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THE ROLE OF INFORMATION AND COMMUNICATION TECHNOLOGY IN DEVELOPING ENTREPRENEURIAL SKILLS IN MARGINALISED COMMUNITIES: THE CASE OF GRAHAMSTOWN

A thesis submitted in fulfilment of the requirements for the degree of

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by

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ABSTRACT

A call to meet the Sustainable Development Goals by 2030 was made by the United Nations in 2015 after the expiry of the Millennium Development Goals. This has led to the need for youth entrepreneurship studies in marginalised communities that are burdened by poverty. The marginalised communities in South Africa, where most poor unemployed people live face numerous challenges. These range from a shortage of skilled people, inequality, poverty, poor infrastructure and lack of formal and informal skills development for communities. Employing information and communication technologies (ICTs) has the potential to improve socio-economic activities, aid comprehensive human development and empower communities. To ensure human development, provision of ICTs to communities should be accompanied by approaches and guidelines that can be used to empower them through entrepreneurship. This requires investigating how ICTs can lead to the empowerment of unemployed citizens within a community. Specifically, the types of tailored ICT skills that are needed to access such empowerment opportunities and are typically taught at skills development programmes (SDPs). An interpretivist, qualitative case study approach was employed during the investigation of four skills development programmes in Grahamstown (Eastern Cape). The

participants included programme directors, managers, trainees who had become entrepreneurs after attending training and those who had not started a business yet. Semi-structured interviews were employed for data collection and thematic analysis was used to analyse the data; while making use of absorptive capacity theory (ACT) as a theoretical framework.

The researcher sought to answer the following main question: How should ICT-based skills development programmes be applied to enhance entrepreneurial skills within marginalised communities? To answer this, the research contributes by proposing a guideline that can be implemented to address the skills shortage in Grahamstown. The first stage requires a community needs assessment, looking at the community members prior and related knowledge. Secondly, the SDPs should create a culture of learning by transforming participants' mindsets through core programmes. Thirdly, the core programmes should be linked with ICT skills training. After training is completed, the SDPs and external world bodies should assist with follow up support courses. During all these stages monitoring and evaluation should be implemented, and all key stakeholders should be involved.

KEYWORDS: ICT-Based Skills Development Programmes, Entrepreneurship, Marginalised communities, Absorptive Capacity Theory, Unemployment, Socio-economic development

Declaration

I, Vinia Ruvimbo Mabika, declare that the Thesis entitled, "*The Role of Information and Communication Technology in Developing Entrepreneurial Skills in Marginalised Communities: The Case of Grahamstown,*" which I hereby submit for the degree, Master of Commerce in Information Systems at Rhodes University, is my own work. I also declare that this thesis has not previously been submitted by me for a degree at this or any other tertiary institution and that all the sources that I have used or quoted have been indicated and acknowledged by means of complete references.

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Vinia Ruvimbo Mabika

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their experiences and how they would like to see the marginalised community within Grahamstown change.

Contents

List of Figures

List of Tables

CHAPTER 1
Introduction and project overview

1.1 Introduction and Research Background

Over the past five decades, poverty alleviation has been the focus of the United Nations (World Bank Group, 2012; May and Diga, 2015; United Nations, 2015; Mbuyisa and Leonard, 2017). The United Nations (UN) (2013) made a commitment to drive the extreme poverty rate to 0% by 2030. Due to the limited scope of the Millennium Development Goals (MDGs) and its failure to achieve its developmental objectives by 2015, Sustainable Development Goals (SDGs) were created (United Nations, 2015). These are seventeen goals from the UN, officially known as 'Transforming our world' and are committed to creating lasting positive freedom and change. The purpose of the SDGs is to create a framework for development programmes that focus on ending poverty, protecting the planet and ensuring that there is global peace and prosperity (United Nations, 2015). These goals work towards the three key areas that the UN identified for sustainability, which are social, environmental, and economic development (United Nations, 2015). The primary emphasis to eradicate poverty further extends to the need for achieving sustainability. In this vein, the SDGs hope to ensure that all men and women, in particular, the poor and the vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance (United Nations, 2015).

The indirect impact of information and communication technologies (ICTs) on poverty alleviation through growth and productivity has long been recognised (Harris, 2016; Mbuyisa and Leonard, 2017). ICT adoption within communities, has the potential of improving socio-economic activities, aiding comprehensive human development and empowering communities (Jacobs and Herselman, 2005; Maier and Nair-Reichert, 2007; Hamel, 2010). They include the following among others: telephones (fixed and mobile), radio, television, computers, fax and the internet (Mbuyisa and Leonard, 2017). Prasad and Sreedevi (2013: p.107) cite that:

"Information Communication Technologies (ICTs) consists of computer hardware, software, Internet and other communication networks, and media used to collect, store, process and transmit information in the form of voice, text, data and images."

For South Africa to become globally competitive there is a need to tie together the key ICTs and skills necessary for the socio-economic development; considering the realities of context (Jacobs and Herselman, 2005). Unfortunately, in South Africa development is compromised by poor infrastructure, services and knowledge. Therefore, there is a need for the interfaces between society and the required ICTs to be different as levels of understanding differ from country to country and communities (Jacobs and Herselman, 2005). Communities need to keep up with the evolving ICTs as they affect people socially and economically (Jacob and Herselman, 2005). Ohemeng and Ofosu-Adarkwa (2014) suggest that if there are limitations to the community's accessibility to ICTs, they may be deprived of the skills needed to participate in the knowledge-based economy. Despite the valuable impact of using ICTs, marginalised communities in developing countries continue to be excluded from the benefits of these ICTs (Attwood, et al., 2013; Touray, Salminen and Mursu, 2013). These communities are any groups of people that have been excluded from mainstream economic and social life (Creswell, 2015). Hamel (2010) states that in order for the potential human benefits to be reaped in these communities, the use of ICTs needs to occur within broader strategies tailored to make the most of these tools and techniques. This needs to occur because using ICTs alone cannot improve people's lives. In other words, there are different types of access to ICTs that need to occur for an improvement in people's lives; from access to the ICT resources, to access of information on how marginalised groups in the society can benefit and access to any knowledge that was previously not available to them (Hamel, 2010). To ensure that communities gain benefits from the implementation of ICTs, all spheres of the government, civil society, private sector and other international organizations should work together to make sure that they improve access to ICT infrastructure, invest into enabling environments and acknowledge the role played by social media (World Summit on the Information Society [WSIS], 2005; World Bank Group, 2018). Current ICT deployments have advanced many countries GDPs at an increasing rate (Rahman, 2006; Farhadi, et al., 2013). Nevertheless, there is a need for them to remain globally competitive. Attwood, May and Diga (2011, p.15) cite that:

> *"…although information and communication technologies have been shown to promote economic growth, the linkages between ICTs and the promotion of individual or community quality of life remain uncertain."*

Attwood, May and Diga (2011) and Attwood, et al. (2014) present evidence that ICTs contribute to improved quality of life ranging from the perception of empowerment, acquisition of knowledge and being informed. However, to ensure the promotion of human development the focus should not only be on the provision of ICTs to marginalised communities but an inclusion of approaches and guidelines that can be used to empower them. There has been progress in the provision of access to ICTs in most developing countries including South Africa. However, there are significant challenges faced by these countries. South Africa faces numerous challenges ranging from shortage of skilled people, inequality, poverty and lack of formal and informal skills training for communities (Steenkamp, 2013; National Youth Policy [NYP], 2015; Chetty, 2016). Such challenges are deeply faced in rural and township communities where most poor people live (NYP, 2015). May and Diga (2015) state that research has acknowledged the possibility of using ICTs as tools for poverty reduction and economic development. This means that integrating ICTs with a nation's growth policy may provide answers to poverty reduction through entrepreneurship (Mbuyisa and Leonard, 2015). Entrepreneurship is defined by Adenutsi (2009, p.5) as:

> *"…the identification of business opportunities and the mobilisation of economic resources to initiate a new business or revitalise an existing business, under the conditions of risks and uncertainties, for the purpose of making profits under private ownership."*

Morrison (2000) also states that entrepreneurship is a holistic and highly innovative process concerned with taking risks. It serves as a means for countries to address their social, economic and environmental issues. Entrepreneurs identify opportunities in the market, gather resources and advance business opportunities to promote self-interest (Nieman and Niewenhuizen, 2009; Steenkamp, 2013). These individuals bear the risk of the business and are rewarded through profits or personal fulfilment if the business succeeds (Steenkamp, 2013). A key approach that offers a variety of services essential to the entrepreneurship of communities and their development is the use of community service centres referred to as skills development programmes in this study (Jacob and Herselman, 2005). Characteristics of a community service centre include being tailored for immediate employment needs, sustainability, ownership,

linkages (with other related or unrelated organisations), services and finances (Jacob and Herselman, 2005).

Entrepreneurship could potentially benefit South Africa, a developing country with high unemployment and high levels of poverty. The context in which the study will take place is Grahamstown, in the Eastern Cape Province of South Africa, where some members from the marginalised community have been given access to some ICT skills development through various skills development programmes (SDPs). Grahamstown was recently renamed to Makhanda; this change happened just before this research study was completed. Therefore, the name Grahamstown will be maintained in this study. Statistics from the Makana Municipality, where Grahamstown is the largest town and the seat of the municipal council highlight that of the 28 494 people in the municipality that are economically active, 32.5% of them are unemployed (Statistics South Africa, 2011). A 42.3% rate of youth unemployment in Grahamstown is also a concern (Statistics South Africa, 2011) one of the causes identified is the low rates of people with access to higher education. The major cause of unemployment in similar communities is the lack of proper opportunities and skills (Hamel, 2010). In addition to the provision of education that is geared towards gaining access to higher education, there is a need for better understanding of contextualized work-oriented training such as business skills, baking, beadwork and sewing; and the development of skills programmes in marginalised communities (Hope Project, 2013). Grahamstown is therefore in need of skills development programmes specifically those that assist communities with creating employment for themselves. For example, the four skills development programmes that were interviewed for this research.

The research is looking at how ICT-based skills development can facilitate the development of entrepreneurial skills through exploring case studies in Grahamstown. The aim of the development programmes will be for the community members to learn how to use these skills in areas that are relevant to their context. Mashinini and Lotriet (2011) suggest that an empowering approach will be for the communities to take ownership of the initiatives. The high unemployment rate in Grahamstown suggests that there is a need to link broader ICT strategies to ensure human capacity development and access to ICTs with the hope that unemployed people will take ownership of job creation opportunities which will result in them being able to sustain themselves.

1.2 Problem Statement

Some of South Africa's greatest challenges are the development of people's skills and employment creation (Botha, et al., 2007). This has led to the need for entrepreneurship studies in marginalised communities that are burdened by poverty. To ensure the promotion of human development the focus should not only be on the provision of ICTs from external world bodies, for example, Non-Government Organisation NGO's. There should be an inclusion of approaches and guidelines that can be used to empower the marginalised communities. When applying ICTs to alleviate poverty, a development strategy should be put in place first (Mbuyisa and Leonard, 2015). Therefore, the NGO's, civil sector and the government should acknowledge their role as major players in the definition of development strategies that target the poor. Some of the challenges faced by South Africa regarding access to ICTs are the digital divide created where a proportion of the country is left without the benefits due to lack of access. Secondly, the access to ICTs is just the beginning of development. There is a need for certain skills and knowledge for effective human capacity development and entrepreneurship (Rahman, 2005; Hamel, 2010; Bailey and Ngwenyama, 2013; United Nations, 2015). Specifically, the question of how ICTs can facilitate entrepreneurial development. This speaks to having these initiatives focus on entrepreneurial activities that will be relevant to their context (Mashinini and Lotriet, 2011; Zaremohzzabieh, et al., 2016).

The primary aim of this research is to investigate how basic knowledge of ICTs can facilitate the development of entrepreneurial skills, using skills development programmes in Grahamstown as case studies. The research seeks to answer the following main research question: *How should ICT-based skills development programmes be applied to enhance entrepreneurial skills within marginalised communities?* The research requires addressing the following sub-questions.

1. *What is the role of ICTs in the support of entrepreneurial development within marginalised communities?*

The purpose of this question is to explore the role of using ICTs in supporting the broader entrepreneurial development in marginalised communities. The question intends to address the fundamental nature of the problem of using ICTs as an enabler to support other skills and entrepreneurship creation initiatives.

2. *How are ICTs used to support the development of entrepreneurial skills within the marginalised community of Grahamstown?*

The purpose of this question is to present research participants understanding of the creative opportunities provided by using ICTs in support of their entrepreneurial skills. Through semi-structured interviews, this research intends to explain real-life behaviour of the phenomenon of using ICT skills to support the development of entrepreneurial skills.

3. *How should ICT-based skills development programmes support the development of entrepreneurship in the marginalised community within Grahamstown?*

The purpose of this question is to allow research participants to give recommendations on how ICT-based skills development initiatives should support entrepreneurship in marginalised communities. This question intends to determine guidelines for recommendations based on the research findings.

1.3 Aims of the Research

The research will thus aim to add to the body of knowledge on the uses of ICTs in enhancing entrepreneurship within the marginalised community of Grahamstown. It will further put forward the opportunities that are presented by employing ICTs as a hub for developing entrepreneurial skills in marginalised communities. The findings of this research will also add knowledge and literature on the link between ICTs and developing entrepreneurship in marginalised communities.

1.4 Contribution

The spread of ICTs and global interconnectedness has great potential to accelerate human development and develop knowledge societies (United Nations, 2015). However, most studies conducted in developing countries have focused more on the supply side of ICTs (Mbuyisa and Leonard, 2017). Less attention has been given to the use of ICT tools to meet the demand for ICT skills development towards fostering entrepreneurship and knowledge for running small or medium-sized enterprises (SMEs) (Evoh, 2012). Given their importance, more research is needed on the impact of ICTs on development in urban and rural communities (Bailey and Ngwenyama, 2013).

In this research, the focus is on development programmes that eradicate poverty and creates sustainable communities which are accessed through skills development programmes in the Grahamstown community. If the SDGs are not to end up the same as MDGs, it is necessary that skills development programmes capture the holistic process of using ICTs in entrepreneurship. The emphasis of entrepreneurship is on individuals taking the initiative to be drivers for economic success (Bridge, O'Neill and Cromie, 1998). Which entails equipping trainees with resilient entrepreneurial skills.

1.5 Methodological Approach

The researcher will adopt an interpretive approach to understand, describe, and develop situated explanations of the phenomenon under study. Principles for interpretive research from Klein and Myers (1999) will be used to guide the study. The choice of interpretive paradigm will directly influence the way the research data will be analyzed and interpreted. According to Walsham (2006), interpretivism adopts the assumption that knowledge is socially constructed. Dependent and independent variables are not stated or interrogated, but rather an understanding of how the social context and phenomena influence each other (Walsham, 2006). In order to achieve this, a case study approach will be used. In this regard, Myers (2013: p.78) state that,

> *"…case study research in business uses empirical evidence from one or more organizations where an attempt is made to study the subject matter in context."*

The core interpretive concepts of this study are briefly discussed below (*Chapter Four* contains a more detailed discussion).

1.5.1 Philosophical Assumptions

The researcher adopted the following philosophical stance towards the world. Two sets of beliefs which delineate how the researcher sees the world were used:

Beliefs about	Explanation
Physical and Social Reality: Ontological	The social and physical world are subjective. This means the empirical world is not given; rather, it only exists through the actions of humans in creating and recreating it (Orlikowski and Baroudi, 1991).
Knowledge: Epistemological	This concerns the criteria required through which valid knowledge about the phenomena will be created. The researcher gained an understanding of the participants' context by interacting with them through semi-structured interviews. There were pre-formulated questions, but the researcher did not strictly adhere to them, allowing the interviewee to speak more about their own experiences.

Table 1.1: Philosophical Beliefs Underlying the Conduct of Research.

1.5.2 Research Method

Based on the participatory nature of this research the study intends to adopt a qualitative research approach. Using guidance from Myers (2013), this section will address the essential building blocks of qualitative research design namely; philosophical assumptions, research method, data collection technique, data analysis approach and written record. Employing qualitative methodology in this study will help the researcher to observe and obtain participant responses and their interest that lies primarily in contextual meaning rather than the researcher seeking objective truth (Gubrium and Holstein, 2002).

1.5.3 Data Collection

The researcher's understanding of the context will be explored with the participants (trainees and project managers) in order to gain clarity taking the form of semi-structured interviews. According to Myers (2013: p.122) semi-structured interviews imply:

"…the use of some pre-formulated questions, but no strict adherence to them. New questions might emerge during the conversations, and such improvisation is encouraged."

Myers (2013) and Denscombe (2014), state that for a case study interview to be in-depth there is a need to interview many people involved with the case, as this will represent various perspectives. Therefore, the sample will consist of some of the community members that have registered and participated in skills development programmes.

1.5.4 Data to be collected

This study intends to investigate how ICTs can facilitate the development of entrepreneurial skills at skills development programmes in marginalised communities. The interviews will collect data directly related to the conceptual diagram illustrated in *Section 3.7.* The study will also be framed within the context of Absorptive Capacity Theory. The central principle of the theory is that firms (businesses of entrepreneurs after training) need to have an ability to recognise the value of new external information for them to be innovative (Cohen and Levinthal, 1990; Roberts, et al. 2012). Absorptive Capacity is used in order to understand the role of ICT's in developing entrepreneurial skills in marginalised communities.

1.5.5 Sources of data

Four skills development programmes in Grahamstown will be the case studies for this research. The source of evidence applied is semi-structured interviews (Myers, 2013). This will provide an opportunity for these organizations to understand and improve how they conduct their work. Case studies will also allow the researcher to observe literature in real-life situations. The disadvantages of using case studies are firstly, the difficulty of gaining access into the organization and secondly that the researcher does not necessarily always have control over situations Woszczynski and Whitman (2004).

1.5.6 Data Analysis

The data treatment method employed is thematic analysis; it focuses on identifying, analysing and reporting themes that are found within data (Braun and Clarke, 2006).

1.5.7 Limitations and Bias

In the long term, the community should be able to sustain themselves through the employment opportunities that are likely to be created. The use of interviews presents the following limitations:

- Interview artificiality – the interviewee might not state their experiences, but what they heard from their peers.
- Lack of trust – there is a chance that the participant being interviewed will not give honest answers to cases they consider sensitive as the interviewer in some cases could be a complete stranger, (Myers, 2013).
- Lack of time – there might be limited time for interviews, meaning that data gathering is incomplete (Myers, 2013). This leads to only a few people being interviewed which might not necessarily express everyone else's views.
- Elite bias – The interviewer can choose to interview a certain type of group and neglect the views of other groups, (Myers, 2013).
- Hawthorne effects – Myers (2013), also suggest that due to the fact that the person conducting the interview will also be participating, there is a chance that the interviewee's response might be influenced.

1.5.8 Assumptions

Participating interviewees are assumed to be involved with skills development programmes that are located in Grahamstown.

1.6 Ethical Considerations

Human subjects are to be protected in any research study. According to Chigona and Chigona (2010: p.25):

> *"The ethical principle refers to the obligation on our part as the researchers to respect each participant as a person capable of making an informed decision regarding participation in the research study."*

This study will adhere to the Rhodes University Ethics Standards Committee guidelines as stated in the handbook. For full consent, participants will be provided with an ethical clearance form which will clearly state the purpose of the research, expected benefits, threats if any apply, the interview questions, informed consent form, details of the researcher and be assured about confidentiality.

1.7 Definition of terms

The following definition of terms are provided to assist the reader in understanding the research.

Economically active: employed or unemployed but looking for work

Marginalised: any group of people that has been excluded from mainstream economic and social life (Creswell, 2015).

Youth: people between the ages of 15 to 34 years (Statistics South Africa, 2018)

Self-reliance: when there is independence for people, either individually or collectively both in their decision-making ability and socio-economically. (SEWA, 2009).

1.8 Thesis Outline

- **Chapter 1 – Introduction and project overview**.
  The researcher provided a background to this thesis and described the problem statement. There is an introduction of the research questions that are the focus of the thesis. It also provides a brief description of the methodology and the chapter layout.
- **Chapter 2 – Review of literature on ICT and entrepreneurship**.
  This chapter presents a review of the literature on ICTs and entrepreneurship in different context.
- **Chapter 3 – Skills development programmes within the South African context**.
  This chapter focuses on the implementation of skills development programmes in South Africa. This part of the thesis also illustrates the conceptual diagram of the thesis.
- **Chapter 4 –Research methodology.**
  This chapter discusses the method used to collect data, analyse it and present the results. The theoretical framework that shapes the study is also presented and interview questions are highlighted.

- **Chapter 5** – **Results.**

  This chapter provides the results that are collected from the interviews. The themes and sub-themes are presented.

- **Chapter 6 – Narrative description.**

  The narrative description is presented, with the thematic analysis of the data being guided by absorptive capacity theory. A guideline that can be applied by skills development programmes is presented.

- **Chapter 7 – Conclusion.**

  This chapter provides the conclusion on the role of ICTs in developing entrepreneurial skills in marginalised communities. Recommendations are presented followed by strengths and limitations of the study.

CHAPTER 2
Review of Literature on ICT and Entrepreneurship

2.1 Introduction

The previous chapter introduced the problem statement, research questions and an overview of how ICT's can be used to facilitate the development of entrepreneurial skills in marginalised communities. This chapter addresses the literature. It commences with the sustainable development goals as stated by the UN and how entrepreneurship can be engaged with to alleviate unemployment through the use of ICT. Socio-economic development is then discussed as an umbrella term that addresses the focus of this research; entrepreneurship and the use of telecentres as a driving force for entrepreneurship training.

2.2 Sustainable Development Goals (SGDs) of 2030

The need for entrepreneurship studies is becoming relevant in development research. In an attempt to decrease social issues that relate to different countries economic growth, for example, unemployment and crime, this research study starts by addressing the agenda for Sustainable Development Goals (SDGs). They were created due to the limited scope of the Millennium Development Goals (MDGs) which were agreed on by the United Nations (UN). These MDGs provided a framework for development however, they failed to achieve their developmental objectives at their expiry in 2015, leading to SDGs being created (United Nations, 2015). The seventeen SDGs are a plan of action, committed to creating lasting positive freedom and change. The purpose of the SDGs is to create a framework for development programs that focus on the goals as stated in *Figure 2.1*.

Goal 1. End poverty in all its forms everywhere

Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture

Goal 3. Ensure healthy lives and promote well-being for all at all ages

Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all

Goal 5. Achieve gender equality and empower all women and girls

Goal 6. Ensure availability and sustainable management of water and sanitation for all

Goal 7. Ensure access to affordable, reliable, sustainable and modern energy for all

Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work

Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

Goal 10. Reduce inequality within and among countries

Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable

Goal 12. Ensure sustainable consumption and production patterns

Goal 13. Take urgent action to combat climate change and its impacts

Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity

Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Goal 17. Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

Figure 2.1: Sustainable Development Goals (United Nations, 2015)

These goals work towards three key areas the UN identified for sustainability, which are social, environmental and economic development (United Nations, 2015). The three key areas are interdependent and inseparable components of human progress (Andreopoulou, et al., 2014). Inequality can be potentially addressed by having economic structural reforms that will help the country meet the SDGs (Chetty, 2016). Acceleration of progress towards meeting goals set by the UN requires action from both the country and the international community for programmes that support business development (Mbuyisa and Leonard, 2015; United Nations, 2015). Therefore, all countries should collaborate in shifting the world to a resilient and sustainable path (United Nations, 2015). Three key goals that are crucial to African countries, specifically South Africa's economy are Goal 1) - End Poverty, Goal 4) - Ensure inclusive and quality education and Goal 8) - Promote Inclusive and Sustainable Economic Growth (Chetty, 2016). However, Goal 8 is not the focus of this research (Chetty, 2016). Eradicating all forms of poverty by 2030 is the greatest global challenge and thus an indispensable requirement for the SDGs (United Nations, 2015; Chetty, 2016). Over the past five decades, poverty alleviation has been the focus of the World Bank (May and Diga, 2015; World Bank Group, 2018). In this light, the UN also made a commitment to drive the extreme poverty rate to 0% by 2030 (United Nations, 2015). In the effort to unpack goal 1, United Nations (2015) state that there is a need to implement development programmes that are aimed at alleviating poverty in all its dimensions in developing countries.

Poverty indicates diverse things in different contexts, with some communities stating that it exists when individuals or households fail to meet the minimum requirement for them to be able to sustain themselves and their families (Obayelu and Ogunlade, 2006; Hamel, 2010; United Nations, 2015). To alleviate poverty, communities should not only be empowered once off but rather permanently. Alleviation can possibly happen when the marginalised groups are empowered with skills that can: - sustain them and their families; give them a sense of emancipation, provide information on opportunities, or create employment for them. The term marginalised stands for any group of people that have been excluded from mainstream economic and social life (Creswell, 2015). May and Diga (2015) and Rahman (2015) highlight that throughout their life, marginal people need to manage and gain control of their lives, which can possibly be achieved if the environment ensures that entrepreneurship is created. The primary emphasis to further eradicate poverty extends to the need to achieve sustainability. In this vein, the SDGs hope to ensure that all men and women, in particular, the poor and the

vulnerable, have equal rights to economic resources, as well as access to basic services, ownership and control over land and other forms of property, inheritance, natural resources, appropriate new technology and financial services, including microfinance.

Post-2015 Development Agenda repeated reference has been made to the indirect impact of ICTs for poverty alleviation through growth and productivity (Mbuyisa and Leonard, 2015; Harris, 2016; Mbuyisa and Leonard, 2017; World Bank Group, 2018). In other words, ICTs can be used as a catalyst for poverty reduction and development (Rahman, 2005; Hamel, 2010; Torero and von Braun, 2006; World Bank Group, 2012; Mbuyisa and Leonard, 2015). This can be done through increasing access to ICT resources for poor communities and remote areas to potentially improve the socio-economic development of the nation (Obayelu and Ogunlade, 2006). In this light, research suggests that the use of ICTs has the potential to serve as tools for poverty reduction and economic development (May and Diga, 2015; Mbuyisa and Leonard, 2017). ICT growth especially mobile telephone and Internet has raised corresponding interest in understanding their role in enhancing the socio-economic potential of businesses (Mbuyisa and Leonard, 2017). This means that integrating ICTs with a nation's growth policy may provide answers for poverty reduction. Global advancement in the use of ICTs is creating awareness on their usefulness when it comes to alleviating poverty and changing lives (Aji, et al., 2016). The continent most struck by universal problems that link to poverty is Africa (Fuchs and Horak, 2008). This is due to global inequality attached to an exclusion of most African countries in the wealth gained from the use of technologies (Fuchs and Horak, 2008). For the ICT initiatives to be successful there should be an understanding of their interaction within the social context at the level of the community (Mashinini and Lotriet, 2011). In acknowledging the pivotal role of the indirect impact of ICTs on poverty alleviation, sustainability is key to realising and maintaining the gains that would have been achieved. From this standpoint, the agenda is quite clear and elaborates precisely how sustainability can be achieved henceforth. The key is to promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity, and innovation, and encourage the formalization and growth of micro small and medium-sized enterprises. An important aspect in the development field is the ICTs for Development (ICT4D) which comprises multidisciplinary research focusing on poverty reduction. Therefore, it is important to conduct research that focuses specifically on understanding the context and the role of ICT4D. This is illustrated in the following section.

2.3 The role of ICTs in combating unemployment

The absence of ICTs is barely a characteristic that determines poverty. The challenges faced in marginalised communities include lack of basic health care, shelter, food, and low levels of education. On top of that, there is a limited ability for the community members to make their own choices. However, ICTs have the potential to process information and have an impact on the lives of the poor (Mbuyisa and Leonard, 2015). The introduction of ICTs has led to information being a valuable resource in our daily lives, through the uprising of technologies across the globe (Mutumwa, et al., 2014). Prasad and Sreedevi (2013: p.107) note that:

> *"…information communication technologies (ICTs) consists of computer hardware, software, internet and other communication networks, and media used to collect, store, process and transmit information in the form of voice, text, data and images."*

ICTs came about as an outcome of integrating communication technology and computer technology (Prasad and Sreedevi, 2007); with the term community informatics being used to refer to the application of ICTs in communities (Aji, et al., 2016). The ICTs role in supporting development and sustainability has led to engagements in discussions in different communities (Zaremohzzabieh, et al., 2014; Zaremohzzabieh, et al., 2016). These two articles identify ICTs as complementary tools that can be engaged with to help improve marginalised people's lives. The spread of ICTs has the potential to advance human development, develop knowledge societies and bridge the digital divide (United Nations, 2015). Furthermore, Zaremohzzabieh, et al., (2016) states that lately, most findings have revealed a substantial positive relationship between ICTs and entrepreneurship in marginalised communities. ICTs have allowed the poor to stay in contact with economic and social contacts, access market information at a faster rate and learn new production strategies (Mbuyisa and Leonard, 2017). Development organizations and scholars also view ICTs as a creative solution to social issues like unemployment, isolation, underdevelopment, and poverty (Charrad and Straubhaar, 2005; Zaremohzzabieh, et al., 2016). Therefore, ICTs can be applied to alleviate these problems.

An increased focus is placed on different ways to create economic opportunities in developing countries. This is leading to further attention being given to ICTs as ways to boost economies and empower small enterprises; to access new markets and manufacture competitive goods (Bailey and Ngwenyama, 2013; Mbuyisa and Leonard, 2015; Zaremohzzbieh, et al., 2016). A precondition for using ICT4D that needs to be addressed in communities is the availability of

telecommunications infrastructure, moreover, the environment (economic and social) should also be enabling (Aji, et al., 2016; World Bank Group, 2018).

Various studies have shown that employing ICTs in societies have both harmful and beneficial consequences (Jimenez, 2006; Obayelu and Ogunlade, 2006). On one hand, there is the potential of improving socio-economic activities, aiding comprehensive human development, empowering communities, and potentially alleviating poverty through the creation of employment opportunities (Jacobs and Herselman, 2005; Obayelu and Ogunlade, 2006; Maier and Nair-Reichert, 2007; Hamel, 2010; Mbuyisa and Leonard, 2015). On the other hand, however, marginalised communities continue to be excluded from these valuable benefits (Attwood, et al., 2013; Touray, Salminen and Mursu, 2013). Obayelu and Ogunlade (2006) suggest that, in order for socio-economic development to occur, realities of context in different parts of the world should be accounted for. In other words:

> *"…interfaces between technology and society will need to be different, as levels of understanding may be very different from those that occur in other parts of the world," (Jacob and Herselman, 2005: p1).*

The gap between people affected by the digital divide and those who are information rich should be reduced in order for communities to build digital societies (Mutumwa, et al., 2014). The following section describes the digital divide.

2.3.1 Digital Divide

The differences in the consumption and production of ICTs experienced in different countries has brought about an area of concern called the digital divide (Prasaad and Sreedevi, 2007). The digital divide represents unequal access to technology (Fuchs and Horak, 2008). In other words, the gap between developed communities that benefit from the access to the Internet and computers as opposed to marginalised communities that are left behind (Prasaad and Sreedevi, 2007; Mutumwa, et al., 2014; Mbuyisa and Leonard, 2015). The former United Nations (UN) Secretary-General Kofi Annan pointed out that the digital divide was viewed as a pressing humanitarian concern moreover, the need to share information through ICTs and communication across national borders were raised as urgent issues (Fuchs and Horak, 2008). As these people lack basic needs for example shelter, food and jobs. Therefore, cutting off communities from basic ICTs might possibly decrease their chances of ever finding remedies for their problems (Fuchs and Horak, 2008). To ensure that communities gain benefits from

the implementation of ICTs, the Government, civil society, private sector; and other international organizations like the United Nations and World Bank should work together to make sure that they improve access to ICT infrastructure, invest into enabling environments and acknowledge the role played by social media (WSIS, 2005; Bailey and Ngwenyama, 2013; World Bank Group, 2018). United Nations (2015) goes on to state that the spread of ICTs and global interconnectedness has potential to bridge the digital divide and provide socio-economic development. The following section will address development in more detail.

2.4 Socio-Economic Development

Research on the challenge of youth unemployment is not new to the development discourse in Africa (Ayele, Khan and Sumberg, 2017). This has led to an increase in policies and programmes interest. For decades economic and social development have been the main discussion regarding the sustainability of marginalised people in developing countries (Unwin, 2009; Zaremohzzabieh, et al., 2014; Zaremohzzabieh, et al., 2016; Ayele, Khan and Sumberg, 2017). Sustainable development occurs when needs of the present generation are met without depriving future generations off their own needs (Andreopoulou, et al., 2014). This means there is better quality of life for the present generation without jeopardizing future generations. In this particular context, development is concerned with economic growth and how marginalised communities can be made more effective (Unwin, 2009).

Modern ICTs are transforming communities; these changes include some of the following aspects: the way people live and communicate, how enterprises do business, the type of jobs that are available and the type of skills that are in lower or greater demand (Evoh, 2012). The foundation of community advancement is on youth entrepreneurship (Zaremohzzabieh, et al., 2016). For the past couple of years, many developing countries have come to acknowledge that investing in youth entrepreneurship is a possible source of business creation and socio-economic development (Zaremohzzabieh, et al., 2014; Zaremohzzabieh, et al., 2016). Zaremohzzabieh, et al. (2014) points out that people need education, health, and economic opportunities for them to overcome the constraints that hinder development. The best strategy for developing countries to become information societies that can improve people's lives is to use ICTs (Zaremohzzabieh, et al., 2014). ICT development could possibly lead to economic development through improving productivity for example improving skills, creating opportunities and saving cost (Jamison, 2007). Currently ICT functions could assist skills development programmes by; connecting people for firm development, creating business

channels, improving customer services, and accessing international markets (Jamison, 2007; Zaremohzzabieh, et al., 2016). Additionally, advances in ICTs have reduced some limitations to development in marginalised areas by improving communication, producing more jobs, boosting productivity, and generating income (Zaremohzzabieh, et al., 2016). Zaremohzzbieh, et al. (2016: p.607) goes on to state that ICTs:

> *"represents the hub of an economic development strategy where small businesses are able to effectively utilize information systems (ISs) to their advantage, and in turn can harvest the full benefit of their technology and become more profitable."*

There is a wealth of knowledge linking ICTs to human development. The development of entrepreneurial skills falls under human development in this study. Human capital is any country's paramount asset and it is necessary for countries to invest more in technologies that supports developing community initiatives such as educational and self-reliance training programmes (Sunkara, Tapio and Rao, 2015). Employability criteria in the knowledge era is increasing by the day, hence the importance of skills development provision for job security (Sunkara, Tapio and Rao, 2015). Nevertheless, ICTs contribute to human development when the community attains appropriate skills and knowledge on its use (Jimenez, 2006). For this study, only two of these human development choices are investigated namely, having access to ICTs that they can use for a decent standard of living and acquiring knowledge. The World Bank identifies labour as the main asset for the poor and therefore suggest that, the best way to reduce poverty is through making labour more productive (Jimenez, 2006). They further state that this requires enhancing the opportunities to develop human capital. By opportunities it means the broadening of space for developing human capital by expanding access to and improving the quality of education and health services. This can be facilitated by starting a working life, giving young people a voice to articulate the kind of assistance they want and a chance to participate in delivering it. Secondly, this would entail developing capabilities of people to choose the opportunities previously stated by recognizing them as decision-making agents and by helping ensure that their decisions are well informed and adequately resourced. Thirdly, it would need to be guided by a system of second chances. This means the provision of an effective system of second chances through targeted programs that give young people the hope and the incentive to catch up from bad luck—or bad choices.

The notion of human capital is a central part of this research study and these development choices mentioned above are guided by sub-questions 1, 2 and 3 (see *Section 1.3*). This entails

equipping trainees with resilient entrepreneurial activities. In other words, equipping trainees with skills that will assist them with sustaining themselves in the long-run which falls under the umbrella of human development. Entrepreneurship studies have become increasingly relevant for development studies. Esselaar, et al. (2006) states that 25% of the capital formation in South Africa is from the small and medium sized enterprises (SMEs) sector, with the number likely to be higher in more informal economies. The potential of SMEs to contribute to poverty reduction has been highlighted as follows: secure employment opportunities for the poor; increased self-confidence; security against income loss and income generation (Mbuyisa and Leonard, 2017). An SME is the same as an entrepreneur as they both have small businesses however; the entrepreneurship is the process leading to the creation of SMEs (Olusegun, 2012). They are both acknowledged as instruments for achieving economic growth and development. The importance of entrepreneurship in development will be highlighted in the following section.

2.5 Entrepreneurship

Poor quality of basic education and lack of entrepreneurship education and training in schools is considered a major contribution to high levels of poverty and unemployment (Steenkamp, 2013; United Nations, 2015). The increasing rate of unemployment in developing countries suggest that community members with advanced education are attaining the jobs meant for people will less or no education (Opute, 2015). This happens because the market is small and entry into the sector is difficult, leaving people who cannot afford any form of education with no form of formal employment options (Opute, 2015). This brings us to Goal 4 of the SDGs which states that there is a need to increase the number of youths and adults with relevant skills for entrepreneurship, employment, and decent jobs. (United Nations, 2015). It puts emphasis on promoting lifelong learning opportunities, one of the ways that this can be achieved is through developing relevant skills for entrepreneurship (United Nations, 2015). Entrepreneurship training can be adopted to build resilience in poverty-stricken areas. Morrison (2000) states that entrepreneurship is a holistic and highly innovative process concerned with taking risks. The entrepreneurs learn new skills that are needed to assume the risk of starting the business and further develop strategies that will assist them with execution (Olusegun, 2012). It serves as a means for countries to address their social, economic, and environmental issues. These are the three key components of the SDGs as stated in *Section 2.2*. Entrepreneurs

identify opportunities in the market, gather resources and advance business opportunities to promote self-interest (Nieman and Niewenhuizen, 2009; Steenkamp, 2013). These individuals bear the risk of the business and are rewarded through profits or personal fulfilment if the business succeeds (Steenkamp, 2013). Entrepreneurship is defined by Adenutsi (2009: p.5) as:

> *"the identification of business opportunities and the mobilisation of economic resources to initiate a new business or revitalise an existing business, under the conditions of risks and uncertainties, for the purpose of making profits under private ownership."*

Some of the benefits that entrepreneurship can provide to the community at large are economic growth, innovation, job creation and productivity (Bridge, O'Neill and Cromie, 1998; Adenutsi, 2009). Therefore, there is a need for the entrepreneur to possess managerial skills (Olusegun, 2012). Furthermore, job creation could lead to a reduction in unemployment rates. An argument raised states that the manner in which entrepreneurship is conceptualised depends on the perspective that will be adopted (Nieman and Niewenhuizen, 2009). The entrepreneurship field proposes the following schools of thought (Bridge, O'Neill and Cromie, 1998):

- Personality perspective – the personality of the entrepreneur determines their entrepreneurial activities.
- Behavioural perspective – entrepreneurship can be taught to people who are capable of learning.
- Sociological perspective – the influence of the environment and the importance of socialisation. These people make their choices based on what they are exposed to.
- Economical perspective – explores the role played by entrepreneurs through applying the economic theory.

According to the personality perspective, it is the personality of a community member that determines if they will be entrepreneurs or not (Bridge, O'Neill and Cromie, 1998). Secondly, the behavioural perspective focus arises as trainees are taught different skills. The behavioural perspective states that it is possible to pinpoint people who are capable of being entrepreneurs (Bygrave and Hofer, 1992). Entrepreneurial skills development programmes are defined as a systematic plan of action applied to help people become entrepreneurs (Botha, et al., 2007). They have the potential to be a driving force for improving marginalised people's quality of life. There has been a call for contributions to train entrepreneurs across the world with the aim of inducing entrepreneurial behaviour. As entrepreneurial skills are required for an

entrepreneur to establish a business (Botha, et al., 2007). Morrison (2000) however state arguments on whether entrepreneurship can be taught or not. On one hand, they argue that there are some individuals who are not meant to be entrepreneurs. On the other hand, they state that there are certain skills that can be acquired with time in the development of entrepreneurial skills. With the latter in mind, there are different factors that need to be addressed when looking at entrepreneurial development. Firstly, in the United Kingdom entrepreneurship education is labelled enterprise which focuses more on individual development other than profit making. Secondly, van Vuuren and Botha (2010) state that another factor that needs to be considered is the entrepreneur's belief in their own ability to become successful. These authors further state twelve core skills required for a successful entrepreneur to assess one's strengths and weaknesses followed by evaluating one's performance:

- To negotiate,
- Deal with people in authority,
- Communicate with people,
- Cope with stress,
- Resolve conflict,
- Making decisions,
- Solving problems were highlighted, and
- Planning one's responsibilities.

Unfortunately, Nieman and Nieuwenhuizen (2009) point out that behavioural perspective fails to capture the whole process of entrepreneurship which entails post business creation and other critical entrepreneurial activities, therefore, there is a need for skills development programmes that address resilience for successful entrepreneurs.

Sociological perspective to entrepreneurship emphasises the importance of socialisation and the influence of the context in the entrepreneurial process (Bridge, O'Neill and Cromie, 1998; Nieman and Nieuwenhuizen, 2009). The role of the environment in enabling entrepreneurial activity provides a holistic understanding of the context (Cope, 2005). The perspective argues that choices of community members are limited to the experiences and expectations which they are exposed to (Bridge, O'Neill and Cromie, 1998). People are exposed to various skills, knowledge and ambitions leading to community members developing at different levels. The different environments that people are exposed to provide different expectations from people

and various opportunities of what they can venture into. Socio-economic factors such as family, parental occupation and social class strongly influence the decision-making process of entrepreneurs (Bridge, O'Neill and Cromie, 1998).

Lastly, the economic perspective explores the role played by entrepreneurship through economic development, by applying economic theory (Bridge, O'Neill and Cromie, 1998). Entrepreneurs fulfil a very important function by ensuring economic development and growth (Bridge, O'Neill and Cromie, 1998). They are aware of the gaps in the supply of goods and services in their communities. Furthermore, this perspective acknowledges that entrepreneurs create ventures through the process of resource distribution resulting in economic development.

Jamison (2007) states that ICT development stimulates entrepreneurial development. Moreover, access to ICTs can remedy the lack of information and improve marginalised communities' entrepreneurship by connecting them to markets (Mbuyisa and Leonard, 2015). However, the entrepreneurship education should not just end at teaching people how to start a business, but rather equipping them with experiences that will assist them with creativity, taking up initiatives, risks and responsibilities (Mutumwa, et al., 2014). The following section will, therefore, address the use of ICTs in marginalised communities.

2.5.1 ICT Entrepreneurship in Marginalised Communities

Modern developmental studies have highlighted the importance of ICTs in transforming society (Mbuyisa and Leonard, 2015). United Nations (2015) states that by 2020 there is a need to substantially expand ICT programmes among other strategies in developed and other developing countries. As ICT developments stimulate entrepreneurial development (Jamison, 2007). There has been progress in the provision of access to ICTs in most developing countries including South Africa. A Malaysian case study by Zaremohzzabieh, et al. (2016) highlighted the importance of agricultural industry development through use of ICTs as communicated in standard policies. The aim was to help young people make a sustainable living and further contribute in the mitigation of unemployment rates among the youth. Despite the focus of the study being the development of the youth's skills in agriculture, the statistics proved that not all the youths ended up being involved in agriculture. Encouraging the youth to get involved is a great challenge, therefore, there is a need for them to be motivated to explore the benefits of ICTs for poverty alleviation. A study by Makoza and Chigona (2012) consulted a few

entrepreneurs (small businesses) on the ICTs they engaged within their business. This will be summarised in the table below.

ICT	Actual Use
Computers	Preparation of documents e.g. business plans, leaflets and recording business transactions. (Moderate use)
Cell phones	Communicating with customers, suppliers and members of staff. Also used to communicate with family members. (Extensive use)
Telephones	Communication with customers and friends operating microenterprises. (Moderate use)
Internet and email	Information on tenders and communicating with customers. (Moderate use)
Public ICT facilities	Checking government tenders on internet and communication with customers. (Moderate use)
TV	Entertaining customers and source of information. Testing DVDs before they are sold. (Extensive use)
Radio	Entertainment while conducting business and source of information for local news. (Extensive use)

Table 2.1: Summary of the use of ICTs in Microenterprises adapted from Makoza and Chigona (2012).

Developing communities face significant challenges, firstly, a digital divide is created where a proportion of the country is left without the benefits due to lack of access (Hamel. 2010). Secondly, the access of ICTs is just the beginning; as such, there is a need for certain skills and knowledge in order for effective human capacity development to take place (Rahman, 2005 and Hamel, 2010); and specifically, the question of how ICTs can lead to access for more opportunities. The following section will address the different types of access to ICTs.

2.5.2 Different types of access to ICTs

There are different types of access that need to occur for an improvement in people's lives. This includes access to ICTs, access to information on how marginalised groups in the society can benefit and access to any knowledge that was previously not available to them (Hamel,

2010). A study by van Dijk and Hacker (2003) states four types of barriers to ICT access that occurs in marginalised communities, these are listed below.

- Firstly, lack of skills access, which occurs because of insufficient user friendliness or inadequate social support.
- Secondly, mental access or lack of elementary digital experience which could be a result of unattractiveness of new ICTs, lack of interest or computer anxiety.
- Thirdly, usage access denoting an absence of usage opportunities.
- Lastly, lack of access to material. The community members will not have possession of computers and network connections.

With the latter in mind, access to physical computers, the Internet and digital divide had been decreasing in developing countries whilst it was increasing in developed countries (van Dijk and Hacker, 2003). To support this, van Dijk (2006) goes on to state that people with advanced levels of education and more income (developed countries) are likely to use presentation applications, spreadsheets and databases relatively more than people with lower income and education.

In a case study by Obayelu and Ogunlade (2006) ICTs at telecentres were used to access information on prices, weather forecast for poor farmers, technology and markets. Their ICTs ranged from TV, phone, e-mail, Internet, radio and printing. Effective use of these telecentres can lead to community access of skill development; study opportunities, job offers and any other information that may interest them (Bailey and Ngwenyama, 2013; Zamani-Miandashti, Pezeshki-Rad and Pariab, 2014). The access of developing countries to ICTs has been expanding (Charrad and Straubhaar, 2005). However, this access is not accompanied by lessons on how to use these skills. The development of skills will be discussed in the following section by firstly addressing the use of telecentres then to be specific to this study through skills development programmes.

2.6 Multi-Purpose Community Centre/ Tele-centre

Research on Multi-Purpose Community Centres (MPCC) also known as telecentres, skills training centres or skills development programmes is used in this research. They were introduced in the early eighties in Denmark, where they were known as telecottages (Aji, et al., 2016). Initially, their focus was on community needs, management structures, operational aspects and financial needs (Jacob and Herselman, 2005), with the purpose of being able to

assist rural farmers with training and jobs by making use of telecommunications and computers. In Africa, they were initiated by The United Nations Education, Science and Culture Organization (UNESCO); the International Telecommunications Union (ITU); and the Canada's International Development Research Center (IDRC) (Mutumwa, et al., 2014). Telecentres come in different types ranging from independent individual agencies to government initiatives acting in response to ICT needs in communities (Bailey and Ngwenyama, 2013). The degree to which the telecentre becomes fundamental to the community signifies its level of success. Furthermore, marginalised communities can be empowered to become entrepreneurs in areas of interest (Obayelu and Ogunlade, 2006; Bailey and Ngwenyama, 2013). Currently, telecentres are viewed as an avenue that offers ICT services to marginalised areas. Therefore, they are usually associated with ICT4D projects, in other words, they are set up in marginalised communities to help people improve their socio-economic growth (Aji, et al., 2016). Given this history, the definition of interest to this research is cited by Jacob and Herselman (2005: np), stating that:

> *"…an MPCC is an organisation offering a range of developmental services (including information services) to a specific community and with a large degree of community involvement."*

Aji, et al. (2016) further states that it is a platform for different interest groups to learn different skills. The establishment of telecentres has been identified as a primary driver that intends to empower the community towards current inventions for their advancement (Jacob and Herselman, 2005; Bailey and Ngwenyama, 2013; Mutumwa, et al., 2014). Potentially, they can encourage entrepreneurship that will support economic development. Bailey and Ngwenyama (2013) state that most youth groups in communities face the risk of not being able to meet their basic needs. This is a result of scarce social support or limited employment opportunities due to the low training and education levels. For most developing countries, the focus is on ICT training which could potentially lead to an increase in employment opportunities (Mutumwa, et al., 2014). Characteristics of a telecentre that is geared towards work-orientations and tailored for employment or self-employment needs of the marginalised are sustainability, ownership, linkages, services and finances (Jacob and Herselman, 2005). Harris (2016) suggested that community engagement research on how ICTs can support the poor, is supposed to implement a strategy that should cover the following strategies for poverty alleviation in communities. Firstly communication, which is by far the most cited factor in development. Secondly, there is a need for stakeholder engagement where the users and researcher should

have a close relationship. Thirdly, capacity-building and monitoring and evaluation. Furthermore, research has been stating claims about the desired outcomes that the programmes address. There is a need to offer evidence of how finding can be useful in guiding communities, NGOs and governments.

In some cases, a barrier to stakeholder engagement occurs when research fails to transfer knowledge to cultural differences with the users (Harris, 2016). Aji, et al. (2016) goes on to state that the services provided should enable the marginalised population to increase their income through improved productivity and marketing. Arguments have been raised in previous research, stating that the telecentre staff should use entrepreneurial skills with reference to other approaches that were employed by previous telecentre initiatives (Bailey and Ngwenyama, 2013). This will assist with the sustainability of the programme as support staff will help the users to develop entrepreneurial skills.

In Jamaica, the need for unemployed youth intervention has been highlighted at the HEART Trust-NTA, Planning Institute of Jamaica and National Centre for Youth Development (Bailey and Ngwenyama, 2013). Low levels of education attainment due to low school attendance have made it difficult for the youth to find employment. HEART Trust-NTA has gone on to integrate their curriculum with entrepreneurial training. There is a need to look at aspects such as training and education for entrepreneurs, particularly in building on innate 'survival entrepreneurship' tendencies among the Jamaican population (Bailey and Ngwenyama, 2013). In a case study on Rwanda by Mutumwa, et al. (2014) Telecentres were used to bridge the digital gap through providing video conferences used for consultation with experts in their fields of interest. They were further used for e-learning were professors would train several students using online facilities. Telecentres are seen as a key measure of how to offer a wide range of services that are required by developing communities in order for them to bring about their own development (Jacob and Herselman, 2005).

2.6.1 Challenges facing telecentres

Although telecentres have benefits, they also face stumbling blocks ranging from limited; sustainability, usability and accessibility (Aji, 2014). Mutumwa, et al. (2014) state that user literacy is one of the challenges faced by telecentres, the perception in communities is that these facilities offer their services to people who are educated mainly because of the language used. Another issue that is faced by potential telecentre users is accessibility. Community

members interested in using these facilities incur travelling cost (Mutumwa, et al., 2014). These cost act as barriers for the poor communities, students and the unemployed who are looking for fairly cheap ways to gain access. Examples of problems relating to issues of access include, a telecenter in Mankweng, South Africa. It had accessibility issues as the location was insecure; it was easy for thieves to steal equipment (Mutumwa, et al., 2014). In extreme cases regarding accessibility, community members are unaware of their location. The main solution that came from an article by Aji, et al. (2016) in relation to the problems that arise when using telecentres was to concentrate on the user. Most studies concentrate on the training centre itself rather than the context of the users. Another example of limited telecentre success is described in a case where the decisions on the activities were made without adequate involvement of the community members (Parkinson and Lauzon, 2008).

Therefore, the focus of skills development programmes should be on the needs of the relevant community. This means the involvement of the community and its socio-economic development signify the effectiveness of a telecentre (Rajalekshmi, 2007; Aji, 2014; Aji, et al., 2016). Given that the users (community) take advantage of the technological infrastructure, telecentres can fast track economic growth (Bar, et al., 2013; Aji, et al., 2016). However, if users fail to see the importance of telecentres and skills development programmes, their potential will not be realised (Aji, et al., 2016). Harris (2016) goes on to state that without conditions such as capacity and leadership within the community, the impact of high-quality skills development programmes will be limited. Integration of ICT skills with other skills taught at skills development programmes lead to a possibility of economic growth (Bailey and Ngwenyama, 2013).

2.7 Summary

This chapter started off with discussing the SDGs of 2030 which were developed at the expiry of MDGs. With poverty alleviation being the motivation of this study, the importance of ICTs in combating poverty is highlighted. The researcher focuses on socio-economic development as an umbrella term that covers entrepreneurship development. Furthermore, the chapter highlighted how telecentres are being used to develop entrepreneurship skills. Literature suggests collaborating ICTs and entrepreneurship in addressing marginalised communities, leading to the following chapter which addresses skills development programmes.

CHAPTER 3
Skills Development Programmes within the South African Context

3.1 Introduction

The previous chapter explored the importance of collaborating ICT skills with entrepreneurship development to alleviate poverty. This chapter will highlight skills development programmes that collaborate ICTs and entrepreneurship. This is followed by successful examples and strategies that have been used in similar context including the South African context. At the end of the chapter, the researcher will present a conceptual diagram which highlights important factors that relate to the collaboration of ICTs and entrepreneurship, based on the literature. Followed by revisited research questions.

3.2 Skills Development Programmes

Bailey and Ngwenyama (2013) and Zaremohzzabieh, et al. (2016) state that through the services offered at telecentres, modern initiatives now incorporate entrepreneurial training for socio-economic development, this is done at skills development programmes. Skills development programmes in marginalised communities should be used as both access points and training centres for people who need to be empowered (Obayelu and Ogunlade, 2006; Aji, 2014). To ensure sustainability of skills development programs that are collaborated with telecentres, there is a need for the community to see their usefulness (Aji, et al., 2016; Zaremohzzabieh, et al., 2016). There is also a need for these initiatives to be able to assess their impact on the community based on, the users demand, community, and national interest. This would assist with creating tailored policy designs for example an approach that can be engaged with to facilitate the development of entrepreneurial skills in communities (Bailey and Ngwenyama, 2013). Moreover, improvement of the technology employed should match changes happening in developed countries.

Despite having numerous development programmes that convince entrepreneurs to use ICTs, a Malaysian case study illustrated that most entrepreneurs still believe that ICT adoption is

challenging and have not started using it to perform their entrepreneurial skills (Zaremohzzbieh, et al., 2016). Numerous development programmes have been active in other developing countries with the aim of assisting entrepreneurs to make use of ICTs. In recent years, changes in ICTs have influenced mainly skilled occupations in addition to the theoretical and cognitive knowledge that is vital for productivity (Evoh, 2012; Chetty, 2016). Innovative solutions offered by ICTs have the potential to empower the poor (Chetty, 2016). They are considered practical tools when narrowing knowledge gaps between people, regions, and countries as they offer new ways of accessing information (Sunkara, Tapio and Rao, 2015). Furthermore, the practical training that combines behavioural and occupational skills makes the youth mobile (Jimenez, 2006). ICTs in various sectors of communities are perceived as catalyst for improving information access and developing relevant skills (Jimenez, 2006; Chetty, 2016). This rationale forces various development programmes and initiatives to embed ICTs as tools to enhance instructional delivery (Jimenez, 2006). For the purpose of this study they will be referred to as ICT-based skills development programmes. ICT-based development programmes are also known as ICT-enhanced training programmes (Evoh, 2012). Such programmes provide both social and private advances in the development of the knowledge economy which is suitable for community socio-economic development (Jimenez, 2006; Sunkara, Tapio and Rao, 2015). Sunkara, Tapio and Rao (2015) cite that:

> *"…the knowledge economy is an economy that can apply its fast-increasing knowledge effectively in work and social situations to increase productivity and general well-being, and to create and apply new knowledge."*

ICT programmes are relevant to many social services and have a potential of introducing more people to the formal economy (Chetty, 2016). Furthermore, they could potentially act as transformative tools which could empower the whole community through the individuals who would have been trained. Therefore, there is a need for careful consideration when assessing how developing countries can remain competitive in the global economy. This leads to a need to prescribe guidelines on setting up ICT skills development programmes in marginalised areas with the hope of enhancing entrepreneurship (Chetty, 2016). One of the barriers to the use of these services is the high cost of Internet use for the marginalised communities (Chetty, 2016). State subsidised initiatives, NGO's and private initiatives in the past years have provided Internet access to the marginalised communities since private internet access is expensive (Sunkara, Tapio and Rao, 2015; Chetty, 2016). This unfortunately creates challenges for communities as they fail to appreciate the importance of technology use in their day to day

living (Chetty, 2016). Communities are also usually uninformed and do not see the benefits of innovative ICT-based skills development programmes. Besides, the main priority for them is to cover the costs of their basic needs, such as food, transport, and housing. Hence, there are downfalls to merely increasing access to ICTs, as people do not only lack access to technologies in marginalised areas, but they also lack proper ICT skills and knowledge (Charrad and Straubhaar, 2005).

Most of the World Bank's support for ICT in education is focused on the provision of computers and Internet connectivity to schools or projects (Evoh, 2012). Evoh (2012) goes on to state that less attention has been given to using ICT tools to meet the demand for ICT-based skill development and entrepreneurship for the knowledge of the marginalised economy. Thus, ICTs have a potential to make skills development, employment and learning opportunities accessible to the youth (Sunkara, Tapio and Rao, 2015). Traditional services are being transformed through ICTs, which play an essential role in the production, trade, delivery, new opportunities, and employment in many industries (Sunkara, Tapio and Rao, 2015). The use of ICTs has become a force of transformation in the modern world by dramatically changing world markets (Sunkara, Tapio and Rao, 2015). Furthermore, innovative business opportunities are being created through the different ICT training initiatives (Sunkara, Tapio and Rao, 2015). These ICTs facilitate development of relevant local content and faster delivery of information on technical assistance and basic human needs such as food, agriculture, health, and water (Obayelu and Ogunlade, 2006). For example, farmers can interact with other farmers, their families, neighbours, suppliers, customers, and intermediaries, which is a way of educating rural communities. However, the use of ICTs has brought about its own challenges in many sectors of society. Public and private organizations continue to do away with low skilled positions replacing them with technology, which further increases the unemployment levels in different countries (Sunkara, Tapio and Rao, 2015). Hence, the importance of ICT-related skills development and education (Sunkara, Tapio and Rao, 2015). Evoh (2012) emphasized the urgency of involving the population in productive economic conditions because of the state of the secondary education and unfortunate population in Africa who are unemployed.

3.3 Successful examples and strategies of ICT initiatives

Innovative training and employment are being created for the youth through ICTs (Evoh, 2012; Sunkara, Tapio and Rao, 2015). The impact of skills development programmes using ICTs to facilitate entrepreneurial development can be seen through various examples. A study by

Sunkara, Tapio and Rao (2015) illustrates successful practices that are employed in other ICT related income generation opportunities and training for the youth with the aim of promoting entrepreneurship. This study is conducted in Papua New Guinea, which is considered a developing country with one of the lowest levels of access to ICT infrastructure in remote areas where private operators are rolling out 2G mobile services instead of faster mobile broadband technologies, such as 3G. The fixed broadband penetration in 2015 was below 1% of the population as it was unaffordable for both small businesses and the average citizen (Sunkara, Tapio and Rao, 2015). Furthermore, Internet usage is below 5% with some of the key constraints in Papua New Guinea being the lack of local support networks and high international connectivity costs.

Although, the literacy rate (67%) is relatively good compared to other developing countries, the youth are still unproductive in the society leading to long-term unemployment for the youth (NYP, 2015; Sunkara, et al., 2015). As a country, they are experiencing scarcity of skilled workers across many sectors. This has led to an increased reliance on skilled foreign workers. The Australia-Pacific Technical College initiative, funded by the Australian government, was introduced in Papua New Guinea as a centre for training citizens in skills that are in high demand. Integrated efforts by organisations are required for youth employment as a few initiatives may not be able to cater for the number of youths in need. Emphasising the need for, private organisations, NGO's and governments to consider imparting ICT skills training to marginalised communities. In this regard, the NYP (2015) and Sunkara, et al. (2015) conclude that there is potential for ICTs to generate employment, however there is a need for enabling environments and supporting structures to be put in place before a country can realise this potential.

ICTs in skill development could potentially offer advantages in opening knowledge and ideas for business opportunities among the youth (Sunkara, Tapio and Rao, 2015). In a hypothetical context, the authors demonstrate that ICTs could offer low cost methods of communication with high revenue markets, while engaging new forms of communication-based technologies offering different opportunities for marginalised communities. Similarly, Self Employed Women's Association (SEWA, 2009) demonstrates that using different forms of ICTs in India, could assist women in earning a living through small businesses. These women discovered business ideas through awareness programmes on basic computer skills in their communities. Through such programme's women discover their potential to harness ICT skills and knowledge that support them in being self-employed (SEWA, 2009; Sunkara, Tapio and Rao,

2015). These women have no fixed employer-employee relationships and earn a living through using their labour in small businesses. Consequently, they contribute to their economy significantly through their labour. There are four types of self-employment mentioned by SEWA (2009) namely hawkers, home-based workers, manual labourers, and producers and services. The programme charges a membership fee of Rs. 5 per year, ensuring commitment of members.

In the Jamaican context, the use of telecentres for entrepreneurship have also been emphasized (Bailey and Ngwenyama, 2013). Initially, the user groups that showed interest were developed small business owners. These users found the convenience of having all facilities in one place and staff members who were readily available to assist beneficiary. A young artist from a local low-income community noted that he was using the telecentre to compile a comic book with the hope of publishing in the future. Without the given resource to support this dream, he could be idling in the streets of Jamaica without any hope. Bailey and Ngwenyama (2013) through consulting with community members found that for telecenters to be effective they had to be attractive to get the youth off the streets. There was a need to blend music and art programs with digital literacy. Furthermore, the participants expect quick financial rewards from telecentres. Word-of-mouth play a major role in the community knowing about the services offered at telecenters. Findings from the research by Bailey and Ngwenyama (2013) show how an unemployed 27-years-old single mother was empowered through the use of ICTs. She attended classes in food and beverage services at a national training academy where she would use computers at the telecentre to search for catering ideas, recipes and to send resumes to restaurants. She further developed an entrepreneurial idea, pointing to the need of having programmes that collaborate entrepreneurial activities with ICT use.

The table below shows entrepreneurial activities currently promoted by telecenters in Jamaica. They were developed in response to the community's interest, potential demand for these services as a business and the perceived needs of the community.

Entrepreneurial program	Activities
Business development	Entrepreneurial skills training, partnerships and community surveys
Community radio	Radio broadcasting
Community tourism	Community day tours and extended stays
Computer skills	Computer repair, word processing, data entry and website development
Creative writing	Short stories and poems
Music	Music production and disc jockey
Video	Video Production
Visual arts	Computer graphics and digital photography

Table 3.1: Entrepreneurial activities, Adapted from Bailey and Ngwenyama (2013: p.234)

The World Development Report reflects a combination of ideas, entrepreneurship policies, fear and crisis response (Jimenez, 2006). The primary framing of the report suggest that governments and development partners should invest in the youth because they are considered an 'investment opportunity.' Furthermore, investing in them could reduce poverty and accelerate growth (Jimenez, 2006; Ayele, Khan and Sumberg, 2017). The policy acknowledges the importance of listening to the youth in need for accurate policy creation in other words looking at things from the view of the youth (Jimenez, 2006). The World Bank presents three strategic directions which are; second chances, opportunities and capabilities (Jimenez, 2006). Second chances are explained as incorporating effective systems through targeted programs that are aimed at giving the youth hope (World Bank, 2006). Different youth groups have undesired outcomes because of reasons ranging from choosing the wrong path to opportunities being restricted. The World Bank further states that it is important to broaden the opportunities for skills development that are presented to the youth because remedies are expensive (Jimenez, 2006). According to Mbuyisa and Leonard (2015) opportunities make markets work for the marginalised communities and expand their assets. Public spending alone from groups that aim to enhance youth skills will not be enough, policies need to motivate the youth, their parents, and the community at large to invest in themselves (Jimenez, 2006; Ayele, Khan and Sumberg, 2017). Ayele, Khan and Sumberg (2017) introduces four points of debate around youth employment in Africa.

- Firstly, the debate on who the youth are, is brought up because there are different age-based definitions that are used in different development organisations and countries. The issue is more on the difference between age groups. Will a coherent policy be possible considering that there might not be much in common between a 15-year-old and a 40-year-old?
- Secondly, the debate of unemployment versus underemployment. Official statistics make estimates on unemployment which is relatively low and arguably of little value as compared to underemployment which is high. This debate arises as policies set for unemployment and underemployment should be treated differently as this could result in faulty framing and possibly wasted resources.
- Thirdly, finding out if entrepreneurship and self-employment are the solution. Ayele, Khan and Sumberg (2017) states that this debate remains one-sided as most development professionals and policymakers suggest that entrepreneurship is the best response to the youth employment challenge. There are observations that have been made from previous research, entrepreneurship is now considered a synonym of self-employment and these are activities that are done to generate income for someone (Langevang, et al., 2015; Singer, Amores and Moske, 2015; Ayele, Khan and Sumberg, 2017).
- Lastly, taking the aspirations of the young people into consideration could possibly assist with informing policies and programmes that concern their working futures.

Another case study by Evoh (2012) presents an innovative approach to ICT skills training and employment generation for out of school and disadvantaged youths in Africa. NairoBits Digital Design School in Kenya presents a case study for vocational and training school which uses ICTs to improve skills development among the youth in African informal settlements. The study suggests that to meet the objectives of an ICT-based skills development and employment generation program for the underprivileged, it requires strong regulatory frameworks and contributions from the World Bank (Evoh, 2012). Furthermore, SMEs within the private sectors, other international organisations, civil society groups and government agencies should assist in the development of communities through meaningful engagements (Evoh, 2012).

The other studies focus mostly on the type of technologies introduced to communities. Jamison (2007) reports that mobile phones have enabled farmers and fisherman in India to find profitable markets for their daily sales. Fisherman call potential buyers to check demand and

prices leading to the elimination of waste as they are aware of the quantities required. Farmers developed an Internet commerce website, which publishes the availability of their agricultural products to large markets. Another study has been conducted with SMEs in fourteen African countries, including South Africa (Esselaar, et al., 2006). The results indicate that mobile phones have overtaken computers as tools in supporting the running of SMEs due to their accessibility and prevalence. Furthermore, a South African study on business strategies employed at women-led SMEs in a mobile technology environment state that mobile phones have gained wide appreciation (Ajumobi and Kyobe; 2015). Entrepreneurs find product prices on their mobile phones without incurring transportation cost to their suppliers or market. The use of mobile technologies has both advantages and disadvantages. One advantage is that it provides low cost base and ensures easy communication between the customer and suppliers. This eliminates travel time as communication can be done whenever and wherever the need arises as mobile phones are also portable (Ajumobi and Kyobe; 2015). Mobile phones also provide useful applications that can be used in the business and allows the user to multi-task. However, there are limited functionalities and ability to develop as the business develops.

Giathaiga (2016) highlights a project aimed at bridging the Internet gender gap through collaborating with NetHope. The training entails a combination of basic Internet skills, entrepreneurship and introduction to ICTs. The trainees were taught practical use of packages such as Microsoft Word, Excel and PowerPoint complemented by smart phone use. Through technology use, women are taught how to access Internet on their phones for social and business functions, how to advertise their businesses online and apply for sponsorship. A few took a step further where they used the Internet for browsing, researching, and applying for jobs. The World Vision Kenya is taking trainees through six-weeks training after which their efforts are recognised through graduation ceremonies. The trainers hold evaluations of the digital literacy skills training through interviews (Giathaiga, 2016). From the results, the author explains that the Internet is a powerful tool for opportunities and a solution for self-employment. The author further recommends obtaining post-opportunities to link attendees with when they are done with training. From the evaluation's trainees raised expectations that they had after completion, they expected the funders to offer job opportunities, set up businesses, computer schools; whilst other trainees just wanted to learn how to use a computer. Mostly, they have gained skills in entrepreneurship where they start small businesses that they market on the Internet. Furthermore, some former trainees are now earning income from schools that are not technologically advanced through assisting teachers' with electronically

recording student marks and printing exams. Unfortunately, challenges of affordability and access are still a concern in most communities. Some of the marginalised communities experience frequent power outages and poor connectivity (Giathaiga, 2016).

In a case study by Obayelu and Ogunlade (2006) ICTs are used to enhance people's lives through providing them with access to information that is pertinent to their economic livelihood. Information accessed relates mainly to distance learning and healthcare using radios and telephones; this study has minimal use of computers and Internet. Another article by Mbuyisa and Leonard (2015) highlighted the importance of micro finance. The Grameen Bank in Bangladesh is an international model for micro-credit as a strategy to alleviate poverty (Moodley, 2005). The bank provides small loans to marginalised communities for small scale self-employment activities. One of the programmes the bank is credited for is to extend infrastructure in rural villages for the borrowers to buy mobile phones and sell services in their villages.

3.4 Best practices for skills development programmes

The table below highlights some of the best practices identified for use as a framework for defining the characteristics of case studies (Jacobs and Herselman, 2005).

Best Practice Characteristics	**Description**
Sustainability	One of the main characteristics of best practices is sustainability. It involves all the facets of the project from financial to political issues. Sustainability for a project or an organization means being able to maintain or prolong the services with the means available and this depends largely on the type of services provided, income generation and future plans.
Ownership	Management structure is also important in determining the success of the project. Depending on the services provided and resources available, small and efficient managerial staffs is important for a MPCC.
Linkages	Linkages in this instance mean the relationship that MPCCs have with other related and unrelated organisations. It also

	means that centres communicate with each other on matters of common interest, which could bring many far-reaching spin-offs. The extent of the centre's connection or link with other centres determines largely its success or failure.
Services	Services provided by the centres vary from area to area, but one of the best practices in terms of services is demand driven services i.e. that the services needed are defined by the clients which will convince them to sacrifice their resources to get them.
Finances	Financial issues are very important to the success or failure of MPCCs. It is important to have clear strategy on fundraising and raising income for centres. A clear business plan is generally accepted as a good practice for MPCCs.
Physical Infrastructure	The community needs to use an existing accessible infrastructure as a site for providing services. If an under-utilised existing building (where potential for growth is available), the community should look at the possibility of using it as an MPCC site. In some areas, there are no appropriate buildings to be used as MPCCs, in which case, other options need to be explored.
ICT Infrastructure	There is a need for appropriate ICTs to provide fast, efficient and effective services. Helping people have access to technologies and enabling them to participate meaningfully in the knowledge economy.

Table 3.2: Best practices of skills development programmes adapted from Jacobs and Herselman (2005: pp.60-61).

SEWA (2009) states eleven questions that can be employed to ensure that a skills development programme is moving in the direction of their two goals which are full employment and self-reliance. The organisation is a membership-based organisation therefore they are encouraged to develop their own guidelines for constant monitoring and evaluation. Below are the questions that guide SEWA where question one and seven link to the goal of full-employment:

1. Have more members obtained more employment?
2. Has their income increased?
3. Have they obtained food and nutrition?
4. Has their health been safeguarded?
5. Have they obtained child-care?
6. Have they obtained or improved their housing?
7. Have their assets increased? (e.g. their own savings, land, house, work-space, tools or work, licenses, identity cards, cattled and share in cooperatives; and all in their own name.
8. Have the worker's organisational strength increased?
9. Has worker's leadership increased?
10. Have they become self-reliant both collectively and individually?
11. Have they become literate?

Considering how ICTs could aid to skills development programmes in marginalised communities, there is a need to discuss technology adoption in entrepreneurship and the reasons why people adopt. The following section will address the need for technology adoption in marginalised communities for them to develop their entrepreneurial skills.

3.5 Technology Adoption in entrepreneurship

The second research question introduced in chapter one focuses on how ICTs are used to support the development of entrepreneurial skills within the marginalised community of Grahamstown. There is a need for the community to collaborate their skills of choice with ICT skills. Therefore, the focus of this section is to address why ICTs are adopted and ultimately how they are used by entrepreneurs.

3.5.1 Decision to adopt

Spencer, Buhalis and Moital (2012) state that the increased access to ICT has improved the playing field for entrepreneurs. The adoption of ICTs has accelerated social and economic change at a rapid pace (Mbuyisa and Leonard, 2015). Opportunities have been created for organisations to develop innovative services and strategic ways of doing business (Ajumobi and Kyobe, 2015). However, this requires entrepreneurs to understand the ICTs first before making any capital investments into them (Nguyen, 2009). The adoption of ICTs has given

both the entrepreneurs and customers access to information and more options to work with. Diefenbach (2007) further states that if entrepreneurs desire strategic growth in their businesses, adopting ICTs could potentially achieve it as technology has become inevitable.

Langley, et al. (1995) states that adoption is not only caused by the individuals' rationality but also through experience. Some of the key reasons for ICT adoption are enhancing one's innovative capabilities, growth, survival and competitiveness (Nguyen, 2009). However, entrepreneurs adopt ICTs for different reasons, as their functions vary due to different working environments. There is an argument that entrepreneurs move to ICTs due to a response or a reaction to an event. Responses and reactions identified are pressure from customers, emphasis on improving efficiency and, pressures from other external (opportunities and threats) and internal environments (strengths and weaknesses). The external pressures mentioned above refer to causes such as market pull and technology push. Nguyen (2009) describes market pull as standards that will be established by the industry and the entrepreneurs have to implement these changes. On the other hand, technology push means there will be an introduction of technology that is well developed, and the entrepreneurs are required to integrate it into their businesses.

Despite the significant contribution that have been highlighted concerning the use of ICTs in business, studies have shown a large number of unsuccessful implementations in small businesses (Nguyen, 2009). Firstly, some business owners are unclear on the reasons why they adopted the technology in the first place since there is no proper planning. Secondly, owners do not understand the relationship between their businesses and the technology. Thirdly, some business owners do not have the capacity to expand their technology resources because of lack of business, ICT strategy, limited access to capital and the most important one to this study being limited ICT skills. Esselaar, et al. (2007) identifies critical barriers to ICT adoption and use experienced by entrepreneurs in South Africa. Firstly, the ICT applications are not tailored to how entrepreneurs do business. Secondly, people are not aware of the benefits they could experience if they adopted and used ICTs. Thirdly, there are low employee skills level. Finally, the cost of ICTs is too expensive as government programmes focus mostly on formal small business sector, informal businesses are less likely to have access to credit from the banking system. Unfortunately, if entrepreneurs are unable to exploit the benefits of adopting ICTs, they will have less chances of them competing with bigger firms (Torero and von Braun, 2006). Furthermore, lack of ICT adoption could decrease the rate at which countries develop (Prasad

and Sreedevi, 2013; Zaremohzzbieh, et al., 2016). Studies that focused specifically on South Africa are discussed in the following section.

3.6 Skills development in South African communities

The improved economic structures represented by South African business industries are seen as an economic powerhouse for Southern Africa (Steenkamp, 2013). There is an inclusive information society where ICT-based innovation flourishes. However, South Africa faces numerous challenges ranging from shortage of skilled people, inequality, poverty and lack of formal and informal skills development for communities that can create various opportunities (Steenkamp, 2013; NYP, 2015; Chetty, 2016). Such challenges are experienced in rural and township communities where most poor people live. Chetty (2016) assert that poverty in poor communities is cycled among the youths who in turn become a threat to the country's development. This poverty trap creates a high unemployment rate (NYP, 2015; Chetty, 2016). Furthermore, the unemployment crisis is worsening as the younger population is likely to be three times more unemployed as compared to the older population. The South African government has encouraged entrepreneurship training as a driving force used to address the unemployment problem (Botha, et al., 2007). In a survey conducted by The South African labour force (2014) it was found that 36.1 percent of the youth were unemployed. This figure is almost double that of the percentage of adults (35-64 years old) that were found to be unemployed at the time of the survey. People with tertiary degrees have a significantly higher chance of getting employed, which leaves most of the youth, (those with a low skill base) unemployable (Sunkara, Tapio and Rao, 2015; Chetty, 2016). Additionally, this means that most of the youths do not qualify for the Unemployment Insurance Fund (UIF), as it only caters for people who were previously employed (NYP, 2015). The South African government encourages entrepreneurship training to address the unemployment problem (Botha, et al., 2007). Entrepreneurs that come from historically disadvantaged areas have benefitted and contributed to the well-being of the other South African citizens. Social intervention programmes referred to as skills development programmes in this study, are used in this regard as vehicles to transfer skills and knowledge to marginalised communities (Botha, et al., 2007). Emphasis should be placed on the trainee's competence in life-skills rather than pure academic knowledge and skills.

Provided that there is implementation of programmes that integrate the youth actively into the economy and society, they will be able to escape socio-economic challenges that are borne to them (NYP, 2014). As skills development programmes are seen as a powerful resource for the country. According to NYP (2014) there is a need for development programmes that can be used to empower the unemployed youth in marginalised communities as they are both the targets and perpetrators of crime in some communities. The power of individuals should be developed through sharing ideas and working together during training. Therefore, a research by SEWA (2009) suggests that community initiatives that take advantage of various mediums available in local communities can help the youth learn different skills for self-reliance. Self-reliance is when there is independence for people, either individually or collectively both in their decision-making ability and socio-economically (SEWA, 2009). Training provided should assist individuals in leading a better life through becoming less dependent on others for help (Botha, et al., 2007). The continual presence of poverty and inequality in the country continues to deny digital inclusion to the masses of the South African population (Chetty, 2016). Hence, participating in the productive aspects of the knowledge economy remains elusive to many as most of the population remains in a survivalist mode. It is therefore, vital to address marginalised communities' access to knowledge through different forms of ICTs in the hopes that it would enable them to escape this cycle. Technologies provide a forum for realising knowledge and skills in developing context (Wilson and Heeks, 2000).

Makoza and Chigona (2012) highlight the impact of using ICTs on the livelihoods of SMEs through a South African case study. The authors suggest that SMEs are a key factor in the socio-economic development of developing countries. The role of SME's was noted as being particularly important in the areas of skills development, income generation and job creation. In this study cell phones were used in most cases. The other supporting ICTs used where electronic mail, radios, televisions, telephones, PCs and the internet. Mainly the ICTs were used for communication with suppliers and customers then gathering any information concerning the business. The study by Makoza and Chigona (2012) notes that the use of ICTs in microenterprises is often shortened by challenges that are beyond ownership and access to ICTs. Moreover, they stated that the main challenge was that microenterprises were unaware of the various uses of ICTs. There were cases where despite having the ICTs, some small businesses did not use them.

In the 2011 budget speech, the South African Minister of Finance stated that SMEs are important because they are a means for poverty alleviation in marginalised communities (SA

Budget Speech, 2011). Often SMEs operate with less than 10 employees and assets valued at roughly R0.1 million. The South African National Small Business Amendment Bill (2003, p.12) defines microenterprises as:

> *"…any entity, whether or not incorporated or registered under any law, consisting mainly of persons carrying on small enterprise concerns in any economic sector, established for the purpose of promoting the interests of or representing small enterprise concerns, and includes any federation consisting wholly or partly of such association, and any branch of such organisation."*

ICTs infrastructure in developing communities of Africa, including South Africa, are compromised by lack of basic access to ICTs and access to the information needed for them to use the technologies and services effectively (Jacob and Herselman, 2005; Mutumwa, et al., 2014). Jacob and Herselman (2005) further states that for South Africa to become globally competitive there is a need to tie together the key ICTs and skills necessary for the socio-economic development considering the realities of context, in this case the Makana Municipality in the Eastern Cape, where Grahamstown is the largest town and the seat of the municipal council.

Chetty (2016) indicates that over the past decades, ICTs have advanced in South Africa, but they continue to face various challenges that prevent them from being used to their full potential. There is inequality in the country as the few wealthy individuals continue to obtain higher productive occupations, whilst the poorer population must settle for low paying jobs; if there are any available (Chetty, 2016). The cyclical nature of this problem exacerbates matters by trapping most of these individuals in poverty. Additionally, South Africa has been identified as a poor performer in relation to the other BRICS countries when considering that a larger percentage of the population is affected by unemployment, poverty and inequality (Chetty, 2016).

More than 53.8% of South Africa falls below the poverty line. The Gini coefficient (which is an indicator of inequality when it is high) is 0.63% for South Africa compared to the lower levels of the other BRICS countries (Chetty, 2016). The other BRICS countries poverty headcount at national poverty line was as follows: Brazil 7.4, Russia 13.4, India 21.9, China 0, showing income inequality in BRICS countries. This makes South Africa one of the most unequal countries in the world (Chetty, 2016).

Three types of poverty lines are identified in South Africa (Statistics South Africa, 2014b).

- Upper bound poverty line - basis on a person's ability to buy food and any other necessities.
- Lower bound poverty line - when the person has an ability to purchase food but must sacrifice other things
- The food poverty line - the poverty line is based on individuals being able to purchase food for an adequate diet.

In South Africa, the choice of poverty aimed for by 2030 with the types above in mind has not yet been determined. Nonetheless there is a high chance of breaking the poverty cycle when self-employment or entrepreneurial development programmes are promoted for low-skilled people (Chetty, 2016). Employment creation significantly translates into sustainable poverty reduction and human development. These initiatives could assist with covering the gap left by the education system that is producing substandard results, emphasized by Goal 4 of the SDGs. The National Youth Policy (NYP) for 2015-2020 was consulted for the South African youth context. The South African Constitution informs it, from the end of apartheid era in 1995 to 2012 when it was created. In line with the need to develop entrepreneurial skills in marginalised communities, the NYP (2015: p.6) states that there is a need to:

> *"...strengthen youth service programmes and introduce new community-based programmes to offer young people life-skills training, entrepreneurship training and opportunities to participate in community development programmes."*

While the policy acknowledges that there is still a fair amount of challenges that need to be addressed, it seeks to update the previous policy by addressing the new challenges that affect the youth in South Africa. Irrespective of the education level of South African youths, there is still a high unemployment rate. Within the youth, unemployment rate is over 52% with only 12.2% absorption into the labour market (Statistics South Africa, 2018). There is a need for the country to move towards a society where citizens will be active champions for their own development with the support of the government (NYP, 2015). Implementing a clear framework or guidelines for the youth into national policy planning and budgeting leads to countries experiencing success stories (Jimenez, 2006). An important aspect states the risky behaviour displayed by unemployed youth for example, tobacco, drugs and alcohol (Jimenez, 2006). Absence of employment threatens the communities a large with social and political instability (Ayele, et al., 2017). Boundaries between employment and criminal activity are

becoming blurred. Therefore, the need to create an environment that empowers the youth to reach their full potential (Sunkara, et al., 2015). In the South African context examples of microenterprises are street vendors, handcrafters, fruit and vegetable sellers, and spaza owners (hawkers) (Aji, et al., 2016; Ayele, Khan and Sumberg, 2017). The following section will describe the context that is engaged with in this research.

3.6.1 Makana and Grahamstown Context

The Eastern Cape, which comprises of 13.5% of South Africa's total population is one of the two poorest provinces in the country (Hayward and Ndamase, 2011; Statistics South Africa, 2011). Statistics from the Makana Municipality, where Grahamstown is the largest town and the seat of the municipal council, state that "of the 28 494 economically active (employed or unemployed but looking for work) people in the municipality, 32.5% are unemployed" (Statistics South Africa, 2011). A 42.3% rate of youth unemployment in Grahamstown is also a concern in the country (Statistics South Africa, 2011). While the low rates of people with access to higher education in the area is a major challenge to the society at large. The major cause of unemployment in similar communities is the lack of proper opportunities and skills (Hamel, 2010). Obayelu and Ogunlade (2006) recommend that strategies aimed at alleviating poverty be focused not only on one gender but on carrying everyone along in the process. Due to the low skill base and high unemployment; Governments, NGO's and corporate bodies must have a strong focus on innovative growth plans rather than focusing on the traditional employment strategies (Gurumurthy, McLaughlin and Jha, 2014; NYP, 2014; Chetty, 2016). The Millennium Development Goals (MDGs) and NYPs can be achieved through these partnerships (Gurumurthy, McLaughlin and Jha, 2014; NYP, 2015). Chetty (2016) further states that there is a need for efforts that transform skillsets to ensure that unemployed community members are afforded opportunities to perform competitively in the higher productivity sectors of the economy. Services provided for example bead work, business skills, computer skills or ICT training and baking to mention a few, enable the marginalised population to increase their income through improved productivity and marketing (Aji, et al., 2016). The benefits of skills development programmes, which combine other skills with ICTs, serves as a foundation from which to operate SMEs after the individuals have completed their training (Jimenez, 2006; Sunkara, Tapio and Rao, 2015). After completing training, internet use is vital in libraries as mobile data is expensive for the entrepreneurs. Unfortunately, at the end of 2017, the Department of Sports, Recreation Arts and Culture (DSRAC) failed to budget

for internet services. The Eastern Cape is currently the only province that is not on the Mzanzi Libraries Online internet project and Grahamstown in not an exception (Amner, 2018). The community members have to rely on internet use provided by skills development programmes which cannot sustain the whole town. The town library has been connected to the local university's internet connection, but this is accessible to the students who log in using their credentials. Unfortunately, the rest of the local libraries did not have internet access in 2018. The following section will elaborate the knowledge gap in a conceptual diagram.

3.7 Knowledge Gap and Conceptual Diagram

In this section, the researcher elaborates on the knowledge gap and illustrates it by means of a conceptual diagram (see *Figure 3.4*). At the expiry of the Millennium Development Goals (MDGs), the Sustainable Development Goals (SDGs) were created and a call for poverty alleviation by different sectors was made (United Nations, 2015). ICTs have been identified as tools that can be employed as a driving force to create self-resilient citizens (see *Section 1.7*). The conceptual diagram provides an understanding of how ICT skills in collaboration with other courses at skills development programmes can facilitate the development of entrepreneurial skills. This is done to potentially provide solutions for poverty and unemployment in the marginalised community of Grahamstown, which would lead to improved income and household consumption, leading to socio-economic transformation. NGO's, civil sector and government (external world bodies) **[concept 1 in conceptual diagram]** should acknowledge their role as a driving force in recommendations of development strategies that target the poor **[point a in conceptual diagram]**. Acceleration of progress towards meeting goals set by the UN requires action from both the developing country and support from the international community for programmes that support business development (Mbuyisa and Leonard, 2015). Numerous skills development programmes **[concept 2 in conceptual diagram]** have been employed in other developing countries with the aim of developing entrepreneurship by imparting skills **[point b in conceptual diagram]**. Unfortunately, some of them lack ICT adoption which is encouraged in developing countries as it creates opportunities for organisations to develop innovative services and strategic ways of doing business (Ajumobi and Kyobe, 2015) **[point c in conceptual diagram]**. The challenges in ICT adoption are mainly experienced due to the shortage of technological

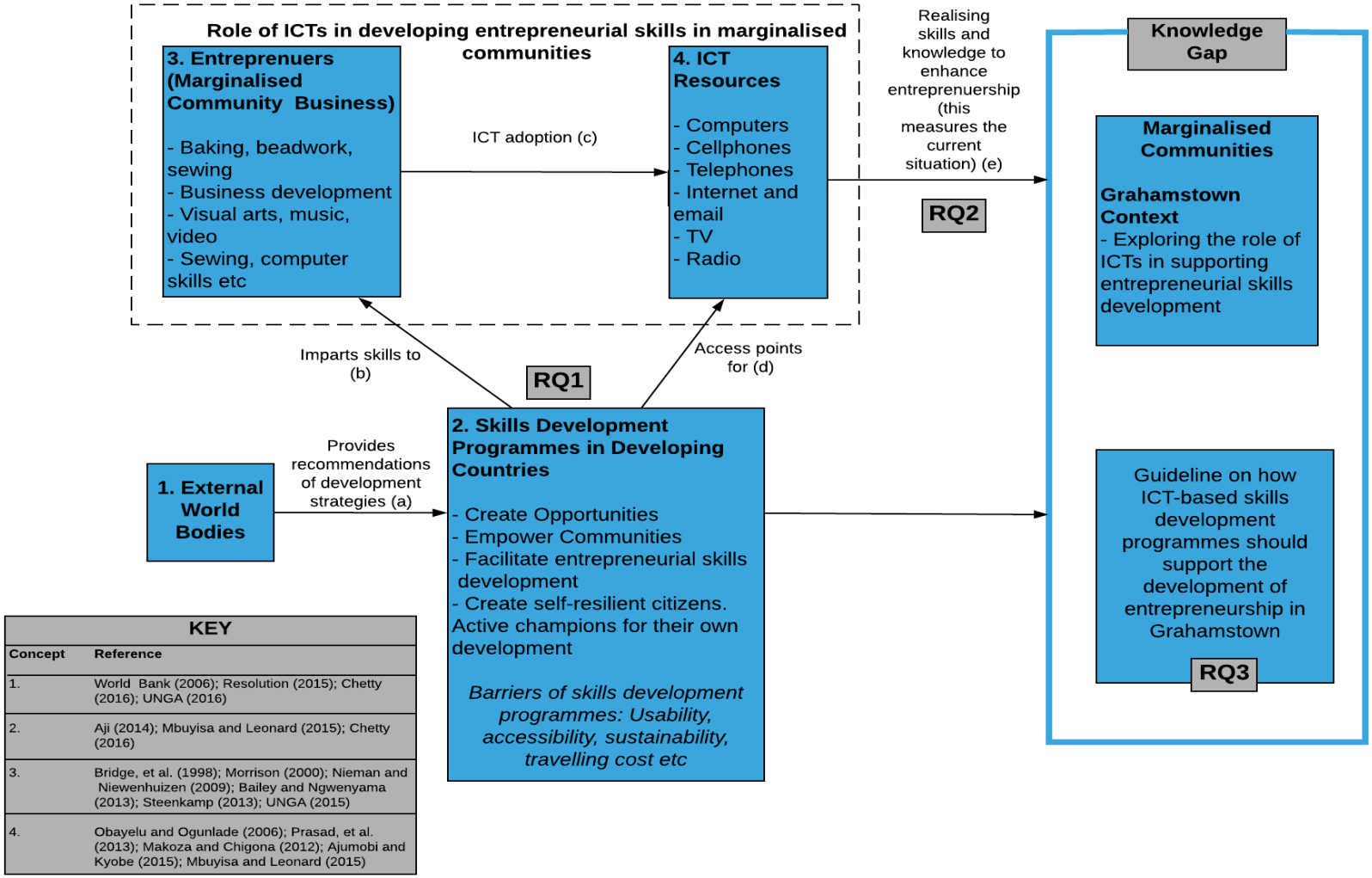
development and lack of successful locally based adoption approaches for the entrepreneurs to follow (Evoh, 2012; Zaremohzzabieh, et al., 2016).

Hamel (2010), The World Bank Group (2012), United Nations (2015) and Zaremohzzabieh, et al., (2016) have embraced the philosophy that ICTs represent modernisation and are key to poverty and unemployment reduction. Increasing evidence in literature imply that access to ICTs resources have a role to play in developing productive entrepreneurial skills, these access points can be found at skills development programmes in communities **[point d in conceptual diagram]** (Obayelu and Ogunlade, 2006; Torero and von Braun, 2006; Makoza and Chigona, 2012; Bailey and Ngwenyama, 2013; Mbuyisa and Leonard, 2015). The use of ICTs in small businesses are often shortened by challenges that are beyond ownership and access to ICTs (Makoza and Chigona, 2012). Moreover, they state that the main challenge is that small businesses are unaware of the various uses of ICT as the availability of technology does not mean everyone will obtain training and develop relevant skills (Sunkara, Tapio and Rao, 2015). This occurs as the majority of government and private sector ICT initiatives mostly focus on the provision of computers and internet connectivity to schools in most communities (Evoh, 2012). Less attention had been given to the use of ICT tools to meet the demand for ICT skills development towards fostering entrepreneurship and knowledge for running SMEs (*reviewed by question 1, Section 3.8*). The rising work force that is semi-skilled or unskilled has been brought up by lack of accessibility to the necessary training and information (Sunkara, Tapio and Rao, 2015). This lack of necessary training is also seen as a key factor that is increasing the unemployment rate in most developing countries as there are mismatches between the job opportunities and the number of skilled people available (Sunkara, Tapio and Rao, 2015).

ICTs resources can raise the living standards and quality of life for poor communities (Attwood, May and Diga, 2011; Andreopoulou, et al., 2014; Attwood, et al., 2014). To ensure the promotion of human development, the focus should not only be on the provision of ICTs from external world bodies for example NGO's. There should also be an inclusion of approaches and guidelines created locally, that can be used to empower the marginalised communities. This will be addressed by research question 3 (*see Section 3.8*). Therefore, there is a need for an approach that will develop the ICT-based skills of unemployed community members in marginalised communities to create entrepreneurship opportunities **[point e in conceptual diagram]**. This is especially pertinent considering that most studies concentrate on the development programme itself rather than the context of the users, in other words, community engagement (Aji, 2016). Thus, ICTs have a potential to make entrepreneurial skills

development accessible to the youth (Sunkara, Tapio and Rao, 2015). The NYP (2015) and Sunkara, Tapio and Rao (2015) conclude that there is potential for ICTs to generate employment (by enhancing entrepreneurial skills), however, there is a need for enabling environments and supporting structures to be put in place before a country can realise this potential.

This study will, therefore, try to find out what could be done to develop such entrepreneurship skills in the marginalised community of Grahamstown in the Eastern Cape. This is done through elaborating guidelines that can be used at ICT-based entrepreneurial skills development programmes. The guidelines are drawn from the results of the interviews that will be conducted with trainees that attended skills development programmes in the Grahamstown community (*reviewed by question 2, section 3.8*). The direction of the arrows in the diagrams are of importance. Where the arrows face one direction, this means the previous concept provides support to the next. In the case of arrows pointing at both directions, this means that both concepts support each other. The purpose of the key in the diagram is to strengthen the arguments contained in the conceptual diagram.



KEY	
Concept	**Reference**
1.	World Bank (2006); Resolution (2015); Chetty (2016); UNGA (2016)
2.	Aji (2014); Mbuyisa and Leonard (2015); Chetty (2016)
3.	Bridge, et al. (1998); Morrison (2000); Nieman and Niewenhuizen (2009); Bailey and Ngwenyama (2013); Steenkamp (2013); UNGA (2015)
4.	Obayelu and Ogunlade (2006); Prasad, et al. (2013); Makoza and Chigona (2012); Ajumobi and Kyobe (2015); Mbuyisa and Leonard (2015)

Figure 3.4: Conceptual Diagram: The role of ICTs in developing entrepreneurial skills in Grahamstown.

With the various articulation of literature from past and present research, the study research questions have been revised to reflect the findings from the literature review.

3.8 Research Questions Revisited

The research questions to be considered in this study are as follows.

1. *What is the role of ICTs in the support of entrepreneurial development within marginalised communities?*

The purpose of this question is to explore the role of using ICTs in supporting the broader entrepreneurial development in marginalised communities. The question intends to address the fundamental nature of the problem of using ICTs as an enabler to support other skills and entrepreneurship creation initiatives.

2. *How are ICTs used to support the development of entrepreneurial skills within the marginalised community of Grahamstown?*

The purpose of this question is to present the research participants understanding of the creative opportunities provided by using ICTs in support of their entrepreneurial skills. Through semi-structured interviews, this research intends to explain real-life behaviour of the phenomenon of using ICT skills to support the development of entrepreneurial skills. The question further investigates how their entrepreneurial expectations are met.

3. *How should ICT-based skills development programmes support the development of entrepreneurship in the marginalised community within Grahamstown?*

The purpose of this question is to allow research participants to give recommendations on how ICT-based skills development initiatives should support entrepreneurship in marginalised communities. This question intends to find out what could be done to develop entrepreneurship skills in the marginalised community of Grahamstown in the Eastern Cape Province through guidelines that will inform skills development programmes run in the Grahamstown community.

3.9 Summary

The chapter discussed the importance of collaborating skills development programmes that focus on entrepreneurship with ICTs. The researcher goes on to discuss the context of this research, after stating successful strategies of skills development programmes. This chapter indicates that there is a need for the community members to see the need of adopting ICT use in their entrepreneurial practices. Lastly, the knowledge gap of this research, conceptual diagram, the revisited research questions, and their purposes are discussed.

CHAPTER 4
Research Methodology

4.1 Introduction

The previous chapter aimed to uncover literature on how ICTs can be used in skills development programmes to enhance entrepreneurship in marginalised communities such as Grahamstown. This chapter will describe the research methodology employed to conduct this research. The chapter will present the research paradigm, theoretical framework, methodological approach, data to be collected, sources of data, data collection instruments, data treatment, limitations, ethical considerations, and the interview guides.

4.2 Research paradigm

Based on the participatory nature of this research, where people interpret certain situations and act according to the situations, the researcher adopted a qualitative approach (Myers, 2013). Employing qualitative methodology in this study helped the researcher with obtaining participant responses that lie primarily in contextual meaning rather than the researcher seeking 'objective truth' (Gubrium and Holstein, 2002). As such, a qualitative approach assisted the researcher in understanding people within their cultural and social context (Myers, 2013). Past research points out that researchers cannot have pre-defined variables when conducting research as human sense-making is complex (Klein and Myers, 1999; Myers, 2013). The authors' further state that sense-making from an interpretivist point of view happens through social constructions like shared meanings, consciousness, instruments, and language (Klein and Myers, 1999; Myers, 2013). There is a need to understand the perceptions and realities a person creates from their personal experiences as this gives way to meaning (Gubrium and Holstein, 2002). Meaning is constructed when both the researcher and participants relate themselves within each other's context. Academic research has received criticism about being out of touch with the real world and people who might make use of its findings (Harris, 2016). Therefore, ICT4D research should be based on qualitative research.

According to Myers (2013) there are three underlying philosophical assumptions regarding the nature of phenomena being investigated:

- **Positivist:** makes the assumption that, reality is objectively given and can be described by measurable quantities.
- **Interpretive:** assumes that access to reality is only through social constructions. The research attempts to understand phenomena through the meanings given by people. This is based on hermeneutics and phenomology.
- **Critical:** makes the assumption that social reality is historically constituted and is produced and reproduced by people.

The choice of interpretive paradigm directly influenced the way research data was analysed and interpreted. Unlike the positivist approach which is adequate for the natural sciences, interpretivism is used since it takes context and the social reality into consideration (Orlikowski and Baroudi, 1991; Myers, 2013). In other words, it was used by the researcher to understand, describe, and develop situated explanations of the phenomena under investigation. Furthermore, the interpretivist approach used adopted the assumption that knowledge is socially constructed, as people interact with the world around them (Orlikowski and Baroudi, 1991; Walsham, 2006). Meaning that, the phenomena of this research was understood through the meanings that people assigned to them (Myers, 2013), this was revealed by interacting with the participants. In information systems, interpretive methods are:

> *"…aimed at producing an understanding of the context of the information system, and the process whereby the information system influences and is influenced by the context" (Walsham, 1993: p.4).*

Dependent and independent variables were not stated or interrogated. Rather, interpretivism sought to understand how the social context and phenomena influenced each other (Walsham, 1993; Klein and Myers, 1999). The paradigm wishes to understand the Grahamstown context through interacting with the community. The researcher adopted the following philosophical stance towards the world. Two sets of beliefs which delineate how the researcher sees the world were used:

Beliefs about	Explanation
Physical and Social Reality: Ontological	The social and physical world is subjective. This means the empirical world is not given; rather, it only exists through the actions of humans in creating and recreating it (Orlikowski and Baroudi, 1991).
Knowledge: Epistemological	This concerns the criteria required through which valid knowledge about the phenomena will be created. The researcher gained an understanding of the participants' context by interacting with them through semi-structured interviews. There were pre-formulated questions, but the researcher did not strictly adhere to them, allowing the interviewee to speak more about their own experiences.

Table 4.1: Philosophical Beliefs Underlying the Conduct of Research.

The hermeneutic principles were applied to guide the interpretation of the themes identified in this study. Klein and Myers (1999) state that hermeneutics focus on wider research context furthermore taking into account the environment of the study. Furthermore, this mode of analysis is primarily concerned with understanding the meaning of text as a whole and the interpretation of its constituent parts. The principles are as follows:

1. **Principle of the hermeneutic circle:** suggest that all human understanding is achieved by iterating between the meaning of the individual parts as well as the whole that they form. Understanding the context is fundamental to all the following principles (Myers, 2013).
2. **Principle of contextualization:** According to Myers (2013) reflection on the social and historic background of the research setting is required. The researcher presented the problem in (*Chapter 1*), which ensured that the audience understand how the current situation under investigation emerged.
3. **Principle of Interaction between the Researcher and the Subjects:** There is a need for the researcher to gain an understanding of the entrepreneurs in the marginalised communities through interaction. The field procedures (see *Section 4.6.2*) will be used as a guide on human interaction to socially construct the data collected.

4. **Principle of Abstraction and Generalization:** The interpretive nature of this study does not facilitate generalization.
5. **Principle of Dialogical Reasoning:** The researcher was sensitive to findings that contradicted the theoretical concepts and frameworks.
6. **Principle of Multiple Interpretations:** The researcher was sensitive to differences in interpretations among the participants. Participants expressed multiple narratives or stories of the same sequence of events under study, which enrich the resultant contextual analysis.
7. **Principle of Suspicion:** Myers (2013) stated that the researcher has to be sensitive to possible 'biases' and systematic distortions in the narratives collected from the participants.

4.3 Theoretical Framework

In order to understand the role that ICTs play in developing entrepreneurial skills in marginalised communities, the theory of absorptive capacity was used as a theoretical framework. The underlying principle of absorptive capacity theory states that to be innovative, a firm needs to have an ability to recognise the value that is in adopting new, external information and absorbing it (Cohen and Levinthal, 1990; Roberts, et al, 2012; Ndiege, Herselman and Flowerday, 2014; Scuotto, et al., 2017). For this study, firms will be stated as businesses of the entrepreneurs. Various ICTs are used as platforms that will assist the entrepreneurs with increasing their ability to recognise, adopt and absorb the external knowledge for sustainability. In today's world, entrepreneurs need to learn from external knowledge to stay competitive. It is vital to teach this to community members during the development programme as they will constantly need to improve their skills given the competition they will face. The theory is defined by Cohen and Levinthal (1990) as the:

> *"…ability to identify valuable external knowledge, assimilate or transform this knowledge into the firm's knowledge base, and apply this new knowledge through innovation and competitive actions."*

African countries growth is not just a question of having stable macroeconomic environments, capital formulation and aid dependency (Onyeiwu, 2015). There is also a need to strengthen the absorptive capacity that is held by the community members through integrating ICT skills training into their skills development. When there are limits to the absorptive capacity of

trainees, there is a need for them to develop internal research and development (R&D) capacities, institute training programmes or develop knowledge management tools (Spithoven, et al., 2010; Roberts, et al., 2012). *Figure 4.1* below illustrates a refined process of how entrepreneurs increase their absorptive capacity, for this context the ICT adoption is added (Robert, et al., 2012). Throughout the stage's ICTs should be used to increase the absorptive capacity of trainees. The training offered at SDPs in this research study is considered the individual participants investment in absorptive capacity.

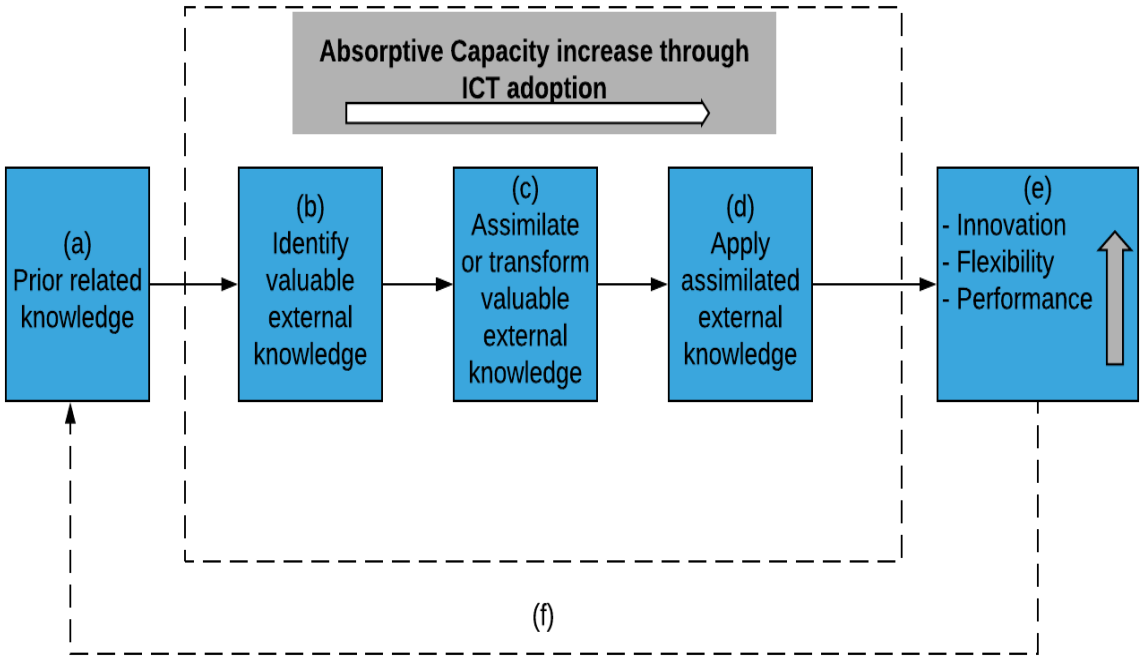


Figure 4.1: Absorptive Capacity, Prior Related Knowledge, and Outcomes adapted from Robert, et al. (2012).

The dotted block signifies the training that participants go through at SDPs which should ensure that they have high absorptive capacity after completion. Businesses that show high absorptive capacity have some level of preparation done before they adopt the ICTs (Ndiege, Herselman and Flowerday, 2014). Entrepreneurs in marginalised communities face various challenges, for example the demand from the customers to be innovative, globalisation and rivalry (Robert, et al., 2012). Given this, developing and maintaining absorptive capacity is a need for any entrepreneur to be successful in the long-run. For this to happen, the entrepreneurs need to understand their prior related knowledge **[Point a in Figure 4.1]**. The absorptive capacity of an entrepreneur will depend on the individual's prior knowledge, their passion and current experiences. This knowledge could be in the form of a shared language, basic skills or

knowledge of the ICT developments in the given field (Cohen and Levinthal, 1990). During the R&D of the business, they see how ICTs or other tools will relate to their business products or services (Onyeiwu, 2015). Afterwards, the SDP should assist the trainees with identifying valuable external knowledge **[point b in Figure 4.1]**. External knowledge is any knowledge that will be new to the entrepreneurs and exist in their external environment. This is crucial for entrepreneur's success in developed countries and marginalised communities in Africa should not be an exception (Cohen and Levinthal, 1990; Robert, et al., 2012; Onyeiwu, 2015). However, identifying this knowledge is not enough for the businesses to succeed. There is a need for them to assimilate or transform valuable external knowledge **[point c in Figure 4.1]** into the business knowledge base. Assimilation addresses the entrepreneurs being taught to implement new external knowledge in a way that is attached to what already exist. On the other hand, transformation addresses implementing this new external knowledge in a way that is not similar to what they are already familiar with, requiring more research on their part. The entrepreneur then moves into applying assimilated external knowledge **[point d in Figure 4.1]**. Some of the reasons to apply the new absorbed knowledge is to predict the ICT trends, increase their knowledge base, align what the business already does and make innovative products (Scuotto, et al., 2017). This will assist them with continually changing how they do their business as the trends change. After training, the individual should be equipped with the skill-sets that will assist them with being an entrepreneur. They should be fully equipped to achieve and maintain innovation, flexibility and high performance **[point e in Figure 4.1]**. **[Point f in Figure 4.1]** highlights the state of the trainee after graduation, they should now be able to make use of ICTs to complete the process from point a-f again despite the changes that can be occurring around them (Spithoven, et al., 2010). They should not be restricted to the content that was covered during their training. Hence, this skills development had to follow a training strategy that would assist them with ensuring that after training, the trainees would be innovative and move with any changing trends. This will assist the business to move with the innovative trends and make use of new opportunities before their competitors do so. Roberts, et al. (2012) states that ICTs have been recognized as a strategic resource, therefore business owners are combining them with their complementary assets, which will be the other courses of choice in this research study.

4.3.1 Assumptions that underly Absorptive Capacity

The assumptions underlying absorptive capacity:

- *Depends on prior related knowledge,* without this a business cannot see the potential value of external knowledge. If the business does not have a minimum knowledge of a certain resource, they will not be able to see the benefit it possesses. For instance, the trainees will not be able to fully apply ICTs in their business if they do not have minimum level of knowledge about them. This means that absorptive capacity is domain-specific.
- *Depends on the absorptive capacities of its individual members,* this is formed by the business owner's absorptive capacity and anyone else they will be working with. It will be dependent on the links across all the capabilities of the individuals (firm-specific). However, this is not part of the scope of the study.
- *It is path-dependent,* if a business accumulates absorptive capacity in one period, they will be more efficient in accumulating it in the next period. This will assist the business in predicting the innovation potential even when the environment is uncertain. In other words, if the trainees assimilate the knowledge taught at SDPs, they will be able to further develop themselves in the future through the application of ICTs.

4.3.2 Absorptive Capacity Conceptualization in IS

Absorptive capacity has been seen as a "stock" of knowledge that was already known and "ability" to be absorbed. It has been measured as the following:

- Asset, anything that the business owns, it can be tangible or intangible. Therefore, the business knowledge base is seen as its asset (Robert, et al., 2012; Scuotto, et al., 2017). In marginalised communities, the knowledge they would have been imparted with during training will be their asset after training.
- Substantive capability, these are the routines that the business uses to get absorptive capacity. To increase their absorptive capacity, community members have attended SDPs for entrepreneurial skills development and ICT training.

- Dynamic capability looks at the businesses ability to change what already exist. This change will happen successfully when entrepreneurs adopt ICTs to further develop themselves.

In IS, absorptive capacity is seen as either an asset or capability. Entrepreneurs are now aware of the innovative ideas that can result from adopting ICTs (Scuotto, et al., 2017). Roberts, et al. (2012) proposed a framework that illustrates the relationship among ICT capabilities, complementary business capabilities and the theory of absorptive capacity. The interactions that happen between IT capabilities which consist of outside-in, spanning and inside-out and; complementary organizational capacities (socialisation and coordination) influence the firm's absorptive capacity in a positive way. Socialisation capabilities create conditions that are necessary for knowledge exchange to occur for example shared goals and cohesion. Coordination capabilities looks at how a business manages its workers in various activities. The type of IT capabilities in absorptive capacity are outside-in, inside-out and spanning. The outside-in IT capabilities are outward facing and assist with knowledge identification, an example is a virtual community which is a network of individuals that interact on social media. Trainees would have been equipped with skills that will assist them with taking full advantage of these virtual communities. Through these interactions, a business can obtain valuable knowledge from the external environment (Roberts, et al., 2012). Secondly, inside-out IT capabilities are inward focused which increases the businesses knowledge application capability. ICT skills and any technology platforms in the business will assist with them assimilating or transforming the valuable external knowledge. Lastly, the spanning IT capability integrate the two other capabilities together for example, knowledge management systems which are used to capture information in the business and make it available to workers. They can store and retrieve information currently known and assist the business owners with understanding how knowledge that is currently known can be merged with new information to benefit the business. The relationship between IT capabilities, complementary organizational capabilities and absorptive capacity is illustrated in *Figure 4.2* below:

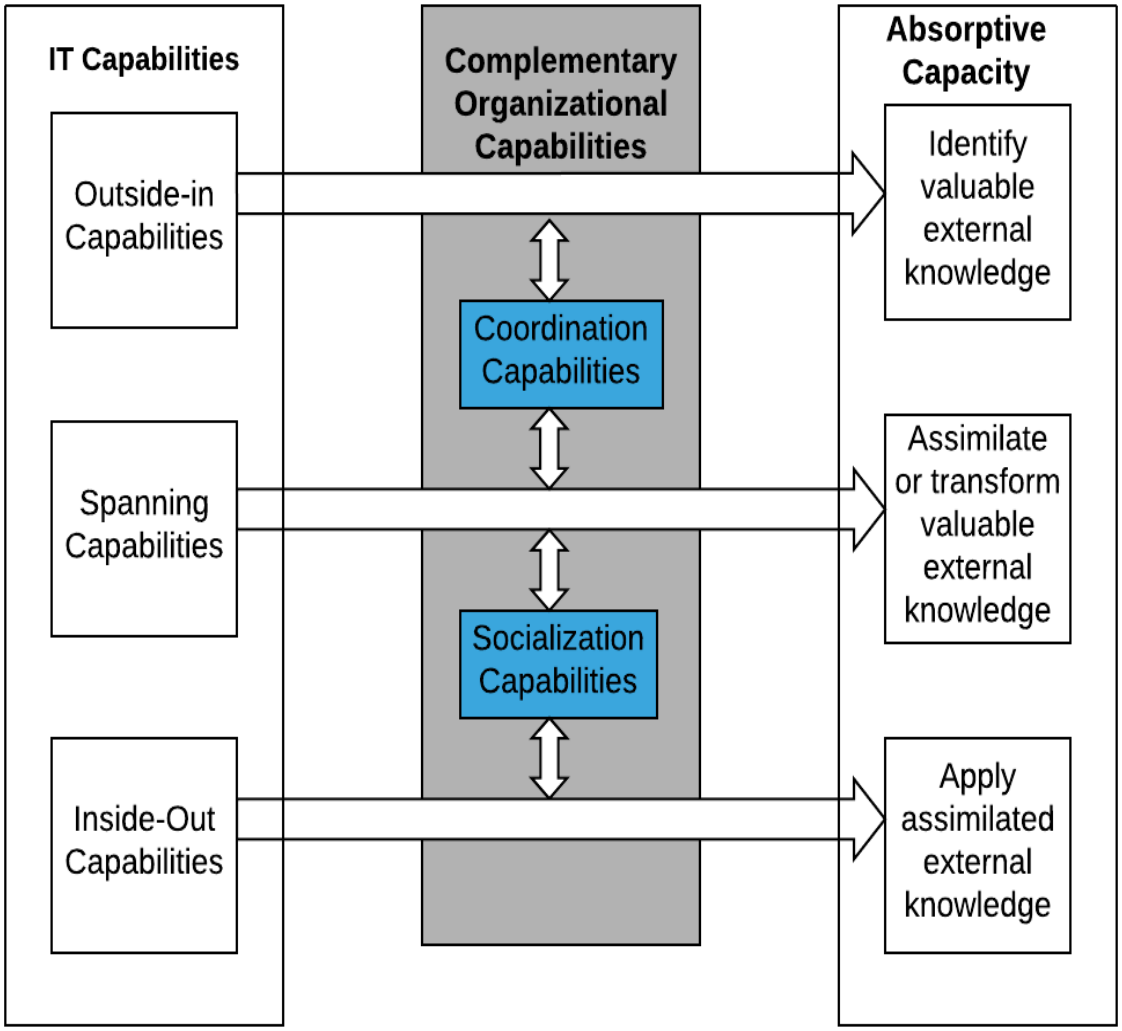


Figure 4.2: The Relationship Between IT Capabilities, Complementary Organizational Capabilities, and Absorptive Capacity adapted from Robert, et al. (2012).

Based on literature presented above, this research aimed to "investigate how ICTs can facilitate the development of entrepreneurial skills, through being a platform that will assist with identifying, assimilating or transforming and applying the valuable external knowledge." Entrepreneurs need to realise the importance of developing and maintaining absorptive capacity for their sustainability and they should be equipped with this skill by SDPs (Robert, et al., 2012; Onyeiwu, 2015).

Absorptive Capacity Theory was adopted in this study as it increases the entrepreneur's ability to anticipate innovation trends and take advantage of emerging opportunities (Robert, et al., 2012). However, it is important to note that research on adopting absorptive capacity theory in

large organisations has been largely understood, yet little attention has been given to small firms and marginalised entrepreneurs (Spithoven, et al., 2010).

4.3.3 Absorptive Capacity in other studies

A study by Onyeiwu (2015) reviews the absorptive capacity and innovation capabilities of African countries. The aim is to identify if low absorptive capacity played a role on slow economic growth of countries in Africa (Onyeiwu, 2015). An argument was raised stating that weak absorptive capacity affected the growth of African countries. Through reviewing various indicators gathered on the UNESCO website, the study identified that Africa has a low absorptive capacity relative to developed continents. Foreign investors do not want to locate in places that have low R&D. They would rather invest in areas that have community members who can assimilate external knowledge through complex technologies to meet commercial needs. Due to low absorptive capacity, businesses in Africa are producing low-end products. The study made use of descriptive statistics with explanatory and dependent variables. It was computed from 2000-2008 from thirty-one countries in Sub-Saharan African countries. Results from the study showed that there was a need for African countries to work on increasing their capacity to assimilate new technologies. Furthermore, the government of the country plays a crucial role in its economic growth. This is achieved through actively developing the human resources skills in any business and is important for sustainable growth.

A study by Scuotto, et al. (2017) looks at the role of social network sites in providing entrepreneurs with innovation and knowledge. The businesses can create online communities that can provide valuable information about their networks. This can be used for different business purposes, from marketing themselves to sourcing customers with the overall aim of active interaction between all actors (customers, suppliers and public institutions). The interactions assisted with the acquiring and absorbing of external knowledge. The study analysed 215 businesses through making use of the Partial Least Square Path Modelling.

A study by Spithoven, et al. (2010) focused on the role of research centres building absorptive capacity at inter-organizational level. Little attention had been given to the way small firms engage in absorbing external knowledge through open innovation. These firms or SME's need assistance to build absorptive capacity. The research established that the openness of the innovation process would make the firms with low absorptive capacity adopt alternative ways to engage in inbound open innovation. This is when companies do not only rely on inhouse

R&D but also search for their technology and knowledge through monitoring their environment.

The following section will describe the methodological approach that was followed by this research study.

4.4 Methodological Approach

The researcher employed interpretive case study research. There is no standard definition to case study research (Benbasat, Goldstein and Mead, 1987). As such the study drew the case study definition from Benbasat, Goldstein and Mead (1987) and Myers (2013). Where the authors state that a case study examines a phenomenon of interest in its natural setting, by using multiple data collection methods. Hence, empirical evidence from one or more organisations is used to potentially study the subject of matter in its natural context. In other words, the participants formed the empirical site investigation which guided further investigation within the context of the Grahamstown community (Myers, 1997; Oates, 2006; Yin, 2013). The researcher is offered an opportunity to concentrate on specific occurrences in their natural setting which results in in-depth understanding (Woszczynski and Whitman, 2004). Benbasat, Goldstein and Mead (1987) state reasons why case study research is viable for information systems research and this applied to this study:

- Firstly, the entrepreneurial development was studied in their natural setting where community members attended various skills development programmes.
- Secondly, employing a case study in this research allowed the researcher to answer 'how' and 'what' questions. This answered the main research question of this study, "*How should ICT-based skills development be applied to enhance entrepreneurial skills within marginalised communities?"*
- Thirdly, the case study approach was appropriate to investigate a previously studied area.

Myers (1997) and Oates (2006) further state that case studies allows the researcher to obtain rich, in-depth information about the case/s under investigation. The authors further state that, such a strategy has the potential to provide a holistic perspective of how ICTs facilitated entrepreneurial skills development in Grahamstown. This required an understanding of the natural setting of the trainees by the researcher (Oates, 2006). Benbasat, Goldstein and Mead (1987: p.371) state the key characteristics of a case study as shown below.

- Phenomenon is examined in a natural setting. The Grahamstown community members were taught skills relevant to their context and semi-structured interviews were only conducted with participants who were previously or currently involved in the programme.
- One or few entities (person, group, or organisation) are examined. Grahamstown community members affiliated with skills development programmes were interviewed. This consisted of the Directors, project managers and the trainees.
- The complexity of the unit is studied intensively. The researcher asked a "How" question, which allows for an understanding of the nature and complexity of the research taking place. Roode (1993: p.8) continues to state that:

  "These questions are answered by direct observation of the problem or phenomenon under study, and describe its reality."

- Case studies are more suitable for the exploration, classification and hypothesis development stages of the knowledge building process; the investigator should have a receptive attitude towards exploration.
- No experimental controls or manipulation are involved. The participants had all joined the skills development programmes in their own capacity prior to the study being conducted.
- The results derived depend heavily on the integrative powers of the investigator. The final results of the research depended on the ability of the researcher to form an effective unit from the semi-structured interviews.
- Case research is useful in the study of "why" and "how" questions because these deal with operational links to be traced over time rather than with frequency or incidence. The main research question of this study was '*How should ICT-based skills development be applied to enhance entrepreneurial skills within marginalised communities?'*

Woszczynski and Whitman (2004) state the advantages of using case studies include an:

- ability to identify and focus on issues,
- richness of details,
- and ability to observe emerging patterns, conducted in real life setting.

The disadvantages of using case studies are:

- the difficulty of gaining access to the organisation and,
- that the researcher does not necessarily always have control over situations.

To show the appropriateness of applying a case study in this research, there is a natural setting and the trainees had to be interviewed regarding the training that they attended in Grahamstown.

4.5 Sources of data and participants

During topic discovery, the researcher was introduced to skills development programme A. The fieldwork focused specifically on the experiences of unemployed youth from the marginalised community of Grahamstown who participated in skills development programmes. Four SDPs were identified and interviewed for this research. They are identified as Skills development programme (*SDPA*), *SDPB, SDPC* and *SDPD* (see *Section 5.2*). The selection of the SDPs was based on their accessibility and prevalence.

The three groups that are addressed from the four different cases are:

- firstly, people who have already been through the training and are entrepreneurs,
- secondly, people who went through the training but are not yet entrepreneurs and
- lastly, the project manager or director.

Case study research provided an opportunity for the organization to understand and improve on how they conduct their work. Moreover, Grahamstown skills development programmes allowed the researcher to observe literature within real-life situations. The research looked at how these skills development programmes could aid entrepreneurial development for the community through the use of ICTs. Marginalised groups are considered sensitive therefore, the following concerns will be taken into consideration; sampling and access, mistrust, culture and language and general ethical concerns. The sampling strategy used in this research is snowball sampling. According to Noy (2008) and Robinson (2014) snowball sampling, also known as referral sampling is when the researcher accesses informants through contact information provided by the other informants. It partakes in the dynamics of natural or organic social networks. Snowball sampling was employed as an effective sample design to access 'hidden populations' in this case marginalised community members. There was a need for snowball sampling as unemployed people are unlikely to respond to advertisements for the

research study due to stigmatisation of the topic (Robinson, 2014). The researcher approached the project managers as the gatekeeper for assistance with identifying potential research participants. The criteria for recruiting the participants was that the individuals had to be Grahamstown community members who attended the chosen skills development programmes despite what they were currently doing. From there the interviewee's recommended the researcher to other community members who took part in other skills development programmes.

4.6 Data collection method

The research focused on understanding human behaviour, their perceptions and actions within their context therefore the need for the researcher to interact with the participants. Hence, semi-structured interviews were employed to ensure an understanding of the role of ICTs in developing entrepreneurial skills. According to Myers (2013) semi-structured interviews make use of pre-formulated questions, however the researcher will not strictly adhere to them. This is encouraged as new questions might emerge during the interviews and the participants should be allowed to express their experiences in their own way leading to more conversations (Davies, 2007). Semi-structured interviews require some experience and there is need for the researcher to notice when the interview is drifting so that they can steer it back to the topic of interest (Leedy and Ormrod, 2005). Based on the literature in *Chapter 2* and *Chapter 3*, probing questions where prepared by the researcher.

Myers (2013) and Denscombe (2014) state that for a case study interview to be in-depth there is a need to interview many people involved with the case, as this will represent various perspectives. Keeping in mind the three different cases covered, some of the questions in the interview guide do not apply to certain cases, hence the three types of interview guides. The interviews may involve several cycles of confirmation in order to gain a deeper understanding of the phenomena (Hancock & Algozzine, 2015).

Human subjects should be protected in research studies; therefore, it is the researchers' obligation to value each contributor (Chigona and Chigona, 2010; Creswell, 2015). Obtaining data from people can be sensitive therefore there are procedures to be followed when conducting this research. The research sourced ethical clearance from the ethical committee in the Information Systems department at Rhodes University. The research instrument included an interview guide and informed consent (Myers, 2013). Potential participants were given the

opportunity to freely give their informed consent to participate in the interviews. Furthermore, it was also made clear to them that involvement was voluntary and that they were free to terminate their involvement in the study at any time. Skills development programmes in Grahamstown were asked for permission to use their material in this research (institutional participation letter see *Appendix A*). For access to the potential interviewees, the researcher started off by contacting the project managers. After getting hold of the potential research participants, suitable dates, times and venues were communicated. The details were communicated a week before the interview took place. Given the interviewee's consent (see *Appendix B*), the interviews were recorded by making use of a mobile recording device. The interview time varied, ranging from 30 to 40 minutes. The two sections below will address the interview guide, fieldwork procedures followed by the guidelines for conducting interviews in qualitative research.

4.6.1 Interview Guide

Three different cases were used to inform how skills development programmes should teach ICTs to entrepreneurs. In-depth interviews were conducted with:

1. People who have already been through the training and are now entrepreneurs,
2. People who have gone through training but are not yet entrepreneurs, and
3. The project manager and director of that specific programme.

The three tables below are based on the different cases that informed how ICT-based skills development should support the development of entrepreneurship in the marginalised community within Grahamstown. The broad themes guided the interview questions, which are based on the main research question and sub-research questions (RQ). This will further address the conceptual diagram as stated by the purpose of each question.

People who have already been through the training and are now entrepreneurs				
#	**RQ addressed**	**Broad Theme**	**Interview Question**	**Purpose**
1.	RQ2	Skills development programme (SEWA, 2009)	*How did you hear about the skills development programme?*	This acts as an introductory question, which lays ground for the research. It also stands to identify how people are recruited in skills development programmes.
2.	RQ1	Skills development programme (Jamison, 2007; Chetty, 2016; Zaremohzzabieh, et al., 2016)	*What were your expectations during and after the skills development programme concerning the use of ICTs in developing entrepreneurial skills?*	The question inquires if the expectations of the trainees were met. May and Diga (2015), state that ICTs serve as a tool for both economic development and poverty therefore there is a need to assess if the trainees agree with current literature.
3.	RQ2	Entrepreneurship (Nieman and Niewenhuizen, 2009; Steenkamp, 2013; United Nations, 2015)	*How did the programme support you in becoming an entrepreneur?*	The purpose of this question is to determine whether the community saw any value in the development programme.
4.	RQ3	Skills development programmes	*What effect/result did paying a membership fee have on you taking part in*	According to Sunkara, et al. (2015) and SEWA (2009), skills development

		(SEWA, 2009; Chetty, 2016)	*the development programme?*	programmes charged membership fees to ensure that trainees stay committed. This question therefore focuses on the perception of the trainees regarding the charges. As communities that acquire both the training and resources for free fail to appreciate the importance (Chetty, 2016).
5.	RQ2	ICT adoption (Esslelaar, et al., 2007)	*How are you using ICTs as an entrepreneur?*	This question seeks to understand how trainees are using the ICTs for example, Esselaar, et al. (2007) indicate that mobile phones have overtaken computers as tools in supporting the running of small businesses.
6.	RQ3	ICT adoption (Inan and Lowther, 2009)	*From your knowledge and understanding, how can the Grahamstown community make better use of the ICT-based skills development programmes on offer?*	The purpose of this question is to further investigate if ICT programmes in marginalised areas of Grahamstown put an emphasis on context-relevant content (Inan and Lowther, 2009).

7.	RQ3	Entrepreneurial skills (Nieman and Niewenhuizen, 2009; Steenkamp, 2013; United Nations, 2015)	*How should ICTs be used to develop entrepreneurial skills?*	The purpose of this questions is to allow the community members to make suggestions and possibly state matters that were not addressed in the interview questions.
8.	RQ3	Sustainable Development Goals (United Nations, 2015)	*What else do you think one should consider when creating a guideline on developing entrepreneurial skills using ICTs?*	This question allows the interviewee to give any other thoughts they have concerning the research in their context.

Table 4.2: People who have already been through the training and are now entrepreneurs.

People who have gone through training but are not yet entrepreneurs				
#	**RQ addressed**	**Broad Theme**	**Interview Question**	**Purpose**
1.	RQ2	Skills development programme (SEWA, 2009)	*How did you hear about the skills development programme?*	This acts as an introductory question, which lays ground for the research. It also stands to identify how people are recruited in skills development programmes.
2.	RQ1	Skills development programme	*What were your expectations during and after the skills development programme*	The question inquires if the expectations of the trainees were met considering the reasons

		(Jamison, 2007; Chetty, 2016; Zaremohzzabieh, et al., 2016)	*concerning the use of ICTs in developing entrepreneurial skills?*	why they joined the development programme. May and Diga (2015) state that ICTs serve as a tool for both economic development and poverty therefore there is a need to assess if the trainees agree with current literature.
3.	RQ2	Skills development programmes (SEWA, 2009; Sunkara, et al., 2015; Chetty, 2016)	*What are your thoughts on skills development programmes charging membership fees?*	According to Sunkara, et al. (2015) and SEWA (2009) skills development programmes charged membership fees to ensure that trainees stay committed. Communities that acquire both the training and resources for free fail to appreciate the importance (Chetty, 2016). This question therefore focuses on the perception of the trainees regarding the charges.
4.	RQ3	ICT adoption (Inan and Lowther, 2009)	*From your knowledge and understanding, how can the Grahamstown community make better use of the ICT-based*	The purpose of this question is to further investigate if ICT projects in marginalised areas put an emphasis on

			skills development programmes on offer?	context-relevant content (Inan and Lowther, 2009).
5.	RQ3	Skills development programmes (Jamison, 2007; Zaremohzzabieh, et al., 2016)	*How can the skills development programme be improved to ensure that ICT skills empower the Grahamstown community?*	This question serves as a way for the interviewees to recommend how the skills development programmes can be employed in their specific context.
6.	RQ3	Sustainable Development Goals (United Nations, 2015)	*What else do you think one should consider when creating a guideline on developing entrepreneurial skills using ICTs?*	This question allows the interviewee to give any other thoughts they have concerning the research in their context.

Table 4.3: People who have gone through training but are not yet entrepreneurs.

Programme Managers/ Directors				
#	**RQ addressed**	**Broad Theme**	**Interview Question**	**Purpose**
1.	RQ2	Skills development programme (Jamison, 2007; Zaremohzzabieh, et al., 2016)	*Why do you incorporate ICT-based skills development in this particular context?*	The aim of this question is to set the scene and give the researcher an understanding of the holistic view of the skills development programme. Further, the researcher will be provided with knowledge on the reasons why the skills

				development programmes incorporated ICTs in this context.
2.	RQ2	ICT training (Obayelu and Ogunlade, 2006; Sunkara, et al., 2015)	*What was the role of the ICT training in reaching the intended goal of developing entrepreneurial skills?*	The aim of this question was to access how the ICT skills training was structured to reach the intended goal.
3.	RQ3	Entrepreneurship (Nieman and Niewenhuizen, 2009; Steenkamp, 2013; United Nations, 2015)	*How can the courses be improved to target skills that can be utilised by entrepreneurs in the marginalised community of Grahamstown?*	The aim of this question is to understand how the current skills can be utilised to enhance entrepreneurship.
4.	RQ2	ICT training (Obayelu and Ogunlade, 2006; Sunkara, et al., 2015)	*What role do you think ICTs play in developing entrepreneurship?*	The purpose of this question is to get an understanding on how ICTs are being incorporated into entrepreneurship by the Grahamstown community.
5.	RQ2	Skills development programme (SEWA, 2009; Sunkara, et al., 2015; Chetty, 2016)	*From your experience in the programme, what was the impact of charging the commitment fee?*	According to SEWA (2009) and Sunkara, et al. (2015) skills development programmes charged membership fees to ensure that trainees stay committed. Communities that acquire both the training and resources for

				free fail to appreciate the importance (Chetty, 2016). This question therefore focuses on the perception of the trainees regarding the charges.
6.	RQ2	ICT adoption (Inan and Lowther, 2009)	*From your knowledge and understanding, how can the Grahamstown community make better use of the ICT-based skills development programmes on offer?*	The purpose of this question is to further investigate if ICT programmes in marginalised areas put an emphasis on context-relevant content (Inan and Lowther, 2009).
7.	RQ3	Sustainable Develoment Goals (United Nations, 2015)	*What else do you think one should consider when creating a guideline on developing entrepreneurial skills using ICTs?*	This question allows the interviewee to give any other thoughts they have concerning the research in their context.

Table 4.4: Programme Managers/Director.

4.6.2 Fieldwork Procedures

For informative interviews to be conducted, fieldwork procedures were adapted from Lubbe, 1998, cited in Krauss, 2007. The following procedures will be followed:

1. To contact all the entrepreneurs from the marginalised community and others that have gone through skills development programmes who are willing and able to participate in the interviews. Researcher made use of skills development programme A (*SDPA),*

SDPB, SDPC and *SDPD* programmes as reference. Fourteen participants were reached as possible sources of data.

2. Firstly, the participants at the highest level (skills development programmes) were contacted for the purpose of obtaining consent to conduct interviews. A gatekeeper's assistance was used, the directors or project managers from the SDPs played this role. The responses from the participants were used for research purposes.
3. A convenient time was scheduled in a relaxed setting.
4. For ethical purposes, interviews were commenced with a brief introduction on the intentions of the research. Furthermore, an explanation on the type of questions was presented including why the interviewee was selected.
5. The interviewee was informed that the interview was recorded and ensured that the intention of the investigator was not to enquire about company specific, financial or private information. The interviewer had to make sure that the interviewee understood that they are at liberty to withdraw from the project at any time, should they so desire. Their responses were treated as private and confidential.
6. The researcher ensured that the interviewees did not have a problem with being recorded.
7. To avoid bias as far as possible, the researcher requested that the interviewees did not discuss interview content with other possible participants.
8. During the interview the researcher ensured as far as possible that the interviewee was at ease at all times.
9. During the interview, the researcher took care that their body language and other possible cues did not influence the interviewee's thinking or responses.
10. In an effort to minimise subjective bias the same general open-ended questions were presented to interviewees in similar order.

4.7 Data treatment

Thematic analysis was used to analyse the data because it focuses on identifying, analysing and reporting on themes and patterns found within qualitative data (Braun and Clarke, 2006; Bryman and Bell, 2014). It required the researcher to search and identify common threads that extend across a set of interviews and was suited to investigating meaning within context (Braun and Clarke, 2006). In this research, thematic analysis was engaged with as a 'contextualist' method. This is a method that sits between two poles of essentialism and constructionism.

Where essentialist or realist method means that it reported the reality, meanings and experiences of the participants. On the other hand, a constructionist method examined how the experiences, realities, events and meanings have effects of discourses operating within society (Braun and Clarke, 2006). Hermeneutic principles detailed under research paradigm guided the thematic resultant analysis (Klein and Myers, 1999). For each interview, the semi-structured interviews were recorded and transcribed in order for the researcher to be able to align and analyse the data for any themes. In some instances, emerging interesting themes that were not in the interview guide were uncovered. Therefore, there was a need for inductive and deductive research approaches where the researcher tracked back and forth between data and theory (Bryman and Bell, 2014). The researcher found thematic analysis appropriate because the researcher was guided by themes identified in previous research on similar topics (Bryman and Bell, 2014). One of the advantages of using thematic analysis are its flexibility meaning it can be used across different research questions and epistemologies. Furthermore, it is relatively easy to use. However, the researcher had to be careful when transcribing as reliance on transcribed interviews made it vulnerable in cases where the transcription was not done accurately.

According to Braun and Clarke (2006) the data is analysed in a six-phase approach, these guidelines where applied in a flexible manner that was appropriate for the main question and sub-questions. There was back and forth movement throughout the phases.

1. Familiarising yourself with your data

Data was collected through interactive means which meant that the researcher was familiar with the data. Possible patterns where identified and shaped through transcribing data into written form. There was a need for the researcher to personally transcribe the interviews as this assisted with the process of creating meaning and overall understanding. Furthermore, the transcript was read and re-read to note down initial ideas. This aided the researcher with an overall understanding, ensuring the formation of patterns. This initial analysis assisted with phase two.

2. Generating initial codes

During the execution of phase two, the interesting features of the data were coded in a systematic fashion across the data set, marking data link to each code. Codes identify interesting data features which are then organized into meaningful groups. Researchers can code the data either through a software programme or manually. For the purpose of this study,

the coding was performed through a software programme, Atlas.TI. Text selections within each data item were tagged and named. A common criticism of generating codes is that the context is lost, this was avoided by the researcher through coding as many potential patterns as possible. The coding framework was created based on what was in the transcripts and some data extracts where coded more than once. This is illustrated in *Table 4.5* where the first column states the data extract and column two the code it is associated with. The third column allows for easier navigation of the different transcripts. The coding framework was created on what was actually said by the participants.

Data extract	**Code**	**Line in transcript**
I think if they could make people aware of them, it would be really helpful. There is a need to change the mindset of people in the township especially for people who have just left school who are not doing anything. If you know how to operate a computer system you could research on how to start a business and maybe even start one online.	• ICT adoption • Visibility of skills development programme • Social issues related to poverty	5:18
We did basic computer training for most of our members. Obviously if you've got a business you have to learn to work with computers for you to be able to market yourself. Facebook is the new way of marketing yourself, also in terms of communicating, sending invoices to other people sometimes people prefer electronic documents.	• ICT training • Social media use	11:11
At the moment when we want to learn to use technology, we come	• Space for expansion	10:9

to the centre. We are running business at a small scale, if we want to tell customers when the chickens have reached a stage where they can be sold, we tell them using cell phones. We do not use Facebook or other things because we are still low-scale.	• Accessibility	

Table 4.5: Data extracts that have been coded multiple times

3. Searching for themes

The third phase involved arranging codes into potential themes and gathering all data related to each potential theme. The researcher analysed the codes and considered how they could be combined under an overarching theme (relationship between codes, themes and different levels of themes). An initial thematic map was visually represented, some initial codes formed main themes and whilst others formed sub-themes. The codes that did not belong anywhere, where temporarily put under a theme called 'miscellaneous'. Interpretative analysis of the data occurred in relation to arguments about the phenomena being examined.

4. Reviewing themes

In this phase, the researcher identified, merged, or eliminated new themes through refinement of themes from phase three. It became apparent that some themes did not have enough data to support them; on the other hand, other themes that were initially separated formed one theme. Two levels of refining themes were followed; firstly, the researcher read all collated extracts of themes and checked that they formed a coherent pattern. The themes that did not fit into the pattern were reworked and discarded from the analysis if not appropriate. Secondly, the validity of themes was checked in relation to the whole data set. The researcher then developed a thematic map of analysis in this phase ensuring that it fit into the data set. At this stage, there was a fairly good idea of the overall story.

Data extract	Code	Line in transcript
• I used the internet on my phone to check what other people had done and how they did it. I also watched YouTube videos on what people in the same line of business where doing. • If they want something that is not on the menu, I check on google first using the centre for Internet access before I say that I cannot do it. • If I keep reminding them with a phone call, sending them whatsapp messages or emails. It makes communication open and transparent.	ICT adoption	5:22, 12:24, 13:7
• The work I was taught was basic and for me to use them in my business I would have to get more training. • Not interacting in person was a concern to me. I had to learn that I can reach more people this way.	ICT use concern	3:9, 5:3

Table 4.6: Data extracts classified under the same code

Candidate theme	Sub-theme	Code
ICT-based skills development programmes	• ICT adoption • ICT training • ICT use concern	• I used the internet on my phone to check what other people had done and how they did it. I also watched YouTube videos on what people in the same line of business where doing [*Participant 2*]. • The assumption is that people don't know anything about computers, hence the basic course [*Participant 10*]. • I think there are often skills where entrepreneurs can actually start a business for themselves without ICTs. [*Participant 6*]

Table 4:7: Extract from a candidate theme

Refined theme	Code
Barriers inhibiting ICT use	• There is an increase in crime…they (unemployed youth) only need someone to just be there but we are not even generous to motivate people. We do not necessarily have to give people money but our knowledge and skills. [*Participant 1*] • It is important for the programmes to do a follow-up with the students that have been part of the programme. They need to help the trainees figure out what more they can do from what they have learnt. [*Participant 4]*

Table 4.8: Refined theme together with some collated data extracts

5. Defining and naming themes

Clearer themes were refined by the researcher through continually analyzing data and generation of themes. The essence of what each theme was about and regulating what part of the data each theme captured. The researcher identified what was interesting about data extracts and why, instead of just paraphrasing them. A detailed analysis of individual themes was written, and they fit into the overall story which related to the main question and sub-questions. In instances of complex themes being addressed, they were divided into smaller sub-themes which illustrated the hierarchy of meaning. The themes were named in such a way that the reader would get a sense of what the theme is about.

6. Final report

The final analysis was conducted as the researcher had thoroughly worked out the themes. The researcher produced the results in the form of a thesis by explaining the story behind the data. A guideline stating the role of ICTs in developing entrepreneurial skills through increasing absorptive capacity in the marginalised communities of Grahamstown was illustrated. Braun and Clarke (2006) recommend a checklist to be used when ensuring that all concepts are fulfilled. Table 4.9 below illustrates the checklist, as used in this study.

Process	**Number**	**Criteria**
Transcription	1	The data has been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for 'accuracy'.
Coding	2	Each data item has been given equal attention in the coding process.
	3	Themes have not been generated from a few vivid examples (an anecdotal approach), but instead the coding process has been thorough, inclusive and comprehensive.
	4	All relevant extracts for all each theme have been collated.
	5	Themes have been checked against each other and back to the original data set.
	6	Themes are internally coherent, consistent, and distinctive.
Analysis	7	Data have been analysed – interpreted, made sense of - rather than just paraphrased or described.
	8	Analysis and data match each other – the extracts illustrate the analytic claims.

	9	Analysis tells a convincing and well-organised story about the data and topic.
	10	A good balance between analytic narrative and illustrative extracts is provided.
Overall	11	Enough time has been allocated to complete all phases of the analysis adequately, without rushing a phase or giving it a once-over-lightly.
Written report	12	The assumptions about, and specific approach to, thematic analysis are clearly explicated.
	13	There is a good fit between what you claim you do, and what you show you have done – i.e., described method and reported analysis are consistent.
	14	The language and concepts used in the report are consistent with the epistemological position of the analysis.
	15	The researcher is positioned as active in the research process; themes do not just "emerge".

Table 4.9: A 15-Point checklist of Criteria for good thematic analysis adapted from Braun and Clarke (2006, 36).

4.8 Summary

The purpose of this chapter was to describe the research methodology that was adopted in this research. The interpretive paradigm will directly influence the way that this research is analysed and interpreted. A case study will be used as a method, the data collection will be through semi-structured interviews. In the following chapter, the results of the interviews will be analysed and discussed.

CHAPTER 5
Results

5.1 Introduction

This chapter presents the context of the research participants and the themes that emerged from the data collection. The different skills development programmes (SDPs) and participants interviewed will be briefly described. This includes ten participants who enrolled in the different SDPs across several years and four project managers/directors. The other two interviewees, a project manager and trainee were used as a pilot study. The reader will be provided with the thematic results by stating the emerging themes from the data and showing them in a thematic map. This chapter will conclude with a description of the themes that emerged during the initial analysis of interview data.

5.2 Contextual Background

A table showing a summary of the participants is illustrated below (*Table 5.1*):

5.2.1 Interview details per Skills Development Programme

SDP Pseudonym	**Number of participants**	**Entrepreneurs**	**Non-entrepreneurs**	**Director or Project Manager**
SDPA	5	2	2	1
SDPB	4	0	3	1
SDPC	3	2	0	1
SDPD	2	1	0	1
Total	14	5	5	4

Table 5.1: Interview participant per Skills Development Programme.

5.2.2 Skills development programme A (SDPA)

Skills development programme A (*SDPA*) is a programme run by a local church in the Grahamstown central business district (CBD). It was launched in 2006 as part of their social development programme. The aim was to equip unemployed single woman who lived in previously marginalised areas in and around Grahamstown with practical and theoretical skills. In 2016, there was a change from empowering unemployed women to empowering any single, unemployed person between the ages of 19 and 40. This was done by providing training and skills development to facilitate financial independence. The program runs on donations and facilitators volunteer their time to equip the community with skill-sets to sustain themselves after the program. A membership fee is charged due to lack of funding. Training takes place for six months with the trainees receiving a certificate upon completion. Afterwards they will potentially be assisted in running a business and facilitate further training to give back to their community. The program provides training in computer skills development, baking, bible literacy, sewing, bead work and business skills. In this case the computer training was designed to complement other lessons in the programme. These ICT skills include packages such as Microsoft Word, Microsoft PowerPoint, Microsoft Excel, Internet use and how best they can make use of their radio's, TV's and cell phones for entrepreneurial development. To be more specific, trainees typed out their CVs, business plans and application letters in Microsoft word. Worked on their presentation skills in collaboration with the business skills class through Microsoft PowerPoint and using Microsoft Excel as a means to record their profits and losses from their baking classes. Internet use was integrated with the lessons to teach trainees how to look for information that can assist them with being innovative when starting a business. This was important, since a customer might want the cake to be shaped and decorated in various ways. Through training on how to use the Internet, the trainee should be able to search for professional bakers and apply what they see to their own work. They further created their own email addresses for easier communication with potential clients or business partners and make use of social media platforms. The participants of *SDPA* were as follows:

- *Participant 1* (the director),
- *Participant 2* (an entrepreneur selling organic soaps),
- *Participant 3* (an entrepreneur running a sewing and baking business),
- *Participant 4* (an unemployed community member currently upgrading matric results) and;

- *Participant 5* (an unemployed community member, seeking employment with an interest in music production).

The table below illustrates the type of ICT training that occurs at *SDPA*,

Skills Development Programme A	**Type of training**
SDPA	Basic computer training for all trainees • Computer components (Hardware and software) • Microsoft Word (Typing curriculum vitae's, business proposals) • Microsoft Excel (Book-keeping) • Microsoft PowerPoint (Business presentations) Internet use • Emails (emailing their exercises to the facilitator, emailing potential business investors) • Facebook (marketing their business) • Google (How to search for innovative ways to grow their business) • YouTube (Video's on how to improve their work) • Internet use on mobile phones. **Computer laboratories only available to trainees during the programme.**

Table 5.2: ICT training at skills development programme A.

5.3.2 Skills development programme B (SDPB)

Skills development programme B (*SDPB*) is a private sewing and crotchet class in Grahamstown. The training is conducted by the director who also teaches at one of the local primary schools. It started off as a personal business and after seeing the skills shortage in Grahamstown the director decided to teach the community members whilst making extra income for themselves. To stay up to date with the latest trends and grow the community members and their personal business, they searched for information on the Internet. Trainees are also told about YouTube as a place where they can further their training afterwards. The lessons are pegged at R100 per lesson. They start with the basics of using a sewing machine, explaining from the simplest form in terms of a manual machine. Furthermore, lessons on more advanced electric sewing machines which have built in software for embroidery are conducted for trainees that indicate that they are interested in buying them. This is not always the case as people prefer the cheaper manual sewing machines. The programme does not run on external funding, the director had to save up money from their salary or they also rely on bank loans to purchase some of their machines. Due to this, they charge a membership fee (commitment fee) for the whole duration before the trainees can start attending the lessons. During training, students have the option to bring their own sewing machines if they have any. Otherwise, they can also pick from her different machines that range from manual to electronic machines that have small computer processing power. The participants of *SDPB* were as follows

- *Participant 6* (owner and director of SDPB),
- *Participant 7* (student at the local University, currently studying and looking into starting a sewing business after obtaining their degree),
- *Participant 8* (trainee now working as a guard in Grahamstown, not yet an entrepreneur due to lack of resources) and;
- *Participant 9* (trainee working as a guard in Grahamstown, not yet entrepreneur but using ICTs to research on how to start a business).

The following table illustrates the type of ICT training that occurs at *SDPB:*

Skills Development Programme B	Type of training
SDPB	No basic computer training (no computer laboratories available, director's personal computer used for any internet searches. • Training on how to search for sewing related blogs on the internet. **Computer not available after training.**

Table 5.3: ICT training at skills development programme B.

5.3.3 Skills development programme C (SDPC)

Skills development programme C (*SDPC*) is an entrepreneurship and business skills development programme operating in Joza, a township in Grahamstown. It aims to transform the economy of the community by encouraging the youth to explore their business ideas leading to the poverty cycle being eliminated. To lessen the unemployment rate through aiming to unlock the huge human potential in a Grahamstown township, *SDPC* makes use of a socio-economic development model. This model focuses on different programmes, firstly, a life skills course which focuses on business development. Secondly, a course that assist the trainees on starting savings groups. Thirdly, the trainees are placed on different seasonal jobs. Lastly, with the assumption that people do not know anything about computers, trainees that attend the other courses are offered a basic ICT course. It ranges from introduction to computers; to introduction to Internet use on different devices for further development of their skills. After the programme, trainees who show commitment are assisted with setting up viable businesses in their communities. Furthermore, they are given opportunities to access the computer room for invoicing, researching and making marketing material. The programme partners with different organizations in Grahamstown including the University to create opportunities for unemployed community members. Based on the sponsorship from different community partners, the programme is free of charge. The participants for *SDPC* were;

- *Participant 10* (programme administrator),
- *Participant 11* (entrepreneur, running a laundromat business in their living room) and,
- *Participant 12* (entrepreneur, running a poultry farm in their backyard).

The table below illustrates the type of ICT training that occurs at *SDPC*,

Skills Development Programme C	**Type of training**
SDPC	Basic computer training for all trainees • Computer components (Hardware and software) • Microsoft Word (Typing curriculum vitae's, business proposals, business plans) • Microsoft Excel (Book-keeping) • Microsoft PowerPoint (Proposal presentations) Internet use • Emails (Emailing potential business investors and other fellow entrepreneurs for advice) • Facebook (marketing their business) • Google (How to search for innovative ways to grow their business) • YouTube (Videos on how to improve their work) • Internet use on mobile phones (The above including whatsapp and twitter). **Computer laboratories and Wifi available to trainees and other community members during working hours.**

Table 5.4: ICT training at skills development programme C.

5.3.4 Skills Development Programme D (SDPD)

Skills development programme D (*SDPD*) is an NGO in Grahamstown founded in 1992 with the focus of providing necessary skills development on ensuring food and health security. It targets the vulnerable and disadvantaged by reminding them that they possess the strength to change their lives and that of the rest of the community. *SDPD* targeted this community as the Eastern Cape has a high level of unemployment and poverty. They provide the community with the best ways to use the available resources. Through partnering with different organizations in Grahamstown to provide organic food security and further teaching the trainees how to sell their excess products. *SDPD* goes out into the community and asks the interested parties to come up with ideas of running an agricultural business. After training they assist the community members with registration with the Department of Agriculture and Local Economic Development. They have also provided some farmers with a garden at their site.

Since they work with different marginalised communities in Grahamstown, mobile phones and radios are their primary forms of communication with the people involved. The trainees are not given any basic computer training course but are briefly shown how they can use ICTs through mobile phones to research and market their work on the Internet. A local radio station in the community has been used as another form of ICT, where these entrepreneurs' market themselves to their fellow community members. Most of the people staying in this part of Grahamstown have no access to the Internet through computers or smart phones. The people who have smart phones cannot afford mobile data that is required to fully benefit from Internet access. Based on the sponsorship from different community partners, the programme is free of charge. The participants from *SDPD* were,

- *Participant 13* (programme administrator) and,
- *Participant 14* (organic farmer currently working on site).

The table below illustrates the type of ICT training that occurs at *SDPD*:

Skills Development Programme D	Type of training
SDPD	• No basic computer training on site, trainees encouraged to go to a youth hub that provides training for the community with free Internet access. • Training on how to use the radio for marketing and access to a local radio station to market their organic vegetables provided. Internet use on mobile phones (emails and whatsapp). **No computer laboratories on site for extra training**

Table 5.5: ICT training at skills development programme D.

5.4 Common themes on developing entrepreneurship through ICTs

After transcribing the semi-structured interviews, thematic analysis was used to draw out the emerging themes. The validity of individual themes in relation to the data set was considered through aligning them with the main question, sub-questions, interview questions and theory. This led to several themes emerging, giving the researcher an idea of how they fit together and what the overall story was about. Coded items were grouped under overarching themes to make the final code groups. The final code groups that came from the analysis were barriers inhibiting ICT use and ICT as an enabler for entrepreneurship development. The sub-themes that were under barriers were social issues and barriers that prevent access to ICTs. These are denoted by the red section in *Figure 5.1*. The first sub-theme under enablers was access to ICTs in Grahamstown and the second one was ICT adoption in entrepreneurship. This is denoted by the blue section in *Figure 5.1*.

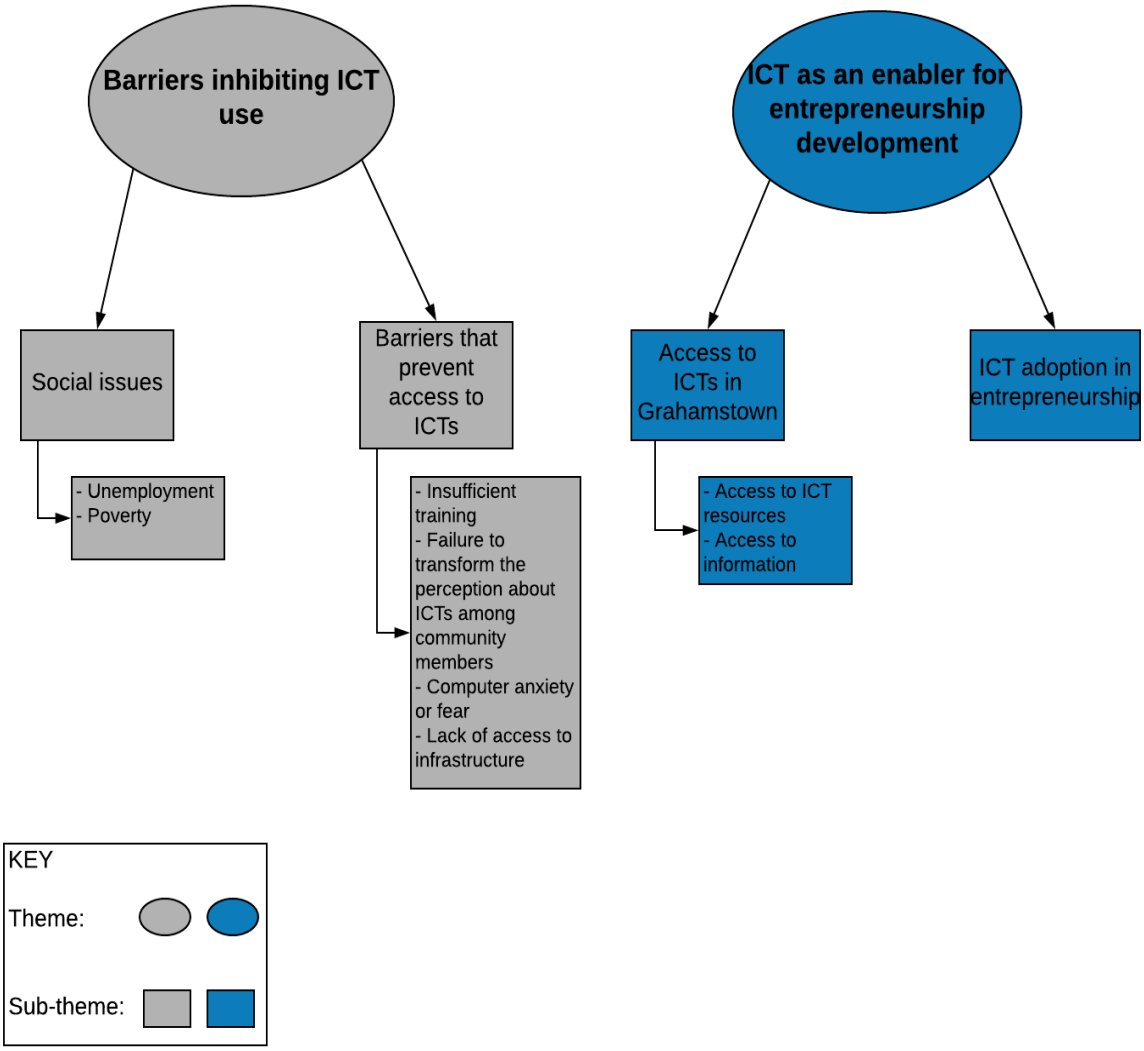


Figure 5.1: Thematic map

5.5 Summary

The aim of this chapter was to describe the context of the participants, illustrate and describe the themes that emerged from data analysis. The story that each theme tells will be described in the following chapter with consideration of how they fit into the broader story, sub-questions and main question.

The following chapter will present the narrative description of the data through the use of thematic analysis. The themes that emerged indicate how community members in the marginalised community of Grahamstown view the use of ICTs in their skills development.

CHAPTER 6
Thematic Narrative

6.1 Introduction

This chapter builds on the previous chapter which provided the reader with the results from data collection. It focuses on integrating the entire research through a narrative. The common themes on views held about developing entrepreneurship through ICTs are thoroughly discussed. Starting with the barriers inhibiting ICT use then moving into enablers in the communities ending with a guideline that skills development programmes should consider. As mentioned in Chapter 4, the study made use of absorptive capacity theory to strengthen the themes and sub-themes that emerged from the analysis.

6.2 Common themes on views held about developing entrepreneurship through ICTs

The theoretical lens focused on understanding how ICTs are externally valued in supporting entrepreneurship activities in marginalised communities. They provide a platform to identify new knowledge, assimilate it and apply the knowledge to meet commercial needs of entrepreneurs. The two main themes that emerged from the analysis process were barriers inhibiting ICT use and ICTs as an enabler for entrepreneurship development. In general, the use of ICTs has benefits and barriers that are evident in marginalised communities. Regarding the marginalised community of Grahamstown, *Section 6.2.1* will discuss the barriers inhibiting ICT usage that lead to skills development programmes (SDPs) trainee's failure to adopt the ICTs in their businesses. Whilst *Section 6.2.2* explored how ICTs can play the role of an enabler for entrepreneurship development in the marginalised community.

6.2.1 Barriers inhibiting ICT use

During the data collection and analysis stage, the researcher identified barriers inhibiting ICT use that are faced by the marginalised community. These barriers could potentially lead to participants in marginalised community's skills development programmes failing to adopt ICTs in their business. The sub-themes that fell under barriers to the process of collaborating

ICTs with other skills were social issues and barriers that prevent access to ICTs. They are further explained in the following section.

6.2.1.1 Social issues

The first sub-theme under barriers inhibiting the use of ICTs in developing entrepreneurial skills reveals that it is linked to social issues related to high unemployment. The high unemployment rate in South Africa indicates that there is a need for action to be taken to decrease the rate (Statistics South Africa, 2011). Likewise, continuous emphasis was made throughout the fourteen interviews about the unemployment rate within the marginalised community of Grahamstown. From the fourteen interviews conducted, unemployment was evident in the marginalised community. All the participants (directors, entrepreneurs and the people that are not yet entrepreneurs) highlighted that unemployment has been a social issue that is increasingly contributing to the poverty rate in Grahamstown. This in turn, increases the overall poverty rate in South Africa. According to the United Nations, the poverty and unemployment rates must be alleviated in all countries including South Africa by 2030 (United Nations, 2015). The need to reduce the unemployment rate has led to marginalised community members in Grahamstown considering becoming entrepreneurs as they are burdened by poverty (Botha, et al., 2007). According to *Participant 1, Participant 6, Participant 10* and *Participant 13* who are the programme administrators at the various SDPs that took part; the focus was on developing entrepreneurial skills. Their intention in starting up such programmes was to create employment opportunities for the community members. This finding is consistent with what Statistics South Africa highlights; current employment opportunities being offered are not enough to cater for everyone irrespective of the education level (Statistics South Africa, 2018). Development of skills and employment creation have been identified in the literature as some of the challenges faced in South Africa (Botha, et al., 2007). This has led to entrepreneurs in the marginalised community of Grahamstown or other community members seeking opportunities. They have gone to complete training at some of these SDPs (see *Section 5.2).* In most cases, they had faced competition which threatened their existence in the Grahamstown community. Hence, the need for the participants who attend SDPs in marginalised communities to be innovative and inclusive to the needs of the community. Moreover, they should operate in a way that will increase their absorptive capacity.

Absence of opportunities threatens the community at large with social and political instability (Ayele, et al., 2017). For example, *Participant 1, 5, 6, 10, 11 and 14* explicitly highlighted that

there is also an increase in crime within the marginalised community of Grahamstown. According to the findings, the unemployed youth display risky behaviour such as theft, vandalism, drugs and alcohol abuse (Jimenez, 2006). Mutumwa, et al. (2014) also states that insecure locations make it easier for thieves in communities to steal equipment. For instance, an addition made by *Participant 11*, when describing their context expressed that:

> *"It would be nice if schools with ICTs would open up their facilities to the community. Unfortunately, with the high crime rate; I think that people will see this as a chance to go vandalise the school." [Participant 11]*

The participant had identified school facilities as some of the access points that could be used by community members. According to the participant, the Department of Education has been rolling out ICT facilities to schools, which only benefits the learners at these schools. There are however, unemployed youths who were not equipped with these skills. In the initial stage of the interview, *Participant 11* suggested that these schools should open their facilities to the unemployed youth. However, they later raised concerns about the security at schools and the likeliness of vandalism occurring if there were no facilitators. *Participant 1* also highlighted the same issue of crime and how it can be reduced:

> *"There is an increase in crime… they (unemployed youth) only need someone to just be there but we are not even generous to motivate people. We do not necessarily have to give people money but our knowledge and skills." [Participant 1]*

Participant 1's comment indicates that SDPs have identified the problems faced by the Grahamstown community and are seeking ways to improve people's livelihoods. This could be achieved by SDPs playing an active role in the community through giving people sustainable ways to address poverty [*Participant 1, 6, 10* and *13*]. For socio-economic development to occur, there is a need to alleviate the crime level and find long-term ways to empower the unemployed youth in Grahamstown. According to the United Nations (2015) crime is one of the results of unemployment and it is affecting economic growth in emerging markets. Other SDPs stated the same social issues as being motivational factors for them to start training especially those targeting unemployed youth in the community. The unemployment social issues in Grahamstown caused digital divide as the marginalised community faces unequal access to ICTs. This is created when a proportion of the community is left without the benefits of ICTs due to lack of access to the various ICTs (Mutumwa, et al., 2014). *Participant 3* stated

that despite being taught how to make use of Microsoft Excel in running their business, not having a computer at home led to them not using it. Another example is when *Participant 8* was addressing how Grahamstown can make better use of SDPs that apply ICTs. They stated that SDPs facilities should be readily available for community members when they need to use them:

> *"…There should be centres where people can go after graduating to use Internet services because most people have cell phones that do not have Internet. It would really make things easier if we could have those services in the location (marginalised communities)." [Participant 8]*

Minimal access to ICT facilities has caused an economic and social gap between marginalised trainees in Grahamstown and other trainees in developed parts of South Africa. Developed community trainees are likely to start more successful businesses. The different levels of access to ICTs will be discussed further in this Chapter (see *Section 6.2.2.1*). The technology that could potentially develop entrepreneurial skills in the community is not available for most community members before and after training. *SDPB* (privately owned and run by one person) did not have the funding to buy any resources that would assist trainees with basic computer literacy skills training. Moreover, the trainees did not have access to the computer used after training. *SDPD* mainly focused on teaching people how to use their mobile phones and radio for developing their agriculture skills. The mobile phones were not donated but belonged to the trainees themselves who financially struggled to buy Internet data and airtime. They were encouraged to go to SDPs that provided free Internet services to the community. According to *Participant 13* and *Participant 14*; despite being aware of the benefits, the transportation cost and time used in this process were considered not worth losing the time they could be in their fields. This could be eliminated if SDPs partner up with external world bodies that can assist them with Internet access on site, which will be closer to the gardens that are used by trainees. In India, another emerging market like South Africa, mobile phones which need Internet access have enabled farmers and fisherman to find profitable markets for daily sales (Jamison, 2007). The customers are contacted via phone calls to check for demand whilst they also find the prices being charged by other competitors. This leads to them eliminating waste as they are aware of the quantities that are required.

Absorptive Capacity Theory in perspective: the sub-theme social issues related to unemployment is based on prior related knowledge (Robert, et al., 2012). Absorptive capacity

is the entrepreneur's ability to identify external valuable knowledge, absorb it and apply it to knowledge that is already part of the business for innovative purposes (Cohen and Levinthal, 1990). Prior related knowledge of the participants before attending any SDPs is important for determining how ICTs will play a role in the development of their entrepreneurial skills (Roberts, et al., 2012). The prior related knowledge could be basic skills, a shared language or knowledge about ICT development in entrepreneurship (Cohen and Levinthal, 1990). In this research study firstly, all parties involved (community members, civil sector, private and public sector, government, NGO's) shared the same primary language IsiXhosa (local language in Grahamstown). Secondly, they were aware of the social issues faced by their community for them to know how to tackle those problems effectively. Lastly, the participants had basic knowledge of how ICTs could be used to develop entrepreneurial skills; these skills could potentially alleviate social issues. Engaging with potential trainees and evaluating their perceptions in an important assessment for community development. Harris (2016) stated stakeholder engagement as a strategy for poverty alleviating in community engagement programmes that use ICTs to support the poor.

6.2.1.2 Barriers that prevent access to ICTs

Regarding the use of ICTs, another theme that emerged was accessibility. As mentioned in the literature, marginalised communities face barriers to ICT access (van Dijk and Hacker, 2003). The marginalised communities within Grahamstown are not an exception when it comes to ICT barriers. Firstly, despite having centres set-up participants still state that there is lack of access to ICT skills training. As noted by van Dijk and Hacker (2003) this shows that there will be insufficient user friendliness or inadequate social support. **Insufficient training** is one of the major reasons leading to Grahamstown community members not adopting ICTs in their entrepreneurial skills. Before attending the training, there was a need for the participants to have prior basic knowledge of the business they wanted to introduce after training. This was also a necessary factor when taking new trainees as it would be easy to understand their needs and assess if they are going to be met by attending this SDP. For SDPs to provide effective training, there was need for them to have enough funding. Funding would assist them with ensuring that there is technical staff to assist with the ICT training and ICT resources use. *SDPA* and *SDPB* both privately owned skills development programmes have not been successful with external funding. *SDPA* as a privately-owned SDP and not being easily accessible to the community members raised some issues that they are facing regarding government sponsorship. The government through the National Youth Policy highlights the potential

advantages that are offered by ICTs in SDPs, for example, opening knowledge and ideas for business opportunities (NYP, 2015). For the advantages to work effectively, there is need for enabling environments and supporting structure to be put in place (Sunkara, et al., 2015). This has led to the government being strict with their funding requirements and the type of organisation they give it to. *SDPA* director*, Participant 1* highlighted that they face challenges with meeting government requirements for funding, this is shown in the extract below:

> *"Government funding these days, especially for community members, wants people to come together as a corporate or as a group…It's homework for us to check what the Government prioritises in terms of community needs and speak to that.' [Participant 1]*

Some SDPs are not fully aware of the requirements that they need to meet for them to be guaranteed funding from the government. Some of the reasons they fail to meet the requirements relate to the type of programmes they are running and their location. *SDPA* has also approached the local university for assistance with obtaining computers and training facilitators. Due to lack of funding, in the year 2016, they had to resort to making community members pay for the services they received. For *SDPB*, the director *Participant 6* makes use of their salary for capital when running the SDP. Due to this, trainees who attend *SDPB* are required to pay membership fees. There is also insufficient training of the skills considering that both the group that has no prior knowledge of the ICT skills and those that are knowledgeable are placed into the same class. When assessments are done before graduation, there are no further assessments that are done afterwards to ensure that the trained community members are in the position to collaborate the other skills with ICTs. Making reference to the SDPs that took part in the research study, there is inadequate social support for trainees after attending SDPs. Only *SDPC* and *SDPD* go on to support trainees that would have started businesses. For example, *Participant 4* highlights the importance of follow-up:

> *"It is important for the programmes to do a follow-up with the students that have been part of the programme. They need to help the trainees figure out what more they can do from what they have learnt." [Participant 4]*

Given that only *SDPC* opens their computer room and centre to the community for Internet use. This only benefits people that are close to the *SDPC* and have knowledge about these services. *Participant 11* after stating that poverty can be alleviated by all the benefits of ICT

adoption in entrepreneurship, they also highlight the lack of access points in the marginalised community of Grahamstown.

> *"It's only that there is no access point around here. Especially in our extension, there is no Internet café for people to go and access their work." [Participant 11]*

Participant 11 highlighted that schools in the community have more resources that could be used after school hours by youths that are out of school but unemployed. However, they also pointed out the potential vandalism and theft that could happen in these schools. This possibly worsens poverty for future generations.

The second type of barrier highlighted by participants was **failing to transform the perception about ICTs among community members (mindset shift)**. The participants who were already entrepreneurs (*Participants 2,3,11,12* and *14)* expressed that they have knowledge of the benefits that can be achieved by making ICTs enablers in their businesses. However, there is lack of interest in maximising their potential in their businesses. For example, some participants *(Participant 12* and *Participant 14)* who are involved in small agricultural businesses expressed that limited access to farmland affects their willingness to adopt ICTs that could potentially support them with expanding or reaching out to more customers. The reason for this is that they do not have the capacity to meet the demand from their customers. To illustrate, *Participant 12* stated that:

> *"Looking at social media, if I put my business on Facebook more people will want chickens and I will not be able to meet their demand. There are space restrictions in my business… for example, if we slaughter our chickens today, we know that within four days they will be sold." [Participant 12]*

From the expression above, *Participant 12* received sufficient training for both the business skills related to poultry farming and ICT skills. Furthermore, they have access to the *SDPC* facilities for further research on how to develop their entrepreneurial skills using ICTs. Another case regarding the mindset of the participants was **computer anxiety or fear**, indicated by *Participant 3* (sewing and baking business). The participant attended the skills development at *SDPA*, however, due to failure in accessing or using a computer after training, they could not implement the knowledge and skills acquired in their business. This led to them not being confident enough to make use of computers. They only made use of their mobile phone to make

phone calls for orders or advertising their work as a WhatsApp profile picture. While *Participant 12* expressed a concern that:

> *"I'm afraid to use those social media things because there are a lot of things happening now. My reason is if I put my business there someone might take the idea and use it as their own." [Participant 12]*

The participant was afraid of people taking their idea and making it their own, hence not sharing their business plan on the Internet. *Participant 6,* the director of *SDPB* highlighted a concern about some community members feeling entitled to being assisted because of their circumstances. Some marginalised community members have resorted to surviving on 'hand-me-downs'. These are mostly second-hand items that are passed down from someone else. The quote below represents what the director of *SDPB (Participant 6)* said regarding community member who feels that they are owed these opportunities:

> *"They have this attitude of you owe me. I am entitled, and you will teach me and hand everything on a platter but if they have to pay for it they will make more of an effort." [Participant 6]*

Community members have become comfortable with their situation and some are not actively seeking opportunities because they are given the basic requirements through different programmes presented in the community. SDPs should, therefore, change the mindset of community members through showing them the benefits of skills offered. Furthermore, there is a need for transformation through the SDPs showing community members that the development programmes are just a starting point. There is a need for community members to learn more by themselves. However, for this to happen in an effective way, the communities should have access to material that can assist them with these developments.

This leads to the last barrier which was **lack of access to infrastructure** required to make full use of ICTs. Marginalised members of the Grahamstown community lack possession of network connections (Internet), computers or cell phones that can be connected to the Internet. In cases where people have cell phones that can connect to the Internet, mobile data is expensive. The marginalised community is still developing and according to interviews has low levels of access to ICT infrastructure. In previous years community libraries in Grahamstown had free Internet services through the Mzanzi Libraries Online project. A newspaper article has confirmed the lack of free Internet services in Grahamstown libraries in

2018. This occurred after the provincial Department of Sports, Recreation, Arts and Culture failed to allocate a budget for the services to the Eastern Cape Province (Amner, 2018).

SDPA had computers and Internet services donated to them. Due to various reasons ranging from not being easily accessible to the targeted community and unavailability of facilitators these facilities were not available to the trainees after training. They would only get access during the duration of their training period. *SDPC* with different local and international partners had training on how the businesses could maximise the use of ICTs. They could also afford to have a facilitator available for their trainees and other community members during working hours. However, there are obstacles faced by some community members that are beyond *SDPC* for example, not all community members know about the services provides or some even lack interest. For instance, *Participant 10* noted that:

> *"... For someone to send an email they have to come here, while they are losing out on the business." [Participant 10]*

Some participants have mobile phones that they were shown how to use but cannot due to mobile data expenses they face.

> *"I don't have a computer here so I need to have time to go to the centre and use a computer there but that needs time which I don't have now." [Participant 11]*

These participants highlighted the need for Internet use when growing a business. However, one was not aware of the opportunities that are presented in the community by some SDPs that offer their resources to community members. This brings about the point of the visibility of these SDPs in the community. Being unemployed is already a financial obstacle that is faced by people in the marginalised community. If they have to spend more money to access the SDP, most people would start looking at the opportunity cost they will face when they attend. For some, it will be the clients they will lose out on when they are going to the SDP and others money lost when paying for transport and buying food. The trainees from *SDPB* also raised concerns about the visibility of the SDP. The place where the training was done was too far for all of them and they ended up using more money for transport:

> *"The obstacles that people face are transport and food maybe they should do something to provide for trainees as it will better their situation." [Participant 4]*

Despite the concerns raised by participants about accessibility. The two of the three interviewed participants from *SDPB* showed signs of how they are working towards being tailors and have been doing more Internet research (watching YouTube video's and browsing through professional tailor's blogs). *Participant 7* as a student has found the research process easier because they easily have access to eduroam (the internet roaming service at their University). When asked about how the Grahamstown community could make better use of SDPs that use ICTs, *Participant 9* highlighted that there should be SDPs were community members can make use of ICT services. That was validated by *Participant 8* from the same SDP, who had gone through training but due to not having the necessary machinery had lost hope for her traditional clothing business idea. When interviewed, the participant was unaware of services that are offered to assist with any ICT training. The participant has a smartphone but only used it for Whatsapp, SMS and calls. Data expenses and lack of training emerged as some of the reasons why they were not fully using their mobile phones.

It is important for the SDP to understand what the trainee's prior knowledge has been for example what type of business they are interested in and what type of activities they have been involved in before registration. SDPs need to go a step further and assess the entrepreneurship schools of thought that each trainee fits in. *Section 2.5* mentioned them as personality perspective, behavioural perspective, sociological perspective and economical perspective (Bridge, et al., 1998). This will assist with providing entrepreneurial skills that meet their needs and most importantly relevant to their context.

Absorptive Capacity in perspective: identifying the individuals' needs and speaking directly to exactly what they need and what they can achieve is an important factor for skills development programmes. This is aligned to the absorptive capacity assumption which states that for businesses to assimilate external knowledge, it is dependent on the knowledge they knew prior to learning that information (Robert, et al., 2012). If businesses do not know the core principles of their business, they will not know how to effectively use ICT skills as a platform to be innovative. During this stage, there is a need for SDPs to apply the transformative learning process, where they will firstly teach the trainees core programmes then how they can be combined with the ICT skills. This brings the notion that existing knowledge (already known and that imparted by core programmes) will facilitate how they learn new related knowledge. Sufficient ICT training, transforming how communities see ICTs and good infrastructure will increase marginalised community members' absorptive capacity.

For SDPs to be successful, after graduation the trainees should be able to increase their income through improved productivity and move out of poverty as a whole (Aji, et al., 2016). This can be achieved through ensuring that their environment enables them to do so.

6.2.2 ICT as an enabler for entrepreneurship development

During the data collection and analysis stage, the use of ICTs was also identified as an enabler for entrepreneurship development. Their various uses assisted some of the community members with developing their entrepreneurial skills. The sub-theme under these enablers were accessible ICTs and ICT adoption. They will be explained below.

6.2.2.1 Access to ICTs in Grahamstown

The types of accessibility that came from the interviews where firstly **access to ICT resources** that were gained by the marginalised community of Grahamstown through different SDPs and libraries. The local university, local libraries and other unnamed private and public companies have provided SDPs with the necessary tools in terms of computers, Internet services and in some cases facilitators. *SDPA* and *SDPC* also introduced trainees to Internet skills, where they made use of electronic forms of communication. These ranged from social media use, emails and making calls in their businesses. *Participant 10* highlighted that:

> *"We taught them how to research things, send professional emails and communicate in a professional manner from different places. That includes making an attachment in an email and how to produce proper invoices." [Participant 10]*

From the extract above, it is clear that the community members who attended *SDPC* were given an opportunity to develop their communication skills when using ICT resources. Emails provided the different entrepreneurs with a record of their different interactions with potential investors, customers and suppliers. This could potentially aid with accountability in their business. The resources introduced to the trainees should assist them with acquiring customers easily, identify external valuable knowledge, respond to new trends at a faster rate and decrease cost. Despite not having access to computers to teach trainees basic ICT skills on. *SDPD* identified that mobile phones were the most important ICT within the marginalised community of Grahamstown. Mobile phones have been named the most important ICT for entrepreneurs in African countries (Esselaar, et al., 2007). They made this the primary ICT resource given

their isolation from the rest of the community as their organic vegetable farmers mostly worked in isolated fields.

Secondly, **access to information** on how the Grahamstown community can benefit from adopting ICTs in the other skills is provided. This is mostly done after assessing the skills needs of the community, consulting other successful programmes or the Local University's Business School. Thirdly, the community was provided with access to knowledge that was previously not available to them. The access provided has been accompanied with training at *SDPA*, *SDPC* and *SDPD* as a means of increasing the absorptive capacity of trainees beyond the programme.

With the experience that they have gained throughout the years, *SDPC* has managed to set up core programmes that community members can attend to empower themselves. These speak to people's different needs and always start off by assessing what skills the trainee has, what they want to achieve and the gaps that are in the Grahamstown community that can be covered by imparting those skills. They give acknowledgement to the need for setting up programmes that consider the realities of their context, as research has shown them that contextualised programmes will assist the community with being globally competitive (Jacob and Herselman, 2005; Hope Project, 2013). When asked about one of the core programmes they take people through, which focuses on teaching people about saving through Stokvel's, *Participant 10* highlighted that:

> *"We are doing this mainly to encourage people to start the savings culture in the township. A lot of people are in debt, so in order to remove people from debt we need to find a way that talks to the context of Grahamstown." [Participant 10]*

As shown in the extract, community programmes should make their content relevant to the needs of the community. Making use of ICTs is becoming a force of transformation by changing world markets (Sunkara, et al., 2015). This is one of the common aims that came up from the reasons why the various SDPs have been set up. Transformation of this external knowledge (the ICTs) can also assist their businesses with engaging competitively in the market (Roberts, et al., 2012).

Research has shown that integrating ICTs into training has been creating innovative business opportunities for community members (Sunkara, et al., 2015). The SDPs which took part in the research study look at combining the skills training with ICTs as a foundation for the trainees to be able to start businesses after they have completed training (Jimenez, 2006; Sunkara et al.,

2015). *SDPC* administrator (*Participant 10)* believes that integrating ICTs with other skills could potentially offer advantages in opening knowledge and ideas for business opportunities for the Grahamstown youth. For example:

> *"Among the youth, I am told that it's around 60-70% who are not working. So, if we can change how things are done in the township hopefully some youths might be able to work." [Participant 10]*

SDPC also displays absorptive capacity assistance for their trainees. They take up any community member who approaches them for training without charging membership fees. However, the first thing they do before training is to identify the trainee's needs and their interest. This assessment helps them place trainees in a programme that will potentially empower them. The trainees who are interested in starting their own business attend a life skills course with the focus on skills relevant to them. After these core programmes, they will be introduced to ICT training before they graduate and leave the programme. They also assist the trainees who are not interested in starting their own businesses but want to be employed.

SDPC administrator (*Participant 10)* stated that for the skills development they take up everyone who approaches them. However, for the ICT development access, only the people who would have completed training in their core programmes (and are starting businesses) are further trained due to lack of resources (trainers and infrastructure). The role of ICT training is described by *Participant 10* and *Participant 1* as follows:

> *"ICT access in Grahamstown is important for growth, one of our goals is to see businesses growing… when we did train with some of the businesses it was for them to be able to operate in a different way and access other markets." [Participant 10]*

> *"…we cannot leave them behind because ICTs are co-skills that will assist them in the other skills that we offer them." [Participant 1]*

As seen in the extracts above, *SDPA* and *SDPC* directors acknowledged the benefits of using ICTs.

Absorptive capacity in perspective: The marginalised community of Grahamstown has been provided with access that was not previously available to them through training at SDPs. The different SDPs aimed to make the content taught relevant within the marginalised community.

As stated by Cohen and Levinthal (1990) entrepreneurs who can invest in further developing themselves independently can increase their absorptive capacity. SDPs in Grahamstown have been aiming to equip the community members with skills that will empower them beyond the programme. *Participant 9* also showed excitement when asked about what they have been doing after they finished training. With an interest in making beaded traditional poncho's as they have seen a market for them, *Participant 9* started attending ICT training at another SDP during their free time. They took this extra training after completing their sewing course. In their case, minimal ICT training had been conducted, however, the little they mastered encouraged them to learn more. They stated that:

> *"I wish more people in Joza knew how ICTs are critical for development. There is a community centre that has been helping me after attending the sewing skills development." [Participant 9]*

As seen in the extract, the participant acknowledges the benefits that can be derived from adopting the use of ICTs in a business. Even though they have not yet started the actual business as they are still saving up for machinery, in the mean time they have started learning ways that can make them marketable to different markets (Bailey and Ngwenyama, 2013; Mbuyisa and Leonard, 2017). Through the different types of ICT access and various skills development, the trainees gained collective knowledge of their area of interest and how that knowledge relates to their products and services. The integration of the valuable external knowledge through the use of ICTs can be accessed by the marginalised community of Grahamstown at various SDPs. This has been assisting trainees with adding innovation to their businesses. Transformation of this external knowledge assisted community businesses with engaging competitively in the market (Roberts, et al., 2012; Ndiege, Herselman and Flowerday, 2014).

6.2.2.2 ICT Adoption in Entrepreneurship

ICT adoption was not directly stated in the research questions, but it emerged as one of the main themes throughout the interviews. With this theme being data-driven, the researcher made reference to the literature. Collaborating ICTs training with other skills taught at SDPs in marginalised communities has been brought up both in literature and the interviews as they are seen as a driver and enabler in business but not a standalone tool (Langley, et al., 1995). Adopting ICTs have given SDPs in Grahamstown knowledge on how their trainees can be innovative in their businesses. From the trainee's perspective, some participants indicated that

ICTs are practical tools that narrow knowledge gaps between them and other communities as they are provided with new ways to access information and communication (Sunkara, et al., 2015). *Participant 2* enthusiastically stated different ICT concepts she has been using in her organic soap business:

> *"I used the Internet to check what other people had done and how they had done it… For example, there was a lady whom I found who was doing different soaps at a larger scale, I got into contact with her and she assisted me." [Participant 2]*

Participant 2 went on to acknowledge the advantages of ICTs in marginalised communities and that entrepreneurs should strive to use them. They gave an example of how posting on social media reaches more people compared to the ambush selling, the traditional technique they used to engage in prior to applying ICTs (Robert, et al., 2012; Sunkara, et al., 2015).

After attending SDPs, the factors that are leading to ICT adoption by entrepreneurs in Grahamstown are either because they are being rational or from what they are experiencing in the business environment (Nguyen, 2009).

- Rational – staying competitive in a set-up where everyone is possibly doing the same business is important. There is also a need for the Grahamstown community members to be innovative and; explore different ways of using ICTs for advertisements and spreading awareness of their products and services. *[Participant 1, 2, 6, 7, 9, 10, 11 and 13]*.
- Experience – feedback and reviews from other competitors in the same business and, external pressure experienced from competitors adopting ICTs.

Despite actions by some of the local SDPs to collaborate the ICT training with their skills development, some participants highlighted the following adoption concerns:

- There is insufficient training at some SDPs, this was mostly highlighted by participants from *SDPB* who are still to start their businesses. *SDPB* did not have computers to train the community members leading to them being shown the few basic concepts on the facilitator's computer without any practice themselves.
- After training, some participants lack the capacity to expand their businesses. This is mostly experienced by entrepreneurs in the agriculture sector (*Participant 12* and *Participant 14).* Trainees are taught how to make use of ICTs; however, they do not

engage with their ICTs to the best of their ability. One of the reasons given was that they do not want to advertise themselves then not be able to meet demand due to low capacity.

- *Participant 11* feared that someone would steal their business idea if she was to market herself on the Internet. This led to the participant not adopting ICTs.
- There is lack of knowledge about the benefits that can be derived from ICT adoption.
    - Some community members are not aware of the benefits they could get from collaborating ICTs with their different skills.
    - There is a need to change the mindset of people
    - Youth in the township are not exposed to the benefits because of lack of access to enough places where they can obtain the information.

The following is a table stating the uses of ICT adoption summarised from the Grahamstown community.

ICT	**Actual Use**
Cell phones (*All participants*)	Communicating with customers through SMS, phone calls and WhatsApp. Researching on their social media (Internet use).
Computers (*Participants 1, 2,4,6,9,10,12* and *13*)	Preparation of documents (business plans and proposals) and recording business transactions. Moderate use of social media.
Emails (*Participants 1,2,4,6,7,10,11,12* and *13*)	Communicating with clients and potential funders.
Radio (*Participants 2,5,12* and *14)*	Advertisement and information on local news.
Public ICT facilities in the Grahamstown township (*Participants 1,2,4,5,9,10,11,12,13* and *14)*	Communicating with clients and fellow entrepreneurs on how to improve their business. Checking for sponsorship from both the public and private sector, including applying for farms.

Table 6.1: ICT adoption in the marginalised communities within Grahamstown.

Various studies that focus on the use of ICTs in small businesses as a result of ICT training also indicate that mobile phones have overtaken the use of other ICTs including computers (Esselaar, et al., 2007). The prevalence and accessibility of mobile phones have led to them gaining wide appreciation in different countries including South Africa. Entrepreneurs in South Africa have eliminated transportation cost as communication and research can be done whenever and wherever the need arises (Ajumobi and Kyobe, 2015). However, this is not the case in the marginalised community of Grahamstown. The participants complained about the transportation cost they are occurring as most of them, have to travel to centres to access the Internet. Mobile data is expensive for community members, participants mostly use their mobile phones for phone calls and short message service (SMS).

Prior to attending the SDPs, the participants either had a business running or they were engaging in an activity which they wanted to improve through attending a SDP. The knowledge that already existed largely played a role as a driver for ICT adoption during the training process. *Participants 2, 3, 11* and *12* (entrepreneurs who adopted ICTs into their businesses) displayed signs of absorptive capacity as they managed to assimilate external information and apply it to their commercial ends (Cohen and Levinthal, 1990). Another similar attribute worth mentioning about these participants is the perspective of entrepreneurship they all fall under. These participants fell under the sociological perspective which argues that the choices of community members are limited to their experiences (Bridge, O'Neill and Cromie, 1998). Before they came to join the SDP, these four participants had either started the business or were in the process of starting. Despite not having started their businesses *Participant 4, 7* and *9* highlighted the behavioural perspective, which shows that entrepreneurship can be taught to people who are capable of learning (Bridge, O'Neill and Cromie, 1998). From the interviews, they highlighted ideas on how they are planning to run their future businesses through ICT collaboration. They were using the external knowledge that they were introduced to, in planning innovative ways to grow their business. *Participant 6* however, only attended because they were sitting idle at home when another community member introduced them to *SDPA.* When asked about their initial goals before attending the programme, the participant stated that:

> *"I did not have any plan, at the time I just came because I was sitting at home idle." [Participant 6]*

Absorptive capacity in perspective: the integration of ICTs and entrepreneurial skills have assisted with knowledge sharing with other businesses from different spaces and the creation of innovative products and services. This further assisted with the community members research and development (R&D) above what they had been offered during training (Cohen and Levinthal, 1990). The participants who have integrated ICTs with their businesses have displayed signs of absorptive capacity increase as they managed to assimilate external information and apply it to their commercial ends (Cohen and Levinthal, 1990). New business owners in the marginalised community realised valuable external knowledge and are applying this to be competitive (Roberts, et al., 2012).

6.3 Guideline for ICT-Based Skills Development Programmes

Various studies have been researching on the challenge of youth unemployment in African marginalised communities, which has led to an increase in policies and programme interest (Unwin, 2009; Zaremohzzabieh, et al., 2014; Zaremohzzabieh, et al., 2016; Ayele, et al., 2017). Youth entrepreneurship has been identified as the foundation of community advancement and should be adopted by marginalised communities. The researcher proposes that external world bodies ought to invest in the youth of Grahamstown as a possible source of business creation and socio-economic development. Given the high unemployment and crime rate among the Grahamstown youth, there is a need for guidelines that can be used to move them into realising their full economic potential. The former UN Secretary-General Kofi Annan pointed out the need to share information through ICTs as an urgent issue across national boundaries (Horak, 2008). This research suggests that spreading ICTs through collaborating them with other courses can assist with bridging the digital divide experienced in marginalised communities. Implementing a clear framework or guideline for the youth into national policy planning and budgeting leads to countries experiencing success stories (Jimenez, 2006). A combination of deductive and inductive reasoning was implemented in this stage (Bryman and Bell, 2014). In the initial stage, deductive reasoning was adopted using Absorptive Capacity Theory as a lens for data collection. The theory was used to collect information from the participants. Additionally, inductive reasoning was adopted to collect context-specific data from participants and inform the proposed guideline that can be applied to develop entrepreneurial skills in the marginalised community of Grahamstown. By following the guideline, businesses in Grahamstown can assure high absorptive capacity. The guideline presented in this study is concerned with the current sustainable development of the Grahamstown community.

The guideline (*Figure 6.1)* starts at the top point (*marked Start)* and proceeds clockwise until it reaches point 5. Monitoring and evaluation should be implemented throughout all the stages through the involvement of all stakeholders (Community members, SDPs, government, external world bodies, civil sector, public and private sector).

1. **Community needs assessment (prior related knowledge of the community members)**

When a SDP aims to develop entrepreneurial skills in marginalised communities within Grahamstown they should start by a community needs assessment **[Stage 1 in guideline]**. Essentially, this will give young people a voice to articulate the kind of assistance they want and a chance to participate in delivering these needs (World Bank, 2006). Through the lens of Absorptive Capacity Theory, the first step will be to check the prior related knowledge of skills **[lens in Stage 1 of guideline]** that are in the community. With this the economic perspective should also be applied, it states that entrepreneurs fulfil a very important function by ensuring economic development and growth (Bridge, O'Neill and Cromie, 1998). Secondly, the behavioural perspective should also be applied in the assessment phase. It states that it is possible to pinpoint people who are capable of being taught entrepreneurial skills. At this stage, the external world bodies should bring their knowledge about functional SDPs that are in developed and developing areas. The external world bodies (NGO, Government, civil sector, private and public sector) play an important role in determining the success of SDPs in marginalised communities. This is achieved through the bodies focusing on innovative growth plans (Gurumurthy, et al., 2014; NYP, 2015; Chetty, 2016). The external body of interest should then consult all the other stakeholders **[Stage 1.1 in guideline]** that will be involved, most importantly the community members. Community members should be given an opportunity to state their needs and local SDPs should identify how they can assist through different partnerships. This is important because from the interviews, the Grahamstown community members are the ones who are aware of the gaps in the supply of goods and services in their communities. For marginalised community members to be equipped with skills that will make them active champions for their own development (NYP, 2015), the current state of the community should be assessed **[Stage 1.2 in guideline]**. This can be done through analysing their problems and needs as these potentially lead to them living below the poverty line. Identifying their ambitions will also potentially assist with making the skills taught relevant to their context. With these factors in mind, the SDPs should check the community

members knowledge about ICTs for them to conduct the training accordingly and eliminate the social issues faced by the community.

The unemployment rate within the marginalised community of Grahamstown has been of concern and could be potentially the cause of theft, vandalism and alcohol abuse. According to the findings, the community members who are not employed but are actively seeking work are not successful therefore the need for them to engage in entrepreneurial skills. To be successful in their operation, all the SDPs administrators or directors indicated the need to form partnerships with the external bodies for the achievement of the Sustainable Development Goals by 2030 (NYP, 2015; United Nations, 2015). *SDPC* and *SDPD*, both well-established SDPs in the Grahamstown community, indicated that funding from external world bodies **[Stage 1.3 in guideline]** is a necessity for them to run successfully. They both specified that they have been supported financially by different local and international external world bodies. The government through the NYP highlights the potential advantages that are offered by ICTs in SDPs for example opening knowledge and ideas for business opportunities (NYP, 2015). For the advantages to work effectively, there is need for enabling environments and supporting structures **[Stage 1.4 in guideline]** to be put in place (Sunkara, et al., 2015; World Bank Group, 2018). This has led to the government being strict with their funding requirements and the type of organisation they give it to. At the end of this stage, the SDPs and external world bodies should then monitor and evaluate **[Stage 1.5 in guideline]** the stage before completely moving to stage two.

2. **Creating a culture of learning by transforming participants mindsets in core programmes**

Secondly, there is a need to create a culture of learning by transforming stakeholder mindsets in core programmes **[Stage 2 in guideline]**. After identifying community members who are capable of being entrepreneurs, they should be enrolled into the SDPs core programmes then equipped with ICT skills as a way to increase their absorptive capacity for entrepreneurial development beyond the training. Community members who show interest in the programme but are looking to be employed should also be trained and assisted accordingly. It is important to introduce participants to core programmes that are focused on the entrepreneurial interest of the marginalised community first before they are introduced to the ICTs. The ICTs should then come in as enablers of these different skills (*see Stage 3 in guideline*). Core programmes **[Stage 2.1 in guideline]** should be set up based on the needs of the community for content to be

relevant to the context. Furthermore, their accessibility to the community members should be also put into consideration. The core programmes that have been of interest according to the SDPs interviewed are:

- SDPA – sewing, baking, beadwork, business skills, Bible literacy and basic ICT training.
- SDPB – sewing and embroidery.
- SDPC – life skills course, savings courses and basic ICT skills training.
- SDPD – cultivating, nutrition and livelihood skills through organic farming. Combined with ICT skills training.

There is a need to show community members the importance of what they are taught for them to value that knowledge. As a community, there is a need to alleviate the high level of unemployment through creating their own employment opportunities. After assessing the community needs, it should be instilled in citizens that there is a need for them to be active champions for their own development through the transformation of their mindsets. According to *Participant 6* as stated earlier, some marginalised community members feel entitled to getting help. They have settled on being assisted as they believe they cannot do anything for themselves. The entitlement factor can be eliminated by community members knowing that they can continue to empower themselves using various ICTs after the training is completed. The lens applied at this stage will be focused on teaching the trainees how to identify valuable external knowledge **[Stage 2 lens in guideline]**. During this part of training, the community members should be taught that the training is just a starting point. They have to learn more by themselves through the application of ICTs in the future. The second entrepreneurship perspective that should be applied at this stage is the personality perspective of the community member of interest (Bridge, O'Neill and Cromie, 1998). How the community member interacts could assist with knowing if it will be easy for them to start a business (Bygrave and Hofer, 1992). In a case where they are not willing or capable to start the business, the trainees should be equipped with skills that will assist them with being employable. The mindset of the individual being trained plays an important factor when it comes to empowerment programmes that are aimed at alleviating poverty. Hence, the need for SDPs to make sure that the training provides sustainable ways to alleviate poverty **[Stage 2.2 in guideline]**. When introducing trainees to different core programmes that SDPs are involved in, they should be encouraged to value what they are being taught and understand the importance of these skills in their lives.

Participant 6 went on to state this as another reason why she charges the trainees. The idea of people valuing what they would have paid for was brought up in the SDP:

> *"No, I charge them because if I don't charge them, they will come for one lesson then they will not come for the next one and I would have prepared for the lesson…I find that if they are paying for it, they come." [Participant 6]*

Due to the lack of funding, *SDPB* had to operate with what works for them. The trainees had to pay membership fees for the services received and lessons were prepared according to the money that was paid. Three trainees interviewed from *SDPB* all stated that they did not mind paying as this was a privately-owned SDP and the facilitator would not be able to provide them with all the required equipment. They also made sure that they attended the training as a way of maximising the money they would have paid. Research by Self Employed Women's Association (SEWA, 2009) in India which assisted women in a marginalised community to start a business through basic computer skills training agreed with charging trainees. Charging membership fees to trainees ensured commitment, as people wanted to make the most of this opportunity. In contrast to what participants from *SDPB* stated, seven other participants were not in support of SDPs charging membership fees. Given the background of people in the marginalised community, not everyone there is willing and able to pay for the services provided. Community members reaction to the membership fees is stated in *Table 6.2* below.

Role	**Participant**	**Reaction to Membership Fee**
Director/Programme administrator	Participant 1	To be charged due to lack of funding
	Participant 6	To be charged due to lack of funding and to encourage trainee commitment
	Participant 10	The youth are unemployed and should be offered these opportunities for free
	Participant 13	The youth are unemployed and should be offered these opportunities for free
Trainees	Participant 2	Not charged, would not been able to attend if charged due to unemployment

	Participant 3	Not charged, would have struggled due to unemployment
	Participant 4	Charged, was alright with it as it was petty.
	Participant 5	Charged, no complaints because it was petty.
	Participant 7	Charged, found it fair as SDP was privately run
	Participant 8	Charged, could only afford a few lessons though, which were not enough for them
	Participant 9	Charged, found it fair and could afford because of current employment
	Participant 11	Not charged, agreed with SDPs being free of charge
	Participant 12	Not charged, would not mind paying back now as they have benefitted.
	Participant 14	Not charged, would not have attended if they had to pay.

Table 6.2: Participants view on Membership Fees in Skills Development Programmes.

At the end of this stage, the SDPs and external world bodies should then monitor and evaluate **[Stage 2.3 in guideline]** the stage before completely moving to stage three.

3. Linking core programmes to ICT Skills Training

Thirdly, the core programmes should be linked with ICT skills training **[Stage 3 in guideline]**. After monitoring and evaluating the previous stage, the SDP should then link the ICT skills to the core programmes that they teach. Modern ICTs are transforming communities in some of the following aspects: the way people live and communicate, how enterprises do business, the type of jobs that are available and the type of skills that are in lower or greater demand (Evoh, 2012). For these and more aspects to be captured in marginalised communities, there is a need for sufficient training **[Stage 3.1 in guideline]** to be implemented. This training should assure

that trainees will be equipped with skills that will assist them with assimilating or transforming the valuable external knowledge **[Stage 3 lens in guideline].** To effectively use ICTs as a platform to gain knowledge, the SDPs should eliminate any form of fear of using ICTs that community members might have. *SDPA* and *SDPC* have set ICT courses that they take their trainees through. These courses could potentially empower the trainees with improving communication, boosting productivity and producing more jobs for their fellow community members (Zaremohzzabieh, et al., 2016).

The SDP should also make sure that there is sufficient access **[Stage 3.2 in guideline]** to the different ICTs that are required by the community members. In terms of ICT access, they should not only be established in an area that is easily accessible to community members or acquire funding to allow easy transportation for community members that need the services but are located far. They should also make sure the accessed ICTs are secure as some marginalised communities in South Africa have experienced ICT equipment theft (Mutumwa, et al., 2014). The trainees should also be shown activities that can assimilate and transform the valuable external ICT knowledge to meet commercial needs when they start their businesses.

The table below highlights some of the basic training that could potentially empower trainees in SDPs,

Skills Development Programme	**Type of training**
SDP	Basic computer training for all trainees • Computer components (Hardware and software) • Microsoft Word (Typing curriculum vitae's, business proposals, business plans) • Microsoft Excel (Book-keeping) • Microsoft PowerPoint (Proposal presentations for potential funders) Internet use

	• Emails (Emailing potential business investors and other fellow entrepreneurs for advice) • Facebook (marketing their business) • Google (How to search for innovative ways to grow their business) • YouTube (Videos on how to improve their work) • Internet use on mobile phones (The above including WhatsApp and twitter). Radio use for marketing to fellow community members **Computer laboratories and Internet available to trainees and other community members during working hours.**

Table 6.3: ICT training at skills development programmes in the marginalised community of Grahamstown.

At the end of this stage, the SDP's and external world bodies should then monitor and evaluate **[point 3.3 in guideline]** the stage before completely moving to stage four.

4. **Follow-up support courses**

Before the trainees graduate from the SDP, sessions where they can interact with other well-established small businesses in the Grahamstown community should be planned by the SDP and other partners involved. This should be supplemented by further training sessions **[Stage 4.1 in guideline]** with other well-established entrepreneurs who are not necessarily from the Grahamstown community. The follow-up will also involve everyone learning how to apply assimilated external knowledge **[Stage 4 lens in guideline]**. The sociological perspective applied at this stage states that community members make their choices based on what they are exposed to. Their context will influence the type of entrepreneurial activities they will take part in. The experiences they are exposed to will influence the type of activities they want to take part in. Therefore, the need to expose community members to the different type of skills that can empower them out of poverty before they leave the SDP.

SDPC has been supporting small local businesses that they train and those that approach them. This is done through inviting successful small businesses to some of their training sessions for knowledge sharing purposes which assist with the community members R&D above what they are offered during the training (Cohen and Levinthal, 1990). One of the purposes stated for these invitations involved assisting the new business owners with realising valuable external information (Roberts, et al., 2012). This process would assist the businesses with assimilating and applying the valuable external knowledge for the creation of innovative products. Furthermore, advice coming from a local well-established entrepreneur was considered more practical and context relevant compared to information coming from a business outside Grahamstown. This comparison did not mean that the well-established businesses were left out from the training sessions, they were used to supplement what was known by their fellow community members. After training, the new businesses were assisted with writing proposals for funding **[Stage 4.2 in guideline]** which has been successful because of the connections that have been established over the years. *Participant 10* the programme administrator of *SDPC*, went on to summarise their efforts in the community as follows:

> *"In a nutshell, we try to change the township's economy so that money can rotate in different hands before it leaves. So that we can create a lot of work for people." [Participant 10]*

SDPA in previous years has awarded the top student in that intake with equipment to assist them with starting a business. No further monitoring and evaluation was done to see if the community members had been fully equipped to be entrepreneurs. From the participants interviewed, none of them had received extra training from the SDP after they graduated. On the other hand, after training *SDPD* offers the participants opportunities to grow organic vegetables for their families and some to sell. Unfortunately, all these trainees cannot be allocated land that is near *SDPD.* There are some farmers who are being sent to other rural areas in the outskirts of Grahamstown. Therefore, the emphasis on communication from the programme coordinators as they need to constantly communicate with all the farmers during their planned projects. The programme administrator, *Participant 13* highlights the use of mobile phones to facilitate this process:

> *"It's not always easy to have them at one place at the same time. So, it's very important to keep communicating with them regardless." [Participant 13]*

Unavailability of land as discussed earlier has been an obstacle for the farmers as they can only make enough food to consume and sell if there is enough land which is currently unavailable. This brought about a sub-theme that has not been initially discussed; space for expansion in terms of land. Despite teaching the trainees everything they would need to know about being digital farmers. It is impossible to make their work successful if they do not have the space to do this. This led to the farmers not using ICTs to advertise as they do not have the capacity to cater for many clients. The participant was equipped with tools they needed to grow their business and they are fully aware of them, but they are not willing to make themselves known and not be able to meet demand. Although *SDPC* has managed to secure funding that allows them to train community members for free. They have not managed to secure land which is required for the trainee's business to flourish. When *Participant 14* was asked for guidelines that can be used by SDPs, they stated that:

> *"The programme helped us out with the skills needed to start our own business. The problem is that we cannot expand because we do not have enough land to do so." [Participant 14]*

SDPD also stated the importance of external world bodies for their programme as their success depends on the availability of land for their agricultural activities. As an agriculture focused SDP in the most rural part of Grahamstown, their focus on ICT training has been minimal. Trainees have been encouraged to go for training at either the local library which used to have free Internet access before 2018 or *SDPC* as they offer computer laboratories and Internet access. When the entrepreneurs start their businesses, the external world bodies should then come in and assist them to create online communities **[Stage 4.3 in guideline]** that will share business-centred content. The aim of the online communities should be to increase the innovation, flexibility and performance **[addition to Stage 4 lens]** of the entrepreneurs within the marginalised community of Grahamstown. With the foundation that they get from the SDPs, trainees should be able to sustain themselves and their communities afterwards. *Participant 1* suggested the importance of implementing online platforms or databases were entrepreneurs can sign up their businesses. This platform should assist them with connecting with customers, funders or anyone else who is interested in knowing details about their products and services (Giathaiga, 2016). For instance, *Participant 1* explains that:

"...people can actually go to this specific Grahamstown page that shows who is doing what and then even if the entrepreneurs have their personal webpages there can be a link that comes from this page to theirs so that people can be exposed." [Participant 1]

For these online communities to be successful, the external world bodies should assist with marginalised communities having access to free Internet access in local libraries and SDPs. The computers or any form of ICTs that are available to community members should have up-to-date software. Currently, there is no free Internet available in the local libraries according to the data collection. These are some of the factors that discourage community members from taking charge of their own empowerment.

The outside-in IT capabilities are outward facing and assist with knowledge identification, an example is a virtual community which is a network of individuals that interact on social media. Trainees would have been equipped with skills that will assist them in taking full advantage of these virtual communities. Through these interactions, a business can obtain knowledge from the external environment (Roberts, et al., 2012). Furthermore, the entrepreneurs should be encouraged to invest in their absorptive capacity through advancing their skills at support courses. At the end of this stage, the SDPs and external world bodies should then monitor and evaluate **[Stage 4.4 in guideline]**.

The guideline presenting the role of ICTs in developing entrepreneurial skills in marginalised communities within Grahamstown as stated in this section is illustrated below.

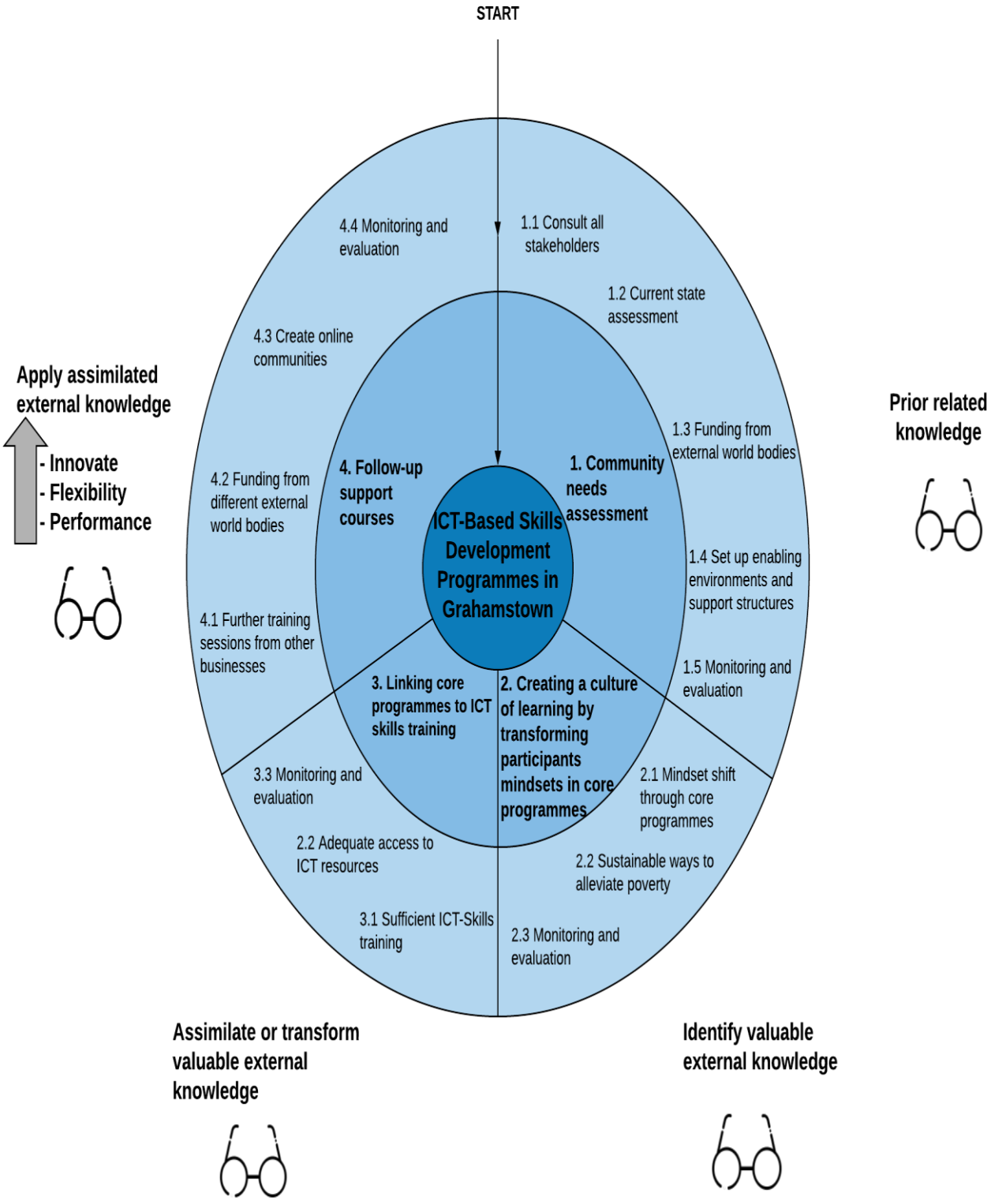


Figure 6.1: Guideline: The role of ICTs in developing entrepreneurial skills in Grahamstown.

6.4 Summary

The current chapter provided a thematic discussion of the findings from the semi-structured interviews. The findings also compared the data collected with the literature review. Some of the themes highlighted were not explicitly mentioned by the participants, they were rather identified through the application of absorptive capacity theory. Applying the theoretical framework guiding this study (Absorptive Capacity Theory), the findings show that when training participants; they should be taught how to recognise the value of new, external information. This should be further applied to their entrepreneurial development. Generally, the participants disclosed that they were aware of the benefits that ICTs would bring to developing entrepreneurial skills. However, there were barriers inhibiting ICT use for example, insufficient training and the need for mindset transformation in the marginalised community of Grahamstown.

In the next chapter, the integration of the entire research will be provided through a summary. Furthermore, an overview of how the research questions were answered is discussed, followed by the key contributions, recommendations and limitations.

CHAPTER 7
Conclusion

7.1 Introduction

The purpose of this chapter is to discuss the findings of this research study in relation to the research objectives and with reference to the literature discussed. The focus is on the integration of the entire research by way of a summary. The previous chapter aimed at comparing the findings from interviews with the literature review. Furthermore, an overview of how the research questions were answered is discussed, followed by the key contributions, recommendations and limitations.

7.2 Summary of Thesis

The role of ICT in developing entrepreneurial skills in marginalised communities was addressed in this thesis. The focus was on the steps that should be followed by SDP's when integrating entrepreneurial courses with ICT skills development.

- **Chapter 1** highlighted the skills shortages in South Africa and a high unemployment rate which trickles down to poverty. An overview of how ICTs were being used by skills development programmes (SDPs) to develop entrepreneurial skills in marginalised communities was also presented. Followed by addressing the problem statement, research questions and research strategy. Lastly, the limitations, assumptions and ethical considerations were outlined.
- **Chapter 2** followed with an overview of the topic based on literature from various researches. It commenced with the sustainable development goals as stated by the United Nations and how entrepreneurship can be engaged with to alleviate unemployment using ICTs. Socio-economic development was discussed as an umbrella term that addressed the focus of this research study which is developing

entrepreneurship. Furthermore, the use of telecentres was highlighted as one form of entrepreneurship training.

- **Chapter 3** highlighted skills development programmes that combined ICTs and entrepreneurship. Successful examples and strategies that have been used in similar contexts were discussed. At the end of the chapter, the researcher presented a conceptual diagram which highlighted important factors that relate to the relationships between ICTs and entrepreneurship, based on the literature. This was followed by revisiting the research questions.
- **Chapter 4** described the methodology employed by this research. The research paradigm, methodological approach, data collected, sources of data, data collection instruments, data treatment, limitations, ethical considerations and the interview guide were presented. This chapter also discussed the theoretical framework that was used as the theoretical lens for this study.
- **Chapter 5** the researcher presented the context of the research participants and the themes that emerged from the data collection. The different participants from the SDPs that were interviewed were briefly described. At the end of the Chapter, a thematic map was presented showing the themes that emerged during the initial analysis of the interview data.
- **Chapter 6** provided a narrative description of the data collected through semi-structured interviews. Common themes on the views held about developing entrepreneurial skills through ICTs were discussed. The story that each theme conveyed was discussed considering how they would fit into the broader narrative. The chapter concluded with, a guideline for developing entrepreneurial skills in marginalised communities making specific reference to how absorptive capacity theory can be incorporated into the process.

7.3 Research questions revisited

The research aimed to add to the body of knowledge on the uses of ICTs in enhancing entrepreneurship within the marginalised community of Grahamstown. The following questions were answered:

How should ICT-based skills development programmes be applied to enhance entrepreneurial skills within marginalised communities?

Main research question: this question aimed at adding to the body of knowledge on the uses of ICTs in enhancing entrepreneurship within the marginalised community of Grahamstown. It is addressed in *Section 7.4*. As indicated in *Chapter 1* three sub-questions were created as stated below:

What is the role of ICTs in the support of entrepreneurial development within marginalised communities?

Sub-question 1: this question explored the role of using ICTs in supporting broader entrepreneurial development in marginalised communities. The question was answered by reviewing the literature from past studies that are related to this research study, as illustrated by the Conceptual Diagram (see *Figure 3.4)*. The review of the literature shows that the Sustainable Development Goals (SDGs) were formulated at the end of the Millennium Development Goals (MDGs), and they respond to a call to alleviate poverty made by the United Nations (UN) and other organisations involved in social development (United Nations, 2015). The SDGs focus on encouraging external world bodies to start acknowledging their role as a driving force in recommendations of development strategies that target the poor. To meet these goals, action is required from both the developing countries and the international community to support the entrepreneurs in marginalised communities (Mbuyisa and Leonard, 2015).

Developing countries have implemented skills development programmes that aim to develop entrepreneurial skills and impart skills in marginalised communities. Unfortunately, most developing countries lack contextual frameworks that can support them in adopting ICTs, since ICTs create opportunities for socio-economic development in marginalised communities (Jacobs and Herselman, 2005; Maier and Nair-Reichert, 2007; Hamel, 2010). The challenges in ICT adoption are mainly experienced due to the shortage of technological development and lack of a successful model to use (Evoh, 2012; Zaremohzzabieh, et al., 2016), hence this affects many people who are involved in SMEs. ICT adoption in marginalised communities is beyond ICT ownership and ICT access (Makoza and Chigona, 2012). Marginalised community members need to be trained as they are sometimes unaware of the potential uses of ICTs in many life contexts for example businesses. Sunkara, et al. (2015) goes on to state that the problem with some initiatives is that they only provide the ICTs without training the communities on how they can be used. In other words, less attention has been given on the use of ICTs as tools to meet the demand for ICT skills development; and fostering entrepreneurship

and knowledge for running SMEs. Increasing evidence in literature imply that access to ICT resources have a role to play in developing productive entrepreneurial skills, these access points can be found at skills development programmes (Torero and von Braun, 2006; Obayelu and Ogunlade, 2006, Makoza and Chigona, 2012; Bailey and Ngwenyama, 2013; Mbuyisa and Leonard, 2015).

To ensure that the skills taught to trainees will sustain them in the future, there is a need for trainees to be taught how to invest in their absorptive capacity. The central principle of the absorptive capacity theory states that to be innovative, a business needs to have an ability to recognise the value that is in adopting new, external information and absorbing it (Cohen and Levinthal, 1990; Roberts, et al., 2012; Scuotto, et al., 2017). Research on absorptive capacity has mostly been on large firms and little attention has been given to small businesses.

How are ICTs used to support the development of entrepreneurial skills within the marginalised community of Grahamstown?

Sub-question 2: the objective of the second question was to present the response and experiences of research participants on the research topic. The marginalised community within Grahamstown is plagued with poverty and unemployment. This has led to different world bodies coming together to find potential solutions that could alleviate these problems. One way was the introduction of SDPs in the marginalised community. Combining ICT training with other skills has been brought up in both the literature review and the interviews. ICTs are seen as a driver and enabler in business but not a standalone tool (Langley, et al., 1995). Adopting ICTs gave SDPs in Grahamstown knowledge on how their trainees can be innovative in their businesses. From the trainee's perspective, some participants indicated that ICTs are practical tools that narrow the knowledge gaps between them and other communities as they are provided with new ways to access information and communication. The participants stated some of the reasons they use ICTs. Firstly, some Grahamstown community members have access to ICT resources. These were gained by the trainees when they attended various SDPs. The SDPs were provided with necessary tools by the local university, local libraries and various companies. Secondly, the Grahamstown community members have been given access to information on how they can benefit from adopting ICTs in the other skills that they have been provided with. Thirdly, community members were provided with access to knowledge that was previously not available to them. In some cases, access is accompanied by training as a means of increasing the absorptive capacity of trainees beyond the programme.

The prevalence and accessibility of mobile phones have led to them gaining wide appreciation in the marginalised community of Grahamstown. The community members also make use of other ICTs, namely computers, radios and public ICT facilities in the community. The community members make use of mobile phones to communicate with customers through SMS, phone calls and WhatsApp. They also make use of the internet to research and engage with other people on social media. This was stated by all the participants who were interviewed. Computers are used to prepare documents (business plans, proposals) and record business transactions. However, they are used in moderation in Grahamstown. The interviewed participants also stated that they make use of email either on mobile phones or computers to communicate with their clients and potential funders. The community members further from the CBD are unable to access public ICT facilities. They make use of a local radio station to market their products. This is mostly, the farmers who are involved in agriculture. Despite all the identified ways showing how ICTs can be seen as enablers, there are barriers that inhibit ICT use within the marginalised community of Grahamstown. These barriers were linked to social issues related to the high unemployment rate in Grahamstown. The above indicates that there is a need for action to be taken. The participants highlighted that high unemployment is contributing to the high poverty rate in their community.

The Grahamstown community also experiences barriers that prevent members from accessing ICTs. Firstly, despite having SDPs set up, trainees still stated that there is insufficient ICT skills training. Secondly, there is a need to transform the perception of ICTs among community members. Thirdly, some community members experience computer anxiety or fear as they are not confident enough to make use of the ICTs. This fear potentially developed because after training community members did not receive extra support or means to sustain their absorptive capacity. Lastly, the Grahamstown community at large lacks access to infrastructure that is required for people to gain full use of ICTs.

How should ICT-based skills development programmes support the development of entrepreneurship in the marginalised community within Grahamstown?

Sub-question 3: to answer this question, the research sought recommendations on how ICT-based skills development initiatives should support entrepreneurship in marginalised communities. A guideline for developing entrepreneurial skills through ICT use was proposed for the marginalised communities within Grahamstown based on the research findings. The

guideline has different phases and it is important to note that for implementation, there is a need to consult the potential users as this will assist with making the programmes relevant to the context. The first phase will be a community needs assessment, looking at the community members prior related knowledge. Secondly, the SDPs should create a culture of learning by transforming participants mindsets through core programmes. Thirdly, the core programmes should be linked with ICT skills training. After training is completed, the SDPs and external world bodies should assist with follow up support courses. During all these stages monitoring and evaluation should be implemented, and all key stakeholder should be involved. However, despite these phases being in a sequence, they can be adopted in any order.

7.4 Key Contributions and Recommendations

To address the main research question, contributions or recommendations in this research stem from the use of thematic analysis and interpretivism. This assisted with covering context-specific information with respect to the marginalised community of Grahamstown. Several recommendations on the role of ICTs in developing entrepreneurial skills within marginalised communities through SDPs are highlighted below (for guideline see *Figure 6.1*):

- **Community needs assessment:** each community is unique and what works in one context might not necessarily work in another. The marginalised community of Grahamstown is burdened by poverty and high unemployment. Therefore, the need to consult the community when identifying the problems that they face, their strengths and resources before stating how they can be solved. This will give everyone involved in the process an idea of how the issues raised can be resolved, as training is tailored to the needs of the community. It is important to consult the youth in communities for accurate guideline creation (Jimenez, 2006). Services from SDPs should be demand driven, in other words, the services that will be provided by SDPs should be defined by the community members. This will convince them to sacrifice their time and resources to get them. The SDPs need to engage with various partners (linkages) through having relationships with other related and unrelated organizations. Furthermore, SDPs should have a support system where they can communicate with each other on matters of common interest, which could potentially bring more opportunities to marginalised communities. From the research study, it was clear that poverty alleviation for the Grahamstown youth is important and different external world bodies should be

consulted. External world bodies in both developed and developing countries are a driving force for recommendations. From the experience that they have gained in a different context and their research, they have created approaches and guidelines on how to empower communities in different capacities. Another factor to focus on before starting SDPs is the funding element. Financial issues are very important to the success or failure of SDPs in marginalised communities. There is a need for SDPs to have clear strategies on how they will fundraise their income to run smoothly. This funding plan can be highlighted in the SDPs business plan. Clear strategies and budgets will also make it easier to gain the confidence of the government or other public and private sector companies who are willing to invest in the SDP.

- **Creating a culture of learning by transforming participants mindsets in core programmes:** the main characteristic of ICT-based SDPs should be their sustainability. This means they will be able to maintain and prolong their services with the means that are available to them. The goal for both the SDP and community members that attend should be to continue operating in the long run. This shows the importance of SDPs training community members to increase their absorptive capacity. This can be achieved by transforming the mindset of community members to a state where they view ICTs as enablers. Furthermore, equipping marginalised community members with skills that can help them sustain themselves beyond training is critical when attempting to alleviate poverty. After identifying the needs of a marginalised community, SDPs can implement effective core programmes. A relevant curriculum should be developed for community members. To teach these courses, the SDP should be located in a place that is easily accessible to the community. Meaning the physical infrastructure of the ICT-based skills development programme also play a role in its success. Given the financial constraints experienced by the Grahamstown community at large, the SDPs need to use existing accessible infrastructure as their sites for providing services. There are underutilized existing building and other underutilized SDPs in the marginalised community; people interested in starting SDPs should look at the possibilities of using these sites. In marginalised areas within Grahamstown where there are no appropriate buildings to use as SDPs, other options need to be explored. This could come in the form of public libraries, school computer laboratories or the local university laboratories. However, there are concerns about security that will need to be addressed first in this case.

- **Linking core programmes to ICT skills training:** the SDPs should have appropriate ICT infrastructure to provide fast, efficient and effective services. The infrastructure should help the community members with access to the technologies throughout the training and after they have graduated from the programme. This will help the community members participate meaningfully in the knowledge economy and view ICTs as drivers that will empower them in different aspects of life. Curriculum development of the ICT skills training should not be done in isolation, they should be linked to the entrepreneurial skills offered. Businesses that show high absorptive capacity have some level of preparation done before they adopt the ICTs (Ndiege, Herselman and Flowerday, 2014).
- **Follow-up support courses:** trainees should be afforded further assistance after training with consideration of the gaps they would have identified. Inviting other businesses to mentor the graduates is necessary for knowledge sharing purposes which will further the research and development of trainees beyond training. In other words, increase their absorptive capacity. A funding plan should also be provided for the entrepreneurs and introductions to some potential sponsors in their line of business. Online communities should be created to share business-centered content, this will potentially lead to an increase in innovation, flexibility and the performance of the entrepreneurs (Cohen and Levinthal, 1990; Roberts, et al. 2012; Giathaiga, 2016). Following up on trainees will motivate the youth, their parents, and the community at large to invest in themselves (Jimenez, 2006; Ayele, Khan and Sumberg, 2017).

7.5 My personal experience from the study

The main strength of this study is that it taps into a research area with limited research in South Africa, especially in Grahamstown. Therefore, the study can add to the body of knowledge on the role of ICTs in developing entrepreneurial skills within marginalised communities. The sample size of fourteen interviewees was recruited to participate in this study and it reveals considerable information for an exploratory study that can only be applied in Grahamstown.

An identified limitation was that the participants of this research could only include people that were part of the four skills development programmes. Out of the community members that fell under this category, the researcher experienced a language barrier. The researcher could only interview members that were English speaking and had to forgo participants who could have

possibly brought in more insights. A further limitation was that *SDPB* and *SDPD* did not offer complete ICT skills training as part of their skills development. However, the researcher used this to obtain the perspectives of both the community members that had been afforded the opportunity to learn and those who did not.

The different SDPs had been stated as the places to conduct interviews, however not all participants could make it there. The researcher had to meet them in their different locations around Grahamstown which brought about financial cost. There was a benefit of this limitation as participants were comfortable which made them more open about their experiences. Due to the scope of this research study, the guideline was not taken back to SDPs for them to assess the practicality.

7.6 Future Research

This research did not cover all aspects of the literature and does not claim that the given guidelines are relevant for all entrepreneurs in marginalised communities, rather acknowledges that it depends on the context of the businesses that an entrepreneur is involved in. For future research, firstly; there is a need for SDPs and external world bodies to assess the relevance of the guidelines proposed in this study with other marginalised communities in the Eastern Cape Province. Since this was not part of the scope of this study. Secondly, researchers can conduct a comparative analysis that highlights how entrepreneurs who did not attend SDPs are making use of ICTs compared to entrepreneurs who were afforded the opportunity. This can be done through the replication and expansion of the same study using a mixed methods approach. Making use of a mixed method approach would have allowed the researcher to make comparisons, this research is purely qualitative.

The research study did not test any increase in the absorptive capacity of trainees, this can be researched in the future over a period of time.

Appendix A:

RHODES UNIVERSITY
Grahamstown • 6140 • South Africa

DEPARTMENT OF INFORMATION SYSTEMS
Tel: [+27] 046 603 8244
Fax: [+27] 046 603 7609
E-mail: issecretary@ict.ru.ac.za

25 April 2018

Director of Institution
Address
Grahamstown
Eastern Cape
6139

Dear Participant

Re: Invitation to participate in research

Miss. Vinia R. Mabika (under supervision of Mr. Karl van der Schyff) is an Information Systems Postgraduate Master of Commerce student at Rhodes University carrying out research study titled: The Role of Information and Communication Technology in Developing Entrepreneurial Skills in Marginalised Communities: The Case of Grahamstown. The aim of this research study is to investigate how ICTs can facilitate the development of entrepreneurial skills, using skills development programmes in Grahamstown as case studies. The participation and cooperation of your organisation is important so that the results of the research are accurately portrayed.

The research study will be undertaken through semi-structured interviews with participants (trainees and programme manager or director). The data to be collected from this research will be qualitative in nature and will be used to write a Master's thesis. The identity of the participants who voluntarily consent to participate will be treated with complete confidentiality. Collection of these data will require from each participant about 30 minutes to complete. The benefits derived from participation in the research include an increased knowledge of the research area. Furthermore, the results of the study will be readily available on request and can be applied by the skills development programmes and trainees to further develop their entrepreneurial skills through incorporating ICTs. There are no anticipated risks from participating in the interview.

Attached for your information is a copy of the participant's Informed Consent Form. If you have questions or wish to verify the research, please feel free to contact us.

If you would like your institution to participate in this research, please complete and return the attached form.

Thank you for your time and I hope that you will find our request favourable.

Yours sincerely,

Vinia R. Mabika
Research Student

Mr. Karl van der Schyff
Supervisor

[The Role of Information and Communication Technology in Developing Entrepreneurial Skills in Marginalised Communities: The Case of Grahamstown]

Institution Consent Form

Participation Consent
I consent for you to approach trainees to participate in the research [The Role of Information and Communication Technology in Developing Entrepreneurial Skills in Marginalised Communities: The Case of Grahamstown].
I acknowledge and understand:
• The role of the institution is voluntary. • I may decide to withdraw the institution's participation at any time without penalty. • Trainees will be invited to participate, and that permission will be sought from them too. • Only trainees who consent will participate in the project. • All information obtained will be treated in strictest confidence. • The trainees' names will not be used, and individual trainees will not be identifiable in any written reports about the study. • The institution will not be identifiable in any written reports about the study. • Participants may withdraw from the study at any time without penalty. • A report of the findings will be made available to the institution. • I may seek further information on the project from Vinia R. Mabika on +27780777401 or g11m5365@campus.ru.ac.za.

Full Name:	
Position:	
Signature:	
Date:	

Please return to:	g11m5365@campus.ru.ac.za

Appendix B:

RHODES UNIVERSITY

INFORMED CONSENT FORM
Department of Information Systems

Research Project Title:	The Role of Information and Communication Technology in Developing Entrepreneurial Skills in Marginalised Communities: The Case of Grahamstown
Principal Investigator(s):	Miss Vinia R. Mabika

Participation Information

- I understand the purpose of the research study and my involvement in it.
- I understand that there are no risks of participating in this research study.
- I understand the possible benefits of participating in this research study.
- I understand that I may withdraw from the research study at any stage without any penalty.
- I understand that participation in this study is done on a voluntary basis.
- I understand that while information gained during the study may be published, I will not be
  identified and my personal results will remain confidential.
- I understand that I will receive no payment for participating in this study.
- I understand that my responses will be audio recorded and the recording will be kept confidential.

- I understand that after the principal investigator has transcribed the interview, the transcript will be emailed to me for validation and I have to return my feedback within two weeks (member checking).
- I understand that if I do not respond within the two weeks the principal investigator will assume that I am satisfied with the transcript.

Information Explanation
The above information was explained to me by: **Miss Vinia R. Mabika**
The above information was explained to me in: □English □Afrikaans □isiXhosa □isiZulu □Other: and I am in command of this language

Voluntary Consent		
I, [ ], hereby voluntarily consent to participate in the above-mentioned research.		
Signature:		Date: / /

Investigator Declaration	
I, **Vinia R. Mabika**, declare that I have explained all the information to the participant and have truthfully answered all questions asked by the participant.	
Signature:	Date: / /

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