 1.3.2 The process of attracting public attention to a specific agricultural product or business through various forms of communication
- 1.3.3 A summary of all income and expenditure showing how revenue from the sale of products and services is changed to net profit
- 1.3.4 A gradual decrease in performance from generation to generation due to continual inbreeding
- 1.3.5 The phenomenon where the alleles on a homologous chromosome pair are the same (5 x 2) (10)
- 1.4 Change the UNDERLINED WORD in each of the following statements to make them TRUE. Write only the answer next to the question number (1.4.1–1.4.5) in the ANSWER BOOK.
- 1.4.1 The quantity of produce that consumers will be willing and able to buy is called supply.
- 1.4.2 Labour control is a measurement used by farm managers to refer to the output of the labour force.
- 1.4.3 The term fixed capital is used to describe the type of capital, such as money, that is available to run a business on a daily basis.
- 1.4.4 Analytical skills allow a manager to reflect on changes in the industry and to develop strategies to cope with them.
- 1.4.5 Prepotency refers to the reappearance of a characteristic after its apparent absence for a few generations. (5 x 1) (5)
- TOTAL SECTION A: 45**

CC1(Lesson C2)

NSC
NOVEMBER 2010

3.4 Farms are found mostly in areas outside towns far from recreation, health and educational facilities. Normally farm workers earn lower wages.

The following happens on farms:

- Alcohol abuse after working in harsh conditions for long hours
- Low levels of education for both parents and children
- Low social values resulting in high HIV/Aids infections

3.4.1 Identify TWO challenges that will affect labour productivity in the above scenario.

3.4.2 State TWO responsibilities of the farmer to address the challenges identified in QUESTION 3.4.1.

3.4.3 Refer to the scenario above and give TWO reasons why farms lose workers to other industries.

A farmer started a poultry business venture with a bank loan of R100 000, payable at a rate of 20%, over a period of 5 years. The eggs were graded according to small and large sizes. The large eggs were sold to a chain store. The smaller eggs were given to the farm workers.

3.5.1 Identify TWO sources of capital that can be used to expand the egg-producing enterprise in the scenario above.

3.5.2 Identify TWO problems with capital in the scenario above.

3.5.3 Name TWO other problems associated with capital, besides those identified in QUESTION 3.5.2.

3.5.4 Use a formula to calculate the profit per month from egg sales, if the income is R14,85 per dozen and the expenditure is R8,55 per dozen. (Show ALL calculations.)

CC2 (Lesson C2)

QUESTION 3: PRODUCTION FACTORS

Class test 24/07/20

Start this question on a NEW page.

3.1 In Agriculture, natural resources include climate, soil, topography, water, air, sunlight, minerals and vegetation. These resources determine the level of production that can take place on the farm. On the other hand, the combination of human energy and mental skill have to be spent in order to attain the required agricultural production. People in the farm will work with the expectation of being paid.

3.1.1 Identify TWO factors of production explained in the passage above and extract a description that matches each of the production factor identified. (4)

3.1.2 State TWO ways through which the economic conditions of farm workers can be improved. (2)

3.1.3 Give TWO economic functions of the natural resource explained in the passage above. (2)

3.2 In South Africa, legislations protect farm workers and prevent unfair labour practices on farms. The Department of Labour provides guidance to farmers to try to ensure compliance with legislations but, COSATU indicates that many farmers do not adhere to the legislations.

3.2.1 Based on the explanation given above, mention any FIVE labour legislation Acts. (5)

3.2.2 Match the legislation Acts mentioned in 3.2.1 above, to the descriptions in the Table below:

Description	Legislation
The legislation governs relations, trade unions, and the right to strike, prevent unfair labour practices and provide procedures for the resolution of labour disputes.	a.
Aims to develop and improve the skills of the South African workforce.	b.
Applies to employers and employees who are injured, disabled or killed as a result of a workplace accident or disease.	c.
Intended to ensure that fair labour practice exist. This include method of payment, minimum wages, hours of work, overtime, leave and working on Sunday and public holidays.	d.
Deals with safety in the workplace. It ensures that the working environment is safe, workers are provided with protective clothing and trained to operate machinery.	e.

(5)

3.2.3 In his pursuit of ensuring long-term sustainability, the farmer aim to maximise profitability by effectively combining and coordinating human, physical and financial resources.

- (a) Identify the agricultural production factor that is best explained by the description above? (1)
- (b) Explain TWO main principles or functions of the production factor mentioned in (a) above. (4)

TEACHER D ACTIVITIES

DD1 (Lesson D8)

1.2 Choose a term/phrase from COLUMN B that matches a description in COLUMN A. Write only the letter (A – J) next to the question number (1.2.1 – 1.2.5) in the ANSWER BOOK, for example 1.2.6 K.

COLUMN A	COLUMN B
1.2.1 When the price of a product settles at the point where demand is equal to supply	A. cash flow budget statement B. Pyramid scheme C. market equilibrium D. incomplete dominance
1.2.2 Groups of people who unite voluntarily to meet their mutual needs, whether economic or social	E. budget F. equilibrium price
1.2.3 A mechanism of inheritance that produces a heterozygote with a phenotype which is intermediate or in between the phenotypes of the homozygote parents	G. Cooperative H. labour productivity I. Co-dominance J. labour
1.2.4 Projection of income and expenditure for any given month	
1.2.5 The amount of work that is done relative to the amount of money that is spent on wages and salaries	

(5 x 2) (10)

1.3 Give ONE word/term/phrase for each of the following descriptions. Write only the word/term/phrase next to the question number (1.3.1 – 1.3.5) in the ANSWER BOOK.

1.3.1 Workers who work less than 24 hours a month, do not have contracts with their employers and are not covered by certain provisions of the Basic Conditions of Employment Act (1997).

1.3.2 A practice of putting labels onto products to promote them as environmentally friendly.

1.3.3 The money and manufactured goods and assets that can be used for the production of other goods and to generate income.

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DD2 (Lesson)

- 1.3.4 A sudden random change in the genetic material or DNA of a cell.
- 1.3.5 The reappearance of an ancestral characteristic in an organism after the characteristic has been absent for many generations.

(5 x 2) (10)

1.4 Change the UNDERLINED WORD(S) in each of the following statements to make the statements TRUE. Write only the answer next to the question number (1.4.1 – 1.4.5) in the ANSWER BOOK.

- 1.4.1 Temporary workers are employed during peak periods, often for a specific task such as harvesting.
- 1.4.2 Expenditure is the property or assets that you pledge or offer to the lender to secure your loan.
- 1.4.3 Specialisation in a farm enterprise is having a number of different enterprises on the farm.
- 1.4.4 A conceptual skill is an analysis of the business' strengths, weaknesses, opportunities and threats.
- 1.4.5 A bacteria is an organism that contains genes from another organism.

(5 x 1) (5)

TOTAL SECTION A: 45

Activity 3: Entrepreneurship

Work individually or in pairs.

1. Give reasons why farmers and other people living in rural communities today have to be entrepreneurs.
2. Indicate why farmers might need to change the way they run their businesses.
3. Find someone in your community who you think is an entrepreneur. What is new or innovative about their business? Interview the person and find out:
 - where they got the idea
 - what they considered when they evaluated their idea
 - what resources they had to mobilise to be able to launch the business.

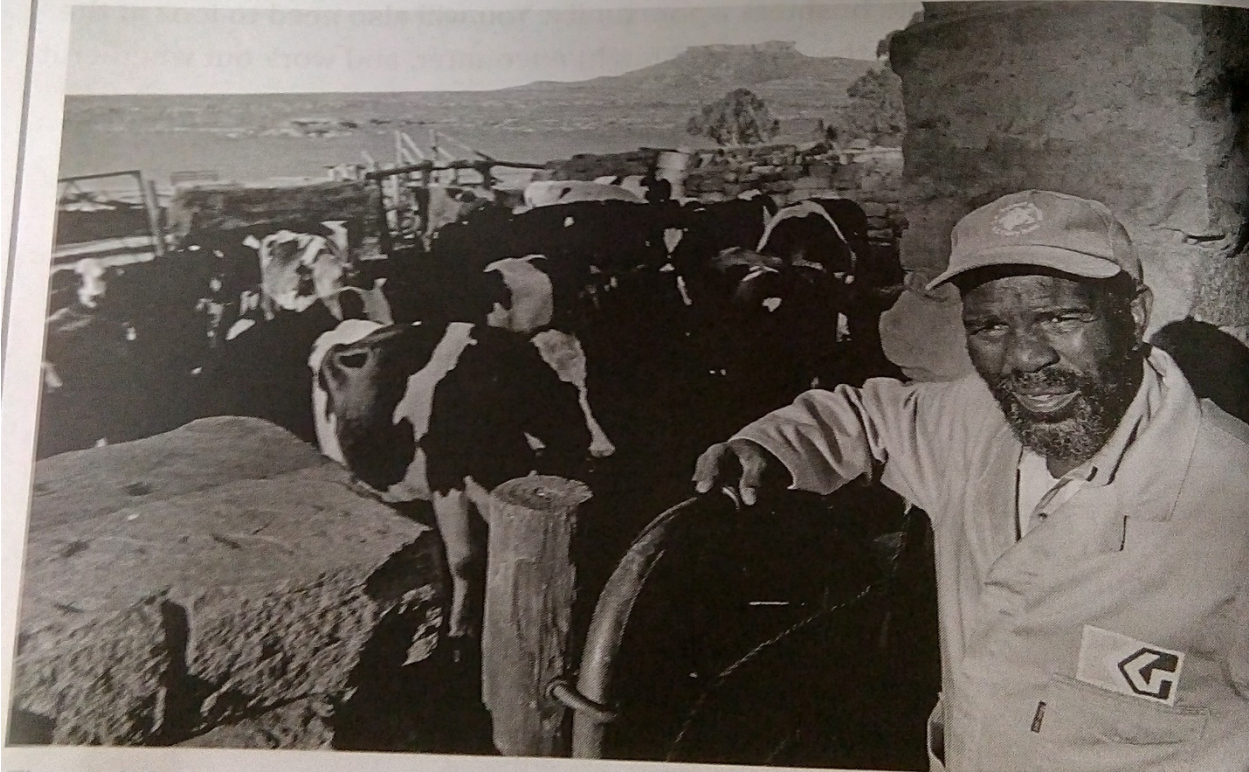


Figure 8.6: Farmers need to be entrepreneurs.

Activity 13: The impact of internal and external forces

Look at this list of forces:

1. Relaxed control over imported agricultural products
2. Declining soil fertility
3. Manager's decision-making skills
4. Poor cash flow
5. Political support for smallholder farmers
6. Competitively priced goods
7. A drive to achieve land reform
8. Stricter labour legislation
9. Animal disease outbreak in the region
10. Low productivity of farm workers
11. Increasing interest rates
12. Satisfied workers
13. Strengthening Rand relative to the US Dollar
14. Good financial management systems
15. Greater environmental awareness amongst consumers
16. Improved education at schools

1. Which of the forces in the list are internal forces and which are external forces?
2. For each item that could be classified as negative, give one way of overcoming or minimising it.

Activity 18: Marketing margins

Working in pairs, look at Table 7.2, which shows the prices paid to farmers for certain products in June 2012.

Table 7.2: Agricultural Commodity Prices for the week ending 8 June 2012

Livestock	Price (R/kg)
Mutton	32,21
Pork (Baconer)	17,20
Grain	Spot price (R/ton)
Maize, white	1 999,00
Wheat	2 893,00

Chapter 3: Agric

In the same week, a national supermarket chain was selling the following products:

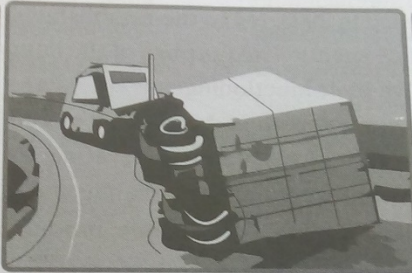
- 2,5 kg white flour (wheat) @ R17,59
- 250 g bacon (pork) @ R22,99
- 2,5 kg super white maize meal @ R14,59
- 500 g Maizena (fine white maize flour) @ R16,49

1. What was the price per kilogram paid to farmers for each of these products?
2. Work out the price per kilogram paid by the consumer.
3. Calculate the difference in each price.
4. Draw labelled flow diagrams to show the marketing chain of each product. Indicate where costs are incurred and who makes money at each step of the chain.

Activity 19: Improve the agribusiness value chain and reduce marketing costs



Bad roads



Accidents



Spoilage

Figure 7.22: Factors that hamper the marketing chain

1. How are the situations in the pictures related to marketing costs?
2. How do they impact on marketing costs?
3. What other factors result in a big difference between the price the farmer receives and the price the consumer pays?

Case study:

Entrepreneurship

Raymond lives in a small town in KwaZulu-Natal and he has an unusual enterprise. He modified his bicycle so that it has a small trailer compartment. Raymond rides around the town and the neighbouring township selling live chickens. He comes to town on pay days and pension days when he knows that people have cash for his chickens. On other days, he actively looks for potential customers in the township. Most people sell live chickens either directly from their farms, or at set points, but Raymond discovered a new opportunity by being a mobile hawker.

preneurship and business planning

OTHER APPENDICES



FINAL Research
Instruments ENTREP



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Sampled observation



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