



Teachers' experiences of teaching Agricultural Economics to grade 12 learners: A case study of two high schools in Ugu District, KwaZulu-Natal

By

Nokulunga Memorial Nzama

219094246

**A Research Study Submitted in the School of Education, College of Humanities,
University of KwaZulu-Natal, in Partial fulfilment of the requirements for the degree
of**

Master of Education

In

Curriculum Studies

2021

SUPERVISOR

Dr. L. R. Maharajh

Declaration

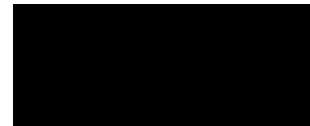
I, Nokulunga Memorial Nzama, declare that this study entitled, **‘Teachers’ experiences of teaching Agricultural Economics to grade 12 learners: A case study of two High Schools in Ugu District, KwaZulu-Natal’**, is my own independent work and it has never been submitted in another institution for degree purposes or any purpose whatsoever. I have also acknowledged and clearly referenced every source or borrowed idea engaged in this thesis accordingly.

Nzama Nokulunga Memorial

Student number (219094246)

...  ..

Supervisor:



Dr. L. R. Maharajh

Signature

Acknowledgements

I acknowledge the following persons who have supported me throughout this project:

Firstly, I would like to give thanks to God the Almighty for keeping me alive, healthy, and helping me through this project, especially during times when I thought of giving up. He has been my strength throughout the course of the study.

To my amazing supervisor, Dr. L R Maharajh, my sincere and greatest gratitude goes to him whose guidance, direction, patience, and wisdom has been a light on my path to continue with this work to its completion. He never gave up on me.

To my mum Mrs. D.A Mbanjwa, I would not have been here if it were not for you. Thank you for continuing to keep me in your prayers.

To my siblings, Philile, Mbo, MaPinket, Portia, Maphe, Lihle, Luyanda, Spha, and Sisanda, words fail me in expressing my gratitude towards your support and motivation.

To my two lovely sons, Nkosi and Asanda, I am eternally grateful for giving me family support through the course of the study. Thank you for your patience and understanding.

The love, inspiration and contributions of my friends cannot go unappreciated. Special thanks to Sthembele, Ralph, Rajan, Micky, Nokhalipha, Thola, Mphumuzi, Fikile, Samkeh, Phaka and Vicky.

Also special thanks to Pastor B Mthembu, his prayers and support have been sustaining me.

To Humanities and Social Sciences Research Ethics Committee, thank you for considering my application for the clearance Certificate. I also acknowledge the support of the Department of education for giving me permission to conduct research in their schools.

Lastly, to all my participants who allowed me into their world and shared their experiences I say thank you and may the good Lord richly bless you.

Dedication

This work is dedicated to my late loving Dad Mfanomncane Zeblon Mbanjwa, who was the pillar of my strength while he was alive, ngiyabonga Khathini, Sam'elihle, Mancisha kancane.

May his soul rest in peace

Abstract

The purpose of the study was to explore the experiences of grade 12 teachers' teaching of agricultural economics, an aspect of the agricultural sciences curriculum within selected schools in Ugu District, KwaZulu-Natal. The study intended to answer the following question: 'What are teachers' experiences of teaching agricultural economics to grade 12 learners in Ugu District, KwaZulu-Natal?' In answering this question, a qualitative case study research style was utilised in the study. Shulmans' Pedagogical Content knowledge (PCK) theory of learning (1986) was used to guide the exploration of teachers' experiences in the teaching agricultural economics to grade 12 learners. Four grade 12 agricultural sciences teachers were purposively selected as participants, using convenience sampling to select those who were most accessible. Data were generated through semi-structured interviews and focus group discussion.

To understand teachers' experiences of teaching grade 12 agricultural economics, the data collected from both semi-structured interviews and the focus group discussion were analysed and discussed in the following themes: teaching of agricultural economics, unpreparedness to teach some aspects, challenges of teaching agricultural economics, coping strategies, teaching strategies of agricultural economics, lack of training on new content, and teaching resources.

The findings of the study revealed that teachers were not adequately trained on new content, thus, agricultural economics aspects were never a part of the syllabus when most of these teachers were trained in Teacher Colleges of Education. Furthermore, the study also revealed that one of the teachers' coping strategies was to network with other teachers who teach business commerce and management subjects. Recommendations for Department of Education to provide all essential pieces of equipment required for teaching and learning of agricultural economics in secondary schools were made. In addition, the study recommends that further research is required regarding teachers' experiences of teaching agricultural economics outside KwaZulu-Natal to provinces like Mpumalanga, Eastern Cape, and North West.

Abbreviations and Acronyms

ASAAE - Association of South African Agricultural Educators

B.Ed. - Bachelor of Education

CAPS - Curriculum and Assessment Policy Statement

C2005- Curriculum 2005

DoE - Department of Education

FET - Further Education and Training

FFA -Future Farmers of America

NCS - National Curriculum Statement

NDP - National Development Plan

NSC - National Senior Certificate

OBE - Outcomes Based Education

PCK - Pedagogical Content Knowledge

RNCS - Revised National Curriculum Statement

SACE - South African Council of Educators

SADTU - South African Democratic Teachers Union

TLMs - Teaching and Learning Materials

UNISA - University of South Africa

UNIZULU - University of Zululand

List of Tables

Table 3.1: Participants' Profiles	30
Table 3.2: Data generation Plan	34

List of Figures

Figure 4.1: Extract requiring a sound background of Economics	50
Figure 4.2: Extract requiring a sound background of Accounting	51

Table of Contents

Declaration.....	i
Acknowledgements.....	ii
Dedication.....	iii
Abstract.....	iv
Abbreviations and Acronyms	v
List of Tables	vi
List of Figures.....	vi
Table of Contents.....	vii
Chapter 1.....	1
Introduction.....	1
1.1 Introduction.....	1
1.2 Background of the Study	1
1.3 Problem Statement	3
1.4 Purpose of the Study	4
1.5 Study Rationale	4
1.6 Scope of the Study	5
1.7 Research Objective	5
1.8 Research Methodology	5
1.8.1 Sampling.....	6
1.8.2 Data Generation Method	6
1.8.3 Data Analysis.....	6
1.8.4 Trustworthiness	6
1.9 Organisation of the Dissertation	7
Chapter 2.....	7
Literature Review	9

2.1 Introduction.....	9
2.2 The Importance of Agriculture	9
2.2.1 Employment of Youth in Agriculture.....	10
2.3 Understanding Agricultural Sciences	11
2.3.1 Agricultural Education for Learners.....	12
2.3.2 Challenges of Teaching Agriculture.....	13
2.4 Importance of Agricultural Economics.....	14
2.4.1 Components of Agricultural Economics	14
2.4.2 Experiences of teaching Agricultural Economics	14
2.4.3 Outlook on Teaching Agricultural Economics.....	15
2.4.4 Teaching and Learning of Agricultural Economics in South African Schools	16
2.5 Teaching Approaches and Strategies in Agricultural Science	16
2.6 Performance in Agricultural Science	21
2.7 Theoretical Framework.....	22
2.8 Conclusion	23
Chapter 3.....	25
Research Methodology	25
3.1 Introduction.....	25
3.2 Research Approach	25
3.3 Research Paradigm.....	27
3.4 Research Design.....	28
3.5 Sampling	29
3.5.1 Purposive Sampling.....	30
3.5.2 Convenience Sampling.....	31
3.6 Data Generation Methods	32
3.6.1 One-on-one Semi-Structured Interviews	32
3.6.2 Focus Group Discussion.....	34

3.7 Data Analysis	37
3.8 Trustworthiness	38
3.9 Ethical Considerations	39
3.10 Limitation of the Study	40
3.11 Conclusion	40
Chapter 4.....	41
Data Presentation and Analysis	41
4.1 Introduction.....	41
4.2 Background Information of Participants.....	41
4.3 Data Analysis Process.....	43
4.4 Discussion of Findings.....	43
4.4.1 Teachers' Understanding of Agricultural Sciences	43
4.4.2 The Rationale for being an Agricultural Sciences Teacher	44
4.4.3 Agricultural Economics and Aims of teaching Agricultural Economics	45
4.4.4 The Teaching of Agricultural Economics	46
4.4.5 Components of Agricultural Economics	47
4.4.6 Unpreparedness to Teach Some Aspects.....	48
4.4.7 Challenges of Teaching Agricultural Economics	49
4.4.8 Coping Strategies Used by Teachers	53
4.4.9 Teaching Strategies for Agricultural Economics.....	54
4.4.10 Lack of Training on New Content	55
4.4.11 Teaching Resources for Agricultural Economics	56
4.5 Conclusion	57
Chapter 5.....	58
Summary, Conclusion and Recommendations	58
5.1 Introduction.....	58
5.2 Summary of the Study	58

5.3 Key Findings	58
5.3.1 Teaching Agricultural Economics	59
5.3.2 Unpreparedness to Teach Some Aspects	59
5.3.3 Challenges of Teaching Agricultural Economics	60
5.3.4 Coping Strategies.....	60
5.3.5 Teaching Strategies of Agricultural Economics	61
5.3.6 Lack of Training on New Content	61
5.3.7 Teaching Resources	62
5.4 Recommendations.....	63
5.5 Suggestions for Future Research	63
5.6 Conclusion	64
References.....	65
APPENDICES	77
Appendix A - Letter to the School Principals	77
Appendix B – Participant Consent form	78
Appendix C- Letter to the District Director	81
Appendix D - Permission to conduct research Letter -Department of Education	83
Appendix E – Ethical Clearance	84
Appendix F- One-on-one semi-structured Interview	85
Appendix G– Focus group discussion	87
Editor’s Letter	89
Turnitin Report.....	90

Chapter 1

Introduction

1.1 Introduction

This chapter serves as an introduction to the study on exploring 'teachers' experiences of teaching Agricultural Economics to grade 12 learners in the Ugu district, KwaZulu-Natal. The chapter presents a background to the study, problem statement, and purpose of the research and the rationale of the study. In this chapter, the scope of the study, followed by the research objective and critical question guiding the study are also provided. In addition, the overview of the research design and methodology are briefly discussed. The chapter ends with an outline of chapters in this dissertation.

1.2 Background of the Study

Agriculture is essential globally because it helps feed, cloth, and provide building materials and employment for millions of people. Hence, it is the backbone of the economy that underpins economic growth, food security, and poverty eradication (Perez-Escamilla, 2017). Furthermore, in most developing countries, agriculture is known to be the driver for economic development. According to Modebelu and Nwakpadolu (2013), many learners are unaware of where and how the food they eat is produced. Many children have the idea that food simply comes from the store, and many people perceive agriculture as only farming. Majokweni (2018) argues that contributing positively to poverty eradication through farming practices is not often recognised.

For this reason, the introduction of agricultural entrepreneurial skills to learners through agricultural economics cannot be overemphasised to equip and inspire them as far as business and job creation are concerned. Besides, many people are not aware of the career opportunities in the food and natural resource industry (Zakaria & Alhassan, 2019). Agricultural economics is the pillar for human survival, hence the importance of teaching agriculture at all levels of education. Agriculture is important due to its contribution to the economy of the country, so teachers' experiences of teaching agricultural economics in this subject is a matter (Veerman, 2019).

Agricultural economics provides knowledge on what to do, not only ensuring increased agricultural production but also how to produce profitably, and efficiently (Mohamed, 2018b). The information above indicates the need for educating learners about agricultural

economics as it develops the knowledge and attitudes necessary to start and manage one's own business. Mupfasoni, Kessler and Lans (2018, p. 66) highlight that basic agricultural economics knowledge includes:

- production of plant and animal products,
- the economic impact of agriculture,
- societal significance,
- agriculture's essential relationship with natural resources and the environment,
- marketing and processing of agricultural products,
- public agricultural policies,
- the global importance of agriculture,
- the distribution of agricultural product.

Agricultural economics prepares learners for careers full of success and a lifetime of informed decisions in the global agriculture, food, fiber, and natural resources systems. To pursue careers in agriculture, one must take studies in environmental science, veterinary science, crop science, soil science, plant science, chemistry, economics, and business management. These courses require high literacy and functional competency in high school mathematics, agricultural sciences, physical sciences, life sciences, and geography (Richard, 2018). Furthermore, these subjects help to prepare learners to have the necessary skills and attitude not only for higher education and further studies, but also entrepreneurial opportunities and for the world of work. (Hudcova, Chovanec, Moudry, 2018). Therefore, it is essential to study agricultural sciences to realise many opportunities that exist for business and young entrepreneurs in agriculture.

The aims of teaching agricultural sciences to learners from grade 10 to 12, as stipulated in the National Curriculum Statement (Department of Education, 2011) are:

- Developing an awareness of the management and care of the environment;
- Natural resources and the humane treatment of animals through the application of science and related technology;
- Developing problem-solving mechanisms within the contexts of agricultural production, processing, and marketing practices;
- Developing awareness of the social and economic development of the society at large through personal growth in commercial and subsistence farming enterprises; and
- To ensure that learners are informed and responsible citizens in the production of agricultural commodities (p. 8).

Passing agricultural sciences at school is therefore crucial. Currently, the demand for agrarian economists is increasing from time to time for different government and private institutions (Mohamed, 2018a). However, passing the agricultural economics aspect is still a challenge for some learners. For this reason, an understanding of the experiences of teachers would be of significant contribution to the quality of teaching agricultural economics.

1.3 Problem Statement

Internationally and in South Africa, education reform has for various reasons moved towards the center of the education system. These reforms are initiated and developed at the state level but implemented by teachers at the school level. The change in the curriculum from curriculum 2005, known as Outcome-Based Education (OBE), led to the introduction of the Revised National Curriculum Statement (RNCS). Thereafter, the National Curriculum Statement (NCS) was introduced, and currently, Curriculum and Assessment Policy Statement (CAPS) has seen new content in agricultural sciences being introduced (Gumede & Biyase, 2016). Many teachers have not been trained to teach some of this new content material. Teacher training and teacher support play an essential role in how to implement the new curriculum (Maharajh, Nkosi, & Mkhize, 2016). There have been reports of challenges encountered by teachers with the agricultural economics aspect (Department of Education, 2018).

In Agricultural Sciences, the introduction of new aspects like Agricultural Economics, which includes Accounting, Business Studies, and Economics, created a wide gap in content knowledge for Agricultural Sciences teachers. This is because Agricultural Economics aspects were never a part of the syllabus when most of these teachers were trained in Teacher Colleges of Education. For this reason, this study aims at exploring the experiences of these teachers in the Ugu district. More specifically as they teach the Agricultural Economics aspects of Agricultural Sciences. Nkohla (2017) study that explored educators' reflections on their practices of Agricultural Sciences Curriculum and Assessment Policy Statement is an example of one that did not include teaching Agricultural Economics. Therefore, this suggests the need for the current study. Studies about agricultural marketing, agricultural marketing system, agrarian entrepreneurship, and agri-business plan have not been done at the Ugu district as a whole and specifically the experiences of the grade 12 teachers. Therefore, there is a need to conduct a study on teachers' experiences of teaching Agricultural Economics to grade 12 learners.

1.4 Purpose of the Study

The purpose of this study is to gain insight on the experiences of grade 12 teachers' teaching of Agricultural Economics which is an aspect of the Agricultural Sciences curriculum to grade 12 learners within selected schools in Ugu District, KwaZulu-Natal.

1.5 Study Rationale

As an Agricultural Sciences teacher with twenty years of teaching experience, it was apparent through personal observations that there is a trend of poor performance among grade 12 learners in the Agricultural Economics aspect. Furthermore, as a senior participant in the marking of grade 12 Agricultural Sciences National Senior Certificate Examination paper two, which includes the Agricultural Economics aspect, it is evident that some learners generally perform poorly in the knowledge area of Agricultural Economics. Therefore, learners obtain marks that are too far below the pass mark, and very few receive distinctions in the Agricultural Sciences subject.

The National Senior Certificate Examination Education (2018) illustrates that learner's performance in Agricultural Economics is still not satisfactory in Grade 12. Additionally, it was clear that learners are comfortable with other aspects of agriculture, such as soil science, plant studies, animal studies, basic agricultural chemistry, basic genetics, biological concepts, sustainable natural resource utilisation, and agro-ecology. However, they experience problems with the Agricultural Economics section.

As an Agricultural Sciences teacher, personal interactions with fellow teachers, Subject Advisers, and Agricultural Sciences Chief Markers, have triggered many questions around the issue of teachers' experiences of teaching Agricultural Economics to Grade 12 learners, which motivated this research study. The study, therefore, explored the experiences of teachers in teaching Agricultural Economics to Grade 12 learners. Teachers' experiences might serve to assist the researcher, teachers, learners, curriculum designers, policymakers, and agricultural specialists to address the problems encountered by teachers in teaching Agricultural Economics to grade 12. This study might also add value by motivating teachers to research their practice.

1.6 Scope of the Study

The current study was conducted in Kwa-Zulu Natal on the lower South Coast, Port Shepstone, in Ugu District. The study was conducted in two different high schools which were selected based on their provision of Agricultural Sciences. They were also chosen because of their proximity, which made physical access easy. The study conducted a focus group that constituted participants from different social environments, and one-on-one semi-structured interviews. The selected participants were teachers experienced in teaching grade 12 learners. Though it is an area with soil fertility, very few families live on subsistence farming. Residents of the area represent different political parties, which is likely giving that they are from different backgrounds. Some are Zulu speaking people, Xhosa while others are foreigners emigrating from countries such as Zimbabwe, Mozambique, and Nigeria. This study explored the experiences of teachers teaching Agricultural Economics to grade 12 learners.

1.7 Research Objective

The objective of this study was to explore teachers' experiences of teaching Agricultural Economics to grade 12 learners.

The research question explored is:

What are teachers' experiences of teaching Agricultural Economics to grade 12 learners in Ugu District, KwaZulu-Natal?

1.8 Research Methodology

A qualitative case study research style was applied because it was appropriate for this study. The study is more illustrative, exploratory, and contextual in its design, and provides more detailed description of researched occurrences (Cresswell, 2014). This study was positioned in the interpretive research paradigm, which sets out to understand human behavior. Cohen, Manion and Morrison (2018) state that the interpretive paradigm assumes the subject world of human experience and efforts are made to get inside the person to understand from within. For this reason, the interpretivists paradigm was considered as the most suitable for this study to understand, explain, and describe teachers' experiences of teaching Agricultural Economics to grade 12 learners.

1.8.1 Sampling

Sampling is described as the process of making decisions about which people, setting, events, or behaviors to observe or study (Cohen, Manion, & Morrison, 2018; Rahi, 2017); (Taherdoost, 2016). The target population from which data was collected were four accessible grade 12 Agricultural Sciences teachers in the Ugu District, Port Shepstone, South Africa. This study used non-probability sampling, specifically purposive and convenience sampling. Four Agricultural Sciences teachers were selected to be involved in this study because they had knowledge of teaching Agricultural Economics to grade 12 learners and could provide in-depth information. The sample size was not representative of the wider population; therefore, findings are not generalizable.

1.8.2 Data Generation Method

The study used two methods of data generation which were semi-structured interviews (one-on-one) and focus group semi-structured discussion with four participants to answer the research question. These multiple sources of data generation were adopted for triangulation to ensure the achievement of authenticity and trustworthiness of data generated (Cohen, Manion & Morrison, 2018; Cypress, 2017). One-on-one semi-structured interviews enabled participants to provide detailed responses on their experiences and the researcher to probe participants to elaborate, extend, and provide details for clarity. Focus group discussion was conducted to get more understanding and in-depth exploration of teachers' experiences in teaching Agricultural Economics to grade 12 learners. Furthermore, the researcher was interested in the shared experiences of the participants.

1.8.3 Data Analysis

Data analysis in qualitative studies is a way in which a researcher makes sense of the data generated from participants (Cohen, Manion & Morrison, 2018). In analysing data for this study, thematic analysis approach was applied. Thematic analysis is a method for identifying, analysing and reporting patterns (themes) within data (Braun & Clarke, 2006). The data from interviews and focus group discussion was transcribed and codes were used to categorise related data, which highlighted the emergent themes.

1.8.4 Trustworthiness

To achieve trustworthiness in this study, interviews were transcribed by the researcher, codes and emergent subcategories were extracted and presented to the participants to verify whether

the information was interpreted accurately. Triangulation was achieved by using one-on-one semi-structured interviews and focus group discussion to ensure the authenticity and trustworthiness of data generated (Cohen, Manion & Morrison, 2018). This was done to strengthen the data.

1.9 Organisation of the Dissertation

This dissertation is arranged into five chapters presented below:

Chapter One

This chapter gives the background to the research topic, problem statement, the purpose of the study, rationale for the study, scope of the study, objective of the study and research question. It further provides a synopsis of the research methodology including sampling, data generation methods, and data analysis. Finally, the trustworthiness of the study was briefly described.

Chapter Two

Chapter two presents a review of the literature about the experiences of teachers teaching agricultural economics to grade 12 learners. The chapter discusses literature on the global implications of teaching and understanding agricultural economics in terms of food security and entrepreneurship. This is followed by a description of teachers' experience and challenges faced when teaching agricultural science in general and agricultural economics in particular. The importance of studying agricultural economics is discussed with a focus on employment, entrepreneurship, and food security. The review ends with a discussion on the theoretical framework that can be used to inform this study.

Chapter Three

The research design and methodology selected for the study is explained in detail in chapter three. Terms such as qualitative, interview, and sampling are discussed in depth. The research instruments (interview questions and focus group discussion) are also described in this chapter. The strategies to ensure authenticity and trustworthiness of the study are explained. This chapter concludes by discussing how data was analysed, including a presentation on the study's ethics and limitation.

Chapter four

This chapter presents and analyses the results of the semi-structured interviews and focus group discussion. The chapter described the profiles of all participants in terms of age, experience, and qualifications. The findings of the study were discussed using themes and direct quotations from participants were used to address the research question.

Chapter 5

This chapter provides the summary of the study and a description of the main research findings.

The chapter also provides some recommendations for future research.

Chapter 2

Literature Review

2.1 Introduction

This chapter reviews literature with regards to experiences of teachers teaching agricultural economics to grade 12 learners. The review discusses global implications of teaching and understanding agricultural economics in terms of food security and entrepreneurship. This is followed by a description of teachers' experiences and challenges they face when teaching agricultural science in general and agricultural economics in particular. The importance of studying agricultural economics is discussed with a focus on employment, entrepreneurship, and food security. This review also discusses the teaching strategies that teachers use when teaching agricultural economics. The implications for the challenges are then viewed in the form of learners' performance in examinations. The review ends with a discussion on the theoretical framework that was used to inform this study.

2.2 The Importance of Agriculture

Globally, agriculture is an important economic activity because it is a sector that guarantees food security. Mc Carthy et al. (2018) point out that food security is when people always have physical, social, and economic access to sufficient, safe, and nutritious food, which meets their dietary needs and food preferences for an active and healthy life. "Nearly 800 million people do not have access to enough food, less than 2 billion people experience key micronutrient deficiencies and 60% of people living in less economically developed countries experience food insecurity" (Perez-Escamilla, 2017, p. 1). Therefore, Agriculture is a sector that is necessary in any society and for this reason it is important to teach children about the importance of Agriculture in this world. Moreover, without the agricultural industry, the demand for food would not be met and economies would not be easily supported. A study conducted by Perez-Escamilla,(2017) indicates that there is slow progress in food security in Africa which has been attributed to the low productivity of agricultural resources and high population growth. In Africa and South Africa in particular, the issue of food security has also taken centre stage.

South Africa continues to face serious food security challenges despite it being high on the government's agenda (Sakiko & Vivian, 2016). The South African National Development Plan (NDP) and Vision 2030 emphasised the potential of agriculture to create one million new jobs by 2030, of which about half would be in the small sector or self-employment. For

this reason, it is important that learners are equipped with necessary skills and understanding of the vast number of agri-business and entrepreneurship careers. Kidane and Worth (2012) noted that agriculture is crucial for economic growth, sustainable development, and food sufficiency. Moreover, the agriculture sector contributes significantly to economic development of this country through provision of employment, market for industrial goods, raw materials for industries and foreign exchange.

2.2.1 Employment of Youth in Agriculture

The agricultural sector contributes significantly to South Africa's economic development through provision of food, employment, market for industrial goods, as well as raw materials for industries. Mutito (2017) posits that in Kenya, secondary school agriculture was introduced to equip learners with knowledge on the basic principles of farming. The intention was to bring out school graduates who would embrace self-employment and even create employment for others in their farms. The purpose of offering agriculture to schools is to eradicate the stigma many learners have towards farming by providing them with skills that will enable them to secure career opportunities in agriculture.

The number of young people is expected to increase to 1.3 billion by 2050 globally, which is 14 percent of the projected global population; therefore, it is of importance to engage youth in agriculture (Diise, Mohamed, & Zakaria, 2018). There is a growing concern worldwide that young people have become disenchanted with agriculture. Farming (2011) cited several reasons for this. Firstly, agricultural studies at schools are used as punishment for bad behaviour. Secondly agriculture is associated with hard labour which is in contrast with the perception of a good job such as being a doctor or accountant. Thirdly, it is not easy to realise success and profit in agricultural activities because so many factors affect profitability and growth of plants or animals. Fourthly, most agricultural activities in rural areas use hoe and machete and are not mechanised, which creates a perception that agriculture is a primitive activity. Lastly, people working in farms are underpaid and work for long hours. Young people are then not attracted to agriculture. Agriculture provides the main source of income and employment. Hence, it is important that young people are connected to farming. Besides, engaging youth in agriculture should be given priority due to increasing youth unemployment, ageing farmers, and declining crop yield under traditional farming system to equip them with the necessary skills of entrepreneurship. Youth unemployment refers to that

people may have qualifications and not get employment, thus agriculture can serve as a source of employment.

Parker (2018) defines an entrepreneur as someone who assumes the responsibility and the risk for a business operation with the expectation of making a profit. Kuratko (2016) similarly, defines entrepreneurship as the capacity and willingness to develop, organize and manage a business venture along with any of its risks to make a profit. However, Heinert and Robert, (2017) define entrepreneurs as innovators who drive change in the economy by serving new markets or creating new ways of doing things. Agriculture plays various roles in the growth and development of the national economy through entrepreneurship development which increases the income level and employment opportunities in rural as well as urban areas (Burns, 2016). There is a need to strengthen the teaching of agriculture in secondary schools as it plays a significant role in building the capacities of agricultural learners to become active players in the South African agricultural economy.

2.3 Understanding Agricultural Sciences

To understand teachers' experiences of teaching agricultural economics to grade 12 learners, it is important to begin with an understanding of what agricultural sciences is. Heinert and Robert (2017) note that "Agricultural sciences is the art of growing crops and looking after animals and includes processing, marketing, storing and transportation of products" (p. 193). It is an integrated science subject that combines the knowledge and skills from physical sciences, life sciences, social sciences, earth sciences, engineering, mathematics and economics (Antle, 2019). Additionally, agriculture is one of the core areas sustaining human livelihood through food security, especially in rural areas; therefore, it is a broad multidisciplinary field of biology that encompasses the parts of exact, natural, economic and social sciences that are used in the practice and understanding of agriculture (Solomon, 2018). Furthermore, agriculture focuses on cultivation of the soil, growing and harvesting of crops, breeding and raising livestock, packing, processing and marketing of agricultural products (McGuire, 2017). The Zimbabwean Schools Examination Counsel (Zimsec, 2017) describes agriculture as a subject which is related to the environment of most schools and is part of the life experience of most students, hence the teaching and learning of the subject should take full advantage of the resources of pupils' experience and environment around the schools. However, CAPS (2012, p. 8) provides a more detailed definition of agricultural sciences as a study of the relationship between soils, plants and animals in the production of

food, fibre, fuel and other agricultural products that have an economic and cultural value. Agricultural science is viewed as a science that combines the knowledge and skills from physical science, life science, social science, earth sciences, engineering, mathematics and economics (McGuire, 2017). Further, agricultural science is a subject which aims at developing investigative, analytic, and observational skills in learners (McGuire, 2017).

The Curriculum and Assessment Policy Statement (2011, p. 7) outlines the following as the main topics in the agricultural science syllabus: “Soil Science, Plant Studies, Animal, Studies, Agricultural Economics, Basic Agricultural Chemistry, Basic Genetics and Biological Concepts, Sustainable Natural Resource Utilisation, Agro-ecology”. Agriculture provides opportunities for employment creation and human resource mobilisation, thus making it a critical component of schools’ curricula. It balances learning, helping learners plan their jobs and developing entrepreneurial skills.

2.3.1 Agricultural Education for Learners

Agricultural Education is the educational field of agriculture that provides students with knowledge of the agricultural industry. Agricultural Education is therefore introduced for the inculcation of the skills needed for the practice of agriculture and contribution to food security for a more sustainable nation (Mutito, 2017). Agriculture is beneficial in education as it balances learning, helping students plan their jobs and developing entrepreneurial skills as it provides students with the opportunity for practical application of knowledge within real-world situations. Amadi and Ekezie (2017) indicate that Agricultural Education is included into the school curriculum for learners to acquire knowledge and skills to meet the basic food production needs of the society as well as production of raw materials for industrial agriculture.

Agricultural Education programs and students involved in Agricultural activities through the Future Farmers of America (FFA) continue to grow across the United States (David, 2017). Therefore, Agricultural Education allows opportunities to educate young people about Agriculture and prepares them to enter the economy as informed consumers since it provides them with sustainable knowledge and necessary skills which will help them to make sound decisions.

2.3.2 Challenges of Teaching Agriculture

South African schools offering Agricultural Science as a subject are mostly black schools found in rural areas set apart by small-scale livestock and crop production (Mbajiorgu et al., 2014).

Thus, this situation prevents parents from involving themselves in their children's school activities due to their work schedules, lack of transport and stress of living in poverty. Furthermore, the government of South Africa introduced a new curriculum for Agricultural Science. The introduction of new content severely hampered the ability of some teachers to deliver quality teaching to the learners as most of the teachers were not adequately equipped to handle the aspect of Agricultural Economics (Otekunrin, Oni & Oluwaseun, 2017). Moreover, teaching and learning resource shortages is one of the serious challenges in the teaching of Agricultural Economics aspect.

The lack of teaching and learning material such as lack of textbooks, lack of studying resources, study guides, library, diagrams, and textbooks result in poor performance in schools as they are important for delivering quality teaching. The teaching of Agricultural Sciences without learning material results in poor performance. Adekoya and Olatoye (2015) stressed that for any qualified Agricultural Sciences teacher, no matter how well trained, it would be impossible to put their ideas into practice if the school does not have the proper equipment and materials necessary to translate their competence into reality. This suggests that teaching and learning material is of importance as it increases learner performance and enhances learning. According to Hlulela (2017), when students do practical work, the activities help develop their skills in scientific thinking. This means that learners do not have opportunities to improve on their understanding beyond what was taught in class. However, some teachers in schools rarely conduct practical lessons because of large class size, inadequate Teaching and Learning Materials (TLMs), poorly functioning school farms and laboratory among other teaching and learning facilities.

Language barrier is a problem for most learners as they are second language speakers and prefer to be taught in their home language which affects effective learning of Agricultural Science.

According to the Chief Examiner's report (2018) on Agriculture Science paper 2, candidates did not do well, although language used and the style of questioning was simple and at the level of a grade 12 second language speaking learner.

2.4 Importance of Agricultural Economics

Agricultural Economics is an applied economics in the use of factors of production such as land, labour, capital, and management in Agriculture (Mohamed, 2018b). Similarly, Diise et al. (2018) defines economics as the study of the use of the above-mentioned factors in the production, distribution, and consumption of goods and services to address the economic problem of scarcity. Agricultural Economics is concerned with the allocation of scarce resources for optimal production and productivity. Additionally, it offers Agricultural Sciences learners unique exposure to agricultural markets, policy, and production systems (Heinert & Robert, 2017).

Teaching and learning of Agricultural Economics is important because learners get skillset in starting and managing their own Agro-based businesses and providing employment to themselves as well as others. Starting a business is easy but growing to sustainable levels demands business competence in marketing, accounting and economics (Miriam & Konyango, 2019).

2.4.1 Components of Agricultural Economics

According to the Department of Education (DoE, 2011), the Agricultural Economics aspect which is taught at grade 12 level is a combination of various topics. These include Agricultural production factors which focus on Land, Labour, Capital, and Management Process; and Agricultural Marketing which focuses on Price determination, Market equilibrium, marketing system, Entrepreneurship, and business planning. Knowledge and skills in Agricultural Economics have never been so important and interesting as it provides useful information and knowledge to Agricultural producers, consumers, and Agri-business firms (Smalley & Rank, 2019).

2.4.2 Experiences of teaching Agricultural Economics

Experiences refer to anything teachers come across or face during the teaching of Agricultural Economics (Msomi, 2015). Therefore, individual experiences are a crucial foundation of acquiring knowledge. These could be challenges or problems they have

encountered and how they overcame them. Nkohlhla (2017) refers to experiences as the key factors that shape learners' understanding. Therefore, teachers' experiences include teachers' understanding, approaches and perceptions of their experiences (Schuck, Aubusson, Buchanan & Burke, 2018). Additionally, in a classroom, the experiences mean how teachers and learners interact during teaching and learning. Teachers use their experiences to decide on the selection of the content, activities, and the teaching strategies of Agricultural Economics aspect. This suggests that teachers should decide how learners will be engaged in teaching. Teachers' experiences influence what and how they teach (Shange, 2010). Thus, teachers have different experiences when teaching Agricultural Economics content to grade 12 learners in Ugu district KwaZulu-Natal.

As a former agriculture student and current teacher, teaching agriculture economics is a challenge to most teachers because pre-1994, the researcher learnt agriculture that was not integrated with economics. Hence, most teachers are not familiar and confident in teaching agricultural economics and prefer to skip the content or scratch the surface when teaching it. Thus, students, as shown in the paragraph above underperform in questions that test content on agricultural economics.

2.4.3 Outlook on Teaching Agricultural Economics

Neil, Evans and Scarre (2016) indicate that Agriculture within the EU is highly diverse and productive. Europe is the largest food importer in the world among the largest food exporters. Thus, teaching Agricultural Economics is important and interesting as it provides information and knowledge to learners who will become entrepreneurs. This suggests that agriculture teachers should provide useful and marketable skills to learners globally. Furthermore, Agriculture is the foundation of the majority of Sub-Saharan African economies being the cause for up to 40% of the gross domestic product, 15% of exports and 60–80% of employment (Mutito, 2017, p. 20). This suggests that there is a need for Agricultural science teachers to teach Agricultural Economics to provide learners with marketable skills and knowledge that allow them to prosper in their selected career. Understanding the Economic aspect in agriculture improves skills in management of resources to optimise productivity and profitability of the agricultural business at hand.

In South Africa, Agriculture is the biggest source of production and employment in rural areas and is the key to a successful economy. Research studies on teaching Agricultural

Sciences to grade 12 learners in South Africa focus on various aspects of teaching. Nkohlha (2017) explored the reflections of educators on their practices of Agricultural Sciences CAPS in a rural school in KwaZulu-Natal. Further, the study conducted by Solomon (2018) focused on enhancing teacher development in the teaching of Agricultural Sciences at schools.

2.4.4 Teaching and Learning of Agricultural Economics in South African Schools

Amadi and Ekenzie (2017) note that “teaching and learning is a process of instilling the right values, attitudes, knowledge, as well as long term skills acquisition necessary to help people benefit from the society and have a meaningful contribution” (p. 103) It is therefore the duty of teachers to stimulate and sustain learners’ interests in Agricultural Economics and enable learners acquire basic knowledge with skills in Agriculture, preparing learners for and exposing them to occupation. Learning is therefore an outcome of teaching that occurs where there is a positive permanent change in an individual’s behavior (Murtonen, Gruber & Lehtinen, 2017). A qualitative study conducted by Modebelu and Nwakpadolu, 2013) on effective teaching and learning of Agricultural Sciences for food Security and National Sustainability revealed the qualification of a teacher matters in achieving quality teaching and learning of agricultural sciences.

The study also found that secondary education still lacks basic vocational and entrepreneurial skills and suggests that more focus should be put on Agricultural Economics as it covers entrepreneurship. Additionally, learners show poor attitude towards Agricultural Economics lessons which impact teaching and learning.

2.5 Teaching Approaches and Strategies in Agricultural Science

Teaching is an activity of instruction that passes on information and skills, it includes the strategies and processes used when transmitting knowledge to the learners (Muijis & Reynolds, 2018). During teaching and learning, learners are engaged to enable their understanding, application of knowledge and transforming them. For example, according to Magnusson and Blikstad-Balas (2019) teaching is to recognize somebody as if she already skilled of doing what she is supposed to become capable of and act accordingly. In examining the core principles of teaching and learning, Crowe (2017) described them as having a communicative ability to use tasks effectively as well as fostering cooperative learning. Crow (2017) further adds that effective teaching and learning includes: encouraging contact among learners; cooperative, collaborative, active, prompt feedback; communicating high

expectations; and respecting diversity in learning approach. These general core principles of teaching and learning are alluded to by Amuriyaga, Abujaja and Hudu (2018) who assert that effective teaching should identify individual differences, recognise importance of feedback, employ a variety of teaching strategies, should have evaluative procedures of learning process as well as use directed learning. Strong, Amy and Hannah (2010) asserted that in teaching agriculture, teachers should put learners in groups, make them collaborate as well as engaging them in problem solving activities. They also found out that most learners did not learn effectively with slides and lecture approach. The most effective approach was hands-on activities in which students had to do the work on their own in Agricultural fields. In teaching pastoral and forage studies, Adekoya and Olatoye (2015) found out that demonstration, collaboration, and peer tutoring were more effective than other teaching approaches such as lecture method and problem solving. However, they further asserted in their investigation that there is no universally effective teaching method as choice of method is informed by contextual factors such as age of learners, topic under study, teacher qualification and skill, time on task, size of class and availability of resources. Shinn (1997) investigated teaching approaches among high school teachers in the United States and found out that laboratory, demonstration, contests, discussion, and supervised learning were the most effective in teaching Agricultural sciences. However, factors that affected the delivery of instruction were teacher quality, teacher contract, school location, size of class and gender. Modebelu and Nwagpadolu (2013) agree with Strong, Amy and Hannah (2010) as they found out that traditional approaches like lecture method and problem solving were not as effective as hands-on activities and demonstration.

The discussion above shows that teachers have a central and critical role to play for learners to understand agricultural content. In this effort, teachers bring their own perspectives and experiences as discussed earlier, teacher quality, values and perspectives which are critical in teaching and learning. Moreover, the teacher is someone who is trained academically to impart knowledge, skills and values to the learner (Hultma & Wedin, 2018). Therefore, teachers are responsible for teaching. Teaching strategies are also techniques which teachers employ when presenting subject matter to their learners. Dragoescu Groszer and Stefanovic (2017) argue that teaching strategies are related to learners' performance. Therefore, good teaching methods offer learners with information to be used now as well as in the future and also assists them to solve problems; this is dependent on the teacher (Miriam & Konyango, 2019). Personally, the researcher has been teaching the subject for twenty years in high

school. The researcher's preferred teaching approaches are lecture method, collaboration, and learner-centred approach.

The lecture method helps the researcher reach out too many students. The researcher's classes have an average of sixty learners which are considered as large classes. Hence, teacher-centred facilitative approach takes a longer time and is less efficient especially with the pressure to finish the syllabus and start preparing learners for examination. The Department of Basic Education (2011) is clear about the kind of teacher that they want. According to the Revised National Curriculum Statement document, specific teaching strategies are prescribed but the emphasis is on meaningful education that must be learner-centred and avoid rote learning which encourages memorising facts and content instead of encouraging application and critical thinking (DoE, 2003, p. 26).

In the researcher's experience of teaching agricultural sciences, it is evident that learners are comfortable with other aspects of agriculture such as soil science, plant studies, animal studies, basic agricultural chemistry, basic genetics, biological concepts, sustainable natural resource utilization and agro-ecology. They however experience problems with the economics section. There are several reasons for this. Miriam, Konyango and Nkurumnwa (2016) found out that teaching methods of Agricultural Economics are problematic in helping learners to acquire understanding of the aspect. This is because teachers use the lecture method too often neglecting other teaching strategies which are interesting to learners when teaching economics. In a study done by Pertiwi, Khafid, and Setyadharma (2019), findings revealed that learning economics was difficult because students came to the subject with a lot of misconceptions as economics concepts are abstract; they had issues with mathematical calculations involved, lacked motivation, and had mathematical anxiety. In a similar study (Pertiwi et al. (2019) observed that student's perception of the teacher and their teaching method was critical in determining learning of economics. Sari, Kardoyo and Thomas (2017) found out that mass media and social environment was important in determining learning outcomes in the subject of economics. Mass media factors including availability of internet, television and other technological gadgets affected learning outcomes. They also discovered that school environment (school, curriculum, contact time) including the reading culture at home had an impact on the learning outcomes of economics students.

These factors affect the economics aspect of Agricultural sciences. In agreement, Mokori, Moabe and Nyangeri (2019) add that students come with misconceptions and struggle with the mathematical and symbolic representations of economics concepts. Through personal experience in teaching learners, it is apparent that they have difficulties interpreting graphs on economics especially relationships of economic variables. Hence all these issues need to be investigated and reported to enhance the researcher's capacity to teach Agricultural science in school. Understanding teachers' experiences in teaching Agricultural Economics to grade 12 learners is also of great interest to the researcher. The main teaching method employed by teachers in Agricultural Economics is chalk and talk (Manu, 2018). This suggests that it is rare to find experiments which implicate many opportunities for learners to be active and make discoveries.

According to Wade (2019), many learners prefer teaching that allows them to listen passively; this shapes the subject matter and prepares them well for tests. However, students learn better when they are more actively involved in the process of learning, as they get the chance to own their learning. Moreover, using active methods of teaching fosters critical thinking, creative thinking and collaborative problem solving which are very crucial in agricultural education. Many approaches are employed in teaching and learning of agriculture to bring forth the needed knowledge, attitude, practice, and skills on learners. Teaching strategies include the telling method, demonstration which is the type of teaching method in which the teacher is the principal actor while the learners watch with the intention to act later (Amuriyaga, Abujaja & Hudu, 2018). This means that agriculture teachers systematically show what the learners must do at the end of the lesson by explaining and actively showing them how to tackle the task.

Manu (2018) described demonstration as a display done by the teacher while the students watch with interest. Agricultural Economics is a practical aspect and therefore needs practical application through effective demonstration methods. Amadi and Ekenzie (2017) analysed the teaching strategies used by lecturers in teaching Agricultural education in higher education, but they ignored the teaching method of agricultural science in high schools as it affects learner performance; their focus was on demonstration and no other pedagogic approaches. In the proposed study, all teaching strategies including textbook method where the teacher reads stories or text to pupils, experimentation, problem-solving, class discussion, question and answer method and group work method will be considered.

A study by Antwi (2017) found out that project-based method challenged students to learn and work cooperatively in groups to seek solutions to the real world. Additionally, the above study revealed that learners show low interest in practical lessons.

The studies suggest that irrespective of all these approaches that could be used for teaching of Agricultural Economics by teachers, the underpinning approach by the policy CAPS is teacher-centeredness. This suggests that the teacher is the center of knowledge and learners are usually passively receiving information. Further, the classroom remains orderly hence teachers retain full control of the classroom and its activities. Therefore, this means that to improve effectiveness of teaching Agricultural Economics, it is imperative that teachers give more consideration to the learning styles of learners as well as teaching strategies. Thus, a growing body of evidence indicates learning styles are important to both understanding and managing teaching and learning.

A quantitative study was conducted by Lunsford, Warner and Morgan, (2016) on students' perceptions and personal reflections on teaching Agricultural Sciences in higher education. The study which was conducted in North Carolina State University focused on the implementation of a scientifically rich approach to introducing the principles of business marketing to 484 undergraduate students. A questionnaire was used for data generation and the findings revealed that there is an overuse of the lecture method approach as the go-to means of content distribution.

The literature reviewed on teaching agricultural sciences to grade 12 learners revealed that several studies have been conducted internationally around teachers' experiences on agricultural education. The study conducted by Kidane and Worth (2012) focused on Agricultural Education and Training in South African context. This study investigated student perceptions of different aspects of Agricultural Education and Training (AET) programme processes that have been offered in secondary schools by the formal educational sector in the province of KwaZulu-Natal, South Africa. The study revealed that students prefer some aspect of Agricultural Sciences and have a negative attitude towards aspect like Soil sciences and Agricultural Economics, especially learners who do Agricultural sciences without Physical Sciences. However, the current study focuses on teachers' experiences of teaching Agricultural Economics to grade 12 learners in the South African context.

2.6 Performance in Agricultural Science

Ochieng (2019) notes a lack of learning and teaching materials as one of the factors that caused poor agriculture performance, which in turn causes lack of motivation to learners. Manu (2018) on the other hand posits that quality of teachers may be affected by attitudes, as job satisfaction of a teacher is generally positively related to their achievement. This suggests that the negative attitude of teachers towards teaching agricultural economics can contribute to low performance of learners. According to Otekunrin, Oni and Oluwaseun (2017) poor performance in the subject is caused, for instance, by students' background, their negative attitudes towards agriculture, as well as poor teaching techniques. Additionally, lack of parental support, teachers' poor attendance of classes, insufficient government support for learners and teachers, and lack of resources like study materials contribute to poor performance (Otekunrin, Oni & Oluwaseun, 2017).

The study conducted by Mbajorgu et al (2014) in Mpumalanga, South Africa with learners and one educator on factors that impact teaching and learning of Agricultural Sciences in FET schools revealed that there are factors related to poor motivation which lead to learners lacking interest in the subject; learners choosing Agriculture Science when they do not have the necessary background for it; learners being forced to take the subject because it belongs to a group of subjects that they are interested in; or students being recommended by their teachers to take Agriculture Science even if they do not have interest in the field.

According to the Chief Examiner's Report in 2017 on Agricultural Sciences in South Africa, the general performance of candidates declined in 2017 as indicated by 75.4% of candidates achieving 30% and above, with 44.5% achieving 40% and above. Eastern Cape, Limpopo, Mpumalanga, and Northern Cape registered a decline in pass rate, while the Free State and Western Cape, Gauteng and KwaZulu-Natal recorded improvements in their results. However, in Agricultural Economics aspect, candidates scored only 32%. This warrants the need to understand experiences of teachers teaching Agricultural Economics to grade 12 learners.

Agricultural economics forms paper 2 of Agricultural Sciences. According to the Chief Examiner's Report NCS (2018) the performance in the above paper was fair although most candidates performed at level 2 and 3 the highest mark was 127, while the lowest mark was 7. This means that teachers need to pay more attention to this paper to improve the performance

of learners. The poorly performed questions are those from Accounting, Economics and Business Studies content as most candidates failed functions of marketing and could not clearly distinguish between a marketing strategy and approach. This suggests that teachers do not focus on all aspects of the content that are listed in both the CAPS policy and the Examinations guidelines (Department of Education, 2017). However, it is essential that CAPS and Annual Teaching Plan be used regularly in lesson planning and preparation in all chapters as some of the topics which cover aspects such as cash flow budget, net worth and net income proved to be a serious challenge to most of the learners.

However, the diagnostic report on performance of candidates in agriculture shows that learners find it difficult to link the concepts covered in the topic as they could not use knowledge of the marketing functions to answer questions based on the topics (DOE, 2018). The literature reviewed on teaching of Agricultural economics reveals that there are very few studies that have been conducted on teachers' experiences of teaching Agricultural economics to grade 12 learners.

2.7 Theoretical Framework

To explore teachers' experiences of teaching Agricultural Economics to grade 12 learners, the study was informed by Shulmans' Pedagogical Content knowledge (PCK) theory of learning (1986). The reason for the selection of Shulman's framework was to use its curriculum concepts to guide the study (Creswell, 2014). The PCK theory refers to knowledge about the teaching and learning of subject matter that considers the learning demands inherent in the subject matter (Shulman, 1986). Pedagogical knowledge refers to the broad knowledge that a teacher requires to be effective in the classroom (Kennedy, 2010). Therefore, this includes content knowledge, knowledge on how to teach, knowledge about pupils and how they learn, knowledge about the curriculum, as well as knowledge about discipline and classroom management. Content or subject knowledge refers to knowing about a subject, as well as the disciplinary knowledge of a subject (Berry, Depaepe & van Driel, 2016). This suggests that Agricultural Sciences teachers require content knowledge that includes information such as concepts for agricultural sciences topics to break down content knowledge for the learners.

The term 'pedagogical knowledge' was first introduced by Shulman (1986), and was subsequently expanded by Jong, Van Driel and Verloop (2005) as well as Cochran and King

(1993). Shulman (1986, p. 9) proclaims that “PCK is blending of content and pedagogy into an understanding of how particular aspects of subject matter are organised, adapted and represented for instruction”. Shulman (1986) states that content knowledge talks about the amount of knowledge in the mind of the teacher. This suggests that content knowledge needs one to understand the structures of the subject matter.

Shulman specifies that there are seven areas of professional knowledge needed for effective teaching, namely: “subject matter content knowledge; pedagogical content knowledge (PCK); curricular knowledge; general pedagogical knowledge; knowledge of learners; knowledge of educational contexts; and knowledge of educational goals and purpose” (Shulman, 1986 p.14).

Therefore, Shulman’s knowledge domains to explore teachers’ experiences of teaching agricultural sciences in grade 12 were used to guide this study. Furthermore, concepts are related to this study; for example, in agricultural sciences subject matter content, pedagogical content and knowledge are important key elements that are needed that contribute to quality performance in learners at grade 12.

2.8 Conclusion

This chapter reviewed literature on the importance of studying agriculture in the broad global context. The review then discussed the importance of studying agricultural economics in the South African context, one of them being the ability of agricultural economics to empower learners in agri-business entrepreneurship and engage in profitable farming. The review also touched on the definition of agricultural science especially agricultural economics. These were then followed by the challenges that teachers and learners experience in the teaching and learning context in high school. Teachers were reported to having a lot of challenges especially in delivering the economics section of agricultural science. One of the reasons cited was the little time and depth given to the section which made the learners underperform in examinations. It was also described that learners do have problems with economics section because it contains some mathematical concepts which made problem solving difficult. Learner interest in agriculture and agricultural economics was therefore established to be problematic and contributing to poor performance. This shows that there is a need for more research in improving teaching strategies especially on the topic of agricultural economics.

Exploring teachers experience when teaching agricultural economics in grade 12 will reveal more about the topic and contribute to fill the gaps in the existing body of knowledge.

Chapter 3

Research Methodology

3.1 Introduction

The aim of the study was to explore and understand experiences of teachers teaching agricultural economics to grade 12 learners. To achieve this, the study sought to realise the following objective: to explore teachers' experiences of teaching Agricultural economics to grade 12 learners. For this objective to be achieved, the critical research question that this study aimed to explore is "What are teachers' experiences of teaching Agricultural Economics to grade 12 learners in the Ugu District, KwaZulu-Natal?"

This chapter presents the research design and methodology that guided the study, research approach (a qualitative approach) and its purpose, the study's research paradigm and its importance, the research design (case study) that was used in the study, the sampling (purposive and convenience) and the reasons for its selection, as well as the research methods (semistructured interviews and focus group discussion). The strategies to ensure authenticity and trustworthiness of the study (credibility, dependability, transferability, conformability) are explained. This chapter concludes by discussing how data was analysed and a presentation on the study's ethics and limitation are provided.

3.2 Research Approach

The research question "what are teachers' experiences of teaching Agricultural Economics to grade 12 learners in Ugu District, KwaZulu-Natal?" seeks to understand the experiences of teachers teaching Agricultural Economics to grade 12 learners through using qualitative approach. Qualitative research is an approach for exploring and understanding the meaning behind social or human problems from individuals or social groups (Chih-Pei, & Chang, 2017). However, Antwi and Hamza (2015) believe that qualitative approach refers to research about persons' lives, lived experiences, behaviors, emotions, and feelings. Therefore, this means that qualitative research is not statistical, and it incorporates multiple realities (Abutabenje, Sawsan, & Raed, 2018).

Furthermore, according to Cohen et al. (2018) and Rahi (2017), qualitative approach is used to collect the in-depth details on a particular topic and assumes a single person represents the group; feelings and emotions of a person are equally important, which are ignored by the quantitative approach. Therefore, the qualitative approach used in this study allowed for an

indepth understanding of the experiences of teachers teaching Agricultural Economics to grade 12 learners. Bermudez et al. (2013) mention that one of the advantages of qualitative research is that it allows a researcher to see and understand the context which decisions and actions take place. Thus, in this study, the qualitative approach was preferred because it provided the researcher with an opportunity to understand, explore and interpret the Agricultural Sciences teachers' lived experiences. Moreover, this approach allowed teachers to express their feelings and thoughts freely about the experiences of teaching Agricultural Economics to grade 12 learners.

Qualitative approach was selected over quantitative approach in this study because, firstly, it is concerned with aspects of reality that cannot be quantified and focuses on the understanding and explanation of the dynamics of social relations (Queiros, Faria & Almeida, 2017).

Secondly, the qualitative approach makes one deeply understand participants' feelings, opinions, and experiences as well as interpreting the meanings of their actions (Chih-Pei & Chang, 2017). Hence, the study helped to uncover trends in thought and opinions and delve deeper into the experiences of teachers. Thirdly, qualitative research allows the researcher to understand different people's voices, meanings, and events. In addition, qualitative research methods such as structured interviews, direct observation, focus group discussions and describing records are mostly used for collecting data (Cohen et al., 2018). The study allowed the participants to express themselves verbally through their actions and their teaching of Agricultural Economics to grade 12 learners. Lastly, during the data generation, the researchers interact with the participants directly through interviews (Thanh & Thanh, 2015). In this study, the response of participants was obtained by conducting semi-structured interviews and focus group discussion. Liu (2017) indicates that in qualitative approach the researcher is fully involved within the area of consideration. Therefore, the researcher was immersed in the situation and the phenomenon being studied. Data was generated by interviewing the participants and conducting focus group discussion to understand the experiences of teachers in teaching Agricultural Economics to grade 12 learners.

Nevertheless, there are shortfalls within qualitative research. It has limitations of generating many truths about the phenomena studied (Rahaman, 2017). However, to mitigate this limitation, the researcher chose participants who are Agricultural Science teachers with more

than five years teaching experience in secondary school. More years of experience is important in mitigating many truths in qualitative studies. Hence, years of teaching experience are an important predictor of learner achievement in school (Adama, 2019).

3.3 Research Paradigm

A paradigm is regarded as a lens through which one understands and views the world. A paradigm is used to describe a researcher's worldview (Kivunja & Kuyini, 2017). Similarly, Cohen, Manion and Morrison (2018) refer to a paradigm as a way of looking at a research phenomenon or a world view. Whereas, Creswell (2014) describes paradigms as frameworks of philosophical assumptions that guide researchers. A paradigm tells how meaning is constructed from the data that is gathered. On the other hand, Thanh and Thanh (2015) point out that a research paradigm comprises three elements: a belief about the nature of knowledge, a methodology, and criteria for validity. This study used an interpretive paradigm to understand the experiences of teachers and interpret the meaning of social action (Thaanyane, 2010). The researcher aimed to develop an in-depth understanding of how people make sense of contexts in which they live and work. Moreover, this study used the interpretive paradigm, which allowed the researcher to understand and describe the data meaningfully using human interaction.

According to Antwi and Hamza (2015), interpretive researchers place strong emphasis on better understanding of the world through firsthand experience, truthful reporting, and quotations of actual conversation. Therefore, participants were selected from two different schools, for this reason. The social context of teachers' experiences was not the same and they made different meanings of their experiences. Moreover, interpretivist researchers discover reality through participant's views, their own background and their experiences (Mackenzie & Knipe, 2006). This study adopted the interpretive paradigm within a qualitative approach to answer the research question stated earlier in the chapter. Interpretivists have the intention of understanding the world of human experience (Kivunja & Kuyini, 2017); therefore, this paradigm was appropriate for this study because it provided a context for examining, as well as understanding, explaining, and describing teachers' experiences of teaching Agricultural Economics to grade 12 learners.

Interpretive researchers do not seek the answers for their studies in rigid ways, but they approach the reality from people who own their experiences and are of a particular group or

culture (Mackenzie & Knipe, 2006). Therefore, the purpose of the research was to develop greater understanding of experiences of teachers when teaching Agricultural Economics to grade 12 learners. This paradigm allowed teachers to express their own feelings, attitudes and perceptions of teaching Agricultural Economics as interpretivists believe that true knowledge can only be obtained by deep interpretation of the subject (Rahi, 2017). Cohen et al. (2018) state that interpretive paradigm understands the subject world of human experience and efforts are made to get inside the person and to understand from within.

The interpretivist paradigm was suitable for this study as the data generated was based on experiences of teachers, their ideas, and actions. It also allowed for in-depth understanding of the participants' experiences within the context they live. In addition, the paradigm allows for the interpretation of data generated on teachers' experiences in the teaching of Agricultural Economics to grade 12 learners, which is important as teaching experience is positively associated with student achievement (Kini & Podolsky, 2016).

3.4 Research Design

According to Cohen et al. (2018), Crowe, Cresswell and Robertson (2011), a case study is descriptive research which involves describing the particular event and/or how events occur. Likewise, Harrison, Birks, Franklin and Mills (2017) argue that a case study investigates a real-life phenomenon (teachers' experiences) in depth within its environmental context, and a case can be an individual, a group, an organization, an event, or a problem. This is supported by Liu (2016) who asserts that a case study is a research approach that creates an in-depth, understanding of a complicated issue in its real-life context. Khoza (2015) says that a case study deals with a specific context which does not always represent the general experiences of the entire population, but the reader is still able to relate if the context is similar to that of the study. This study used a case study because it fits very well into qualitative research and it specifically focused on teachers' experiences of teaching Agricultural Economics to grade 12 learners in Ugu District to gain in-depth understanding of their experiences within their context.

Moreover, a case study is appropriate where the 'how' and 'why' questions are being explored with the participants (Crowe et al., 2011). The case study's objective is "to show 'what it is like' to be in a particular situation capturing reality, description of participants' lived experiences and feelings in a situation" (Cohen et al., 2018, p. 377). Furthermore,

Nnawulezi (2018) argues that case studies involve looking at a case or phenomenon in its real-life context usually by employing various types of data. Grade 12 teachers who are teaching Agricultural Sciences were interviewed (semi-structured interviews) and focus group discussions were conducted to collect data of their experiences in teaching Agricultural Economics aspect. However, the data generation tools allowed the researcher to pose and probe using ‘how’ and ‘why’ questions. This provided an opportunity for teachers to provide in-depth information about their experiences of teaching Agricultural Economics to grade 12 learners.

According to Hencock and Algozzine (2017), there are three types of case studies, which they differentiate in terms of the end product of the research that might be explanatory or descriptive: exploratory, illustrative, and critical instance case study. For any study, a case study follows a single or multiple case. Therefore, this study is a descriptive case study that uses a single community.

Four Agricultural Sciences teachers from two schools were selected. Furthermore, the experiences of two different schools with different performance levels helped in understanding teachers’ experiences of teaching Agricultural Economics in different ways.

3.5 Sampling

Sampling is described by Cohen et al. (2018), Rahi (2017) and Taherdoost (2016) as the process of making decisions about which people, setting, events or behaviors to observe or study. Moser and Korstjens (2018) and Maree and Potgieter (2018) argue that sampling is the process of selecting or searching for situations, context and/or participants who provide rich data of the phenomenon of interest. The sample in a qualitative study is typically small as researchers explore small diverse groups (Windsong, 2018). In light of this, the current research focused on four accessible grade 12 Agricultural Sciences teachers in the Ugu District, Port Shepstone, South Africa, teachers who have taught Agricultural Sciences for more than five years from two different schools offering the subject within the same district. This is because they were best placed to provide a rich source of information for this study.

The participants included two males and two females. Informed consent was given, and ethical considerations were adhered to. Also, anonymity and confidentiality of participants was ensured.

According to (Cohen et al., 2018), there are two methods of sampling in educational research such as probability (random sampling) and non-probability (purposive sampling). Probability samples include random stratified sampling, cluster sampling, stage sampling, and multi-phase sampling, whereas non-probability samples include convenience sampling, quota sampling, and purposive sampling (Cohen et al., 2018). This study used non-probability sampling, specifically purposive and convenience sampling, because it targeted a group of teachers who did not represent a wider population but themselves. Therefore, findings from this study are not generalisable.

3.5.1 Purposive Sampling

The study used purposive sampling, since the focus is on teachers who were involved in the teaching of Agricultural Sciences. Furthermore, teachers from the two selected schools were within close proximity, available and from the same environment (Ugu District). Moser and Korstjens (2018) define purposive sampling as a method in which the researcher deliberately chooses a participant due to the qualities the participant possesses.

Moreover, purposive sampling is used in order to access people who have in-depth knowledge about particular issues (Etikan, Musa, & Alkassim, 2016). Therefore, purposive sampling enabled the researcher to make choices about which teachers to include in the sample.

In addition, the researcher's experience and knowledge was crucial in selecting Agricultural Sciences teachers who are members of the Association of South African Agricultural Educators (ASAAE). The ASAAE is formed by teachers of Agricultural Sciences, Agricultural Management practices, Agricultural Technology, Basic Agriculture in ordinary public schools, lectures from universities, Technical and Vocational Education and Training Colleges. The participants were selected from two high schools that offer Agricultural Sciences as a subject and Agricultural Economics as part of the content within the subject. Since the study's focus is to explore teachers' experience in teaching Agricultural Economics to grade 12 learners, four teachers with experience of teaching Agricultural Sciences in grade 12 for more than 5 years were selected to gain in-depth information about their experiences in teaching the subject. Moreover, the participants chosen were Further Education and Training (FET) Agricultural teachers experienced in teaching the NATED 550, the Curriculum 2005 (C2005), the NCS and the CAPS curriculum in the grade 12 classroom.

Teachers that were selected were knowledgeable, willing to participate and had the ability to communicate experiences and opinions in an articulate, expressive, and reflective manner much in the same way as suggested by Taherdoost (2016). However, purposive sampling has been criticised because of its subjectivity and non-probability which is based on nature of unit selection (Rai & Thapa, 2015), and the lack of reliability, since it does not deal with the issues of generalisability. Therefore, to avoid generalisability the researcher selected four teachers from different schools to explore their experiences in teaching Agricultural Economics to grade 12 learners. In addition, to strengthen the research, convenience sampling was used.

3.5.2 Convenience Sampling

Convenience sampling is described by Etikan et al. (2016) and Moser and Korstjens (2018) as the selection of participants who are readily and easily accessible. This is in line with the view of Cohen et al. (2018) who assert that in convenience sampling, the researcher picks the sample from those they have the easiest access to. The four participants of the study were chosen because it was convenient for the researcher as the schools were near the place of work and accessible to generate data.

For this study, grade 12 Agricultural Sciences teachers were selected because of the relationship and characteristics shared with the researcher such as meeting during cluster workshops, moderations, marking sessions for National Senior Certificate Examinations. The participants were contacted through email and phone to participate in the study and were provided with initial information about the study. All four teachers comprising of two females and two males, aged in their 40s and 50s consented to participate in the study. All participants were black African teachers. The schools are located away from towns and cities and are attended by Black learners from lower- and working-class families.

However, Cohen et al. (2018) argue that one of the limitations of convenience sampling is that it does not represent any group apart from itself, and does not seek to generalise to the wider population. Therefore, the above limitations were addressed by selecting two Secondary schools that are within reach. The sample were not representative of the whole population but only Ugu District and the findings were not generalised. The sampled schools were named using alphabets A-D and four participants were named using numbers 1-4 as described in table

Table 3.1: Participants' Profiles

PARTICIPANTS	GENDER	AGE	HIGHEST QUALIFICATION	TEACHING EXPERIENCE
Participant A 1	Female	49	National Diploma of Education	20 years
Participant A 2	Male	35	Bachelor of Education	10 years
Participant B 3	Female	47	National Diploma of Education	18 years
Participant B 4	Male	50	Advanced Certificate in Agricultural Sciences	25 years

3.6 Data Generation Methods

The study adopted two methods of data generation which are semi-structured interviews (one on-one) and focus group discussion for four participants to answer the research question. These multiple sources of data generation were adopted for the purposes of triangulation in order to ensure the achievement of authenticity and trustworthiness of the data generated, this is similar to suggestion made by Cohen et al. (2018).

3.6.1 One-on-one Semi-Structured Interviews

This study employed one-on-one semi-structured interviews for the purpose of understanding and interpreting the experiences of teachers teaching Agricultural Economics to grade 12 learners in the context they live in. Cohen et al. (2018) define interviews as a conversation between two people which is designed to obtain research data through direct verbal interaction between individuals. Mahati-Shamir, Neimeyer and Pitcho-Prelorentzos, 2019) demonstrate several purposes of interviews in qualitative research. Firstly, interviews enable the researcher to learn in depth about the perspectives, experiences, beliefs, and motivations of the participant. Secondly, interviews may be used as the principal means of gathering information to serve the research objectives and acquire information on what a person is thinking. Thirdly, interviews are useful for getting the story behind a participants' experiences and the participant can pursue in-depth information around the topic. Lastly,

interviews seek to describe the meaning of central themes in the life of the subjects. Similarly, Gill, Treasure and Chadwick (2008) point out that Qualitative methods, such as interviews, are believed to provide a deeper understanding of social phenomena than would be obtained from purely quantitative methods.

This was in line with what was sought after in this study because teachers' experiences of teaching Agricultural Economics to grade 12 learners were explored. Cohen et al. (2018) identify five main kinds of interviews: the structured interviews, semi-structured interviews, unstructured interviews, non-directive interviews, and focused interviews. This study utilised one-on-one semi-structured interviews with open ended questions to explore teachers' experiences of teaching Agricultural Economics to grade 12 learners.

The semi-structured interviews are a flexible way of generating data and they permit the researcher to ask questions that are based on what the participants have said during the interview (Mahati-Shamir et al., 2019).

This means in comparing to structured interviews, they allow for the discovery of information that is important to both participants and the researcher. In addition, enough room was given to the participants to express their thoughts while guiding the researcher not to stray from the purpose of the study. The semi-structured interview also enabled the researcher to ask further questions driven by what participants communicated during the interview. The flexibility of open-ended questions enabled probing for rich in-depth information about the experiences of teachers in teaching Agricultural Economics to grade 12 learners.

A suitable date and time for the interviews were arranged with each participant. All interviews and focus group interviews were done through zoom because of Covid-19 pandemic. I had to arrange a zoom meeting with the participants for both one-on-one semi-structured interviews and for focus group discussion. Participants were sent a link to connect with since there was no face to face physical interviews. At the beginning of the interviews, the researcher built a relationship of trust with each interviewee by explaining the key features of the research project and outlining the broad issues that were to be addressed as well as the amount of time needed to complete the interview, this is similar to the suggestion made by Brown and Danaher (2019). Interviews were conducted using the language that the participants were most familiar with, which were English and IsiZulu. Creswell (2014)

supports the conducting of interviews in the language that participants understand. This helped the participants respond to questions in detail and express their thoughts without any language barriers. The one-on-one semi-structured interviews lasted 45 minutes per participant and were administered once. Interviews were audio-recorded with the consent of participants to ensure that all data presented were captured.

One-on-one semi-structured interviews enable participants to provide detailed responses and experiences; and open-ended questions allow the researcher to prompt and probe (Cohen et al., 2018), as well as clarify questions to participants when they do not understand. However, Creswell (2014) claims that semi-structured interviews (one-on-one) provide information filtered through the views of the interviewee. For a more in-depth data on the experiences of teachers, a focus group discussion was organised after the semi-structured interviews.

3.6.2 Focus Group Discussion

A focus group discussion is a “technique where a group of people are brought together by a researcher to discuss a specific topic, to draw from the personal experiences, beliefs, and views of the participants through a moderated interaction” (Kook, Harel-Shalev & Yuval 2019, p. 88). Focus groups are a form of group interview and they rely on the interactions within the group which yield a collective rather than individual view (Cohen et al., 2018). This means that participants in a focus group interact with each other. Likewise, Williams (2007) describes focus group as a group discussion on a particular topic organized for research purposes which is guided, monitored and recorded by a researcher who is a moderator.

The purpose of focus group discussion is for in-depth exploration of a topic about which little is known. Therefore, the purpose of adopting this form of data collection method for this study was to gain understanding and in-depth exploration of teachers’ experiences in teaching Agricultural Economics to grade 12 learners. Furthermore, the shared experiences of the participants were of great interest. Busch, Lawrence and William (2019) and Kook, HarelShalev and Yuval (2019) argue that focus groups are used for generating information on collective views, and the meanings that lie behind those views. Additionally, focus groups are useful in generating a rich understanding of participants’ experiences and beliefs (Ayrton, 2019). Winkie (2017) highlights that focus groups involve participants who possess certain

similar characteristics; all participants in the study were currently teaching grade 12 Agricultural Sciences and have taught the subject for more than 10 years.

Similarly, Solbakken, Bondas and Kasen (2019) argue that focus groups are most productive when the participants have shared experiences which offers an important foundation for their interaction. Before the start of a focus group discussion, participants were given verbal information and they were ensured confidentiality and informed that participation was voluntary and that they could drop out of the study at any time (Cohen et al., 2018). Informed consent forms were emailed to the participants and they signed and returned to me. The focus group discussion was administered once for approximately 45 minutes to answer the research question. Focus group discussion was recorded for transcription, and permission was sought to record the group discussion. It was important to consider the duration of the group discussion as participants are likely to suffer from fatigue when discussions are longer (Halaweh, DahlinIvanoff, Svantesson, & Willen, 2018).

I started the group discussion by welcoming all the participants. The purpose of the study was then clarified to the participants and how data will be used. Participants were also assured of anonymity and confidentiality. Thereafter, participants were invited to introduce themselves and were given a chance to ask any questions regarding the study. During the focus group discussion, participants were asked to discuss their different experiences of teaching Agricultural Economics to grade 12 learners using the same set of questions used in the semi-structured interviews. The researcher facilitated the group discussion, keeping it focused without interfering and preventing the discussion from being dominated by one member as suggested by (Gill et al., 2008). The researcher also emphasised on the importance of hearing a range of experiences from all participants. The discussion continued until all participants had shared their point of view. The researcher thanked all participants for taking part as well as their contribution to the study. Rewards were provided to all participants, as a token of appreciation and each participant was offered a gift voucher via email.

On the other hand, focus groups are not “without their drawbacks” as Cohen et al. (2018, p. 533) note that, “it is not easy to decide on the size of participants in a group (too small or too large) and if the group is too large it becomes hard to manage, and sometimes it is not easy to ensure that the participants have something to say and feel comfortable enough”. Therefore, to avoid this, the study was limited to four teachers to avoid using a large and uncontrollable

group. It was the researchers' responsibility to ensure that all participants had something to say during the discussion by directing the discussion. The data generation plan is shown in table 2 below.

Table 3.2: Data generation Plan

QUESTION	OBJECTIVES
Why was the data generated?	To explore teachers' experiences of teaching Agricultural Economics to grade 12 learners.
How was the data generated?	One-on-one semi structural interview and focus group interview discussion.
Who were the sources of the data Generation?	4 Agricultural Science Grade 12 teachers with more than 10 years teaching experience from different schools in the Ugu District.
How often was the data generated?	One-on-one Semi-structured interviews were administrated once and lasted 45 minutes. Focus group discussion were conducted after the semi structured-interviews, and they lasted 45 minutes.
Where was the data generated?	Both one-on-one semi-structured interviews and focus group discussion were done through zoom because of Covid-19 pandemic.
Justification of this plan for data generation	The semi-structured interviews were useful for drawing out teachers' experiences of teaching Agricultural Economics hence rich in- depth data was generated. Using these two methods enabled the researcher to understand teachers' experiences of teaching Agricultural Economics to grade 12 learners.

3.7 Data Analysis

Data analysis in qualitative studies is a way a researcher makes a logic of data generated from participants (Cohen et al., 2018). The researcher makes sense of the data generated through notes, patterns, themes, categories and regularities. Genapathy (2016) defines data analysis as a process used by researchers for reducing data to a story and interpreting it to derive insights which make sense. Jebb, Parrigon and Woo (2017) describe data analysis as the process of bringing order, structure and meaning to the mass of generated data. This suggests that data analysis helps in structuring the findings from different sources of data. Hence, the study analysed and interpreted the data on teachers' experiences of teaching Agricultural Economics to grade 12 learners using thematic analysis approach.

Thematic analysis is a method for examining, identifying and reporting patterns within data (Braun, Clark, & Weate, 2016, p. 7). A theme captures something crucial regarding the data in relation to the research questions and represents some level of patterned response or meaning within the data (Braun & Clarke, 2006). Thematic analysis allows the researcher to summarise the key features of a large data, as it forces the researcher to take a well-structured approach, and helps in the production of a clear and organised final report as suggested by Nowell, Norris, White and Moules (2017).

Braun et al. (2016) argue that thematic analysis "is a useful method for examining the perspectives of different research participants, highlighting similarities and differences, and generating unanticipated insights" (p. 27). This suggests that the main aim of thematic analysis is to identify themes in the data that are important or interesting and interpret it to make sense of it. Thematic analysis was used in the study to analyse data from the responses to open-ended questions on interviews and focused group discussion. Further, thematic analysis was chosen to ensure the rich description of the data generated. The analysis was guided by Braun and Clarke's (2006) six phases of thematic analysis which include:

- Familiarisation with the data: which is transcribing the data, reading and re-reading the data and noting initial ideas.
- Coding: This refers to searching for interesting patterns or features across the entire data set.
- Searching for themes: Collating codes into potential themes and gathering all data relevant to each theme.

- Reviewing themes: Checking if the themes work in relation to the coded extracts and the entire data set.
- Defining and naming the themes: Clear definitions and names for each theme.
- Writing up: producing a scholarly report of the analysis. (p. 87).

The researcher's familiarization with the audio recordings through listening and re-reading the transcripts severally while taking notes provided a context for the emergence of specific units of meaning and later on themes (Maguire & Dehlahunt, 2017). This was done to understand what was shared by participants during the interviews. During the coding process, quotations from transcripts that had similar characteristics were coded and grouped. This was done to guide the writing process. Coding is described as the process of organising and sorting qualitative data (Stuckey, 2015). As qualitative research brings large amounts of data, codes that were similar in meaning were grouped together under emergent themes from the data (Thaanyane, 2010). In addition, the cross-checking of themes was done to confirm their relevance to the coded extracts.

3.8 Trustworthiness

In qualitative research the researcher tests the study for the validity (the study measured what it desired to measure) and reliability (the consistency of a measure towards the study) which is referred to as trustworthiness (Hadi & Closs, 2016). Trustworthiness is defined by Noble and Smith (2015) as the originality of the findings and how the participants believe that the findings are worthy to be trusted; also, the results rely on the availability of in-depth, appropriate and concentrated data. Anney (2014) demonstrates that qualitative researchers use trustworthiness to achieve four propositions: credibility, dependability, confirmability and transferability.

Anney (2014) describes credibility as the confidence that can be placed in the truth of the research findings. Thus, in this study, the researcher ensured that the data from the study was credible by personally transcribing the interviews and confirming the interpreted data with the teachers that participated in the interviews. According to Cohen et al. (2018), dependability is about giving correct and direct information in the study. In the current study, this was achieved by ensuring that all four participants were appropriate for the purpose of the study. Furthermore, original evidence of data generated from interviews and focus group discussion were provided and direct quotations were used.

Conformability refers to the degree to which the results of an inquiry could be confirmed (Anney, 2014b). Triangulation was applied in this study through using one-on-one semi structured interviews and focus group discussion. Triangulation was therefore used to confirm the findings of this study.

Transferability is described as the degree to which the results of qualitative research can be transferred to other contexts with other respondents (Cohen, Manon & Morrison, 2018). This chapter provides a step-by-step narrative of how this research was conducted for the purpose of replicating the study in a different area of research in the future, thus making it transferable.

3.9 Ethical Considerations

Dooly, Moore and Vallejo (2017) point out that ethical issues are of importance especially when the research is about animals and humans. Furthermore, they define ethical issues as the principles that secure a participant's behavior when research is conducted. Those principles include participant's anonymity, informed consent, confidentiality, as well as privacy and these (ethical issues) prevent any misconduct that might occur during the study. Informed consent is the process in which the participant decides whether they agree to be part of the study after being notified about all aspects that will influence their decision as described by Kara and Pickering (2017). In the current study, measures of confidentiality and anonymity were adhered to.

In addition, informed consent was obtained from all parties involved in the research prior to implementing the study. A request to conduct the study was extended to the Head of Department at the Department of Education and school principals from two secondary schools from Ugu district. Thereafter, ethical clearance from the University of KwaZulu-Natal was also requested. Once permission was granted from the relevant parties, letters were written to participants to inform them of the purpose of study. Participants were also provided with consent forms and assured that participation in the study was voluntary. They were also assured of their anonymity and confidentiality of data produced. Participants were further briefed on the study objectives and interviews, including focus group discussions were recorded with their consent.

3.10 Limitation of the Study

Queiros, Faria and Almeida (2017) define limitation of a study design as influences or conditions that the researcher cannot control which might affect the results. The limitation of this study was time. Teachers are very cautious of their time and they do not like being disturbed during their break and lunch hours in schools. To overcome this challenge, the researcher requested meetings with the teachers after work for one-on-one interviews and focus group discussions. The researcher ensured that the schedule did not interfere with their working time.

Another limitation of the study was that some participants wanted to withdraw from the research process due to reasons unknown to the researcher, therefore, six participants who are teaching grade 12 Agricultural Sciences from other schools within the district were recruited to account for dropout. Some participants were not comfortable with the recording of interviews; therefore, the researcher explained the purpose of using it during interviews and focus group discussion.

3.11 Conclusion

This chapter discussed the research methodology that guided the study in detail. The study adopted an interpretive qualitative approach which was also described. The chapter provided the sampling method which was purposive and convenience sampling. A detailed description of the data collection process was also discussed. These included semi-structured interviews and focus group discussion. Thematic analysis which was used to make sense of the data was discussed as well as the validity and reliability of the study. In addition, the ethical procedures that involved, acquiring consent from the relevant parties, participant anonymity and confidentiality were presented in detail. Lastly, the study limitations that included time constraints, withdrawal of some participants from the research process and unfamiliarity with using audiotapes for recording interviews as well as how these were mitigated were discussed in detail. The following chapter presents the data and analysis of findings.

Chapter 4

Data Presentation and Analysis

4.1 Introduction

The preceding chapter outlined the research design and methodology. This chapter presents the research data generated from the case study of two schools located in the Ugu district of KwaZulu-Natal Province. Four post-level-one teachers were used as primary sources of data. The data presentation is done to answer the research questions prepared before the interviews with Agricultural Sciences teachers. As described in chapter three, one-on-one semi-structured interview and focus group discussion were used in generating data. These methods of data collection give much more detailed information and allow for in-depth understanding of the phenomena being researched, as participants can reflect and reason on various subjects in a different way. Data were generated to obtain teachers' experiences of teaching Agricultural Economics to grade 12 learners. The following research question guided the study: *“What are teachers' experiences of teaching Agricultural Economics to grade 12 learners in Ugu District, KwaZulu-Natal?”*

This chapter presents the participants' background information to set a context to understand the participants' experiences of teaching Agricultural Economics; the data analysis process; discussion of findings and a conclusion.

4.2 Background Information of Participants

The participants selected in this qualitative study were Further Education and Training (FET) Agricultural Sciences teachers, experienced in teaching the National Education Curriculum (NATED 550), the Curriculum 2005 (C2005), the National Curriculum Statement (NCS), and the Curriculum and Assessment Policy Statement (CAPS) curriculum in the grade 12 classroom. These participants have taught the Agricultural Economics aspect of the Agricultural Sciences curriculum for more than ten years and were selected because they would provide an experience-based response to the experiences of teaching Agricultural Economics to grade 12 learners. Their ages ranged between 35 to 50 years, and participants teaching grades ranged from grade 8 to 12. The sampled schools were named using alphabets A and B. The four participants were named using numbers 1 to 4.

Participant A1

Participant A1 is a 49-year-old female teacher. She is a qualified professional teacher, who is registered with SACE. She holds a Secondary Teachers Diploma, and her major subjects are Agricultural Sciences and Life Sciences from Transkei College of Education and Advanced Certificate in Natural Sciences from UNISA. She teaches grades 11 and 12, specialising in Agricultural Sciences. Participant A1 worked in the Eastern Cape Province before joining KwaZulu-Natal Province and has 20 years' experience teaching at the high school level.

Participant A1 is involved in the marking of the National Senior Certificate examination (Agricultural Sciences). She enjoys coaching the school choir as her extracurricular activity.

Participant A2

Participant A2 is a 35-year-old male teacher. He is a qualified teacher and registered with SACE. Participant A2 obtains a Secondary Teachers' Diploma in education and a B.Ed. from UNISA. He teaches grade 12 Agricultural Sciences and Natural Sciences grade 8. Participant A2 has taught in the school for ten years and is a cluster coordinator for Agricultural Sciences in the Ugu district. He enjoys reading in his spare time as well as playing soccer during weekends. He is a sports coordinator in the school as well as a SADTU Site Steward.

Participant B3

Participant B3 is a 47-year-old male teacher. The qualified teacher holds a Secondary Teachers' Diploma obtained from Maluti College of Education. Participant B3 teaches grade 12 Agricultural Sciences as well as grade 9 Natural Sciences. He has an experience of eighteen years as a high school teacher and ten years at the current school. Participant B3 is involved in the National Senior Certificate examination (Agricultural Sciences) as a senior marker for paper 2, covering the Agricultural Economics aspect. He is passionate about physical education and is a coach of the soccer team in the school. In his spare time, he enjoys listening to gospel music.

Participant B4

Participant B4 is a 50-year-old professionally qualified educator who holds a Secondary Teachers Diploma from Bethel College of Education and an Advanced Certificate in Agricultural Sciences from UNIZULU. He's registered with SACE, and teaches Agricultural Sciences and Life Orientation to grade 9 pupils. Participant B4 has been teaching for 25 years and has huge experience in the education system as he has even taught before the democratic

dispensation of 1994. He has offered his services to many schools, and 16 of those 25 years were in the current school. Participant B4 is also involved in the National Senior Certificate examination (Agricultural Sciences) as a senior marker for paper 2, covering the Agricultural Economics aspect. He has been a senior marker for six years. He enjoys reading during his spare time.

4.3 Data Analysis Process

Genapathy (2016) describes data analysis as a process of reducing and interpreting data to obtain insight. The data analysis process helps in reducing a large chunk of data into smaller pieces. In the current study, the researcher listened to interviews severally to get a sense of the data presented before transcribing (Braun & Clarke, 2006; Genapathy, 2016). The data from interviews and focus group discussions were coded to identify emergent elements related to the theoretical framework and the study purpose (Saldana, 2015). According to Saldana (2015) “a qualitative research code is a word or short phrase that symbolically assigns a summative, salient, essence-capturing, and/or evocative attribute for a portion of language-based or visual data” (p. 9). The coding process aimed at obtaining a holistic understanding of the teachers’ experiences of teaching Agricultural Economics to grade 12 learners. The purpose of coding was to develop categories or themes. The coding offered an opportunity for familiarisation with the data to arrange and reduce the data.

Similarities between the codes were identified and merged eventually developing categories that fitted into the themes used during the writing process. Thematic analysis which is used to identify, analyse, and report patterns (themes) within the data was employed in this study (Braun & Clarke, 2006). The thematic analysis was useful in providing insight to the ways that teachers make meaning out of their experiences. The excerpts from participants provided below support the research findings and discussions.

4.4 Discussion of Findings

4.4.1 Teachers’ Understanding of Agricultural Sciences

When participants were asked about their understanding of Agricultural Sciences, all participants viewed Agricultural Sciences as studying soil, animals, plants, production,

processing, comparing indigenous knowledge with modern technology, transportation, and the importance of using natural resources sustainably. Participant A1 mentioned that:

Agricultural Sciences is a science that deals with food and fibre production and processing. Agricultural Sciences include land cultivation, plant production, animal production, and the processing of plant and animal products for human consumption and use. Food is the most basic human need.

This concurs with Heinert and Robert's (2017) view that Agricultural sciences are the art and science of growing crops and rearing animals and includes processing, marketing, storing, and transportation of agricultural products. However, participant B4 pointed out that:

Agricultural Sciences is the mother of all sciences. It is the origin of all the sciences. Man must pursue agricultural activities to live. Agriculture looks at how to create job opportunities for people in the country, how to provide people with raw materials as well as the stabilization of the economy in a country.

Furthermore, during the focus group discussion, participants indicated that Agriculture is a 'future'. South Africa is an agricultural land, and most people belong to an agricultural background for food security. The country's social-economic benefit comes from agriculture. Similarly, CAPS (2012) highlights that Agricultural Sciences is a study of the relationship between soils, plants, and animals in the production and processing of food, fibre, fuel, and other agricultural commodities that have an economic, aesthetic, and cultural value. This suggests that Agriculture is both a science and technology. Therefore, agricultural production lies in science and technology to achieve sustainable and stable agricultural development and ensure the effective supply of agricultural products for a long time (Abutabenje, Sawsan, & Raed, 2018; Solomon, 2018).

4.4.2 The Rationale for being an Agricultural Sciences Teacher

When participants were asked why they chose to be Agricultural Sciences teachers, they provided various reasons. Participant B4 expressed the following:

To be honest, I have a passion for agricultural sciences, and I love to observe the stages that the seeds or crops of plants undergo when planted; and I was also interested in observing development stages and was curious as to how one seed can bring about such processes, e.g., maize plant...

Participant A1 stated the following:

I chose to be an agricultural sciences teacher because I wanted to pass the indigenous and scientific information that I got from my custodians and through books scientifically to the recent and the next coming generation to explore them, to different fields of agriculture to become entrepreneurs.

Participant B3 mentioned the following:

I decided to be an Agricultural Sciences teacher because Agriculture plays an important role in its economy. Learners must be taught such information in schools. What would happen if there were no farming activities such as the farming of livestock and crops?

For all the participants, teaching Agricultural Sciences is important to them. It equips learners with sustainable knowledge and necessary skills, which will enable them to make their own sound decisions. These participants have a passion for teaching Agricultural Sciences to learners. It is said that learners' perceptions about learning are directly dependent upon the teacher's passion (Bukaliya, 2017). This also concurs with Modebelu and Nwakpadolu (2013) analogy that a teacher with passion positively influences the learning experience. There is a correlation between a teacher's passion and the learners' intrinsic motivation to learn. Passion leads to interested, energetic, and partaking learners in the subject. Passionate teachers are good at creating beneficial relations with their learners. Amadi and Ekezie (2017) indicate that teaching of Agricultural Sciences should be included in the school curriculum for learners to acquire knowledge and skills to meet society's basic food production needs and industrial raw materials. Therefore, teachers should utilise the teaching and learning of agricultural sciences to equip the students for good living, stimulating learners' interest in agriculture, and integrating their knowledge and skills.

4.4.3 Agricultural Economics and Aims of teaching Agricultural Economics

When asked about their understanding of Agricultural Economics during a focus group discussion, participants responded as follows:

Participant B4 described Agricultural Economics as follows:

An applied social science deals with how producers, consumers, and societies use scarce resources in the production, marketing, and consumption of food and fibre products.

Participant B4 believes that Agricultural Economics is concerned with allocating scarce resources for optimal production and productivity. Diise, Mohamed and Zakaria (2018) also define economics as the study of the use factors of production in the production, distribution, and consumption of goods and services to address scarcity's economic problem.

For participant A2 Agricultural Economics:

is the study about production factors, how they bring about the production process, and the importance of each in production to ensure food security in our country while providing jobs for people and its contribution to the country's economy.

It is evident that Agricultural Economics focuses on food production to ensure that all people have access to enough food in the country and employment in rural areas. Furthermore, it is the key to the economy. In addition, Participant B3 indicated that:

Agricultural Economics combines the technical aspects of agriculture with the business aspects of management, marketing, and finance.

The above description shows that it is important to promote Agricultural Economics knowledge and skills to learners. If they are not employed, they can open their agribusinesses, creating job opportunities for others. Additionally, if learners are motivated, they can consider business opportunities and careers in Agricultural Economics.

4.4.4 The Teaching of Agricultural Economics

The participants in the focus group discussion were asked about the rationale for teaching Agricultural Economics. One of the participants spoke about preparing learners better for productive careers in agriculture and agribusiness. Some participants indicated that they teach Agricultural Economics as an aspect covered in Agricultural Sciences as stipulated in the curriculum and assessment policy statement (Department of Education, 2011). Participant B3 mentioned that:

I teach agricultural economics to grade 12 to equip learners on why there is a need for them to consider farming to produce food and sell to retailers or agencies and consumers, even to export it to other countries; and marketing as a process in the agriculture industry as a whole.

The above statement suggests that participant B4 believed that in taking Agricultural Sciences one should have the knowledge and skill of Agricultural Economics to solve poverty and unemployment problems. Furthermore, the CAPS document (Department of Education, 2011) stipulates that Agricultural Economics equip learners to develop problem-solving mechanisms within the contexts of agricultural production, processing, and marketing practices.

Participant A2 indicated that:

Learners must understand all the concepts taught in Agricultural Economics and differentiate land, labour, capital, and management. Moreover, be able to acquire marketing and selling skills.

The above excerpt shows that in Agricultural Economics, the critical factors of production which are land, labour, capital, and management are crucial in a farm business. This suggests that understanding each production factor leads to a successful farm business. Similarly, Diise et al. (2018) define economics as the study of the use factors of production in the production distribution and consumption of goods and services to address scarcity's economic problem. This means that every learner should be able to see the connection between different factors of production. This also concurs with Kidane and Worth's (2012) claim that Agricultural Economics enables learners to obtain the required knowledge, skills, and values and learn their appropriate application in the production and processing of agricultural products. However, Participant B4 indicated that she had a responsibility as a qualified Agricultural Sciences teacher to ensure that the aims for teaching Agricultural Economics knowledge and skills as stipulated in CAPS documents are met. Furthermore, Participant A1 added that:

I want learners to pass paper two because Agricultural Economics forms paper 2 in the examination. I want my learners to pass with flying colours because they practice it daily at their homesteads since we are staying in rural areas.

Therefore, it is clear from the above observation that, for participant A1, the reason for teaching Agricultural Economics is that she was following the instruction from the Department of Education and did not mention anything about the importance of Agricultural Economics to learners. She only indicated that she wants learners to get good marks in paper 2 (Agricultural Economics) in their final examination. However, the Agricultural Sciences syllabus's main purpose is to develop basic Agricultural knowledge, skills, and attitudes and provide learners with opportunities that expose them to various branches of agriculture (Manu, 2018).

4.4.5 Components of Agricultural Economics

To the question of what the components of Agricultural Economics are, all the participants were clear on the components covered in Agricultural Economics. Participant A2 and participant B3 listed the same topics as participant B4. Participant A1 mentioned that:

Agricultural Economics primarily focuses on production factors, agricultural marketing, agricultural entrepreneurship, agri-business, and business planning.

Participant B4 added that:

I always cover all nine chapters in Agricultural Economics CAPS: land, labour, capital, management, agricultural marketing, market equilibrium, agricultural marketing systems, agricultural entrepreneurship, and business plans.

The participants' responses indicate that they all have a common understanding of the topics covered in Agricultural Economics. Moreover, the responses from the participants are in line with topics stipulated in the CAPS document. In terms of CAPS (2011), topics covered in Agricultural Economics are production factors, agricultural marketing, agricultural entrepreneurship, and agri-business plan. Participants were able to categorise which topics are in the Agricultural Economics aspect and indicated that they possess content knowledge of Agricultural Sciences in the CAPS document. According to Berry, Depaepe and Van Driel (2016), content or subject knowledge refers to knowledge about a subject and disciplinary knowledge.

4.4.6 Unpreparedness to Teach Some Aspects

When asked whether there are any aspects that they feel unprepared to teach in Agricultural Economics content, the responses during one-on-one interviews and focus group gave an indication that some of the teachers are not ready to teach some topics covered in Agricultural Economics. They indicated that one of the reasons they feel they are not prepared is because they received insufficient training in Agricultural Economics aspect.

Participant A2 said:

I am not confident to teach agricultural entrepreneurship and agri-business because I was never trained in these aspects when I was doing my training.

Participant A1 stated that:

I struggle to teach production factors since I do not have a background in Business Studies, Economics, and Accounting.

Like Participant A1 and A2, Participant A4 mentioned the following:

For the first three years of my teaching, I used to skip some aspects when teaching Agricultural Economics because I struggled with economics, accounting, and business studies aspects. The reason being that I did not do these subjects when I was doing my high school. Furthermore, I was not trained in entrepreneurship and agri-business when I did my diploma.

However, Participant B3 said that:

I enjoy teaching the Agricultural Economics section. I am always prepared whenever teaching. I still do my best in all aspects.

Teachers' knowledge and competence are based on the education and training that is taught during study periods (Aimah, Ifadah, & Linggar Bharati, 2017). The above statements indicate that some participants had discomfort with some topics in Agricultural Economics. Hence, when they were trained, some of the topics were not part of the curriculum. Three participants in the interview said that conceptual understanding is required to perform in Agricultural Economics. Hence, some of them have no confidence in teaching some of the topics covered in Agricultural Economics. Only participant B3 enjoys teaching Agricultural Economics aspect and does his best when presenting all the topics. This means that adequate knowledge of the subject matter is the key to learners' performance. Furthermore, Shulman (1986) argues that content knowledge is a preliminary qualification for prospective teaching, playing a vital role in instruction and professionalism.

This finding is an indication that inadequacy in content could hamper the achievement of set goals (Berry, Depaepa & van Driel, 2016). Over and above, this suggests that teachers who are not confident with the content covered in Agricultural Economics prefer to skip the content or scratch on the surface when teaching it. Hence, they could not present lessons with confidence to learners, leading to low learner achievement. Content or subject knowledge refers to the knowledge about a subject, the disciplinary knowledge of a subject (Berry, Depaepa, & van Driel, (2016). The Department of Education (2015) reveals that learners were not exposed to financial documents, especially the balance sheet and financial management system. These aspects are covered in Agricultural Economics. This means that some teachers obtained their qualifications under the old curriculum, which might not have prepared them enough to manage the new curriculum. As a result, learners performed very poorly in paper 2.

4.4.7 Challenges of Teaching Agricultural Economics

During a focus group discussion, all the participants indicated different challenges they experience when teaching Agricultural Economics. One of the challenges was a lack of necessary background in commerce subjects in learners. Hence, learners experience problems in some topics, and this is indicated by participant B4 who commented on his challenges of teaching Agricultural Economics:

Learners struggle to grasp some concepts, and therefore it becomes difficult for them to understand the Agricultural Economics aspect. Some learners doing Agricultural Sciences are not familiar with subjects like Accounting, Economics, and Business Studies, so it becomes a problem for them to master some of the content.

Participant B3 added that:

When I introduce the Agricultural Economics aspect to learners taking Physical Sciences and Life Sciences, they become confused and think that they are in Economics, Accounting, and Business Studies class. Hence, they have a negative attitude towards Agricultural Economics, which impacts badly on learners' performance.

This implies that if learners have a negative attitude towards Agricultural Economics, they are most likely not to engage in Agricultural Economics careers as indicated by Kidane and Worth

(2013) who state that a learner's attitude about learning affects their outlook towards learning throughout life. This suggests that teachers need to be motivated to increase the performance of the learners in Agricultural Economics. This also implies that for better performance, Agricultural Sciences teachers should devise innovative teaching methods to sustain the learners' interest and participation throughout the lesson period. Learner's attitude towards the study of Agricultural Economics can affect their subject performance (Otekunrin, Oni, & Oluwaseun, 2017). Therefore, a positive attitude towards Agricultural Economics assists learners to relax, remember, focus, and absorb information as they learn. Additionally, the Agricultural Science teacher's role is to provide support and encouragement to learners (Smalley & Rank, 2019). Furthermore, participant A1 added that:

Teaching grade 12 Agricultural Economics requires a sound background in Economics, Business Studies, and Accounting.

Figure 4.1: Extract requiring a sound background of Economics (NSC November Exam, 2014)

An emerging broiler and egg farmer want to draw up a cash flow budget for a month, opening from a zero balance. Workers' wages cost R4 000 per week. Chicken feed costs R7 000 per week, electricity is R2 500 per week and some other costs amount to R1 500 per week. The farmer's income consists of the following: Eggs sold for cash to local shops is R10 000 per week. Once a month broiler is sold to a slaughter house for R50 000.	(4)
3.4	
3.4.1 Draw up a mini cash flow budget for ONE week.	
3.4.2 Determine the net cash income for ONE month.	(3)
3.4.3 Explain whether the net income of this business can be guaranteed on the basis of its cash flow.	(2)

In the above extract, the teacher needs a sound background in Accounting and Economics aspects from the teachers of Agricultural Sciences to be able to respond to this examination question and to teach learners the knowledge and skills required to successfully answer this question, especially the ability to draw a mini cash-flow budget and to be able to transfer the skills to learners.

In figure 4.2, the extract requires a background of accounting to approach the question, which means that this might be a challenge for some teachers due to inadequate Accounting, Economics, and Business skills. Therefore, this implies that Agricultural Sciences teachers must be current in the subject matter and its pedagogy for Agricultural Economics. Hence, an effective teacher gives various examples, correctly plans lessons, and knows the subject matter.

Figure 4.2: Extract requiring a sound background of Accounting (NSC November Exam, 2014)

3.3 The information below shows the assets and liabilities on a farm.

- Value of farm: R3 500 000
- Tractor loan: R365 000
- Value of vehicles: R275 000
- Overdraft: R150 000
- Bond: R4 200 000
- Cash: R50 000
- Value of buildings: R650 000

Assets	Rand	Liabilities	Rand
Total		Total	
Net Worth			

Use the table above and complete it with the (7) information provided. Calculate the net worth of the farm.

3.3.2 Indicate whether this farming business is viable. Give (2) a reason to support your answer.

Furthermore, this means that Agricultural Economics has mathematics, accounting, and graphs. Some teachers may experience mathematics challenges and may not have an accounting background and experience, which may cause them to avoid this section when teaching.

However, Participant B3 said that:

Agricultural Sciences is forced upon learners since it belongs to a group of subjects that they are not interested in.

The above view shows that learners may be negatively or positively affected by this. Selection of subjects includes an interest in the subject, importance of the subject, ability or success of the subject, and career preference. However, according to Badiru, Aluko and Adejumo (2019), there is a reduced interest in Agricultural Sciences as a secondary school subject as well as a clear decline in youth's involvement in agricultural activities. This means that learners prefer courses such as medicine, law, nursing and engineering to agriculture-related courses. This suggests that the appropriate choice of subjects is an important step in achieving educational goals. This is similar to a study that was done by

Solomon (2018) where findings revealed that subject choice is an integral part of education systems beyond secondary school.

4.4.8 Coping Strategies Used by Teachers

The interviewed Agricultural Sciences teachers revealed that they use practical examples as one of the coping strategies when they teach Agricultural Economics. This is done to equip learners with the relevant skills to apply knowledge in practical situations. Hence, some participants use real-life scenarios in the teaching of Agricultural Economics. Participant B4 mentioned the following:

When I introduce new concepts, I make use of practical examples. For example, sugar cane and nuts production, as some of the learners' parents work on farms, and in their homes, their parents are producing sweet potatoes and amadumbe. I do this to make learners understand some Agricultural Economics concepts.

Participant A1, mentioned that:

When teaching, I give learners a thorough practice on terminology, concepts, and I also drill them to use correct terms for Agricultural Economics.

Therefore, the above view indicates that for participant A1, Agricultural Economics terminology forms part of daily teaching and learning. This helps understand concepts such as balance sheets, income statements, cash flows, and budgets. However, participant A2 indicated that one of the coping strategies he used was to network with other teachers teaching Business, Commerce and Management subjects.

Participant A2 mentioned that:

For Accounting and Economics topics, I always ask my colleagues to assist me in some concepts.

It is clear from the above excerpts that for the teacher to cope in the teaching of concepts like net cash income, cash flow, and all other Accounting and Economics concepts, collaborative teaching with Accounting teachers for better comprehension and understanding of Accounting and Economics concepts is necessary. This is in line with the study Khalidi, Abdullah and Kamoludeen (2016) who indicated that teachers work collaboratively and systematically during teaching and learning in the classroom with one goal: to enrich and improve learners' learning education experiences and improve teaching methods. This means that networking with other teachers enhances teachers' content and pedagogical content knowledge; thus, teachers play a crucial role in the teaching and learning process. However, the level of knowledge being attained by learners depends solely on the level of knowledge and attitude of their teachers (Keller, Neumann & Fisher, 2017).

4.4.9 Teaching Strategies for Agricultural Economics

In response to the question of teaching strategies of Agricultural Economics, all participants indicated that they use different teaching strategies when teaching Agricultural Economics during the focus group discussion and one-on-one interviews. Thus, good teaching methods provide learners with information to be used now or in the future. Participant B3 comments on his teaching strategies:

I use the lecture and demonstration method. I also make use of questions to check if learners understand the content. I provide learners with plenty of practice. Feedback is also provided to learners so that they refine their efforts. I allow learners to work together in productive ways.

Like participant B3, participant A2 added that:

I use many different strategies to cater to learners' inclusivity. I am using cooperative learning, questioning to check and understand. I use graphs, especially for the supply and demand curve explanation, plenty of practice, providing learners with feedback, and working together.

However, participant B4 believed in using real-life scenarios when teaching. She had this to say:

I move from concrete to abstract, making examples that learners are more familiar with, for example, the selling of sweets and bananas by some of the community members at school, and how they come up with prices and the reasons for selling their products.

The above participants' interview responses suggest that teachers use different teaching methods to teach Agricultural Economics. This then means that teachers engage learners in the learning process by working together and showing learners what they need to know. This also reveals that teachers use both learner-centered and teacher-centered methods. According to

Miriam, Konyango and Nkurumnwa (2016), a teacher's choice of teaching method depends on their technical know-how and the nature of the content. Some of the methods used include problem-based, student-centred, demonstration, project, and lecture method. This means that

Agricultural Sciences teachers should choose a flexible teaching method and develop learners' critical thinking. Kidane and Worth (2014) confirm that the instruction approach of teachers and the classroom environment all influence learners' attitudes and interest in Agricultural Sciences lessons in the teaching and learning process.

However, participants' findings do not indicate that they involve learners in Agricultural Economics activities through projects. The project method exposes learners to long-lasting experiences and assists them to think critically. This collaborates with the study of Antwi (2017) whose findings indicated that the project-based method challenged students to learn and work cooperatively in groups to seek solutions to the real world. Additionally, therefore, this means that Agricultural Sciences teachers must prepare for

practical experiments that will help to consolidate the teaching that is taking place in the classroom (Solomon, 2018). Consequently, poor teaching methods contribute to poor performance (Mokori, Moabe, & Nyangeri (2019).

4.4.10 Lack of Training on New Content

Lack of training on the new content in Agricultural Economics seems to be a major obstacle for some teachers. Some participants indicated that they never received training on Agricultural Economics at teacher colleges. Furthermore, they are not familiar with some concepts; hence, they find it challenging to deliver to learners. Teaching and learning process is more dependent on the transfer of knowledge from the teachers to the learners. Three teachers saw new content that was added on Agricultural Economics as a challenge.

Participant A2 expressed the following:

At first, I did not know how to teach Agricultural Economics. I had a very bad attitude towards it. Being that at high school as a learner, I did not do the Agricultural Economics aspect. Furthermore, when I was doing my training, I was not trained on the new content of Agricultural Economics. When I started my teaching practice, the new content was introduced, and I had to teach it.

Another participant, A1, said that:

Agricultural Economics is not an easy aspect for learners who are not doing Business Commerce and Management subjects, and it is extensive. Yet, time is limited to teach Agricultural Economics.

For Participant 3:

Teaching grade 12 Agricultural Economics requires a sound background in Economics and Business studies as well as Accounting, so I always get help from colleagues, and they help by providing support in Agricultural Marketing, which includes demand and supply, interpretation of law of supply and demand using graphs, price elasticity, and price inelasticity.

However, participant B4 did not find new content challenging since he received training while studying for his degree at the University. Participant B4 stated that:

I enjoy teaching Agricultural Economics, and I am very confident when going to class to teach Agricultural Economics. I learn a lot from learners. Every day is different, and I feel like understanding each learner better. This experience helps me understand that teaching Agricultural Sciences was a right choice for my career. Now, I am motivated to teach and put into practice everything I was taught at University.

This shows that training plays a very crucial role in educational excellence. Thus, Agricultural Sciences teachers must receive training on new content to possess knowledge of the subject matter for Agricultural Economics and stay at the top of their game in class. Through training, Agricultural

Sciences teachers expand their knowledge and improve their pedagogical skills to improve learners' performance (Peake, Duncan, & Ricketts, 2007). There is a need for teachers to be provided with training to gain skills not learned while taking college courses and stay current with new technical aspects that deal with content (Macnall, 2019). This means that if teachers are prepared through training, they will be able to cope with whatever situation they may encounter during teaching and learning. Hence, effective teaching of Agricultural Economics involves a deep understanding of the subject matter.

4.4.11 Teaching Resources for Agricultural Economics

When participants were asked about the resources they use to teach Agricultural Economics, they provided the following comments:

Participant B4 stated that:

I use a different textbook in my teachings, such as Agricultural Sciences Focus, Agricultural Sciences study and master, documents from the Department of Education, worksheets, and previous question papers.

Participant A2 said:

Prescribed textbooks, study guides, farmers' weekly, teaching material, and videos that we get from ASAAE conferences.

Participant A1 and B3 added that:

We use CAPS document, different textbooks, relevant departmental documents, videos, chalk, chalkboard, duster, and charts with pictures of marketing and production factors.

The above excerpt shows that teachers do have some resources for teaching Agricultural Economics effectively and meaningfully to learners. Furthermore, according to Fomunyan (2013), each teacher chooses the teaching strategy they want to use based on their teaching and the resources available.

Regarding problems with appropriate resources to support teaching and learning of Agricultural Economics, participants in a focus group discussion and semi-structured interviews indicated that on the aspect of teaching resources for Agricultural Economics, schools do not have enough resources and practical teaching resources. Participants highlighted that although some resources are available, they are inadequate. Participant B4 shared that:

In my school there is a shortage of learner textbooks with rich information on Agricultural Economics, and that leads to low learner performance in Agricultural Economics due to lack of background in Economics, Accounting, and Business studies in learners

Therefore, it is evident from the above statements that some resources are available for Agricultural Sciences but are inadequate. This means that this hampers teachers' delivery of quality lessons to the learners and is a barrier to learning.

Participant A1 added that:

There are no resources for Agricultural Economics to conduct practical lessons; I only use videos when attending ASAAE conferences. I always order other study material, but they do not come.

Participant A1 added that:

I rely on pictures from the textbooks. Some information needs to be accessed on the internet, and learners do not have internet access. In my school, we offer many different subjects, but we have only one projector.... can you imagine a school with more than 1500 learners and we only have one projector? I have slides that I can use to teach

Agricultural Economics, but unfortunately, I cannot use them because each time I want to use the projector, someone is using it. Hence, it is believed that some subjects are better than others are.

The participants' responses above indicate that teachers do their best to improvise due to the lack of resources in schools; they use videos they get from ASAAE and pictures from textbooks. Bizimana and Orodho (2014) assert that a teaching and learning resource is any support material available to the teacher in class and reading material for learners. Therefore, this means that the availability of teaching and learning resources helps teachers present and transmit the content effectively. Lack of resources (textbooks and other study material) affect teaching and learning of Agricultural Economics, this means that learners do not have an opportunity to improve their understanding beyond what is in the book. Ong'amo and Ondigi (2017) indicate that resources promote good preparation, smoothness, and momentum lesson pacing. This suggests that resources help teachers to organize and manage the classroom setting as an efficient learning environment.

4.5 Conclusion

This chapter analysed the results of the semi-structured interviews and focus group discussion. The chapter described the profiles of all participants in terms of age, experience, and qualifications. The data were presented in terms of the participants' responses to questions in the interviews and focus group discussion. The chapter concluded by looking at teaching resources for Agricultural Economics. In the next chapter, the findings presented are synthesised into themes to address the research question. The chapter also presents the summary of the study, recommendations, and suggestions for further study.

Chapter 5

Summary, Conclusion and Recommendations

5.1 Introduction

The current study explored teachers' experiences of teaching Agricultural Economics to grade 12 learners in Ugu District, KwaZulu-Natal. The study sought to answer the research question "What are teachers' experiences of teaching Agricultural Economics to grade 12 learners?" This critical question was answered through a semi-structured interview and focus group discussion. The previous chapter provided the presentation and analysis of the data generated. Firstly, this chapter summarises, discusses the findings and makes recommendations based on the findings. Lastly, the chapter also highlights aspects of Agricultural Sciences that need further research.

5.2 Summary of the Study

The current study explored teachers' experiences of teaching Agricultural Economics to grade 12 learners from two selected schools in Ugu District, KwaZulu-Natal. The background of the study, the purpose of research, and its rationale were presented. The reason for the study was to gain understanding of experiences of teachers who teach Agricultural Economics to grade 12 learners from their point of view. Since the background to the study revealed that various study has been conducted on agricultural sciences, both internationally and nationally but have not explored the aspect of teaching and learning Agricultural Economics, this study aims to contribute to the gap in the existing body of knowledge. The current study is underpinned by Shulmans' Pedagogical Content knowledge (PCK) theory of learning (1986). Which was found useful since I wanted to use its curriculum concepts to guide this study.

The study employed an interpretive qualitative approach that allows the researcher to examine the life experiences of participants. The participants of this study were four agricultural sciences teachers who were selected using a purposive and convenience sampling method. The criteria for the selection involved teachers who teach agricultural sciences to grade 12 learners when this study was undertaken. Additionally, all participants have more than five years of experience, specifically in agricultural sciences and their availability. The study used semi-structured interviews and focus group discussions to generate data. Findings of data generated were discussed to explore teachers' experiences of Agricultural Economics to grade 12 learners. The summary of findings from the analysed data and some conclusion, with recommendations are presented below.

5.3 Key Findings

This section discusses the key findings from the current research study as follows:

5.3.1 Teaching Agricultural Economics

A good teacher should identify the important Agricultural Economics skills that learners must acquire to make them progress and function proficiently in society after school (Mutito, 2017). Therefore, this suggests that failure to focus on such skills makes most youth feel inadequate and instead of taking up agriculture as an investment, they move to the urban areas to look for jobs. The study revealed that some teachers were teaching Agricultural Economics because they have a passion for teaching Agricultural Sciences, acknowledging that it is exciting to teach the subject and that they gain pleasure from teaching it. This finding is similar to the study done by Tesha (2018) who showed that most teachers teach Agricultural Economics for the love of the subject, and the goal is to teach learners to be successful when they leave school. What was highlighted in some participants' responses was that they followed the Department of Education's instruction and did not mention anything about the importance of Agricultural Economics to learners. The study's findings also revealed that one of the participants only indicated that he wants learners to get good marks and pass paper 2 (Agricultural Economics) in the national final examination.

5.3.2 Unpreparedness to Teach Some Aspects

From the study's findings it became evident that some teachers are not sufficiently confident to teach all the concepts of Agricultural Economics. Teachers indicated that one of the reasons they feel they are not prepared is because they received insufficient training in Agricultural Economics aspect. This is supported by Peake, Duncan and Ricketts (2007) who state that training of Agricultural Sciences teachers allows them to expand their understanding and improve their teaching skills to serve learners and the community in which they teach effectively. Teacher preparation involves the ability of the teacher to deliver lessons with confidence to learners, subject knowledge, planning lessons and selecting relevant teaching materials. Unpreparedness to teach some concepts in Agricultural Economics leads to teachers coming late to the classroom, going off topic during the lesson, stumbling over the lesson and speaking without coherence during lesson presentation. Modebelu and Nwakpadolu (2013) revealed that teachers who are professionally trained in Agricultural Science are efficient and effective in the classroom. Furthermore, teachers who are not confident with content covered in Agricultural Economics prefer to leave out this information or scratch the surface when teaching it. This then suggests that Agricultural Sciences teachers should be competent in the Agricultural Economics aspect and present content to learners in ways that engage them. The data from interviews and focus group discussions implies that grade 12 teachers need training or clarity on concepts before presenting lessons to learners. Husana, Ritonga, Lahmi, Saputra, and Ayu (2020) concur, pointing out that teachers need to be supported with training for updating the important knowledge and skills in the subjects they teach.

5.3.3 Challenges of Teaching Agricultural Economics

The findings from the current study indicated that teachers seem to face challenges when teaching Agricultural Economics. These include lack of necessary background knowledge of commerce subjects in learners, as well as negative attitudes of some teachers towards Agricultural Economics which affect learners' performance in the subject. Inadequate Accounting, Economics and Business skills is another challenge for teachers. This finding agrees with that of Tesha (2018) which revealed that business economics background for most Agricultural teachers and agricultural extension was poor; besides, there are few teachers who are experts in all the themes covered in Agricultural Sciences. The study also revealed that teachers were also worried about the negative attitude of some learners towards the subject. From the experiences of teachers in this study, it was found that the introduction of new content severely hampers the ability of some teachers to deliver quality teaching to learners as most of them were not adequately equipped to handle the aspect of Agricultural Economics. This finding correlates with research done by Husana et al. (2020) who reported that teachers' challenges were more related to the inability of teachers to understand new concepts following the changes that occurred in the new curriculum. Hence, some teachers find it challenging to teach Agricultural Economics aspect. This suggests that content workshops to address new concepts on Agricultural Economics are required to improve teachers' content knowledge and skills. Moreover, teacher training increases the teachers' productivity and boosts their morale.

5.3.4 Coping Strategies

The study revealed that some teachers' coping strategies are to network with other teachers who teach Business Commerce and Management subjects. Networking offers support for teachers who are struggling with concepts of Agricultural Economics. This was also revealed by Gatt and Manuel (2009), that networking allows opportunities for teachers to increase and improve the teachers' personal content knowledge and pedagogical skills. Furthermore, it is a good practice for teachers as it promotes teachers' professional development. This shows that when teachers work together they share knowledge and acquire new teaching strategies. Khalidi, Abdullah, and Kamoludeen (2016) also revealed that teamwork increases content delivery to the learners and communication skills such as questioning techniques and giving clear instructions. It also transpired from the findings that teachers use real-life scenarios in the teaching of Agricultural Economics. This finding is similar to the study by Sormunen, Hartikainen-Ahia and Jappinen (2017) who revealed that the use of real-life scenarios when teaching connects learners' daily lives, allows learners to understand, triggers learners' interest and motivation. Real-life scenarios allow teachers to put learners in the picture of what they are learning, and learners can make connections between the lesson and the real world. Real- world examples of teaching Agricultural Economics help

learners to recognise that the concepts they learn in the classroom affect the outside world. This implies that Agricultural Economics touches each living person profoundly and critically, hence it is a science of survival. Therefore, teachers should use real-life scenarios when teaching as it helps learners understand lessons more; not only what they are learning but also why they are learning the concept. Additionally, the findings from the data indicate that connecting lessons to the real world increases learners' interest in the subject matter which encourages them to be active and engage in the learning process.

5.3.5 Teaching Strategies of Agricultural Economics

The findings indicate that teachers used different strategies when teaching Agricultural Economics, including lecture method, demonstration method, discussion, and co-operative learning. This was also noted in a research conducted by Miriam, Konyango and Nkurumnwa (2016) who found that lecture and discussion methods were the most commonly used methods by Agricultural Sciences teachers. Furthermore, it appears from the findings of the current study that some teachers move from concrete to abstract when teaching Agricultural Economics and use both learner-centered and teacher-centered methods. This suggests that teachers use different approaches to help learners to understand concepts when teaching. However, almost all the participants indicated that they prefer to use the lecture method referred to as the talk and chalk method when teaching since teachers are under pressure to complete the syllabus. This is supported by Abeysekera (2015) who revealed that lecture method offers learners little opportunity to engage interactively with the content. This shows that teachers dominate the teaching with less participation on the part of learners. On the other hand, from the experiences of teachers in the study, the lecture method has the advantage of allowing teachers to cover a wide area within a brief time. However, this suggests that methods that make learners passive do not allow them to practice their knowledge and skills. Strong, Amy, Hannah (2010) showed in their study that the use of appropriate teaching methods enhance interaction between the teachers and learners in an exchange of ideas.

5.3.6 Lack of Training on New Content

The study revealed that participants expressed frustration at the lack of training on new content. The findings of this study highlighted that three participants never received training on the new content of Agricultural Economics aspect when they were at college. This shows that they are not familiar with some concepts; hence, find it quite challenging to deliver some topics covered in Agricultural Economics to learners. Adama (2019) also revealed that teachers need to be trained and retrained constantly to attain new and more knowledge to improve their teaching experience in the classroom. Only one participant indicated that they enjoy teaching Agricultural Economics. Therefore, this suggests that content training and support through developmental workshops should be organised for teachers by Agricultural Sciences

subject advisors. (Peake et al., 2007) notes that training makes teachers deliver lessons more effectively as opposed to before they received training. Furthermore, when Agricultural Sciences teachers are trained, they acquire more content knowledge, skills, and competencies. In support of the above finding, David (2019) asserts that regular training of teachers also increases the teachers' productivity as required in the teaching of Agricultural Sciences. This means that if teachers are prepared through training, they will be able to cope with whatever situation they may encounter during teaching and learning. Hence, learners expect teachers to be experts in the topics they teach in Agricultural Economics. This shows that the training of teachers through content workshops is essential to empower them.

5.3.7 Teaching Resources

Findings in this study revealed that the four Agricultural Sciences teachers were using different resources. The teachers' common resources were textbooks, documents from the department of education, chalkboard, past examination question papers and charts with pictures. The study also revealed that only one out of four teachers used gadgets such as computer, power point, overhead projector and video tapes. Stanojevic, Cenic and Cenic (2018) believe that it is necessary for teachers to modernize teaching materials to make learning more attractive to learners. They also insist on modern teaching, which includes the introduction of the use of modern teaching aids such as computers. The results further showed that some teachers seem to face inadequate teaching and learning resources and their unavailability. Maharajh, Nkosi and Mkhize (2016) state that the provision of resources is crucial in ensuring smooth curriculum enactment. The findings of this study highlighted that learners share textbooks. Therefore, when books are shared, some learners will not have a chance to use books at home, which may affect the learning of Agricultural Economics. It also appeared from the findings that there is a shortage of practical teaching resources for Agricultural Economics. This then shows that learners do not have the opportunity to go beyond what was taught in the textbook. This finding agrees with that of Mbajiorgu et al. (2014) which revealed that some factors are associated with failure on the part of the government to provide needed resources to meaningfully impact on the teaching and learning of Agricultural Sciences. Participants also highlighted that both teachers and learners have no access to the internet in their schools. Thus, both learners and teachers do not have access to a myriad of information on Agricultural Economics. This suggests that internet access is essential as learners can use it to complete their assignments, homework, research, and presentations. Furthermore, this implies that learners will get the opportunity to explore knowledge.

5.4 Recommendations

This study's focus was to explore teachers' experiences of teaching Agricultural Economics to grade 12 learners in Ugu district, KwaZulu-Natal. The study was limited to only two high schools and four teachers in the Ugu District because of its qualitative nature. Therefore, the findings of this study cannot be generalised. Considering the above key findings, some recommendations are suggested.

- Further research is required regarding teachers' experiences of teaching Agricultural Economics outside KwaZulu-Natal in provinces like Mpumalanga, Eastern Cape, and North West.
- It is recommended that in teaching concepts such as cash income, cash flow, expenditure and all other accounting and economics concepts, there should be collaborative teaching with the accounting teachers for better comprehension and understanding of these concepts.
- The study also recommends that short agricultural sciences learning programmes be organised from universities and other institutions of higher learning for teachers of agricultural sciences focusing on developing subject content knowledge and the teaching of Agricultural Economics to empower Agricultural Science teachers.
- The study further recommends that teachers' network with teaching- subjects, such as Business Commerce and Management subjects, as well as mathematics. This will help teachers to focus on all aspects of the content that are listed in both the CAPS policy and the Examination Guidelines.
- In addition, the study recommends that Agricultural Sciences teachers be encouraged and trained to use appropriate and quality teaching methods to encourage skill development in Agricultural Economics.
- Furthermore, subject advisors with the Department of Education's support should provide teachers with content training through developmental workshops to promote their efficiency in teaching Agricultural Economics. Moreover, it is recommended they help organise teachers to visit businesses and observe how they operate and how their financial documents and financial management systems are organised.
- The study also recommends that the Department of Education should provide enough textbooks for every learner. Additionally, schools with the help of School Governing Bodies need to allocate a budget for gadgets such as a computer, Power point, overhead projector, and video tapes. Practical teaching resources for Agricultural Economics should also be provided. Department of Education should also provide all essential pieces of equipment required for teaching and learning of Agricultural Economics in secondary schools. The study also recommends that both teachers and learners have access to the school Wi-Fi to access various types of information for Agricultural Economics.

5.5 Suggestions for Future Research

Further research and thought should attend to the following:

- Teachers' experiences of teaching basic agricultural genetics to grade 12 learners.

- Promoting the teaching and learning of basic agricultural chemistry in secondary schools.
- Developing a strategy for teaching and learning of optimum resource utilisation to grade 10 learners.
- The teaching and learning of animal studies in agricultural sciences.

5.6 Conclusion

Agricultural Economics is the pillar for human survival, hence the importance of teaching agriculture at all levels of education. Agriculture is an important subject due to its contribution to the economy of the country, so teachers' experiences of teaching Agricultural Economics to grade 12 learners was a matter of concern. This study focused on teachers' experiences of teaching Agricultural Economics to grade 12 learners in Ugu District. The purpose of the study was to explore the experiences of grade 12 teachers teaching of Agricultural Economics, which is an aspect of the Agricultural Sciences curriculum within two selected schools in Ugu District, KwaZulu-Natal.

The importance of teaching and learning Agricultural Economics in secondary schools cannot be over emphasised. The study's results revealed some relevant concerns and challenges emanating from teachers' experiences of teaching Agricultural Economics to grade 12 learners. The study suggests total participation of all stake holders in the successful teaching and learning of Agricultural Economics in schools.

References

- Abeysekera, I. (2015). Student preferences for instructional methods in an accounting curriculum. *International Journal of Teaching and Learning in Higher Education*, 27(3), 310-319.
- Abutabenjeh, S., & Jaradat, R. (2018). Clarification of research design, research methods, and research methodology: A guide for public administration researchers and practitioners. *Teaching Public Administration*, 36(3), 237-258.
- Adama, H.A. (2019). Impact of in-service training on teachers' job performance in public secondary schools in Kogi-East Senatorial district, Kogi State, Nigeria. *International Journal of Education and Research*, 7(1), 165-178.
- Adekoya, Y.M., & Olatoye, R.M. (2015). Peer tutoring and lecture teaching strategy on senior secondary students' achievement in the aspect of agricultural science. Faculty of Agriculture. Olabisi Onabanjo University. Ogun State.
- Aimah, S., Ifadah, M., & Linggar Bharati, D. A. (2017). Buiding teacher's pedagogical competence and teaching improvement through lesson study. *Arab World English Journal (AWEJ)*. 8 (1), 66-78.
- Amadi, N.S., & Ekezie, Z.J. (2017). Analysis of strategies used by lectures in teaching agricultural education in higher institutions in riverstate Nigeria. *Journal of Education and Practice*, 8(28), 103-111.
- Anney, V.N. (2014). Ensuring the quality of the finding of a qualitative research: Looking at trustworthiness criteria. *Journal of Emerging Trends in Educational Research and Policy Studies*, 5(2), 272-281.
- Antle, J.M. (2019). Data, economics and computational agricultural sciences. *American Journal of Agricultural Economics*, 101(2), 365-382.
- Antwi, E.S.A. (2017). Improving Pupils Attitude towards Practical agriculture lessons among form two agriculture pupils of Tamale senior high school. (PhD), University for development studies.
- Antwi, S.K., & Hamza, K. (2015). Qualitative and quantitative research paradigms in business research: A philosophical reflection. *European Journal of Business and Management*, 7(3), 217-225.

- Ayrton, R. (2019). The micro-dynamics of power and performance in focus groups: An example from discussions on national identity with the South Sudanese diaspora in the UK. *Qualitative Research*, 19(3), 323-339.
- Badiru, I.O., Aluko, B., & Adejumo, A.A. (2019). Teachers Perception of the effects of the new Education Curriculum on the choice of Agriculture as a Career among Secondary School Students in Oyo State. *Journal of Agricultural & Food Information*, 20(1), 86-95.
- Bermudez, D., Benjamin, M.T., Porter, S.E., Saunders, P.A., Myers, N.A.L., & Dutton, M.A. (2013). A qualitative analysis of beginners' mindfulness experiences for women with posttraumatic stress disorder and a history of intimate partner violence. *Complementary Therapies in Clinical Practice*, 19(2), 104-108.
- Berry, A., Depaepe, F., & van Driel, J. (2016). Pedagogical content knowledge in teacher education. In *International handbook of teacher education* (pp. 347-386). Springer.
- Bizimana, D., & Orodho, J.A. (2014). Teaching and learning resources availability and teachers' effective classroom management and content delivery in secondary schools in Huye District, Rwanda. *Journal of Education and Practice*, 5(9), 34-38.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101.
- Braun, V., Clark, J., & Weate, P. (2016). *Using thematic analysis in sport and exercise research*. Routledge.
- Brown, A., & Danaher, P. A (2019). CHE principles: Facilitating authentic and dialogical semi-structured interviews in educational research. *International Journal of Research & Method in Education*, 42(1), 76-90.
- Bukaliya, R. (2017). Agriculture in the primary school curriculum: providing the impetus to the Zimbabwe Agenda for sustainable Socio-Economic transformation. *International Open and Distance Learning Journal*, 2(2), 26-30.
- Burns, P. (2016). *Entrepreneurship and small business*. Palgrave MacMillan Limited.
- Busch, T., Lawrence, M., & William, B.L. (2019). *The Agricultural Scientific Enterprise*. Routledge.

- Chauke, P.K., & Kabiti, H.M. (2016). Teachers' perceptions on agricultural sciences curriculum evolvement, infrastructure provision and quality enhancement in Limpopo Province South Africa. *International Journal of Educational Sciences*, 14(1-2), 93-101.
- Chih-Pei, H.U., & Chang, Y.Y. (2017). John W. Creswell, research design: Qualitative, quantitative, and mixed methods approaches. *Journal of Social and Administrative Sciences*, 4(2), 205-207.
- Cohen, L., Manion, L., & Morrison, K. (2018). *Research Methods in Education* (8th Ed.). Routledge.
- Creswell, J.W. (2014). *Research design: Qualitative, quantitative and mixed methods approaches* (4th Ed.). SAGE.
- Crow, O.J. (2017). Key principles of effective teaching and learning within a communicative framework. *Shoin ELTC Forum*, 6, 17-25.
- Crowe, S., Creswell, K., & Robertson, A. (2011). The Case Study Approach. *BMC Medical Research Methodology*, 11(1), 100.
- Cypress, B.S. (2017). Rigor or reliability and validity in qualitative research: Perspectives, strategies, reconceptualization and recommendations. *Dimensions of Critical Care Nursing*, 36(4), 253-263.
- David, L.C.J. (2017). Teacher perception of Georgia middle school agricultural education curriculum and its relationship to secondary agricultural education enrollment. (PhD), Auburn University, Auburn Alabama.
- David, S. (2019). Effects of Guided-Discovery and Problem-solving teaching methods on students' academic performance in financial accounting in colleges of Education, North Central, Nigeria. (PhD), Kwara State University (Nigeria, Nigeria).
- Department of Education (2018). Diagnostic Analysis. KwaZulu-Natal.
- Department of Education (2015). Diagnostic report Agricultural Sciences National Senior Certificate.
- Department of Education (2011). Curriculum and Assessment Policy Statement Grades 10-12 Agricultural Science.

- Diise, A.I., Mohamed, A.A., & Zakaria, H. (2018). Organising project method of teaching for effective agricultural knowledge and skills acquisition: comparison individual and group students' project. *Journal of Education and Practice*, 9(23), 56-66.
- Dooly, M., Moore, E., & Vallejo, C. (2017). Research Ethics. *Research-publishing. Net*.
- Dragoescu, A.A., Groszer, A.S., & Stefanovic, S. (2017). Teaching and learning in English for special purposes for agricultural and mechanical engineering. *Research Journal of Agricultural Sciences*, 49(1), 110-125.
- Etikan, I., Musa, S.A., & Alkassim, R.S. (2016). Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*, 5(1), 1-4.
- Farming, Y.I. (2011). Major reasons youth in Africa do not like Agriculture. In Y. I. Farming (Ed.), Jstor.Org.
- Fomunyan, K.G. (2013). Student teachers' experiences of teachers' professional identity within the context of curriculum change in a University of KwaZulu-Natal. (PhD), University of KwaZulu-Natal, Durban.
- Gatt, S., & Manuel, F. (2009). Networking school teachers to promote better practice in the teaching of science across Europe. *European Journal of Education*, 44(4), 493-506.
- Genapathy, M. (2016). Qualitative data analysis: Making it easy for nurse researcher. *International Education Journal of nursing*, 8(2), 106-110.
- Gill, P., Treasure, E., & Chadwick, B. (2008). Methods of data collection in qualitative research: Interviews and Focus groups. *British Dental Journal*, 204(6), 291-295.
- Gumede, V., & Biyase, M. (2016). Educational reforms and curriculum transformation in post-apartheid South Africa. *Environmental economics*, 7(2), 69-67.
- Hadi, M.A., & Closs, S.J. (2016). Ensuring rigour and trustworthiness of qualitative research in clinical pharmacy. *International Journal of Clinical Pharmacy*, 38(3), 641-646.
- Halaweh, H., Dahlin-Ivanoff, S., Svantesson, U., & Willén, C. (2018). Perspectives of older adults on aging well: A focus group study. *Journal of aging research*, 2018.

- Harrison, H., Birks, M., Franklin, R., & Mills, J. (2017, January). Case study research: Foundations and methodological orientations. In *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research* (Vol. 18, No. 1).
- Heinert, S.B., & Robert, T.G. (2017). A profile of agricultural education teachers with exemplary rural agricultural entrepreneurship education programs. *Journal of Agriculture Education*, 58(4), 192-209.
- Henck, D.R., & Algozzine, B. (2017). *Doing Case Study Research*. Teacher College Press.
- Hlulela, K. (2017). The Practice of scaling down practical assessment components of agriculture in Junior Secondary Schools Curriculum. *A synthesis of teachers' perceptions*, 5(3), 132-144.
- Hudcova, E., Chovanec, T., & Moudry, J. (2018). Social entrepreneurship in agriculture, a sustainable practice for social and economic cohesion in rural areas: The case of the Czech Republic. *European Countryside*, 10 (3), 377-397.
- Hultma, G., & Wedin, A.S. (2018). Imparting teachers' knowledge professional know-how. *Interaction and strategies in supervising teacher students*, 3(12), 1-21.
- Husana, S.A., Ritonga, M., Lahmi, A., Saputra, R., & Ayu, S. (2020). Teachers' unpreparedness in carrying out Islamic education learning using the revised 2013 curriculum in elementary school. *European Journal of Molecular & Clinical Medicine*, 7(2), 1520-1528.
- Jebb, A.T., Parrigon, S., & Woo, S.E. (2017). Exploratory data analysis as a foundation of inductive research. *Human Resource Management Review*, 27(2), 265-276.
- Kara, H., & Pickering, L. (2017). New directions in qualitative research ethics.
- Keller, M.M., Neumann, K., & Fisher H.E (2017). The impact of physics teachers' pedagogical content knowledge and motivation on students' achievement and interest. *Journal of Research in Science Teaching*, 54 (5), 586-614.
- Khalidi, M., Abdullah, N.A.H., & Kamoludeen, A. (2016). Teachers' beliefs on the benefit of collaboration in lesson study. *IIUM Journal of Educational Studies*, 4(2), 1-20.
- Khoza, S.B. (2015). Student teachers' reflections on their practices of the curriculum and assessment policy statement. *South African Journal of Higher Education*, 29(4), 179-197.

- Kivunja, C. & Kuyini, A.B. (2017). Understanding and Applying research paradigms in educational contexts. *International Journal of Higher Education*, 6(5), 26-41.
- Kook, R., Harel-Shalev, A., & Yuval, F. (2019). Focus groups and the collective construction of meaning: listening to minority women. In *Women Studies International Forum*, 72(4), 87-94.
- Kuratko, D.F. (2016). *Entrepreneurship theory, process and practice*. Cengage Learning.
- Liu, L. (2016). Using Generic Inductive Approach in Qualitative Educational Research: A case study analyses. *Journal of Education and Learning*, 5(2), 129-135.
- Lunsford, A., Warner, W.J., & Morgan, J.E. (2016). Agricultural education teacher candidates' perceptions of the edTPA. *Career and Technical Education Research*, 41(3), 213-223.
- Mackenzie, N., & Knipe, S. (2006). Research dilemmas, paradigms, methods, and methodology. *Issues in Educational Research*, 16(2), 193-205.
- Macnall, E.S. (2019). South Western Agriculture Teachers' Mathematical Content Knowledge. (Masters), University of the Free State.
- Maguire, M., & Dehlant, B. (2017). Doing a thematic analysis: A practical, step by step guide for learning and teaching scholars. *AISHE-J: The All Ireland Journal of Teaching and Learning in Higher Education*, 9(3), 112-119.
- Magnusson, C. G., Roe, A., & Blikstad-Balas, M. (2019). To what extent and how are reading comprehension strategies part of language arts instruction? A study of lower secondary classrooms. *Reading Research Quarterly*, 54(2), 187-212.
- Maharajh, L.R., Nkosi, T., & Mkhize, M.C. (2016). Teachers' experiences of the implementation of the curriculum and assessment policy statement (CAPS) in three primary schools in KwaZulu-Natal. *Africa's Public Service Delivery & Performance Review*, 4(3), 371-388.
- Mahati-Shamir, M., Neimeyer, R.A., & Pitcho-Prelorntzos, S. (2019). Designing in-depth semi-structured interviews for revealing meaning reconstruction after loss. *Death Studies*, 1(8).
- Majokweni, Z.Z.P. (2018). The impact of outsourced extension services on the performance of smallholder farmers in Msinga. (PhD), UKZN.

- Manu, I. (2018). Enhancing senior high school students' performance in Agricultural Sciences using activity - based teaching strategy at Beposo senior highschool, Bosomtwe District. (Masters), University of Tamale, Tamale, Ghana.
- Maree, J.E., & Potgieter, T. (2018). Palliative chemotherapy: The perspective and experiences of South African nurses. *Asia-Pacific Journal of Oncology Nursing*, 5(1), 77-81.
- Mbajiorgu, C.A., Oguttu, J.W., Maake, M.S., Haeeralal, P.J., Ngoepe, M.G., Masafu, M.M., & Kaino, L.M. (2014). Factors that impact teaching and learning of agriculture science in FET schools in Mpumalanga, South Africa: A case of Mandlethu EFT School. *Journal for the Education of Human Ecology*, 45(2), 137-145.
- McCarthy, U., uYsal, I., Badia-Melis, R., Mercier, S., O'Donnell, C., & Ktenioudaki, A. (2018). Global food security-issues, challenges, and technological solutions. *Trend in food science*, 4(77), 11-20.
- McGuire, A.M. (2017). Agricultural science and organic farming: time to change our trajectory. *Agricultural and Environmental Letters*, 2(1), 122-134.
- Miriam, K., & Konyango, J. J. J. (2019). The place for dry land agriculture in kenya's secondary school agricultural curriculum. *Historical Paper*, 9 (32), 134-197.
- Miriam, K.N., Konyango, J.J.J., & Nkurumnwa, O.A. (2016). Irony in The Teaching of Agriculture in Kenya's Arid and Semi-Arid Secondary Schools: The students and teachers' perspective. *International Journal of Innovative Research and Advanced Studies*, 3(10), 65-70.
- Modebelu, M.N., & Nwakpadolu, G.M. (2013). Effective teaching and Learning of Agricultural Science for food security and national sustainability. *Journal of Educational and Social Research*, 3(4), 161-171.
- Mohamed, A.A. (2018a). Evolution of agricultural economics: A review article for economists. *Journal of Economics and Sustainable Development*, 9 (19), 89-112.
- Mohamed, A.A. (2018b). Evolution of Agricultural Economics. A Review Article for Economists. *Evolution*, 9(19).

- Mokori, E., Moabe, S., & Nyangeri, J. (2019). Influence of selected factors on the choice of agricultural subject among secondary school students in Kisii and Nyamira Counties. *Asian Journal of Agricultural Extension, Economics and Sociology*, 31(3), 1-12.
- Moser, A., & Korstjens, I. (2018). Series: Practical guidance to qualitative research Part 3: Sampling, data collection and analysis. *European Journal of General Practice*, 24(1), 9-8.
- Msomi, X.A. (2015). Experiences of Grade 12 educators in teaching auditing aspect of the accounting curriculum in Burlington Circuit of Umlazi district. (Masters), Faculty of Education. UKZN, Durban.
- Muijis, D., & Reynolds, D. (2018). *Effecting teaching evidence and practice* (3th Ed.). Sage.
- Mupfasoni, B., Kessler, A., & Lans, T. (2018). Sustainable agricultural entrepreneurship in Burundi: Drivers and outcomes. *Journal of Small Business and Enterprise Development*, 25(1), 64-80.
- Murtonen, M., Gruber, H., & Lehtinen, E. (2017). The return of behaviourist epistemology: A review of learning outcomes studies. *Educational Research Review*, 22, 114-128.
- Mutito, S.K. (2017). Perceptions of agriculture teachers towards intergration selected climate change topics into secondary school agriculture syllabus. (PhD), Egerton, Machakos Count Kenya.
- Neil, S., Evans, J., & Scarre. (2016). Isotopic evidence for residential mobility of farming communities during the transition of agriculture in Britain. *Royal Society Open Science*, 3(1), 112-121.
- Nest, A. (2012). Teacher mentorship as professional development: Experiences of Mpumalanga primary school natural science teachers as mentees. (Masters), Unisa, Pretoria.
- Nkohla, B.M. (2017). Educator's reflections on their practices of agricultural sciences Curriculum and Assessment Policy Statement. (Masters). Faculty of education. UKZN, Durban.
- Nnawulezi, E.N. (2018). A Case Study of Middle School Teachers' Attitudes of Inclusion of Students with Disabilities. (PhD), Concordia University.

- Noble, H., & Smith, J. (2015). Issues of validity and reliability in qualitative research. *EvidentBased Nursing*, 182, 34-35.
- Nowell, L.S., Norris, J.M., White, D.E., & Moules, N.J. (2017). Thematic Analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1).
- Nyumba, O., Wilson, K., Derrick, C.J., & Mukherjee, N. (2018). The use of focus group discussion methodology: Insights from two decades of application in conservation. *Methods in Ecology and Evolution*, 9(1), 20-32.
- Ochieng, D.M. (2019). Management factors influencing Academic performance in Agriculture in public day Secondary schools in Kisumu West Sub-counting. (Masters). Faculty of education. Kenya Methodist University, Kenya.
- Ong'amo, B.L., Ondigi, S.R., & Omariba, A. (2017). Effect of utilization of biology teaching and learning resources on students' academic performance in secondary schools in Siaya District-Kenya. *Journal Educational Studies*, 4(2), 1-22.
- Otekunrin, A., Oni, O., & Oluwaseun, A. (2017). Challenges, attitudes and academic performance in public secondary schools of Ibadan North, Nigeria. *Journal of Scientific Research and Report*, 13(1), 1-11.
- Parker, S.C. (2018). *The economics of entrepreneurship*. Cambridge Press.
- Peake, J.B., Duncan, D.W., & Ricketts, J.C. (2007). Identifying Technical Content Training Needs of Georgia Agriculture Teachers. *Journal of Career and Technical Education*, 23(1), 44-54.
- Perez-Escamilla, R. (2017). Food Security and the 2015-2030. *Current development in Nutrition*, 1(7), 89-94.
- Pertiwi, R.S., Khafid, M. & Setyadharma, A. (2019). Factors influencing difficulties of learning economics. *Journal of Economic Education*, 8(1), 48-56.
- Queiros, A., Faria, D., & Almeida, F. (2017). Strengths and limitations of qualitative and quantitative research methods. *European Journal of Education Studies*, 3(9).
- Rahaman, M.S. (2017). The Advantages and disadvantages of using qualitative and quantitative approaches and methods in language "Testing and assessment" research: A literature review. *Journal of Education and Learning*, 6(1), 102-112.

- Rahi, S. (2017). Research design and methods: A systematic review of research paradigms, sampling issues and instruments development. *International Journal of Economics and Management*, 6(2), 1-5.
- Rai, N., & Thapa, B. (2015). A study on purposive sampling method in research. *Kathmandu School of Law*, 4(2), 1201-1126.
- Richard, A.L. (2018). A delphi study to identify jobs that experts in the field of agriculture business identify as necessary for high school students to be prepared for in agriculture in the next five years, to rate the importance of the jobs identified as necessary, and to identify the skills necessary to perform successfully in each of the five most highly rated jobs. (PhD), Brandman University, California.
- Sakiko, F., & Vivian. (2016). Food security in S.A: Human rights and entitlement perspectives. *Agrekon*, 56(4), 404-405.
- Saldana, J. (2015). *The coding manual for qualitative researchers*. Sage.
- Sari, R.E.K., Kardoyo, K., & Thomas, P. (2017). The factors restricting economic Papuan students learning difficulties. *Journal of Economic Education*, 6(2), 31-47.
- Schuck, S., Aubusson, P., Buchanan, J., & Burke, P. F. (2018). The experiences of experiences early career teachers: new initiatives and old problems. *Professional Development in Education*, 44(2), 209-221.
- Shange, D.S. (2010). An exploration of teachers' experiences in teaching grade 10 geometry within CAPS in Umbumbulu Circuit. (Masters), UKZN. Durban.
- Shulman, L.S. (1986). Those who understand knowledge growth in teaching. *Educational Researcher*, 152, 4-14.
- Smalley, S.W., & Rank, B.D. (2019). Preservice teacher perceptions of the role of an agriculture teacher during their early field experience. *Journal of Agriculture Education*, 60(2), 99-108.
- Solbakken, R., Bondas, T., & Kasen, A. (2019). Safeguarding the patient in municipal healthcare-a hermeneutic focus group study of Nordic nursing leadership. *Journal of Nursing Management*, 27(6), 1242-1250.

- Solomon, B.N. (2018). Enhancing teacher development in the teaching of agricultural sciences at school. (Masters), Faculty of Education, University of Free State, Qwaqwa.
- Sormunen, K., Hartikainen-Ahia, A., & Jappinen, I. (2017). Quality of SSI scenarios designed by science teachers. In *cognitive and affective aspects in science education research*, 3(2), 103116.
- Stanojevic, D., Cenic, D., & Cenic, S. (2018). Applications of computers and modernization of teaching science. *International Journal of Cognitive Research in Science, Engineering and Education*, 6(2), 89-93.
- Strong, R., Amy, H., & Hannah, C. (2010). Agricultural Extension Agents Perception of Effective Teaching Strategies for Adult Learners in the Master Beef Producer Program. *Journal of Extension*, 48(3), 1-2.
- Stuckey, H.L. (2015). The second step in data analysis: coding qualitative research data. *Journal of social Health and Diabetes*, 3(1), 7-10.
- Taherdoost, H. (2016). Sampling methods in research methodology, how to choose a sampling technique for research. *How to Choose a Sampling Technique for Research*, 4(1), 110-121.
- Tesha, M.W. (2018). Effectiveness of teaching and learning agricultural science subject in selected secondary schools in Tanzania. (PhD), Sokoine University of Agriculture, Tanzania.
- Thaanyane, M.E. (2010). Teachers' experiences of implementing business education in three secondary schools in Maseru District. (PhD), ukzn, Durban.
- Thanh, N.C., & Thanh, T.T. (2015). The interconnection between interpretivist paradigm and qualitative methods in Education. *American Journal of Education Science*, 1(2), 24-27.
- Veerman, N.L. (2019). The possibilities for sustainable agriculture in the south of Brazil and the role of environmental education. (PhD), Faculty of Agriculture, University of Nairobi, Kenya.
- Wade, A.S. (2019). Exploring the influence of agriculture lessons on the Agricultural lessons on the Agricultural knowledge and beliefs of 4th grade students. (Phd). Faculty of Education, University of Grand Canyon, Arion.
- Williams, C. (2007). Research Methods. *Journal of Business and Economics*, 5(3).

- Windsong, E.A. (2018). Incorporating intersectionality into research design: An example using qualitative interviews. *International Journal of Social Research Methodology*, 21(135-147).
- Winkie, P. (2017). Using focus groups to investigate study abroad theories and practice. *Systems*, 71, 78-83.
- Zakaria, H., & Alhassan, Y.N. (2019). Tertiary students' perceptions about their prospects of employability: the case of students in Ghana. *Africa Education Review*, 16(5), 134-157.

APPENDICES

Appendix A - Letter to the School Principals

Ms. Nzama Nokulunga
P O Box 39345
Uvongo
4270
Lunginzama13@gmail.com
073605621/0733378943
23 March 2020

The Principal

Dear Sir

Re: Request for permission to do scholarly research in your school

I hereby request you to allow me to conduct a scholarly research in your school to interview grade twelve Agricultural Sciences teachers. I am currently doing a Masters Degree in Education, at the University of KwaZulu-Natal.

My topic seeks: to explore teachers' experiences of teaching Agricultural Economics to grade 12 learners. Participants in this study involve teachers. Ethical issues will be observed throughout the study. All interviews and focus group interviews will be done through zoom. There will be no face-to-face physical interviews.

Should you wish to verify above information concerning my research. You can contact my supervisor, Dr Lokesh Maharajh. His contact details are: 072 43 569 68 and Email address is maharajhlr@ukzn.ac.za.

In the event of any problems or concerns/questions you may contact the researcher at (provide contact details) or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus Govan

Mbeki Building

Private Bag X 54001

Durban

4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557- Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

Appendix B – Participant Consent form

Box 39345

UVongo

4272

24 March 2020

Dear Participant

INFORMED CONSENT LETTER

My name is Nokulunga Memorial Nzama. I am doing Masters Degree in Education (Curriculum Studies) at University of KwaZulu-Natal, Edgewood campus, South Africa.

I am interested in exploring teachers' experiences of teaching Agricultural Economics to grade 12 learners in the Ugu District. I kindly request you to participate and answer some questions based on your experiences as an Agricultural Sciences teacher.

I have selected two data generation methods for this study. These instruments include semistructured interviews and a focus group interview. The interviews would take between 45 minutes to an hour and will be done after school. All interviews and focus group interviews will be done through zoom. There will be no face-to-face physical interviews. These interviews will be hand written as well as audio recorded.

Kindly note that:

- Your confidentiality is guaranteed as your personal information will not be disclosed.
- The interview may last for about 1 hour.
- Any information given by you cannot be used against you, and the data generated will be used for purposes of this research only.
- Real names of the participants will not be used, but symbols such as A, B, C, D, E and F will be used to represent participants' names;
- Data will be stored in secure storage and destroyed after 5 years.
- You have a choice to participate, not participate or stop participating in the research. You will not be penalized for taking such an action.
- Your involvement is purely for academic purposes, and there are no financial benefits involved.
- If you are willing to be interviewed, please indicate (by ticking as applicable) whether or not you are willing to allow the interview to be recorded by the following equipment:

Equipment	Willing	Not willing
Audio equipment		

I can be contacted at:

Email: lunginzama13@gmail.com

Cell Number: 0733378943/0733378943

My supervisor is Dr Lokesh Maharajh. who is located at the School of Education, Edgewood campus of the University of KwaZulu-Natal. His contact details are: 072 43 569 68 and email address is maharajhlr@ukzn.ac.za.

In the event of any problems or concerns/questions you may contact the researcher at (provide contact details) or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001

Durban

4000

KwaZulu-Natal, SOUTH AFRICA

Tel: 27 31 2604557- Fax: 27 31 2604609

Email: HSSREC@ukzn.ac.za

Thank you for your contribution to this research.

DECLARATION

I..... (Full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent to participating in the research project.

I understand that I am at liberty to withdraw from this study at any time, should I so desire.

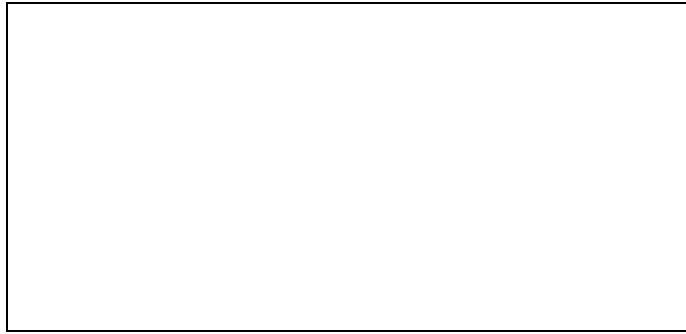
SIGNATURE OF PARTICIPANT

DATE

.....

.....

SCHOOL STAMP



Appendix C- Letter to the District Director

Ms. Nzama Nokulunga
P O Box 39345
Uvongo
4270
Lunginzama13@gmail.com
073605621
24 March 2020

The District Director

Mr W. M Sibiya

Department of Education: UGU District

P/Bag X 860

Port Shepstone

4240

Dear Sir

Re: Request for permission to do scholarly research in your district.

I hereby request you to allow me to conduct a scholarly research in the Ugu district to interview grade twelve Agricultural Sciences teachers. I am currently doing a Masters Degree in Education, at the University of KwaZulu-Natal.

My topic seeks: to explore teachers' experiences of teaching Agricultural Economics to grade 12 learners. I have asked the permission from the principals of the following schools:

1. Ingwemabala Comprehensive High school
2. Makhanda Secondary School

Participants in this study involve teachers. Ethical issues will be observed throughout the study. All interviews and focus group interviews will be done through zoom. There will be no face-to-face physical interviews.

Should you wish to verify above information concerning my research. You can contact my supervisor, Dr Lokesh Maharajh. His contact details are: 072 43 569 68 and Email address is maharajhlr@ukzn.ac.za.

In the event of any problems or concerns/questions you may contact the researcher at (provide contact details) or the UKZN Humanities & Social Sciences Research Ethics Committee, contact details as follows:

HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS ADMINISTRATION

Research Office, Westville Campus

Govan Mbeki Building

Private Bag X 54001
Durban
4000
KwaZulu-Natal, SOUTH AFRICA
Tel: 27 31 2604557- Fax: 27 31 2604609 Email:
HSSREC@ukzn.ac.za

I am looking forward to your co-operation to my request.

Thank you for your contribution to this research.

Yours faithfully

Mrs. Nzama Nokulunga M.
P O Box 39345
Uvongo
4270

Lunginzama13@gmail.com

073605621/ 0733378943

DECLARATION

I..... (Full names of the District Director) hereby confirm that I understand the contents of this document and the nature of the research project, and I consent for the school and teachers to participate in the research project.

I understand that the school and teachers are at liberty to withdraw from the project at any time, should they so desire.

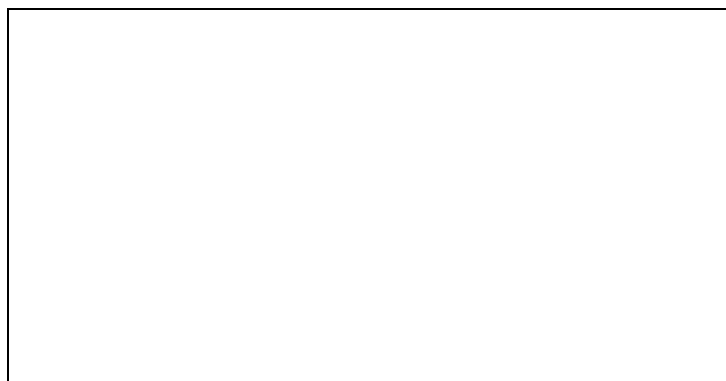
SIGNATURE OF DISTRICT DIRECTOR

DATE

.....

.....

STAMP



Appendix D - Permission to conduct research Letter -Department of Education



education

Department:
Education
PROVINCE OF KWAZULU-NATAL

Enquiries: Phindile Duma/Buyi Ntuli

Tel: 033 392 1063/51

Ref.:24/8/4132

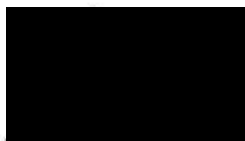
Mrs Nokulunga M. Nzama
P.O. Box 39345
UVONGO
4270

Dear Mrs Nzama

PERMISSION TO CONDUCT RESEARCH IN THE KZN DoE INSTITUTIONS

Your application to conduct research entitled: **"TEACHERS' EXPERIENCES OF TEACHING AGRICULTURAL ECONOMICS TO GRADE 12 LEARNERS:"**, in the KwaZulu-Natal Department of Education Institutions has been approved. The conditions of the approval are as follows:

1. The researcher will make all the arrangements concerning the research and interviews.
2. The researcher must ensure that Educator and learning programmes are not interrupted.
3. Interviews are not conducted during the time of writing examinations in schools.
4. Learners, Educators, Schools and Institutions are not identifiable in any way from the results of the research.
5. A copy of this letter is submitted to District Managers, Principals and Heads of Institutions where the intended research and interviews are to be conducted.
6. The period of investigation is limited to the period from 04 June 2020 to 10 January 2022.
7. Your research and interviews will be limited to the schools you have proposed and approved by the Head of Department. Please note that Principals, Educators, Departmental Officials and Learners are under no obligation to participate or assist you in your investigation.
8. Should you wish to extend the period of your survey at the school(s), please contact Miss Phindile Duma/Mrs Buyi Ntuli at the contact numbers above.
9. Upon completion of the research, a brief summary of the findings, recommendations or a full report/dissertation/thesis must be submitted to the research office of the Department. Please address it to The Office of the HOD, Private Bag X9137, Pietermaritzburg, 3200.
10. Please note that your research and interviews will be limited to schools and institutions in KwaZulu-Natal Department of Education.



Dr. L. Nzama
Head of Department: Education
Date: 04 June 2020

...Leading Social Compact and Economic Emancipation
Through a Revolutionary Education for all...

KWAZULU-NATAL DEPARTMENT OF EDUCATION

Postal Address: Private Bag X9137 • Pietermaritzburg • 3200 • Republic of South Africa

Physical Address: 228 Pietermaritz Street • Ex-NED Building • Pietermaritzburg • 3201

Tel.: +27 33 3921063 • Fax.: +27 033 3921203 • Email: Phindile.duma@kzndoe.gov.za • Web: www.kzndoe.gov.za

Facebook: KZNDOE...Twitter: @DDE_KZN...Instagram: kzn_education...Youtube:kzndoe

Appendix E – Ethical Clearance



22 September 2020

Mrs Nokulunga Memorial Nzama (219094246)
School Of Education
Edgewood Campus

Dear Mrs Nzama,

Protocol reference number: HSSREC/00001905/2020

Project title: Teachers experiences of teaching Agricultural Economics to grade 12 learners
Degree: Masters

Approval Notification – Expedited Application

This letter serves to notify you that your application received on 24 August 2020 in connection with the above, was reviewed by the Humanities and Social Sciences Research Ethics Committee (HSSREC) and the protocol has been granted FULL APPROVAL

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment/modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the discipline/department for a period of 5 years.

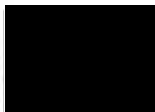
This approval is valid until 22 September 2021.

To ensure uninterrupted approval of this study beyond the approval expiry date, a progress report must be submitted to the Research Office on the appropriate form 2 - 3 months before the expiry date. A close-out report to be submitted when study is finished.

All research conducted during the COVID-19 period must adhere to the national and UKZN guidelines.

HSSREC is registered with the South African National Research Ethics Council (REC-040414-040).

Yours sincerely,



Professor Dipane Hlalele (Chair)

/dd

Humanities & Social Sciences Research Ethics Committee
UKZN Research Ethics Office Westville Campus, Govan Mbeki Building
Postal Address: Private Bag X54001, Durban 4000
Tel: +27 31 260 8350 / 4557 / 3587
Website: <http://research.ukzn.ac.za/Research-Ethics/>

Founding Campuses:  Edgewood  Howard College  Medical School  Pietermaritzburg  Westville

INSPIRING GREATNESS

Appendix F- One-on-one semi-structured Interview

Interview Questions

These questions refer to teaching grade 12 Agricultural Economics

1. Agricultural Sciences

- (a) What is your understanding of the concept of Agricultural Sciences?
- (b) How long have you been teaching Agricultural Sciences teacher?
- (c) Why did you choose to be an Agricultural Science teacher?

2. Agricultural Economics

- (a) What is Agricultural Economics?
- (b) What time of time on the school calendar do you teach Agricultural Economics?
- (c) Why are you teaching Agricultural Economics to grade 12 learners?

3. Challenges of teaching Agricultural Economics

- (a) What are the challenges of teaching Agricultural Economics?
- (b) How do you cope with challenges of teaching Agricultural Economics?

4. Teaching Strategies of Agricultural Economics

- (a) Can you please describe the teaching strategies you use to teach Agricultural Economics?
- (b) Do your strategies work? Explain.
- (c) Why do you teach Agricultural Economics the way you do?

5. Components of Agricultural Economics

- (a) What are the components of Agricultural Economics?
- (b) Are there any aspects that you feel unprepared to teach in Agricultural Economics content?

6. Experiences of teaching Agricultural Economics

- (a) What are your experiences of teaching Agricultural Economics?
- (b) Why do you have the experiences that you have in Agricultural Economics?

7. Teaching resources of Agricultural Economics

- (a) What resources are you using to teach Agricultural Economics?

(b) Do you have a problem with appropriate resources to support teaching and learning Agricultural Economics? Can you please explain?

Appendix G– Focus group discussion

These questions refer to teaching grade 12 Agricultural Economics

1. Agricultural Sciences

- (a) What is your understanding of the concept of Agricultural Sciences?
- (b) How long have you been teaching Agricultural Sciences teacher?
- (c) Why did you choose to be an Agricultural Science teacher?

2. Agricultural Economics

- (a) What is Agricultural Economics?
- (b) What time of time on the school calendar do you teach Agricultural Economics?
- (c) Why are you teaching Agricultural Economics to grade 12 learners?

3. Challenges of teaching Agricultural Economics

- (a) What are the challenges of teaching Agricultural Economics?
- (b) How do you cope with challenges of teaching Agricultural Economics?

4. Teaching Strategies of Agricultural Economics

- (a) Can you please describe the teaching strategies you use to teach Agricultural Economics?
- (b) Do your strategies work? Explain.
- (c) Why do you teach Agricultural Economics the way you do?

5. Components of Agricultural Economics

- (a) What are the components of Agricultural Economics?
- (b) Are there any aspects that you feel unprepared to teach in Agricultural Economics content?

6. Experiences of teaching Agricultural Economics

- (a) What are your experiences of teaching Agricultural Economics?
- (b) Why do you have the experiences that you have in Agricultural Economics

7. Teaching resources of Agricultural Economics

- (a) What resources are you using to teach Agricultural Economics?
- (b) Do you have a problem with appropriate resources to support teaching and learning Agricultural Economics? Can you please explain?

Editor's Letter



Barbara Mutula
Associate member

Membership number: MUT001
Membership year: March 2020 to February 2021

0786439029
kabangebarbara@gmail.com

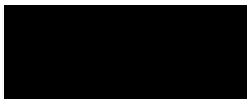
www.editors.org.za

13 January 2021

TO WHOM IT MAY CONCERN

This is to confirm that the thesis written by Nokulunga Memorial Nzama, titled 'Teachers' experiences of teaching Agricultural Economics to grade 12 learners: A case study of two High Schools in Ugu District, KwaZulu-Natal' was copy edited for grammar, spelling, punctuation, layout (including numbering, pagination, heading format, justification of figures and tables), and references by the undersigned. The document was subsequently proofread, and a number of additional corrections were advised.

The undersigned takes no responsibility for corrections/amendments not carried out by the student in the final copy submitted for examination purposes.



Mrs. Barbara L. Mutula-Kabange

Copy Editor, Proof reader
*BEd (UBotswana), BSc Hons Psychology (UKZN),
MEd Educational Psychology (UKZN)*

This receipt acknowledges that **Turnitin** received your paper. Below you will find the receipt information regarding your submission.

Submission author:	Lungi Nzama
Assignment title:	Thesis
Submission title:	Teachers' experiences of teaching A...
File name:	Turnitin_2.doc
File size:	426.5K
Page count:	61
Word count:	21,550
Character count:	125,238
Submission date:	01-Feb-2021 02:45PM (UTC+0200)
Submission ID:	1491385644

For the first time, we have shown that the *in vivo* effects of an antioxidant on the function of the human digestive system can be assessed. Moreover, the *in vivo* effects of a dietary antioxidant on the function of the digestive system can be assessed. The *in vivo* effects of a dietary antioxidant on the function of the digestive system can be assessed. The *in vivo* effects of a dietary antioxidant on the function of the digestive system can be assessed.

Turnitin Originality Report

- Processed on: 01-Feb-2021 2:48 PM CAT
- ID: 1491385644
- Word Count: 21550
- Submitted: 2

Teachers' experiences of teaching Agricultural Economics to grade 12 learners... By Lungi Nzama

Similarity Index

23%

Similarity by Source

Internet Sources:

17%

Publications:

7%

Student Papers:

13%