Teacher perceptions of the role of the school principal in sustainable school-based vegetable gardens

by

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DECLARATION OF AUTHENTICITY

I, Lauren Carol Jordaan (student number: 12021785), hereby declare that all the resources consulted have been included in the reference list, and that this study titled ***Teacher perceptions of the role of the school principal in sustainable school-based vegetable gardens*** is my original work. This mini-dissertation has not been submitted by me for any degree at another institution.

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Lauren Jordaan   Date

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RESEARCH ETHICS COMMITTEE

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Ms Bronwynne Swarts
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- No significant changes,
- Informed consent/assent,
- Adverse experience or undue risk,
- Registered title, and
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Teacher perceptions of the role of the school principal in sustainable school-based vegetable gardens

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ABSTRACT

This study forms part of three broader projects[1] where school-based vegetable gardens have been implemented in nine primary schools in resourced-constrained communities in the Nelson Mandela Metropole, South Africa. The purpose of the current study was to explore teacher perceptions of the role of school principals in the success and sustainability of these school-based vegetable gardens.

For the purpose of my research, I followed a qualitative methodological approach, and relied on interpretivism as epistemological paradigm. I utilised a multiple case study research design, applying Participatory Reflection and Action (PRA) principles. I purposefully selected 36 teachers from the nine schools involved in the broader project to participate in this study. For data generation and documentation, I relied on a PRA-based workshop, semi-structured individual interviews, observation, field notes, a research journal and audio-visual techniques. I completed inductive thematic analysis.

Three main themes and related sub-themes emerged. The first theme highlights the value that teacher participants attach to school principals being informed and involved in vegetable gardens, by sharing the dream and being passionate, being informed of the garden team's needs and challenges, and being actively involved. The second theme emphasises the importance of a principal providing support by motivating and encouraging teachers and learners to be involved, providing resources and fundraising opportunities, and networking with stakeholders. Finally, the last theme entails factors that may have a negative impact on the success of school-based vegetable gardens in terms of limited interest and involvement by the principal, and not recognising the value of the teachers or the school garden.

The findings of the current study indicate that the majority of the teacher participants acknowledged the positive roles that their principals fulfilled, which they then linked to the success and sustainability of their school-based vegetable gardens. Teacher participants indicated that effective leadership can be demonstrated when school principals lead by

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[1] Supportive Teachers Assets and Resilience (STAR, 2003-), focusing on ways in which teachers can support vulnerable communities; Supporting Home Environments in Beating Adversity (SHEBA, 2011-), focusing on the potential role of volunteers in school-community support projects; Food Intake and Resilience Support: Gardens as Taught by Educators (FIRST-GATE, 2015-), focusing on teachers supporting peers with school-based vegetable gardens.

example, provide the necessary resources, are well informed and knowledgeable about school gardens, and show support to those involved.

LIST OF KEYWORDS AND ABBREVIATIONS

Keywords

- ❖ Effective school leadership
- ❖ FIRST-GATE (Food Intake and Resilience Support: Gardens as Taught by Educators) project
- ❖ Health-promotion intervention
- ❖ Invitational education theory
- ❖ Resource-constrained context
- ❖ School-based vegetable garden
- ❖ School principal
- ❖ SHEBA (Supporting Home Environments in Beating Adversity) project
- ❖ STAR (Supportive Teachers Assets and Resilience) project
- ❖ Sustainable vegetable garden

Abbreviations

- ❖ Department of Basic Education (DBE)
- ❖ Food and Agriculture Organisation of the United Nations (FAO)
- ❖ Food Intake and Resilience Support: Gardens As Taught by Educators (FIRST-GATE)
- ❖ Health Promoting Schools (HPS)
- ❖ Non-Governmental Organisation (NGO)
- ❖ Participatory Reflection and Action (PRA)
- ❖ Supporting Home Environment and Beating Adversity (SHEBA)
- ❖ Supportive Teachers Assets and Resilience (STAR)
- ❖ Sustainable livelihoods (SL)
- ❖ World Health Organisation (WHO)

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CHAPTER 1 – INTRODUCTION AND GENERAL ORIENTATION

1.1 INTRODUCTION AND RATIONALE FOR UNDERTAKING THE STUDY

This study forms part of three broader funded[2] research projects, namely the STAR (Supportive Teachers Assets and Resilience), SHEBA (Supporting Home Environments in Beating Adversity) and FIRST-GATE (Food Intake and Resilience Support: Gardens as Taught by Educators) projects, undertaken by Professors Ronél Ferreira and Liesel Ebersöhn since 2003. All these projects have been guided by the asset-based approach (Ebersöhn & Eloff, 2006) and focus on the way in which teachers, schools and communities can support vulnerable individuals in resource-constrained settings.

As part of the three projects, schools and communities have initiated supportive programmes and efforts over the years. These include school- and community-based vegetable gardens, which have formed a focus of all the participating schools' efforts to support vulnerable learners and community members. As such, vegetable gardens have been identified by these schools as a potential way of meeting some of the basic nutritional and economic needs in resource-constrained communities, as highlighted by Ferreira and Ebersöhn (2012). Even though all schools who have participated in the broader research projects started school-based vegetable gardens, this initiative has not been implemented to the same level of success within the various schools. As a result, the question can be raised as to what the factors are which determine the success and sustainability, or otherwise deterioration, of school-based vegetable gardens in resource-constrained communities with the support (or not) of the school principal.

For the FIRST-GATE project (2015-), the focus has fallen on effective strategies for school-based vegetable gardens, and how schools can use vegetable gardens as a way of supporting vulnerable communities. Based on the observations of the research team over the past ten years (during the STAR, SHEBA and FIRST-GATE projects), several factors have been identified that may potentially influence the success of school-based vegetable gardens, with one of these relating to the potential role that a school principal may fulfil. As this possibility requires ongoing research, my study centres on the role of the school principal in

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[2] Funded by the National Research Foundation (NRF) of South Africa, project numbers 74455 and 93320 (Community Engagement Programme).

determining (or not) the success of school-based vegetable gardens as perceived by the teachers of the schools that have participated in the broader projects.

My initial literature review indicated that a great deal of existing literature focuses on how effective leadership within the school environment relates to academic success and achievement, yet that limited research exists on the effect of leadership or school principals when implementing school-based interventions. As a result, I was unable to identify a fixed model for effective leadership in this field of interest. As school leadership can only be understood within the context and community in which a school is situated (Ngcobo & Tikly, 2010), Gerrit Kamper (2008) suggests that the Invitational Leadership model may be adopted by principals in South Africa, more specifically in schools with limited resources. This possibility, however, requires ongoing research, thereby highlighting the potential value of my study. Furthermore, by conducting research within the said broader research projects, my research may add to new knowledge stemming from the projects, which can in turn be applied in other schools within similar contexts that join the projects in future.

1.2 PURPOSE AND AIMS OF THE STUDY

The purpose of my study was to explore and describe the potential role of school principals in the success and sustainability, or otherwise deterioration, of school-based support initiatives, more specifically of school-based vegetable gardens. In exploring this phenomenon, I focused on the perceptions and experiences of teachers who have been involved in school-based vegetable gardens, in terms of their views on the role of the school principal. I conducted my study within the broader STAR, SHEBA and FIRST-GATE projects initiated in nine schools in the Eastern Cape Province of South Africa, involving teachers who have previously been involved in the projects.

More specifically, I aimed to achieve the following:

- ➢ Gain insight into teachers' perceptions on what effective leadership is, within a resource-constrained school context.
- ➢ Identify what school principals can do to support school-based vegetable garden projects.
- ➢ Explore how school principals may hamper the success of school-based vegetable garden initiatives.

Comparing teachers' viewpoints to existing literature and theory on factors determining the success and sustainability of school-based vegetable gardens may potentially strengthen the existing knowledge base. More specifically, the findings of my study may add insight in terms of the role that school principals can fulfil when implementing and maintaining school-based vegetable gardens in resource-constrained community contexts.

1.3 RESEARCH QUESTIONS

The primary question that guided this study is: *How do teachers view the role of school principals in the success and sustainability of school-based vegetable gardens?*

The following secondary questions apply:

- ❖ How do teachers conceptualise effective leadership in a resource-constrained school context?
- ❖ How can school principals support school-based vegetable garden projects?
- ❖ How may school principals hinder the success of school-based vegetable garden initiatives?

1.4 WORKING ASSUMPTIONS

I undertook my research against the background of the following assumptions:

- ❖ School principals will fulfil a determining role in the success and sustainability of school-based support initiatives.
- ❖ Resource-constrained communities possess or can access certain resources to initiate and sustain school-based vegetable gardens.
- ❖ School principals who employ the asset-based approach will be more supportive than when not implementing this philosophy.
- ❖ Teachers will have insight in terms of the role that school principals may fulfil in the success and sustainability of school-based support initiatives such as vegetable gardens.

1.5 CONCEPT CLARIFICATION

In this section I clarify the key concepts underlying the current study.

1.5.1 Resource-constrained school contexts in South Africa

Mnguni-Letsoalo (2012, p. 16) describes resource-constrained communities as "communities characterised by limited basic resources such as food and water, economic resources, physical

and material resources, and human resources". Similarly, according to Cook (2016), resource-constrained communities in South Africa imply environments where high rates of unemployment, poverty, a lack of job opportunities, difficulty in growing foods and low access to water are prevalent.

In the current study, resource-constrained school contexts refer to schools and school environments in South Africa where limited resources are available to the specific school, learners and community. Such contexts typically face challenges of severe poverty, lack of employment and developed infrastructure, limited access to basic services, and low levels of literacy (Ferreira & Ebersöhn, 2012). As people who live in these communities generally have low sources of income, the food they can afford is often not nutritional and healthy. Therefore, another challenge these communities often face is food insecurity, which may lead to malnutrition and undernourished individuals, specifically children (Oldewage-Theron & Slabbert, 2008). Based on the South African quintile classification system, where schools are categorised as Quintiles 1 to 5 schools, according to the available resources and circumstances faced by the schools. Quintile 1, 2 and 3 schools can be considered as resource-constrained schools. In these schools, learners receive at least one healthy meal per day at school, which is funded by the national Department of Basic Education (Department of Basic Education, 2009).

1.5.2 School principals

Hall et al. (2016, p.2) describe a principal as "arguably the most influential position in education today", and as a "building administrator" who leads the other staff members and learners of a school. Mombourquette (2017) more broadly refers to the role of a principal as involving the school community to collaboratively create and sustain the values, mission and goals of a school. As collaborators, school principals can create opportunities where teachers can work together as teams that are self-driven in terms of their levels of teaching, in support of child development and learning (Balyer, Karatas, & Alci, 2015). Therefore, a school principal will generally aim to build up not only a school, but also the wider community.

In the current study, school principals refer to primary school principals in resource-constrained school contexts in South Africa that have been participating in the broader STAR, SHEBA and FIRST-GATE projects over recent years. All schools involved have initiated or maintained school-based vegetable gardens during the time of their involvement in the broader projects, with varying levels of success and sustainability.

1.5.3 School-based vegetable garden

The Food and Agricultural Organization of the United Nations (FAO, 2004, p. 3) defines school gardens as "cultivated areas around or near to primary and/or secondary schools, which can be used mainly for learning purposes but could also generate some food and income for the school". Litt, Soobader, Turbin, Hale, Bucheneau and Marshall (2011, p. 1467) similarly state that having a community or home garden may encourage the promotion of healthy behaviours.

School- and community-based vegetable gardens more specifically involve natural sites that connect people to the environment, require active and sustained participation by community members, and for this purpose, typically encourage direct and indirect engagement of role-players (Litt, et al., 2011). This implies, for example, the gaining of knowledge on ecological systems, food growth and preparation, and the health and wellbeing of people who are involved. In this study, school-based vegetable gardens thus refer to gardens situated on school premises which are managed by schools and/or community volunteers. These are regarded as a potential source that may encourage learning as well as the health and wellbeing of not only learners, but also the broader community, by providing food.

1.5.4 Success and sustainability of school-based support initiatives

Success and sustainability within the school context can be related to "the ability of individuals and schools to continue to improve to meet new challenges and complexity in a way that does not damage individuals or the wider community but builds capacity and capability to be successful in new and demanding contexts" (Davies, 2011, p. 14). According to Johnson and Lazarus (2004), using schools to promote health and well-being will be impactful because of the way in which schools and teachers can reach and influence children at a critical time in their lives, childhood and adolescence.

Within the context of the current study, success and sustainability points to ongoing progress and the continuous development of school-based vegetable gardens which may serve as a potential source of food and the provision of a supportive learning environment at school. By implementing vegetable gardens in a school setting and not merely in the local community, teachers may have the opportunity to educate learners from a young age onwards about the importance of nutritional eating, promoting the learners' knowledge in this field with the potential of them taking the newly gained knowledge into the local community (Johnson & Lazarus, 2004).

1.6 CONCEPTUAL FRAMEWORK

In compiling a conceptual framework, I relied on both the Invitational Education theory, a branch of the Invitational theory of Leadership by Purkey and Siegel (2003), and the asset-based approach (Ebersöhn & Eloff, 2006). Burns' (2007) discussion of Invitational Leadership theory indicates five domains which may contribute to the failure or success of schools, namely places, policies, programmes, processes, and people. Each of these domains are regarded as important to create a successful and positive school environment (Burns, 2007). For my study, I specifically focused on the potential role of programmes, processes and people in determining the success of school-based vegetable gardens. I regard this part of the Invitational Education theory as a suitable frame of reference for my study due to the focus on communities and people, as well as encouraging a positive school culture which aligns with the focus and approach of the broader research projects of which my study forms a part.

Invitational Leadership theory emphasises the importance of a leader (principal) within the school environment who is effective – from implementing management tasks to facilitating change, regardless of the context of the school. Although Invitational Education theory is not based on the skills that individuals hold, invitational leaders will typically encourage others to realise their potential (Purkey & Siegel, 2013). In linking the asset-based approach to this principle, I relied on Ebersöhn and Eloff's (2006, p. 462) statement that "the point is to think about potential and about the ways existing potential can be directed towards available opportunities".

Ebersöhn and Mbetse (2003) furthermore describe the asset-based approach as focused on people within a community who all possess skills and social resources. A related aspect entails the focus on relationships within the asset-based approach as this is said to create a sense of shared responsibility, which may be important when implementing a project such as a school-based vegetable garden (Ebersöhn & Eloff, 2006). By integrating these main assumptions of the asset-based approach with three of the five domains (or five "P's") of the Invitational Leadership theory, I was guided by aspects that focus on collaboration and the development of communities through the implementation of programmes and processes that may create a stimulating and enriching school environment. Furthermore, I was able to focus on relationships that may potentially be built and encouraged in order to maintain and continue future development (i.e. the people domain). I elaborate on my conceptual framework in Chapter 3.

1.7 PARADIGMATIC PERSPECTIVES

In this section, I introduce the paradigmatic perspectives I utilised in undertaking my study. More detailed discussions follow in Chapter 3.

1.7.1 Epistemology

In undertaking my research, I adopted an interpretivist stance. According to Mack (2010, p. 8), "the ontological assumptions of interpretivism are that social reality is seen by multiple people and these multiple people interpret events differently leaving multiple perspectives of an incident". As I explored the experiences and perspectives of teachers, the interpretivist paradigm enabled me to gain insight into the social context of the school environment and of school-based vegetable gardens in resource-constrained settings, more specifically in terms of teachers' perceptions of the role of the school principal.

An advantage of utilising the interpretivist paradigm within an educational setting as mentioned by Taylor and Medina (2013), is that it allows for in-depth reflection not only by the researcher but also by the participants. Scotland (2012) states that interaction between the researcher and participants may be encouraged when discovering new, and what may be considered as "hidden", social forces and structures while gaining insight into a cultural phenomenon. On the other hand, my choice of the interpretivist paradigm also implied potential limitations, for example that the findings are not generalisable to broader contexts (Mack, 2010). However, I focused on gaining insight into the perceptions of a specific group of teachers in a specific school context within South Africa; I did not aim to obtain generalisable findings, even though the findings may potentially be transferable.

1.7.2 Methodological approach

I followed a qualitative approach in undertaking this study. According to Yin (2016), the purpose of qualitative research is to understand the meaning people attach to their lives within real-world settings in order to be able to represent their views and perspectives. This approach implies an exploration of the context in which people live, generating and adding to existing or emerging theory that may explain the way in which human beings behave, and using multiple resources rather than relying on a single data source (Yin, 2016). Due to my focus on the perspectives of teachers within specific school contexts, I regard a qualitative approach as suitable for the current study. Following a qualitative approach allowed me to gain an understanding of the school communities that participated, and of the experiences and perspectives of the teacher

participants on the role of the school principal in the success of a school-based vegetable garden.

According to Griffin (2004), some of the advantages of qualitative research relate to a degree of flexibility when conducting a qualitative study, the possibility of the researcher investigating sensitive topics once a trusting relationship has been established with participants, and the option of making connections between the different spheres of participants' lives. However, a potential limitation of qualitative research relates to such studies being time-consuming (Griffin, 2004). To this end, I scheduled and planned sufficient time for data generation and analysis. I also thoroughly prepared myself prior to undertaking the study, reading up on qualitative research and analysis in order to feel competent when conducting the field work and to eliminate unnecessary time-consuming practices that could potentially occur.

1.8 RESEARCH METHODOLOGY

In this section I introduce the methodological process of my study. A more detailed discussion of the key choices is included in Chapter 3.

1.8.1 Research design

I utilised a case study design for this study (Stake, 2010). According to Maree (2012), the purpose of case study research is to gain an in-depth understanding of a specific case of choice within a natural context. As I included nine schools, I relied on a multiple case study design which entails a focus on more than one case (Yin, 2009). A multiple case study design is common when conducting research in school settings, where each school then presents an individual case (Yin, 2014).

I furthermore applied Participatory Reflection and Action (PRA) principles in undertaking my research. Cornwall and Jewkes (1995) view PRA as a potential way of guiding local people to produce and analyse their own situations, based on the things that are important to them. One advantage of including PRA principles in my study is that it allowed the participants to take on an active part in the research process, not just being subjected to it, but fulfilling an active role and taking ownership of the discussions and research activities (McDonald, 2012). On the other hand, a potential limitation of case study research applying PRA principles relates to potential power issues and differentiation amongst participants. This may create misunderstandings, and potentially cause conflict when making meaning of the generated data (McDonald, 2012). I guarded against this potential pitfall by selecting the participants with care and by remaining vigilant of the participants at all times in order to observe any conflict that may have occurred as

a result of power relations. I also identified influential people during the data generation activities who could potentially use power to relay their own perceptions and the perceptions of others, and guarded against this happening by walking around and being part of the discussions, guiding them when necessary. As the participants were familiar with the research team and the PRA process that had been implemented in the past, I did not experience any instances of power-related challenges.

1.8.2 Selection of cases and participants

I relied on convenience sampling to select nine cases (schools) in the Nelson Mandela Metropole which have been participating in the STAR, SHEBA and FIRST-GATE projects over recent years. Etikan, Musa and Alkassim (2016, p. 2) refer to convenience sampling as a type of non-probability sampling "where members of the target population that meet certain practical criteria, such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the purpose of the study". In relying on convenience sampling, I was able to benefit from this strategy being affordable, easy to apply and it allowed me to include cases that were available and easily accessible. This may be characterised as a strong working relationship with the research team (Etikan et al., 2016).

In selecting the teacher participants, I utilised purposive sampling. According to Maxwell (2013, p. 97), purposive sampling is a strategy where "particular settings, persons, or activities are selected deliberately to provide information that is particularly relevant to your questions or goals…". All teachers who have participated in the said projects at the selected schools (cases) over the years were invited to participate. As a result, 36 primary school teachers participated in my study.

The selection criteria that I applied relate to the participants being teachers at the nine selected schools, being able to communicate in English, and being willing to provide informed consent. It was also expected of teacher to have experienced the role of a school principal in the implementation of a school-based vegetable garden. Potential limitations of purposeful sampling include that, by involving a selected group of participants, other groups or individuals who could potentially provide a researcher with information on the phenomenon under study may be left out (Cook, 2016). In addition, the potential lack of generalisability may be considered. However, as purposive sampling within a qualitative study implies an in-depth investigation of a specific population (Higginbottom, 2004), rather than obtaining generalisable findings, I do not view this as a limitation of my study. The teachers who participated were furthermore in the best possible position to enable me to address my research questions.

1.8.3 Data generation and documentation

I utilised a PRA-based workshop, five individual interviews, observation, field notes, a research journal, and audio-visual techniques in the form of digital audio-recordings, transcripts, photographs and posters for data generation and documentation purposes. All noted data generation and documentation processes will be further explained in Chapter 3. PRA-based data generation methods, generally completed in small groups, are often visual and concrete by nature (Chambers, 2015). These can include activities such as visualisation, verbalisation and documentation, sequencing, optimal ignorance, and triangulation (Cavestro, 2003). In the current study, PRA-based workshop activities required of the teacher participants to compile posters in small groups of four to five people each, and then present their ideas and experiences to the rest of the group.

In addition to PRA-based activities, I relied on individual interviews which according to Tracy (2013), entails a structured and purposeful question and answer conversation based on a mutual topic of interest. During data generation activities I also utilised observation, with my role being that of participant-as-observer, as referred to by Angriosino (2013). This type of observation required me to be integrated and in interaction with the participants (Angrosino, 2013). Lin (2016) states that such observation may enable a researcher to experience a study from the inside out, and gain insight into events in such a way that the researcher can understand the context and meaningful factors. As a result, data analysis will not remain on the surface level but will be completed with deep insight (Lin, 2016).

During observation and throughout the research process, I made field notes in order to document my "private, personal thoughts, ideas and queries regarding [my] research observations and interviews" (Phillippi & Lauderdale, 2018, p. 381). I also kept a research journal of my experiences, making autobiographical notations about my experiences and feelings throughout the research process (Tracy, 2013). In terms of potential limitations of these strategies, Silverman (2017) mentions that field notes can result in a researcher becoming stuck with the original form in which notes had been made, not allowing others full insight into recorded events. For this purpose, I kept copies of my notes and where I found these not to be suitable for reading, I added additional versions that may be more easily understood by other researchers and readers.

I furthermore compiled verbatim transcriptions of all PRA-based discussions and individual interviews for the sake of data analysis (Olsen, 2012). An advantage of using audio-recordings is that these can be replayed if needed, and that verbal accounts can be captured in the written

form of transcriptions (Silverman, 2017). Finally, I included visual data in the form of photographs and PRA posters (matrices) that the participants compiled. I remained aware of the importance of noting the information attached to photographs, such as an incident that was captured, who was included in a photograph and when the photograph had been taken. As a result, it was important for me to label all visual data in order to be able to refer back to it when doing data analysis (Silverman, 2017).

1.8.4 Data analysis and interpretation

I conducted inductive thematic data analysis. According to Guest, MacQueen and Namey (2012), thematic analysis aims to identify and describe both obvious and unspoken themes implied by the data of a study. I followed Braun and Clarke's (2013) thematic analysis model. As such, I implemented the steps of familiarisation with the data, coding, searching for themes, reviewing the themes, defining and naming themes, and writing up the results (Braun & Clarke, 2013). In terms of the final steps of writing up, Stake (2012) emphasises the importance of reaching new, cohesive understandings by taking into consideration all experienced ideas of the participants.

Javadi and Zarea (2016) highlight some advantages of thematic analysis by referring to high levels of flexibility and tangibility, and the fact that thematic analysis implies a method which is fairly easy to implement. Nowell, Norris, White and Moules (2017) state that, as thematic analysis is flexible, it can be adapted to the needs of studies in order to provide rich, detailed, and complex accounts of the data. Even though flexibility can be regarded as an advantage as it provides for a wide range of analytical options, flexibility also implies a potential limitation due to the difficulty of developing analysis guidelines. This may pose a challenge to a researcher who has to distinguish between important and less important aspects in the data (Braun & Clarke, 2006). As I was not experienced in conducting thematic analysis at the start of my study, I continuously relied on the assistance of my supervisor and the support of my co-researchers in the project[3] in an attempt to ensure trustworthy findings.

1.9 ETHICAL CONSIDERATIONS

I obtained ethical clearance from the Faculty of Education's Ethics Committee before commencing with any data generation activities. Permission to do research was obtained from the nine schools and the Department of Basic Education as part of the broader projects prior to

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[3] Core project team consisting of Professors Ronél Ferreira and Liesel Ebersöhn as well as my fellow Masters student in Educational Psychology (Ms Tegan van der Westhuizen) who co-conducted her data generation sessions with me, focusing on teachers' experiences of involving various role-players in school-based vegetable gardens.

me becoming a part of the project. I also obtained written informed consent from the participants after explaining both verbally and in writing the purpose of my study, its scope, the activities they would take part in, the use of the results, and the way in which I would respect anonymity and confidentiality (Richards & Schwartz, 2002). As part of obtaining informed consent, I explained participants' autonomy, implying their right to withdraw from the study at any time (Hammersley & Traianou, 2012).

Throughout my study, I attended to confidentiality and anonymity by not revealing the participants' identities or any information related to them in my field notes, the transcriptions or when reporting the results in Chapter 4 of this mini-dissertation (Flick, 2007). I avoided deceiving the participants in any way in terms of the details of the research process. To this end, I remained transparent and regularly communicated with the participants in an open honest way. I furthermore focused on sound relationships of trust from the start of the research process (Hammersley & Traianou, 2012).

Finally, I attended to beneficence and aimed to ensure the well-being of the participants during all research activities (Flick, 2007). Accordingly, I discussed the benefits of being involved with the participants at the start of my study (Halai, 2006). I did not foresee any risks or harm to participants, yet remained aware that no harm was done at any stage. I elaborate on the way in which I respected and followed ethical guidelines in Chapter 3.

1.10 RIGOUR OF THE STUDY

The criteria I aimed for to ensure quality in my study are credibility, transferability, dependability, confirmability and authenticity. I respected these criteria in an attempt to ensure that my study will provide quality findings and documented evidence which may be utilised in future research in this area of interest.

Credibility refers to the truth of research findings (Connelly, 2016). I attempted to obtain credible findings through the use of field notes, triangulation of the generated data and member checking (Anney, 2014). Transferability, which refers to the ability to replicate the process of a study within a similar context, required that I include rich detailed notes and documentation of the research process. For this purpose, I include an audit trail in this mini-dissertation (Connelly, 2016). Next, I attempted to achieve dependability or the "stability of the data over time and over the conditions of the study" (Connelly, 2016, p. 435), as well as confirmability which refers to the degree to which other researchers can authenticate the study (Anney, 2014). I aimed for dependability and confirmability by working closely with my supervisor and co-researchers in the project, as well as by creating an audit trail where details of the decisions and actions of the research process

are documented (Anney, 2014). Closely aligned to confirmability, authenticity implies the ability to portray a reflection of the meaning and experiences that participants of a study live and perceive (Whittemore, Chase, & Mandle, 2001). I attempted to adhere to the criterion of authenticity by ensuring that the documentation I obtained was accurate and presented the voices of the participants in their true reality. For this purpose, I relied on member checking. Chapter 3 includes a more detailed discussion on the ways in which I aimed to ensure rigour.

1.11 CHAPTER OUTLINE

In this section I provide an overview of the outline of the mini-dissertation.

Chapter 1: Introduction and General Orientation

In Chapter 1, I provide a broad overview of the study I conducted. I present my rationale for undertaking this study and state my purpose. I formulate research questions, and state my working assumptions. I introduce the paradigmatic choices that directed my study and then broadly introduce the procedures I utilised to complete the study. I conclude by touching on ethical considerations and the rigour of the study.

Chapter 2: Literature Review

In Chapter 2 I discuss existing literature related to the focus of my study. I explore effective and ineffective leadership, more specifically in a school setting, and then contemplate the role of the school principal in school-based projects. I also discuss school-based vegetable gardens as a possible way of supporting resource-constrained communities and contemplate how such initiatives can be sustained. I complete the chapter by explaining my conceptual framework.

Chapter 3: Research Methodology

In Chapter 3, I describe the research paradigm and approach I selected, and explain my research design. I also describe in detail the process I completed for this study in terms of the data generation, documentation and analysis procedures I utilised. I discuss the ethical guidelines I followed and the ways in which I aimed to achieve rigour, in support of a trustworthy study and findings.

Chapter 4: Results and Findings of the Study

Chapter 4 focuses on the results and findings of the study. Following inductive thematic data analysis, I present the themes and sub-themes I identified. Next, I situate these results against existing theory, thereby discussing the findings I obtained.

Chapter 5: Conclusions and Recommendations

In the last chapter of the mini-dissertation, I come to conclusions by addressing the research questions I formulated in Chapter 1. I discuss the potential contributions of my study and reflect on the challenges I faced when conducting the study. I conclude with recommendations for training, practice and further research.

1.12 CONCLUSION

In this chapter, I introduced my study by providing a brief outline and overview of the purpose of the study, my rationale for undertaking this research and the choices that guided me in undertaking my research. I formulated research questions, defined the key concepts, and then introduced my conceptual framework, paradigmatic choices, research design and methodology. I also referred to ethical considerations and quality criteria.

In the next chapter, I discuss existing literature in the field of effective leadership as it applies to school principals. I also explain the conceptual framework that guided my research.

CHAPTER 2 – LITERATURE REVIEW

2.1   INTRODUCTION

In the previous chapter, I provided an overview of my study. I described the rationale, provided some background and stated the purpose. I formulated research questions, stated my working assumptions and clarified key concepts. I also introduced the conceptual framework, my epistemological stance and methodological approach, as well as the research process and methodological strategies I utilised.

In this chapter I discuss existing literature on the potential role of school principals in sustaining school-based vegetable gardens. I describe effective school leadership, as well as the profile and roles of school principals in the South African context. I conclude the chapter by explaining the conceptual framework of my study in more detail.

2.2   EFFECTIVE LEADERSHIP WITHIN A SCHOOL SETTING

Leadership can be defined as "the art or process of influencing people so that they will strive willingly and enthusiastically toward the achievement of group goals" (Curtis & O' Connell, 2011, p. 32). In order to understand the role that a principal may play within the school environment, it is important to consider what effective leadership entails and how a principal may implement leadership principles within the school context.

2.2.1   Key dimensions of effective school leadership

Ngcobo and Tikly (2010) conducted research in the field of effective school leadership in rural and township schools in South Africa. These authors (Ngcobo & Tikly, 2010, p. 204) posit that, "effective leadership is often associated with the school effectiveness tradition. Within this tradition, 'effectiveness' has often been defined in relation to a quantifiable measure of outcomes such as exam results". According to Ngcobo and Tikly (2010), the first dimension of effective leadership relates to formal structure *versus* distributed leadership. Distributed leadership occurs when leadership roles and responsibilities are given to, for example, deputy heads, heads of departments, teachers, students and sometimes members of the community. Reasons for distributed leadership include the power of praise, involving others in decision-

making processes and allowing other staff members to hold professional autonomy (Harris, 2002; Williams, 2011).

Southworth (2009) discusses three characteristics of distributed leadership when following a learning-centred approach. Firstly, distributed leadership encourages people to move away from the idea of leadership involving just one individual, to the view of leadership being collective in nature. Secondly, distributed leadership entails the creation of many learning-centred leadership opportunities where as many leaders as possible participate with the aim of making a positive impact. Lastly, distributed leadership implies certain challenges such as encouraging senior leaders to let go of their traditional role and focus on becoming developers who assist others in becoming leaders, and on coaching people on how to be the best leaders they can (Southworth, 2009). Distributed leadership furthermore encourages strong organisational commitment which may be important when implementing school-based programmes such as vegetable gardens (Chen, Cheng, & Sato, 2017).

The next key dimension identified by Ngcobo and Tikly (2010) relates to democratic *versus* top-down decision making. Many school principals follow a democratic leadership style where role-players and stakeholders have a say in the decision-making process. In this regard, Mullen and Jones (2008) state that for school improvement to occur, principals must not only focus on learners' achievements, but also on developing teachers to acknowledge differences and diversity within the school. Teachers' voices must also be heard, they must be held accountable for decision and policy making, encourage equality and diversity, and value the building of a sustainable community. A democratic leadership style by a principal can create an inviting environment where other staff members are encouraged to be heard and will subsequently feel that what they say is important, and that their ideas can contribute to success. Barr and Saltmarsh (2014) conducted research in this field on the role of the school principal in fostering parent-school engagement, finding that leadership will be most effective in schools where principals demonstrate leadership through knowledge, interest and involvement, in an inclusive and democratic way.

Another key dimension of effective school leadership entails the practical dimension whereby principals and leaders in schools are considered responsible for prioritising certain functions in schools. In this regard, Ngcobo and Tikly (2010, p. 215) state that

"having a shared vision was central to the school's success in mobilising people around the change process". As such, principals are responsible to create a sense of direction in schools through a vision and mission, and then model the related values.

Harris (2002, p. 18) emphasises the importance of principals displaying integrity by "walking the talk" and being consistent in their actions. She emphasises the value of principals displaying their belief and optimism in others, acknowledging that they have potential to grow and develop; and displaying respect for others in the way they encourage and empower one another (Harris, 2002). These trends in educational leadership do not only focus on the internal aspect of good leaders, but also on their ability to change and adapt according to the culture and environment they find themselves in. Any principal thus needs to ensure management in such a way that a solid, strategic direction is created in support of a school vision and values, and that the direction is properly communicated to those involved (Horner, 2003). By sharing a sense of purpose, the members of a school may be motivated to take part in school-based interventions (such as vegetable gardens), having a shared vision and being willing to put in the required effort to create change.

Next, effective school leadership implies the promotion and support of community engagement, which holds the potential of sourcing finance, security and discipline within schools (Ngcobo & Tikly, 2010). In addition, a community can be utilised to help empower the leaders in their midst and in this way create growth in a school. According to Moos (2011), school principals need to remain aware of the environment and context in which their schools function, thereby realising that there is more than just the school itself which is influenced and impacted by growth and development. Research by Ylimaki, Gurr and Drysdale (2011) in a school in a high-poverty neighbourhood in America identified aspects that could help improve a school. Of these, the ability of a school principal to cultivate and sustain strong parent and community involvement in school initiatives seems important to consider in the current study. Once parents and community members perceive themselves in more of a leadership role, communication can become more open about what parents and the community may learn, what children can learn and what the needs of the community are (Ylimaki et al., 2011).

In considering the key dimensions of effective school leadership, as identified by Ngcobo and Tikly (2010), and against the focus of the current study, it seems too be important for principals to apply themselves holistically in the school environment, focusing on the functional role they play. Therefore, principals need to ensure that they create opportunities for other staff members and include others in important processes. This is especially important when implementing a vegetable garden where a principal needs to show support in creating a shared vision for the school as a whole, but also trusting others to help manage the success and maintenance of the garden.

2.2.2 Profile of a school principal in South Africa

In South Africa, the requirements to apply for school principalship include a minimum of seven years teaching experience; and leadership, management and administrative skills based on the needs of the specific school where such an appointment is sought (Wiehahn & du Plessis, 2018). According to the Department of Basic Education's policy for standard South African principalship (Department of Basic Education, 2015), a number of aspects need to be considered before an individual can be appointed as a school principal. These include demonstrated ability to understand the core purpose of a principalship, subscribing to educational ethics and social values, knowledge and skills in the key areas of principalship, and lastly, having the necessary personal and professional qualities to be an effective principal. To this end, the DBE (2015, p. 22) states that "the principal as a proficient communicator, corresponds with a wide variety of individuals and groups who make up the school community. Furthermore, the principal should be capable of making quick and accurate judgements, enabling prompt handling of challenges and problems as they arise".

Ngcobo and Tikly (2010) also indicate some personal qualities required to be an effective principal. These qualities include integrity, respect by the wider community, commitment to learners, and concern for community welfare. Furthermore, a school principal need to be financially trustworthy, maintain valued relationships with staff members, be encouraging, compassionate and understanding, as well as fair in dealing with challenging situations. In addition, school principals should be effective communicators, role models, and good listeners. These characteristics align with the qualities stipulated by the DBE (2015), indicating integrity, fair-mindedness, patience, empathy, compassion, adaptability, humility and self-confidence as important.

2.3 ROLE OF SCHOOL PRINCIPALS IN SOUTH AFRICAN RESOURCE-CONSTRAINED COMMUNITIES

In this section, I describe some challenges often faced by schools in resource-constrained communities. I also discuss the role of school principals in such communities, more specifically in terms of supportive school-based interventions.

2.3.1 Challenges generally faced by schools in resource-constrained communities in South Africa

Learners who attend schools in resource-constrained communities in South Africa are typically challenged by a number of internal and external factors on a daily basis. These include hunger and undernourishment, poverty, crime and substance abuse, illness and single-parent households, to mention a few. Such challenges will have an effect on how a learner learns, and whether or not a learner attends school regularly (Vester, 2018). In this regard, Kamper (2008, p. 2) states that "the learners are often hungry and ill; do not have proper clothing, lack study facilities, parental support, study motivation, self-esteem and language proficiency, and move frequently from school to school". It follows that teachers (and school principals) face the challenge of supporting learners who experience adversity on various levels.

Additional challenges that teachers may face relate to beginner teachers lacking professional knowledge or being under-qualified; teachers having low self-esteem and motivation, low expectations of, and often a lack of respect for learners; and having to work in classrooms that are neglected and lack resources (Kamper, 2008). As a result, teachers may experience tension due to work pressure and/or an overload of work because of large numbers of learners and insufficient numbers of teachers. Lack of role clarity and role conflict are other challenges that teachers may face (Vazi et al., 2013; Du Plessis, 2015).

Challenges thus often faced by school principals, especially in schools where resources are limited, include scenarios such as school fees and textbooks not being paid or bought because learners lack the necessary finances; limited school equipment and physical facilities in schools; a lack of accommodation for staff; absence of playgrounds; learners having to travel long distances to school, and the use of English (often a second or third language) as the medium of instruction (Bush & Oduro, 2006). Closely related, Preston, Jakubiec and Kooymans (2013) state that

school principals commonly face issues specific to sociocultural and financial challenges related to the school community. As such, educational stakeholders need to show understanding of the circumstances in order to help principals promote effective leadership policies, practices and programmes.

In conclusion, schools in resource-constrained communities in South Africa are typically challenged on various levels, with certain implications for principals of such schools. These challenges include poor funding which will not only affect the commitment of teachers and learners, but also play a role in the maintenance of school facilities (Du Plessis, 2015). Parents in these areas are furthermore often under-educated and may not necessarily value the importance of regular school attendance. In areas where agriculture is the main source of income, parents may prioritise children helping on farms resulting in low school attendance (Mulkeen, 2005). In addition, social challenges related to poverty, unemployment, hunger and malnutrition, as well as crime and violence, imply a school environment posing distinct challenges to teachers and school leaders.

2.3.2   Roles of school principals in resource-constrained contexts

As early as 1996, principals in South Africa were expected to "facilitate administrative vision, demonstrate concern for students' learning processes, and to relate to faculty, staff and community in a cooperative environment" (Richardson, Lane, & Flanigan, 1996, p. 290). In essence, school principals are expected to balance the role of being in control of learners and administrative tasks, while creating an environment for staff members where they feel respected, as well as inviting the community to assist against the background of various challenges in the case of schools in resource-constrained settings. Broadly speculating, principals are thus expected to set the tone for a positive school climate. Legros and Ryan (2015, p. 15) state in this regard:

> *"The significance of the principal's role in the development or sustainability of school climate began in the 1980s. Much of the research on the principal's contribution has focused on leadership traits that contribute to a positive climate. Within that research, recurring themes of shared leadership, collaboration, relationship building, intentionality and improving practice have emerged. Studies have demonstrated the importance of collaboration amongst parents, students, teachers and administration in the learning community to resolve problems".*

In order to create a successful school environment and positive school climate, school principals are expected to fulfil several roles. One important role is mentioned by Balyer et al. (2015), who state that a collaborative environment can be created when school principals group teachers into teams that can ensure effective collaboration. In this regard, while encouraging collaboration, school principals should also believe in teachers' intrinsic ability to assist in leadership capacities; provide opportunities for encouragement and expect staff members to be included in decision-making processes; and empower them to take risks. In several schools involved in the STAR, SHEBA and FIRST-GATE projects, of which my study forms part, garden committees have been overseeing the implementation and maintenance of the school-based vegetable gardens.

This provides an example of how school principals can achieve success, as such committees comprise selected team members that can work together and share decision-making and other skills. Once a committee has been set up, it is important that the principal provide support to the individuals who form part of the group (Schumaker & Sommers, 2001). The process of choosing a committee to share in decision-making may be done "from the top" when the principal uses his/her authority to decide who will be suitable to fill such positions. On the other hand, the provision of support can follow a "from the bottom" approach as this implies a collaborative effort by several individuals, in order to ensure success (Ponomareva, 2015, p. 40).

Rossow and Warner (2000) identify three personal prerequisites for a principal to be considered as supportive. First, the role of modelling is emphasised, implying that a principal will be cautious of the behaviour and attitudes she/he displays, as learners and teachers often imitate what they see. Second, consensus building is important and can be achieved through the behaviour that a principal displays in order to enhance consensus amongst others. This can, for example, be done by bringing teachers together who can assist each other in different areas of their work. The last prerequisite is feedback, implying that a principal provides feedback in the expectation of building success (Rossow & Warner, 2000).

According to the DBE's (2015) policy document entailing guidelines for principalship in South Africa, school principals are required to fulfil eight core roles. They are namely expected to be leading, teaching and learning in the school context, shaping

the direction and development of schools, and managing the quality of teaching and learning while ensuring accountability. In addition, principals are responsible for developing and empowering the self and others, managing schools as organisations, working with and for the community, managing human resources (staff) in the school, and managing and advocating extramural activities. The above-mentioned guidelines combine personal and functional areas of performance, which are all important in creating growth and development in a school. It follows that the role of a school principal can be viewed as a complex role which, if not performed properly, can have a detrimental effect on the success of a school.

2.3.3 Role of school principals in supportive school-based interventions

School principals are key to the success or failure of school-based interventions and supportive initiatives. A school development programme that was implemented in several schools in a resource-constrained community in South Africa a few years ago serves as an example, which aimed to improve school development through engaging local community members. Many of the principals at the schools where the programme was implemented were found to have understood the role they had to fulfil, more specifically in actively communicating and inviting local communities to participate (Prew, 2009). Ngcobo and Tikly (2010) affirm this role of school principals, highlighting the importance of principals engaging and working with community members.

School or community support projects will seldom succeed without buy-in from a principal, being the leader of the school, who in many cases is also considered a leader within the community where the school is situated. As part of the seven-pillar model of Damons and Abrahams (discussed in the next section), these authors refer to school principals as "seed champions" (Damons & Abrahams, 2009, p. 123) who will fulfil a vital role in the implementation of any or school-based project. The principal, however, also needs to be able to replicate leadership in different areas by involving other champions or leaders to take charge of different tasks. Therefore, an effective school principal should oversee the implementation of tasks and activities yet also choose different sub-leaders who can take responsibility for some tasks. Such an approach implies distributed leadership, as previously discussed.

Damons and Abrahams (2009) believe that the development of leadership and supporting the pillar champions is vital to ensure programme success. Furthermore, they state that "personal belief in the success of the programme, commitment, personal sacrifice, hard work, and belief in the possibility of making a difference should motivate the leader" (Damons & Abrahams, 2009, p. 126). Each of these imply important values, but also important roles that principals need to accomplish. As an example, Ozer (2007) found in her study on school gardens in America that the success of sustainable gardens can be attributed to support for implementation received from principals, teachers and learners. In their research on the implementation of a vegetable garden in a socio-economically disadvantaged school in Australia, Somerset and Markwell (2008) similarly found that the school principal can play a significant role in relationship-building with the key teachers involved, and that this can in turn result in the successful development of a garden due to encouraging engagement of the community. The authors identified communication by the principal as an important factor in relationship building with both teachers and the community (Somerset & Markwell, 2008).

In a related study on health-based school initiatives in Brazil, the role of a school principal in being a leader and facilitator of similar programmes was found to also result in success. In addition, principals took the lead in formulating plans of action when faced with challenges, thereby resolving conflict and ensuring strategic orientation amongst role-players (Meresman, Pantoja, & da Silva, 2009). It seems clear that school principals are expected to fulfil a critical role in school-based support initiatives for these to succeed and be sustained. More specifically, a school principal can invite the local community to engage in initiatives by utilising active communication and working with community members. Furthermore, a school principal can create opportunities for others to take on leadership roles, while building effective relationships with members of staff and the community.

2.4 VEGETABLE GARDENS AS SUPPORTIVE SCHOOL-BASED INTERVENTIONS IN RESOURCE-CONSTRAINED COMMUNITIES

In this section I explore the potential value of school-based vegetable gardens in resource-constrained communities, and how these can be sustained.

2.4.1 Value of school-based vegetable gardens in resource-constrained communities

The Health Promotion Schools (HPS) policy was implemented in South Africa in 1994 in an attempt to address health difficulties faced by learners and teachers throughout the country. The focus of this policy falls on "school pupils and their communities, to identify and prevent risks to learners, including through empowering communities to act together with health, education and other social services" (WHO, 2013, p.2).

According to the Kwa-Zulu Natal Department of Health (2001), five key components are required for successful implementation of the HPS policy. These include having contact and networking with appropriate services and resources, and developing simple policies on health that can guide and direct activities. Furthermore, the components entail creating a safe and healthy environment where people can live, learn and work, as well as building the necessary skills of all members within the school community. Lastly, strengthening interactions between a school and the surrounding community is important. Each of these components can play a part in creating better school environments and in promoting health. One of the ways in which schools can promote health is through school-based vegetable gardens that can support both schools and communities, if the above-mentioned components are achieved (Department of Health, 2001).

Damons and Abrahams (2009) report on a school- and community-based intervention which was implemented in Port Elizabeth, South Africa in 2003. The aim was community development by implementing the HPS model and using schools as feeders to create and encourage development. The project included six pillars from the HPS model as well as an additional pillar added by Damons (Damons & Abrahams, 2009). The six pillars from the HPS model can be considered as "entry points" into the community. These were namely, establishing a useful garden in the environment; improving nutritional status and learner performance, addressing violence and conflict resolution, implementing teenage life-skills and HIV and AIDS plans, developing safe and healthy school premises, and maintaining good standards of sanitation and clean water (Department of Health, 2001). The seventh pillar, added by Damons, was quality education.

Using these seven pillars in their study allowed the authors to implement a number of successful developments within schools, including the successful establishment of school-based vegetable gardens that could supply meals to families in the community. In the project, the aim and focus of the broader WHO campaign to promote health in schools through collaboration with important stakeholders and communities could also be achieved.

The Food and Agriculture Organisation of the United Nations (FAO) identifies a number of benefits of school-based vegetable gardens. Firstly, gardens can provide food solutions by encouraging healthier eating in a cheaper and more accessible way. Secondly, school-based vegetable gardens can be a source or example for home gardens, as people may be inspired by gardens at school and as a result implement the same initiative and healthy eating practices at home. Thirdly, vegetable gardens can supply food for children at school, encouraging healthy eating patterns that may support physical development, and provide an avenue to educate learners. Lastly, the environment that a school garden creates can improve learners' attitudes towards a healthier natural environment. In addition, a garden can provide an opportunity for learners to learn, by acquiring knowledge and skills (FAO, 2010). In affirmation of these values, Laurie, Faber and Maduna's (2017) research indicates that school-based vegetable gardens can assist teachers to teach learners how to live a healthy lifestyle; while also gaining gardening skills.

In South Africa, a national school feeding programme was introduced by the Department of Basic Education in 1994 with the purpose of encouraging healthy eating and assisting learners in gaining skills and reducing absenteeism (Rendall-Mkosi, Wenhold, & Sibanda, 2013). This programme entails daily meals to learners in schools, educating them about healthy living and establishing and maintaining food gardens within schools. The Department of Basic Education considers school principals, as well as what they refer to as a nutrition coordinator (a person chosen by the principal to assist in managing the nutrition programme), as the main role-players to oversee the implementation of the nutrition programme (Mawela & van den Berg, 2018). The principal is expected to fulfil a number of roles in order to ensure that the nutrition programme is implemented, such as the buying of food, managing of

finances, writing of reports and monitoring of food handlers (Rendell-Mkosi et al., 2013).

Another role that a principal is expected to practice is modelling the importance of good nutrition and showing learners how to make healthy lifestyle choices through utilising, for example, a school-based vegetable garden (Qila & Tylio, 2014). The school principal may guide others in the implementation of school-based initiatives by creating a School-Based Support Team who is willing to and knowledgeable on promoting healthy lifestyle behaviours to the learners and surrounding community (Department of Basic Education, 2012). In support of this idea, Jowell (2011) states that school-based vegetable gardens in South Africa can act as a buffer against certain crises, and can provide diversified, nutritious food within the school, especially in contexts where nutritional diversity is hard to achieve.

2.4.2 Factors contributing to the sustainability of school-based vegetable gardens

Sustainability can be defined as "the ability to continue and keep a program going beyond initial, external funding and to have it become an ongoing part of an agency's program and services" (Whitman & Aldinger, 2009, p. 20). Various factors can contribute to the sustainability of school-based vegetable gardens. According to school principals from California, USA, where school gardens have been implemented to improve healthy food consumption practices, factors such as funding, staff support, administrative support, time, parent volunteers and a garden coordinator may contribute to the sustainability of school-based vegetable gardens (Graham et al., 2005).

In his research, Prew (2009) found that community engagement in school improvement is often directed by the community itself and that a community will respond more positively if a school is functional. This is important to take note of as many school principals may share the belief that the community needs to assist a school to be successful. However, if such a view is changed to one of schools assisting the wider community, more buy-in may be achieved, with higher levels of community involvement. This in turn may positively impact the sustainability of school-based initiatives such as vegetable gardens.

As discussed previously, distributed leadership is considered as important (Ngcobo & Tikly, 2010) and can support the sustainability of school-based vegetable gardens, as leadership dispersed amongst the members of a school may ensure a repertoire of knowledge and skills that can be utilised to the best potential, thus ensuring that a vegetable garden is managed well. In addition to teachers, leadership roles can also be shared with community members, who may once again possess the necessary attributes to support the sustainability of school-based vegetable garden projects.

2.5 CONCEPTUAL FRAMEWORK OF THE STUDY

In this section I discuss the conceptual framework that guided my study. I relied on the Invitational Education theory (Haigh, 2011), and the Asset-based approach (Ebersöhn & Eloff, 2006) to compile the framework.

2.5.1 Invitational Education theory

Invitational Education theory (Haigh, 2011) is a branch of Invitational Leadership theory and focuses on effective leadership by members of a school, such as the principal, staff members, learners and school governing body members. The main aim of this theory is focused on the "constructive alignment of the messages transmitted by, and contained within, any given learning environment" (Haigh, 2011, pp. 299-300). Invitational Education theory emphasises the outcome of change through the use of collaboration rather than power, by including those involved in the education process (Egley, 2003). Four elements of an invitational leader apply; namely optimism, respect, trust and intentionality (Kamper, 2008), as summarised in Figure 2.1.

Elements	Domains	Levels	Dimensions
Trust	People	the Plus Factor	Self personally
Respect	Places	Level IV: Intentionally inviting	Others personally
Optimism	Policies	Level III: Unintentionally inviting	Self professionally
Intentionality	Programs	Level II: Unintentionally disinviting	Others professionally
	Processes	Level I: Intentionally disinviting	

| Foundations: | | Perceptual tradition | |
| | | Self -concept theory | |

Figure 2.1: Invitational Education theory (Purkey, 1991)

According to Invitational Education theory, *optimism* acknowledges all people as having potential in the areas of human development and therefore able to learn and grow from their mistakes. *Respect* is considered as the most important aspect in this theory, according to which people are taken as valuable and capable. Leaders who are able to show respect can assist role-players to succeed with tasks within the school. *Trust* implies confidence in others and acknowledging other people's integrity and abilities. When leaders trust their colleagues, the latter will be able to commit to ongoing development and growth within themselves and the school they contribute to. Lastly, *intentionality* means that the human potential of people can be realised by intentionally inviting people to grow and evolve through programmes and policies that may enable them to do so. As such, school principals can invite members within the school to participate and, in the process, create an encouraging environment for both learners and staff members by applying these elements of invitational leadership.

Effective and positive leadership skills are vital for schools to be successful, regardless of circumstances such as being situated in resource-constrained contexts. When having to implement school-based interventions such as vegetable gardens, invitational leadership may support success. Within the school context, an effective principal supported by other managers may thus lead such initiatives to success (Bush, 2007). In terms of the application of Invitational Education theory, five domains are considered as optimal for success – the so-called 5 P's, as referred to by Purkey and Novak (Zeeman, 2006).

The first domain is *people*, implying the importance of inviting people into the areas of change and development through interactions and respect for one another, thereby building a community. In this regard, Haigh (2011, p. 301) mentions that "instructors and learners work together as a family, with courtesy and respect, to build long-term relationships and to manage stress and conflict". Therefore, having people as part of a process (such as a school-based initiative being implemented) implies collaboration between those involved in the development process. The second domain is *places*. According to Novak (2009, p. 57) "…school takes place in a specific space. How we fill and un-fill those spaces send powerful and continual messages". As such, the first place to start is seen to be within the school through creating an inviting environment.

To this end, Purkey (1991) posits that the physical environment of the school implies the opportunity for creating immediate change.

Thirdly, the domain of *policies* refers to the rules and regulations that will lead a school in a specific direction. In this regard, a mission statement reflecting the school's values and aim in terms of practice is important. Haigh (2011) states that policies and policy-making within a school indicate that people's needs are being respected, and that an environment is created that is mutually supportive and can result in a learning community ethos. Next, in terms of the *programme's* domain, Novak (2009, p. 57) states that "programmes take insiders outside the school and bring outsiders inside the school sending the message that the school is a vibrant and connected institution".

Lastly, the domain of *processes* refers to the processes that may be utilised when decisions are made that will affect the school and school members. Therefore, leaders are expected to invite others who form part of decision-making processes to work together collaboratively. Once the other "p's" have been established, the process will become the focus of how things are done. Stanely, Juhnke and Purkey (2004) posit that the processes within a school can be characterised by an independent philosophy, procedures that will ensure collaboration and cooperation, and networking between learners, staff members, parents and the community on a continuous basis. All these domains can play an important role in creating an environment where effective leadership can be nurtured and encouraged. In a resource-constrained context, these domains are accessible and can be developed by schools in collaboration with the community. Each of these domains will furthermore play an important role in the success and sustainability of a school-based intervention, such as a vegetable garden.

According to the Invitational Leadership model (Shaw, Siegel, & Schoenlein, 2013) different levels of functioning can be associated with the 5 P's. The level of functioning that is viewed as most beneficial to successful principalship entails the level of being "intentionally inviting". Being intentionally inviting implies that a principal will demonstrate skills such as resolving conflict, being resourceful and practicing resilience (Novak, 2009). Purkey and Novak (1992, p. 10) state that "ideally, the factors of people, places, policies, programs, and processes should be so intentionally inviting as to create a world where each individual is cordially summoned to develop physically, intellectually, and emotionally". At this level, principals are encouraged to

fulfil the dimension of being professionally inviting to oneself and to others, which is important in facilitating development, both in the school environment and amongst teachers. Being an effective invitational leader who is able to work at this level furthermore means that a principal will be committed to not only grow the school, but also the people involved (Niemann, Swanepoel, & Marais, 2010).

2.5.2 Asset-based approach

One way to school development is through the application of the asset-based approach when undertaking projects. Eloff (2003) describes this approach one that moves away from focusing on weaknesses to focusing on assets and capacities that can be used to address needs and weaknesses. The asset-based approach values and encourages skills, knowledge, connections and potential, both in individuals and in communities; and aims at nurturing such strengths and resources identified in individuals and communities (Glasgow Centre for Population Health, 2012). Ebersöhn and Eloff (2006, p. 462) define the functional use of the asset-based approach as follows: "This internal focus is to stress the primacy of local definition, empowerment, creativity and hope — linking it with embedded knowledge systems".

Key features of the asset-based approach include the view that assets are a collective resource at the disposal of individuals and communities. Furthermore, the approach fosters capacity, connectedness and social capital in individuals and communities, and aims to promote protective factors to support health and well-being (Glasgow Centre for Population Health, 2012). At the centre of an asset map lies individual assets, sometimes called human capital, as this refers to the skills and resources that an individual possesses (Grinstein-Weiss, Curley & Charles, 2007). These skills can include any potential that a person holds such as knowledge, experience, networks and personal traits. Therefore, when wanting to create change in a community, it is important to start from the inside out and look at the assets of the people. In this regard, Eloff (2003) believes that, when the mobilisation of individual assets occurs, a ripple effect can be created, influencing other individuals as well as other systems.

Garoutte (2018) states that it is important when canvassing for assets to remember that people themselves are resources who have different types of relationships, connections, skills and interests. A school principal is considered as an asset based on the role of a principal within a school and community. It has been mentioned that

school principals are specifically valuable in building networks and strengthening relationships both in and out of the school context, especially when implementing a school initiative such as a vegetable garden. In such a case, a school principal can, for example, seek the individual assets of those who work in and around the school to establish a garden committee that is functional, knowledgeable and possess the necessary skills to ensure success. In addition, a collaborative effort by those invited to partake in the development and maintenance of a school-based vegetable garden is important, requiring the principal to acknowledge all individuals involved, from learners, to teachers and members of the community. In this way, collaboration can be used as a driving force to ensure success of the school-based vegetable garden.

Eloff (2003) emphasises the facet of *leadership and management* as an important asset in the school environment which can result in additional assets through "the development of leadership capacities in teachers, children, parents, and other stakeholders, and the development of a democratic leadership style that is facilitative and inclusive" (Eloff, 2003, p. 36). Ebersöhn and Mbetse (2003) similarly state that one of the advantages of the asset-based approach is individual capacity building, which can be accomplished when school principals create opportunities for other staff members and learners, or parents and stakeholders to take on leadership capacities. In addition to this idea of capacity building, Eloff (2003) refers to another facet called *human resources*, which entails the individual assets that people possess. In this regard, opportunities need to be created to ensure individual self-development, the strengthening of relationships within a school, and opportunities for teamwork.

Technical assets can be described as the resources that a school can provide such as a building and learning environment (Eloff, 2003). Specific to my study, these technical assets can be related to the space a school provides to implement and sustain a school-based vegetable garden. To this end, a school principal can ensure that such technical assets are suitable to the needs of a school, and that the necessary resources are provided to promote sustainability. Edward Barnett (2013, p. 498) states that "the participation of stakeholders in education can increase the relevance and quality of education, improve ownership, help to reach disadvantaged groups, mobilise additional resources and build institutional capacity". To ensure a successful school-based vegetable garden, a school principal, as mentioned, is therefore required to network, gain sponsors and obtain funds to mobilise resources that a school does not

have. Eloff (2003) identifies citizens' associations and local institutions as examples, referring to local businesses, NGOs and local farms, to mention a few.

Assets can furthermore be found in the *structures and procedures* of a school which relates to the authority, rules and regulations that guide decision-making. As mentioned, effective leadership by a school principal is essential in ensuring the success of school-based initiatives. Therefore, the way in which a principal practices effective leadership can be regarded as an asset, more specifically through a garden committee in the case of a school-based vegetable garden where decisions are made and ideas, policies and rules are regulated to ensure success.

2.5.3 Integration of Invitational Education theory and the Asset-based approach

Both Invitational Education theory and the Asset-based approach focus on the potential of people and the community in order to encourage development. By integrating three of the 5 P's of Invitational Education theory, specifically programmes, processes and people (Purkey, 1991), with the systems defined by Eloff (2003) in the Asset-based approach, I compiled a conceptual framework that guided me in undertaking my study. I also applied the idea of intentionally inviting others to fulfil what the asset-based approach encourages, where people's potential can be supported by the facets of school assets as described in the previous section. Figure 2.2 captures the conceptual framework I compiled.
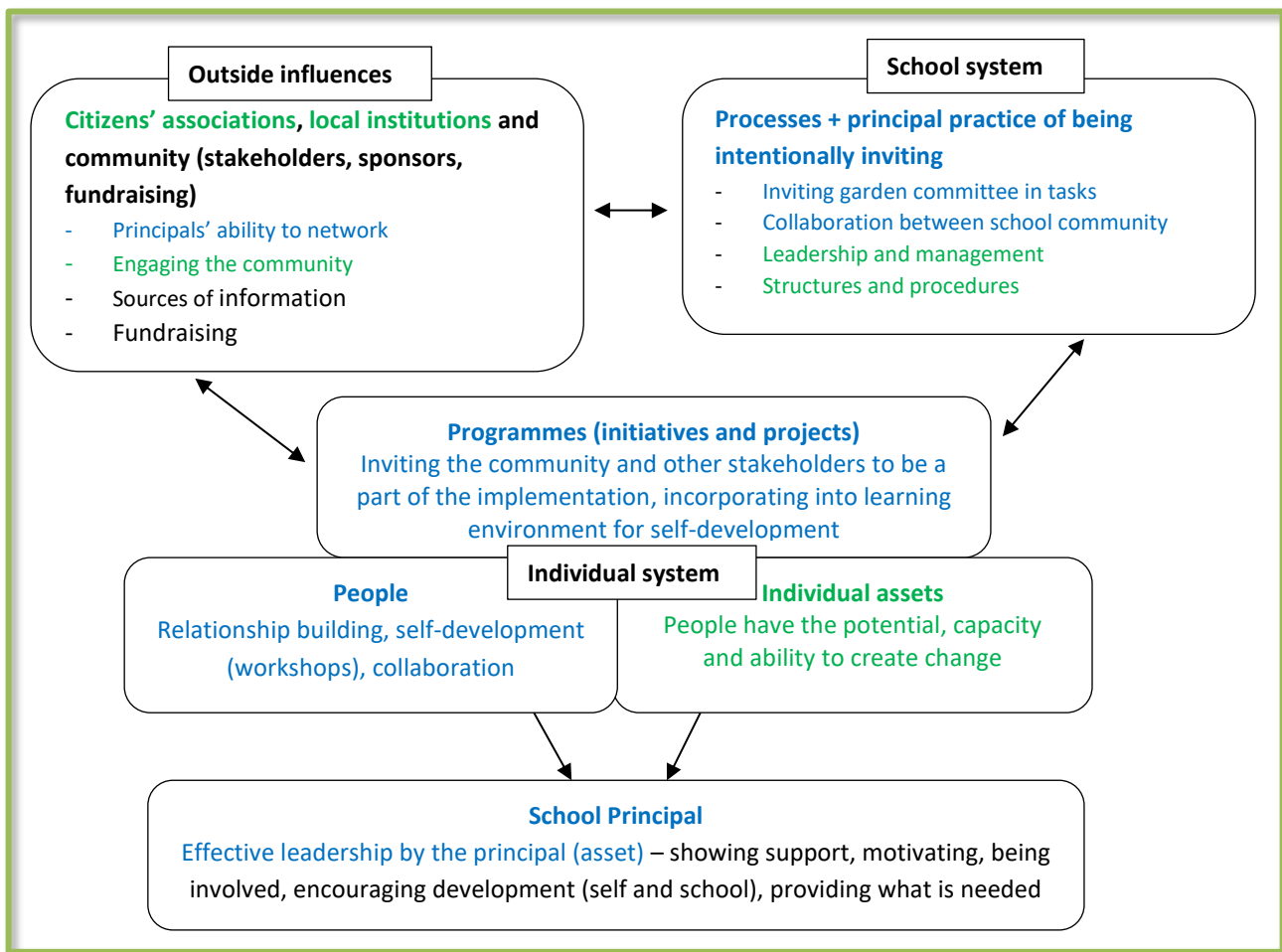
Figure 2.2: An integration of Invitational Education theory (Purkey, 1991) and the Asset-based approach (Eloff, 2003)

Both the Asset-based approach (represented in green in Figure 2.2) and Invitational Education theory (represented in blue in Figure 2.2) are relationship-based whereby people are taken as the starting point for change to occur. This internal focus can facilitate empowerment and hope and allow for local systems to define themselves (Ebersöhn & Eloff, 2006). According to Invitational Education theory, people are "able, valuable and responsible, and should be treated accordingly", and by giving them the respect they deserve, they will be empowered to reach their potential (Steyn, 2005, p. 261). Therefore, the individual system (centre of my conceptual framework) is important as this is where potential, collaboration and relationship building can begin. Linked to individual assets and people, are programmes which may entail school-based initiatives or projects. Haigh (2011) states that programmes, according to Invitational Education theory, will invite wellness and well-being, and aim to enrich all those involved. If implemented in a successful way, a school principal can encourage the use of programmes, such as a school-based vegetable garden, in self-

development of staff members and learners by encouraging their involvement and incorporating the programme into the learning environment.

The school principal generally play a vital role in both the individual and school system, being the one that people look up to for guidance when programmes are implemented. On a personal level, school principals possess individual assets that may be strengthened through the role they fulfil. As indicated in Figure 2.2, this includes a principal displaying effective leadership and support to others, motivation they can provide, being involved in initiatives, encouragement for the development of the self and the school, and the ability to provide what is needed. In addition, a school principal can be intentionally inviting to the wider community and other stakeholders to become involved in school initiatives. Therefore, a principal is required to remain aware of the assets of individuals in the community that may assist in school-based initiatives. In this regard, Budge (2006) states that critical leadership of place is the type of leadership that aims to improve the quality of life in communities. She comments that "leaders with a critical leadership of place support community as a context for learning, understand that schools and their local communities are inextricably linked, and that the ability of each to thrive is dependent upon the other" (Budge, 2006, p. 8).

If a school principal is at a level of intentionally inviting others and giving them opportunities to develop themselves, the school system can be taken as an asset. A number of areas of growth may occur such as establishing a garden committee to help in decision-making, giving ideas and regulating rules. A school principal can create an environment for collaboration not only between themselves and staff members, but also between learners, and on occasion, with community members and outside influences. Leadership and management can thus develop assets when a principal intentionally invites not only themselves but also teachers and learners.

Lastly, in integrating the two theories into a conceptual framework, I included a system of outside influences. Outside influences can play a significant role in resource-constrained environments through funding, resource provision and sponsorship for the needs of the school and community. I placed reciprocal arrows between such outside influences, school systems and programmes, indicating that these will influence one another, more specifically in the role that a principal can fulfil in networking with outside influences, and using them as a source of information.

2.6 CONCLUSION

In this chapter I discussed school leadership, and described the profile and roles of a school principal, specifically in the South African context, in resource-constrained settings. I also explored the role of school principals in supportive school-based initiatives, such as vegetable gardens. I concluded by explaining my conceptual framework.

In the next chapter, I explain the research methodology I utilised in undertaking the current study. I describe the paradigmatic choices I made as well as the methodological strategies I employed. I conclude the chapter by discussing the way in which I implemented ethical guidelines as well as the quality criteria that apply.

CHAPTER 3 – RESEARCH METHODOLOGY

3.1 INTRODUCTION

In the previous chapter, I discussed existing literature relating to the current study. I explained aspects of effective school leadership and described the profile of a school principal. I explored the challenges that schools in resource-constrained areas generally face, and then discussed the potential role of a school principal in supporting school-based interventions. I explained the potential value of school-based vegetable gardens and defined some factors that may contribute to sustainability. To conclude the chapter, I discussed the conceptual framework of my study.

In this chapter I explain the research process. I describe my selected paradigmatic choices and then explain the research design and selection of research sites and participants. I also discuss methods of data generation, documentation, and analysis. Finally, I attend to ethical considerations and quality criteria.

3.2 PARADIGMATIC PERSPECTIVES

In this section I provide a detailed description of the epistemological and methodological paradigms I was guided by.

3.2.1 Epistemological paradigm: Interpretivism

The term *epistemology* is based on the idea of perceiving and understanding the social world, and focuses on aspects such as what is known about reality and where such knowledge comes from (Snape & Spencer, 2003). I took an interpretivist stance in this study. Neuman (2006, p. 88) describes interpretivism as "the systematic analysis of socially meaningful action through the direct detailed observation of people in natural settings in order to arrive at understandings and interpretations of how people create and maintain their social worlds". Interpretivism suggests that research cannot be observed from the outside but will rather entail an exploration of the direct experiences of participants (Mack, 2010).

In exploring the lived experiences and perspectives of teachers who have participated in school-based vegetable gardens in the past, the interpretivist paradigm allowed me

to gain insight into the contexts in which these gardens have been implemented, and how their success or failure could be related to the role of school principals, as perceived by the participants. Snape and Spencer (2003, p. 13) describe this process as "the interpretive aspects of knowing about the social world and the significance of the investigator's own interpretations and understandings of the phenomenon being studied". When utilising an interpretivist stance, the researcher typically uses subjective experiences and then embeds meaning into what has been shared by participants (Neuman, 2006).

An underlying premise of interpretivism relates to the idea that a researcher will gain knowledge through interactions within the cultures that are studied (Taylor & Medina, 2013). This can create a space where in-depth reflection is possible in terms of the interactions that take place between the researcher and participants, as well as between the various participants (Taylor & Medina, 2013). In this study, the formulated research questions guided my interactions with the participants and allowed me to not only gain insight into their perspectives, but also reflect on the information I obtained in comparison to existing studies. At the same time, the PRA-based workshop allowed the participants to reflect on the questions that guided them and on their discussions. In this regard, Scotland (2012) states that interaction between the researcher and participants may be encouraged when discovering new and so-called "hidden" social forces and structures, while gaining insight into a specific phenomenon.

Some limitations are, however, associated with the interpretivist paradigm. According to Mack (2010), the possibility of subjectivity may influence a researcher and the interpretations that are made. In my study, I relied on reflexivity and regular discussions with my research colleagues in an attempt to address this challenge. As a fellow student and I conducted joint data generation sessions, I also had access to both our field notes. I furthermore relied on member checking in order to ensure that I had analysed the data correctly.

Another limitation often mentioned relates to the lack of generalisability due to the fact that interpretivists aim to rather gain deep insight into a specific phenomenon (Pham, 2018). The aim of my study was indeed to gain insight into the role of principals in relation to the success of school-based vegetable gardens. As such, I did not aim for generalisable results.

3.2.2 Methodological paradigm: Qualitative research

According to Yin (2016), qualitative research focuses on the meaning that people attach to their lives within the world they live in, so that their views and perspectives of those around them can be represented and understood. Researchers are accordingly usually able to explore the context in which people live, adding to existing theory and generating knowledge on an emerging topic that can explain behaviour by using a number of resources instead of only one set of data (Yin, 2016).

Denzin and Lincoln (2018, p. 3) state that qualitative research:

> *"…consists of a set of interpretive, material practices that make the world visible. These practices transform the world. They turn the world into a series of representations, including field notes, interviews, conversations, photographs, recordings and memos to the self. At this level, qualitative research involves an interpretive, naturalistic approach to the world. This means that qualitative researcher's study things in their natural settings, attempting to make sense of, or to interpret, phenomena in terms of the meanings people bring to them".*

The above-mentioned statement describes the role that I was expected to play as the researcher. In this regard, my selected approach allowed me to gather information about the perspectives of the teacher participants, thereby not only furthering my knowledge as researcher, but also adding to the existing theory stemming from the projects on which this research builds. Following a qualitative approach furthermore allowed me to observe the participants of the different schools and gain an understanding of their experiences and perspectives with regard to the potential role of their school principals in the success of school-based vegetable gardens.

An advantage of qualitative research that Griffin (2004) mentions relates to flexibility when conducting such a study. In my study, being able to talk to teachers about their schools' vegetable gardens from a personal point of view, and observing first-hand the efforts put into the gardens, seemingly encouraged open conversations. Connecting with the participants in a professional yet personal manner allowed them to share their perspectives and experiences with me (and the rest of the research team). Another advantage that Denzin and Lincoln (2018) mention entails the option to combine various methods for qualitative data generation, thereby supporting rigour as well as richness. By using a number of data generation methods, I was able to obtain rich data and a comprehensive understanding of what I explored.

Another advantage of qualitative research is that "it is good at simplifying and managing data without destroying the complexity and context", according to Antenio (2009, p. 16). Researchers can thus generally accomplish the aims and purposes of their studies without minimising the complexity and context of human interaction and meaningfulness generated. In my study, I could rely on this benefit by choosing data generation methods that were useful and specific to the data I required, that also allowed me to build relationships with the participants and gain an in-depth understanding of their views on the phenomenon I focused on.

A possible limitation associated with qualitative research relates to the ambiguities of language that may potentially be present in data analysis (Atieno, 2009). As my study included participants who do not have English as a first language, some misunderstandings may have occurred between what the participants intended to contribute and how I analysed the data. In order to mitigate this, I discussed my analysis with my supervisor and did member checking with the participants, allowing them to review my analysis and make sure that I had interpreted their contributions correctly (Denzin & Lincoln, 2018).

Another possible limitation referred to by Griffin (2004) is that qualitative research can be time-consuming. In order to address this, I included a PRA-based workshop for data generation, involving several participants at once and generating data in a timely manner. Lastly, the findings of qualitative studies cannot be generalised; however, my aim was to merely explore the experiences of a specific group of participants in terms of a specific focus area, as already explained.

3.3 RESEARCH METHODOLOGY

In this section I discuss the research design, how the cases and participants were selected, as well as my data generation, documentation and analysis strategies.

3.3.1 Research design

I implemented an multiple case study design, applying PRA principles (Baxter & Jack, 2008). Yin (2014) states that a case study design can be used in many circumstances and contribute to existing knowledge on individuals and groups, organisations, societies, political and related phenomena. Lewis (2003) similarly mentions that a case study design can include one or more cases which are studied within context, and

through various data generation methods. The aim of implementing a case study design relates to the option of viewing a phenomenon through "a variety of lenses, which allows for multiple facets of the phenomenon to be revealed and understood" (Baxter & Jack, 2008, p. 544). In this regard, Yin (2014) states that a multiple-case study design is typically employed when a study includes more than one case, as in my study, with nine schools participating.

In following a case study design, I also employed PRA principles. PRA involves local people as the main actors in completing certain activities that typically entail small group activities where participants map, diagram, observe and analyse their experiences (Chambers, 2013). As a result, participants may take action which can result in positive change within their context (McDonald, 2012). Three core attributes of PRA are "shared ownership of research projects, community-based analysis of social problems, and an orientation toward community action" (Kemmis & McTaggart, 2009, p. 568). When applying PRA principles in a study, the researchers and participants thus work together in a collaborative manner (Toness, 2001).

In implementing a multiple case study design while applying PRA principles, I was able to capture meaningful information of the phenomenon under study that represent the experiences and perceptions of the participants (Rempfer & Knott, 2002). I was furthermore able to gather this information from a number of schools, therefore gaining insight from a number of sources. This can be considered as an advantage as I could gain a holistic view of the perceptions of various teachers on the role of the school principal in successful school-based vegetable gardens.

On the other hand, limitations associated with case study research applying PRA principles relate to such studies potentially being time consuming (Cornwall & Jewkes, 1995). To this end, I ensured that I was thoroughly prepared for all data generation activities and avoided any unnecessary wasting of time. All the posters used in the PRA-based workshop were for example compiled prior to the workshop, and my research colleagues and I assisted during the workshop so that groups did not get stuck on one question for too long. Another limitation, already previously mentioned, concerns the issue of generalisability which was not my aim.

A last possible limitation of a case study design relates to the concern for rigour. Literature points to the fact that case studies can often cause a researcher to present

data that is ambiguous and disordered, and in PRA research bias can furthermore cause a study to be untrustworthy (Yin, 2014). Throughout my study, data were thus documented, analysed and re-analysed in order to avoid ambiguity or bias. As mentioned, my co-researcher, supervisor and I continuously discussed the analysed data, and I included member checking in the process.

3.3.2 Selection of cases and participants

I utilised convenience sampling to select nine cases (schools) for participation, and then purposefully selected 36 teacher participants who have previously been involved in the STAR, SHEBA and FIRST-GATE projects. Etikan et al. (2016) refer to convenience sampling as a type of non-probability sampling of members of a target population. In this study, the convenience of selecting schools that have been participating in broader projects implied the advantage of established relationships with researchers, as well as easy access and availability of the cases (Etikan et al., 2016).

Purposive sampling, on the other hand, entails the process of selecting "groups participants according to preselected criteria relevant to a particular research question" (Guest et al., 2005, p. 5). To this end, Etikan et al. (2016) state that purposive sampling is a technique that identifies and selects individuals and groups that are knowledgeable about the phenomenon under study. Therefore, purposive sampling allowed me to involve participants who were well-informed and experienced in terms of the potential role of school principals in the implementation and maintenance of school-based vegetable gardens. The selection criteria for the teachers to participate were as follows:

❖ Teacher at a school that had been involved in the STAR, SHEBA and/or FIRST-GATE projects
❖ Able to communicate in English
❖ Providing informed consent
❖ Active involvement in a school-based vegetable garden
❖ Available after school hours for data generation sessions.

Potential limitations associated with purposeful sampling include limited consistency or being biased, due to only selecting certain participants (Acharya, Prakash, Saxena,

& Nigam, 2013). Furthermore, qualitative studies that rely on purposive sampling are not generalisable. As already stated, my aim was however not to generalise the findings but to rather understand the experiences of a specific group of participants.

3.3.3 Data generation and documentation

I utilised a PRA-based workshop, individual interviews, observation, field notes, a research journal, and audio-visual techniques for data generation and documentation.

3.3.3.1 PRA-based workshops

PRA-driven methods generally involve activities that are completed in small groups and are often visual and concrete by nature (Chambers, 2013). Activities such as visualisation, verbalisation and documentation, sequencing, optimal ignorance, and triangulation can be used (Cavestro, 2003). During my implementation of this strategy, participants completed and presented two posters based on specific questions I posed. Images of the two posters are captured in Photographs 3.1 and 3.2.

Photograph 3.1: PRA-poster 1
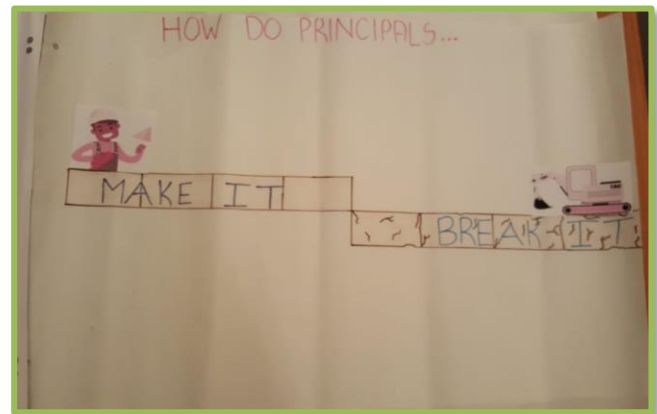
Photograph 3.2: PRA-poster 2

These posters (PRA-matrices) were compiled during a PRA-based workshop I conducted with a fellow student (T. van der Westhuizen) on 28 May 2018. The workshop lasted two hours during which 36 participants discussed questions in small groups, whilst capturing their ideas on posters. For the first poster, the prompt which guided the discussions entailed the: "*Role the principal plays in the vegetable garden*" (Photograph 3.1). For this poster, the small groups of participants were requested to capture different potential roles of the school principal on the different coloured cards, describe the role and then provide examples.

After completing the small group discussions, each group presented their ideas to the rest of the participants. Hereafter, small groups completed a second poster, focusing on the following question: *"How can principals make it or break it?",* with reference to school-based vegetable gardens. During the completion of the second poster the participants initially seemed a bit resistant to answer the question and report back. This may be seen as a potential limitation, possibly arising from teachers' perceptions of their own professionalism, or to cultural aspects resulting in the teachers being hesitant to discuss their principals. In addressing this challenge, I reassured the participants that their contributions would be treated confidentially and anonymously. Even though they thus initially seemed hesitant to discuss the role of the principal, a good amount of detail was still generated as the discussions progressed.

3.3.3.2 Individual semi-structured interviews

My fellow Masters student and I conducted five semi-structured interviews at the five respective schools on 18 September 2018, during a second field visit. Each interview was on average 30 minutes long. Three of the participants were teachers at the time, one a school principal, and one a deputy principal. Audio-recorded interviews were transcribed verbatim, after the interviews had been conducted, for data analysis purposes (refer to Appendix C.4). Participants for the interviews were selected based on previous knowledge of the schools by the original project implementors, and on schools who would provide the richest information for the study. This included schools from across the spectrum of contexts in which the vegetable gardens have been implemented.

According to Gill, Stewart, Treasure and Chadwick (2008), semi-structured interviews are guided by a number of key questions focused on the topic which is explored, however, at the same time allowing for flexibility and discussions of any responses in more detail if needed. During the interviews we conducted, the participants seemed more comfortable to discuss the role of the school principal when compared to the PRA-based workshop they had participated in. Individual interviews allowed me with an opportunity to ask additional questions where needed and encourage the participants to share details that may not have been discussed previously. In conducting semi-structured interviews, I could also rely on the advantage of following

a flexible approach (Gill et al., 2008), thereby conducting the interviews in a focused manner yet observing non-verbal messages and making adjustments when needed.

A potential limitation of individual interviews is that it can be time-consuming (Taylor, 2005) and may generate huge amounts of data. To this end, I was guided by a list of focused questions (Appendix B) which allowed me to remain focused on the topic of discussion, yet with the necessary flexibility. Another possible limitation relates to the fact that interviews generally require certain conversational skills in order to flow and for the interviewer to identify cues that may assist in gaining information (Taylor, 2005). As I have conducted a number of interviews throughout my university career, I could rely on my experience during this data generation activity. Another limitation that I however experienced relates to language, as many of the participants have English as a second language, with the result that I found it hard to understand some of the participants I interviewed. This was however overcome by asking for clarification where needed, as well as using the recordings to later interpret what had been said.

3.3.3.3 Observation

Observation is often relied upon when doing interpretivist research. Observation refers to "a method through which researchers generate understanding and knowledge by watching, interacting, asking questions, collecting documents, making audio or video recordings, and reflecting after the fact" (Tracy, 2013, p. 65). Observation thus implies the gathering of information about an event, as part of a research process.

As I fulfilled the role of participant-as-observer, where I was able to interact with the participants by becoming integrated into the study itself (Angrosino, 2013). Lin (2016) states that this type of observation will allow a researcher to gain understanding of a study from the inside out. By gaining insight into a context, a researcher may in turn be able to identify and understand meaningful factors that can play a role. By fulfilling this role during my study, I was able to get to know the participants, gaining insight into their perspectives and ideas.

A challenge often associated with participant observation involve a researcher becoming too focused on, for example, making notes, instead of the interactions that occur (Stake, 2012). In this regard, Stake (2012, p. 94) states that "the first responsibility of the observer is to know what is happening, to see it, to hear it, to try

make sense of it". In an attempt to avoid this challenge, I relied on triangulation of the data. In this way I could ensure that no important information was missed, and I could use photographs to capture information as well as the responses of the participants.

Another challenge related to observation entails the possibility of researchers imposing their own views and understanding onto what they observe (Bell & Waters, 2014). In an attempt to mitigate this, I reflected on a regular basis and discussed my observations with my supervisor and fellow researchers. I documented my observations in the form of field notes and by means of photographs.

3.3.3.4 Field notes and research journal

During field work, it is important for researchers to make detailed notes about what they observe. Field notes can capture the details of a study and be used to later reflect on what was experienced by the researcher when in the field. Throughout my study, both my co-researcher and I compiled field notes. We then shared our notes, thereby obtaining different perspectives on what had occurred.

One of the limitations associated with field notes, as noted by Silverman (2005), is that the researcher may only have the original form in which notes were compiled, resulting in readers merely having access to what had been recorded. A potential way of overcoming limited notes is to follow a strict routine when making field notes and to later go back and extend on what has been written (Silverman, 2017). To this end, I compiled field notes during my observations and then later, when typing them out, added information that I could recall from what I had observed. This assisted me in reflecting on what I had written in the moment, yet also on what different things may or may not have been implied. For example, during the PRA-based workshop, both my co-researcher and I detected some apprehension by the participants to compile posters about their principals. When revisiting my notes and reflecting on this occurrence, I was able to hypothesise why this may have occurred and carefully revisit the questions I had posed. These thought patterns were captured in my research journal (see Appendix C.3).

As such, a research journal forms an important component of qualitative research and can assist a researcher in noting thoughts and reasoning, as well as feelings and possible apprehensions about a study. In this regard, Silverman (2014, p. 299) states

that "diaries can be a rich source of data which detail how people make sense of their everyday lives", as others may be able to follow the thought process underlying a study. In this regard, Stake (2012) proposes that a research journal can include a researcher's ongoing conjectures, things that may be confusing, and things that a researcher wonders about.

3.3.3.5 Audio-visual strategies

I audio-recorded the discussions at the PRA-based workshop as well as the semi-structured individual interviews I conducted. All recordings were then transcribed in order to change the form of the data from orally collected data, to written data that could be analysed Polkinghorne (2005). My co-researcher and I took joint responsibility for the transcriptions and then cross-checked these in order to ensure accuracy. In addition, I included visual data in the form of poster matrices completed during the PRA-based workshop as well as photographs taken during the workshop and interview process (see Appendix D.1 and D.2).

In terms of the visual strategies I employed for data documentation, Tracy (2013, p. 115) states that "Photos and video can provide a vivid and detailed recording, documenting the exact set-up or the participants in attendance, but they have the downside of relinquishing anonymity". In support, Pink (2004) notes that visual research material implies a number of different functions that can work in a collaborative way. These functions include the provision of visual records or data, representing experiences within a research study, or providing material facts or material culture. With regard to the photographs taken during the research process, these captured the contexts of the schools we visited, as well as the activities that took place during interactions in the PRA-based workshops and individual interviews. In order to overcome issues of anonymity, participants could indicate on the consent form whether or not they wanted to be identifiable in photographs.

3.3.4 Data analysis and interpretation

I conducted inductive thematic analysis, which entails a process whereby researchers familiarise themselves with the data through reading and re-reading all information, identify key words, trends and themes, and then analyse the data to find meaningful information (Guest et al., 2012). In this regard, Gibbs (2007, p. 1) states that, "The

idea of analysis implies some kind of transformation. You start with a collection of qualitative data and then you process it, through analytical procedures, into clear, understandable, insightful, trustworthy and even original analysis".

Braun and Clarke (2006) provide a step-by-step process for conducting inductive thematic analysis. These steps include familiarising oneself with the data, generating initial codes, searching for themes, reviewing the themes, defining and naming themes, and producing a research report. In my study, I followed these guidelines, in an attempt to ensure that the themes I identified link to the generated data (Braun & Clarke, 2006). The first step was thus to gather all the generated data and read and reread this. Data included the PRA posters, interview transcripts, my field notes and research journal. By reading through the data a number of times, I was able to familiarise myself with it.

Stake (2010, p. 151) states that "coding is sorting all the data sets according to topics, themes, and issues important to the study". Once I was familiar with the data, I coded the participating schools by using letters of the alphabet. Interviews were linked to the codes ascribed to the participating schools. Next, I sorted identifying keywords that were repeated throughout the data, which I tabulated based on which school's posters and interviews applied.

I then decided on themes and a number of sub-themes based on the keywords reoccurring in the data. In order to ensure that my connections were correct, I used triangulation and also compared my analysis to that of my co-researcher, in order to see whether or not similar keywords or themes occurred. Once this process had been completed, I identified quotations and photographs that I could include when writing up the results. Nowell et al. (2017) state that an advantage of thematic analysis lies in its flexibility, in terms of an adaptable approach that can be modified to fit a research study. Thematic analysis is not grounded in any specific theory and can thus be easily adapted. Another advantage of thematic analysis is that it is relatively easy to grasp (Nowell et al., 2017). I was thus able to easily understand the analysis process as described by Braun and Clarke (2006), and as such found the analysis process easy to manage.

According to Braun and Clarke (2006), a number of potential limitations can, however, be related to thematic analysis. One of these limitations is based on the possibility of

doing a shallow analysis, for example when a researcher codes and finds themes without any deeper level of analysis. I attempted to avoid this by triangulating the data sources and through analyses by more than one researcher, as well as by discussing my analysis with my supervisor in order to check that the level of analysis was deep enough. Another limitation mentioned by Braun and Clarke (2006) is that a mismatch may occur between the data itself and the analytical claims that are made. I aimed to address this potential challenge through the use of member checking, as previously discussed, whereby analysed information was checked by the participants in order to ensure that I had understood their claims and interpreted these.

3.4 ETHICAL CONSIDERATIONS

Ethical considerations are the steps that researchers take to ensure that participants are protected from any harm, misconduct or deceit. In this section I discuss the strategies I implemented in support of conducting ethical research.

3.4.1 Informed consent and autonomy

As a first step of my study, I obtained ethical clearance from the Faculty of Education's Ethics Committee at the University of Pretoria (see Appendix A1). Next, I obtained informed consent from all participants on the day of the PRA-based workshop, before commencing with data generation activities (see Appendix A2). Denzin and Lincoln (2018) state that, in agreeing to take part in a study, participants have the right to human freedom which incorporates two essential conditions. Firstly, no participant can be forced to take part as all participation is voluntary; and secondly, participants are allowed to receive information on a study before making the decision to participate or not (Denzin & Lincoln, 2018).

Orb and colleagues (2000) discuss the importance of respect for participants and that people's rights need to be acknowledged by researchers throughout any study. This includes: "the right to be informed about the study, the right to freely decide whether to participate in a study, and the right to withdraw at any time without penalty" (Orb, Eisenhauer, & Wynaden, 2000, p. 95). For this purpose, I explained the aim and process of my study to the participants when obtaining their consent. The consent forms defined what would be expected of them and stated the benefits of the study and their participation. Participants were furthermore provided with the option to

choose whether or not their identities had to be kept anonymous. They were reminded that they could withdraw from the study at any time.

3.4.2 Anonymity, confidentiality and privacy

Anonymity refers, quite literally, to the participants in a study being kept "nameless", while confidentiality implies that a researcher remove some information, in order not to indicate the identity of the participants (Berg, 2001). As such, confidentiality requires the researcher to take the necessary steps to keep all data and data sources confidential unless otherwise indicated by participants, who may opt for disclosure. It is also important that research data is stored in a safe place with the appropriate access control (Silverman, 2010). Richards and Schwartz (2002, p. 138) state that "In most cases, qualitative health services research aims for anonymity and confidentiality, and should use fool proof strategies for the secure storage of tapes and transcripts. Pseudonyms or initials should be used in transcripts and, where possible, other identifying details should be altered".

Applying these guidelines to my study, I used codes to refer to the schools, for example, School A, School B and so forth, as well as the participants, for example, Participant 1, Participant 2 and so forth. To this end, all identifying information was changed accordingly in the transcripts and when reporting the results (Chapter 4). For storage of the generated data, all data is safely stored at the University of Pretoria and all electronic data files are password protected. These files include my field notes, photographs, transcripts, and PRA posters.

3.4.3 Beneficence and justice

Beneficence implies that a researcher is morally and ethically obliged to not harm and not intend to harm any participant in a study (Windle, 2002). Beneficence is important as it ensures that participants will not only be protected from physical and psychological harm, but will also benefit in some way from taking part in a study (Windle, 2002).

In my study, I did not foresee any harm being done to the participants, however I remained aware of the needs of the participants in order to identify any possible signs of discomfort. None such incidences could be observed. As my co-researcher,

supervisor and I were present at all data generation sessions, we could interact with the participants and ensure that their needs were met.

3.5 QUALITY CRITERIA

In this section, I discuss the different quality criteria I strived to adhere to.

3.5.1 Credibility

If a research study is credible, readers will be able to use the results and findings with confidence (Tracy, 2013). According to Tracy (2013) dependability and trustworthiness are important for credible research. In this study, I aimed for credibility by using member checking, thereby making sure that my interpretations of the generated data were in line with what the participants had meant (Mays & Pope, 2000).

Another way of ensuring credibility is through the use of triangulation. By including transcriptions, photographs, field notes and a research journal, I was able to describe the research process in detail, as well as the participants who took part and the different activities they completed. I used triangulation to check data sources against each other in order to ensure that what had been observed and interpreted was trustworthy and correct (Stake, 2010).

3.5.2 Transferability

Transferability refers to the extent to which research findings or methods can be transferred from one group to another, or the extent to which research findings can be applied in another similar context with different participants (Thomas & Magilvy, 2011). Transferability can be achieved by providing sufficient detail on the context of a study as well as the phenomenon being studied, in order for comparisons to be possible by those wanting to conduct a similar study (Chowdhury, 2015).

In order to achieve transferability, thick descriptions are thus required. Thick descriptions can be done by "providing lush material details about the people, process and activities" (Tracy, 2013, p. 235). The field notes I compiled as well as the research journal I kept, include detailed descriptions about the data generation process as well as the experiences I had throughout the study. In addition, photographs provide detail about how the activities were set out, and which activities were completed during the

PRA-based workshop. Triangulation, as mentioned earlier, assisted me in achieving transferability.

3.5.3 Dependability

Dependability refers to the possibility of results being similar if a study is repeated in the same context, using the same research methods and involving the same participants (Shenton, 2004). Therefore, in the case of dependability, if another researcher was to follow the research process in a similar context, the results would be similar to the findings and results of the initial study (Thomas & Magilvy, 2011). An audit trail can ensure dependability in a study, and relies on comprehensive notes on the research process in order for the reader to understand how a final product was achieved (Houghton, Casey, Shaw, & Murphy , 2013).

Another way to ensure dependability is through reflexivity, which entails a researcher being continually self-critical about the research process (Tobin & Begley, 2004). In this study I used a research journal to document my thoughts on the research process, and to clarify any bias that may have occurred. In this mini-dissertation, I also include detailed notes throughout.

3.5.4 Confirmability

Confirmability implies the possibility of readers being able to identify that a final product emerged from the data, and not from a researcher's own construction of information (Chowdhury, 2015). This can be ensured through the use of an audit trail, as previously mentioned, as well as triangulation and member checking, also discussed previously. Reflexivity, as mentioned, is a core strategy that can be used to ensure confirmability through constant reflections in a research journal.

3.5.5 Authenticity

Authenticity entails that research reflects the experiences and meaning making of participants' lives, as they perceive it (Whittemore et al., 2001). Therefore, a researcher needs to depict the phenomenon under study as accurately as possible (Chowdhury, 2015). To ensure authenticity, triangulation, as previously mentioned, can be used. Thick descriptions, as well as member checking (also previously mentioned) can also be utilised to ensure authenticity. My use of direct quotations

when discussing the results (Chapter 4), allowed me to capture the participants' experiences and contributions, keeping their perceptions of the phenomenon in focus in support of authenticity.

3.6 CONCLUSION

In this chapter I discussed the research methodology of my study. I explained how I utilised interpretivism as epistemology and followed a qualitative approach. I described the research design and all related methodological choices I made. My discussion also focussed on quality criteria and ethical considerations.

In the next chapter I present the results and findings of the current study. I first discuss the themes and sub-themes that I identified. Next, I present the findings I obtained by comparing the results with the literature I presented in Chapter 2.

CHAPTER 4 – RESULTS AND FINDINGS OF THE STUDY

4.1 INTRODUCTION

In Chapter 3 I discussed the research process. I described the interpretivist paradigm I utilised, as well as the qualitative approach I followed. I explained how I implemented a case study research design, applying PRA principles, and provided detail on the data generation, documentation and analysis methods I utilised.

In this chapter I discuss the results and findings of the study. I describe the themes and sub-themes I identified, and integrate direct quotations from different sources of data, and photographs gathered throughout the research process in my discussion. I then present the findings by comparing the results I obtained to literature included in Chapter 2.

4.2 RESULTS OF THE STUDY

In this section, I discuss the three themes and related sub-themes I identified during the process of inductive thematic analysis. Figure 4.1 provides an overview of the results of the study.

Teacher perceptions of the role of school principals in the implementation and maintenance of school-based vegetable gardens

THEME 1:

BEING INFORMED AND INVOLVED

THEME 2:

PROVIDING SUPPORT

THEME 3:

PRINCIPAL-RELATED FACTORS THAT MAY HAVE A NEGATIVE IMPACT

SUB-THEME 1.1:

Sharing the dream and being positive about the garden and its value

SUB-THEME 2.1:

Motivating teachers and learners to be involved, and allowing them time in the garden

SUB-THEME 3.1:

Limited interest, involvement or support for the garden

SUB-THEME 1.2:

Being informed of the garden team's composition, activities and needs

SUB-THEME 2.2:

Providing resources and encouraging involvement in fundraising

SUB-THEME 3.2:

Not recognising teachers' role and the value of the garden

SUB-THEME 1.3:

Being actively involved

SUB-THEME 2.3:

Accessing networks of support and sources of information

Figure 4.1: Themes and sub-themes of the study

4.2.1 THEME 1: BEING INFORMED AND INVOLVED

This theme relates to school principals being enthusiastic about vegetable gardens, having knowledge about their schools' gardens on a holistic level, and being involved in the activities related to the gardens. Refer to Appendix E (Table E.1) for a summary of the criteria I used to identify the specific sub-themes.

4.2.1.1 Sub-theme 1.1: Sharing the dream and being positive about the garden and its value

The participants viewed buy-in by the principal as an important aspect that will determine the success of a school-based vegetable garden. According to the teachers, a vegetable garden project would thus benefit from a principal sharing the dream for having a successful garden and being positive about the initiative. A participant from School A, for example, stated, *"if we need support we go to our principal"* [4] (I-3, S-A, P-A1), while a participant from School I said, *"…but you can have your passion but if the principal of the school doesn't buy your idea's you'll just die with it"* (I-4, S-I, P-I1). The participant elaborated by explaining that *"…if the principal wants it, so you can fly your wings but if the boss of the school doesn't buy your story you can be passionate, you can be gifted, you can have all the resources but it's the school's principal that's the one who…",* (I-4, S-1, PI1). I captured a similar understanding of the importance of the school principal buying into a vegetable garden project in my field notes in the following way: *"…if the principal is not invested then neither are the teachers and this has a huge impact on the garden"* (FN, 18 September 2018).

According to the participants, it is important for a school principal to understand the value of a school-based vegetable garden as well as the potential impact it may have on the school. Participants seemingly valued the possibility of a vegetable garden providing learners with food and promoting healthy eating habits. One of the participants (a school principal) explained this as follows: *"it was my idea initially… I decided that I should ask the sponsors of our school to maybe make us a vegetable garden where the children will be involved in gardening and you know I wanted them*

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[4] Henceforth the following abbreviations apply: PRA-1 = 1st poster made during PRA-based workshop on 28 May 2018; PRA-2 = 2nd poster made during PRA-based workshop; I = individual interview conducted on 18 September 2018; S = school; P = participant; FN = field notes; RJ = research journal.

to see where the food comes from and take pride in themselves, seeing that they've produced something out of their own you know" (I-2, S-H, P-H1). Similarly, a participant from School E noted that a garden can *"promote healthy eating"* (I-1, S-E, P-E1). The principal from School H herself elaborated on the value of school-based vegetable gardens in providing food to learners, saying that, *"so the department is encouraging all of the schools to start a vegetable garden to supplement whatever they are giving us, because you know it is not always enough"* (I-2, S-H, P-H1).

In addition to the value of school-based vegetable gardens for food provision, participants referred to the value of enriching the curriculum and providing learners with knowledge and skills. School A, during the PRA-based workshop, noted the following: *"integrate program (garden) into school curriculum"* (PRA-2, S-A), as captured in Photograph 4.1. In terms of a vegetable garden being a source of information and skills that learners can apply in other contexts or share with others, participants valued the possibility of application in learners' personal contexts. In this regard, the principal of School H indicated her dream for their garden as follows: *"give skills to take home because some of these children are coming from very poor backgrounds you know so if they have the skill of producing something they can go home and make their own gardens at home you know to feed their families"* (I-2, S-H, P-H1).
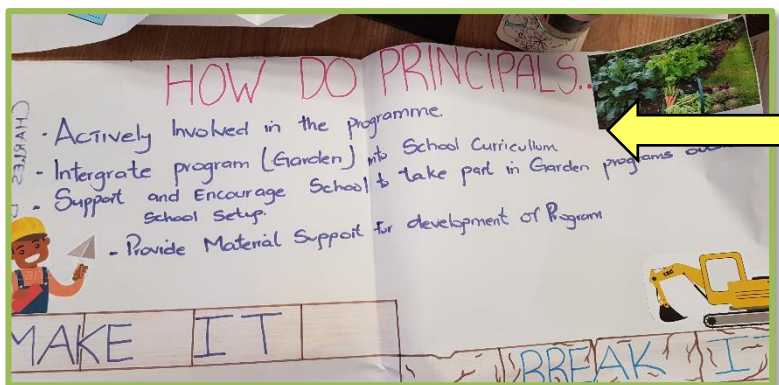
**Photograph 4.1:** Integrate the garden into the curriculum (School A)

4.2.1.2 Sub-theme 1.2: Being informed of the garden team's composition, activities and needs

The participants apparently expected school principals to know what is happening, who is involved, what they have achieved and what they struggle with in school-based vegetable gardens. The deputy principal of School I explained the importance of a

committee and the principal (or deputy) forming part of this team and thus knowing what is going on in the project, by saying, *"Yes. I've got a committee, because here at the school, everything we work in committees. You can't do anything on your own and what I love about working with committees even if I'm not here they know everything"* (I-4, S-I, P-I1). The principal of School H similarly emphasised that it is important for the principal to be involved in such committees and to lead by example, saying, *"…and also if we have committees, I must also be part of the committee to oversee that everything is happening accordingly"* (I-2, S-H, P-H1).

According to the participants, it is thus important for school principals to be informed and know what is happening in their school-based vegetable gardens as well as to participate in garden activities in order to be able to do *"presentations"* on the garden, talking about and discussing the *"garden progress in seminars"* (PRA-1, S-I). During the PRA-based workshops they made comments such as *"must know the 'ins' and 'outs' of the garden"* and *"getting frequent reports from the committee"* (PRA-1, S-D and E), as captured in Photograph 4.2. This idea was also implied by School C, who explained that their principal *"organised the group of people (parents/community) to maintain the garden",* and was thus aware of the different tasks of the garden team members. For example, the principal appointed *"people who plant, and weeding. People to do repairs"* (PRA-1, S-C).
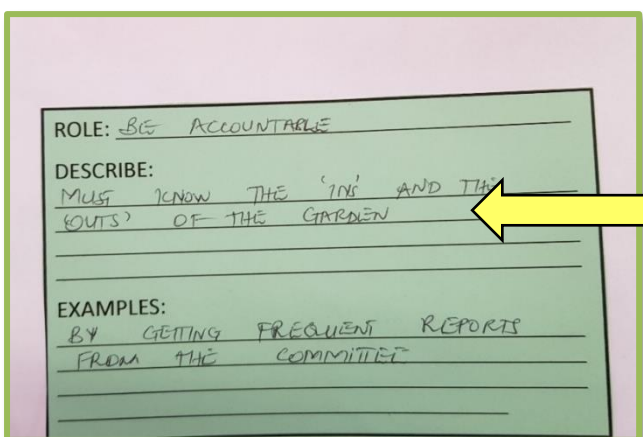
Photograph 4.2: Importance of being informed (Schools D and E)

In addition to the importance of the school principal being informed about the composition and activities of the garden committee, participants seemingly valued the role that principals can fulfil when the committee experienced challenges. A participant from School E explained, *"…I spoke to the chairperson and I told her about the challenges and I even told the gardener go and speak to them, go and speak to the*

principal" (I-1, S-E, P-E1), thereby emphasising the need to be heard when challenges arise.

Participants from School I similarly indicated the value of gaining advice from the principal and getting help with decision-making and problem-solving when faced with challenges. A participant explained this in the following way: "*because especially in the townships because we are paying for water, so you need the advice from the principal where to go about when there is a drought…"* (I-4, S-I, P-I1). Similarly, a participant from School E emphasised the importance of a principal supporting the garden team, stating the following:

> "*Because of all the challenges if he [the principal] could see what I'm talking about then I'm sure there would be changes. Dripping taps, the hose pipe that can't work now at that tap there and the pests eating up the produce, like what's the point in watering and taking care of it and nurturing it when there's pests, and we need money for that"* (I-1, S-E, P-E1).

4.2.1.3 Sub-theme 1.3: Being actively involved

The participants seemingly held the view that the success of a school-based vegetable garden can be determined by the active involvement of a school principal, forming part of the garden committee and assisting in the garden in various ways. In addition to the importance of the principal being supportive and positive, the participants apparently valued the possibility of a principal being informed and able to assist. School B referred to their principal as an advisor, as captured in Photograph 4.3, who could ensure "*best practices and policies to ensure sustainability"* (PRA-1, S-B). I similarly noted this idea during the second field visit, stating that the principal *"is a very knowledgeable woman, who has big dreams for the garden. She is so passionate about the garden and puts a lot of effort in to maintain it"* (FN, 18 September 2018).
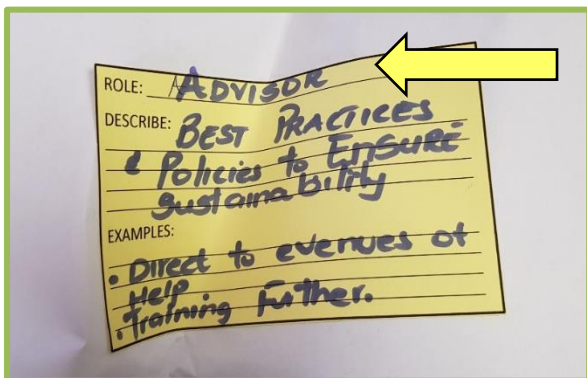
Photograph 4.3: Principal fulfilling an advisory role (School A)

Participants referred to various ways in which school principals can be actively involved in school-based vegetable gardens. For example, they mentioned the roles of the school principal in participating in garden activities, giving ideas, showing responsibility, and overseeing and supporting the garden initiative. In this regard, School H's participants stated the following: *"to work and be involved in the garden so that teachers and learners can see example"* (PRA-1, S-H). School I similarly emphasised active involvement of the principal when referring to *"they are a part of what's happening"* (PRA-2, S-I). In support, Schools A and G both expressed the need for their principals to *"being actively involved"* and *"actively involved in the program"* (PRA-2, S-A, S-G), as captured in Photograph 4.4.
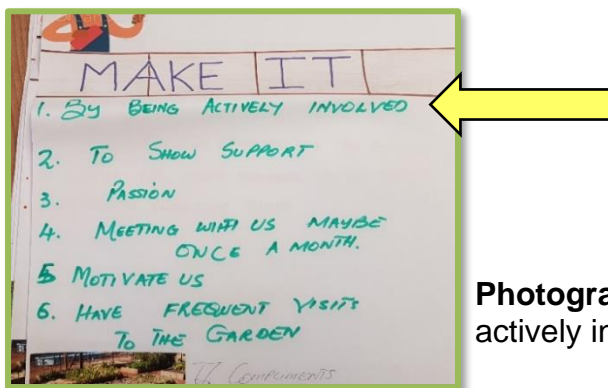
Photograph 4.4: Importance of principals being actively involved (School G)

As such, teachers seemingly viewed principals who are involved in school-based vegetable gardens in a holistic way as a positive force for success. This idea was mentioned on the PRA posters of Schools C, G and I (refer to Appendix D.3). School H agreed that *"principals need to also be involved"*, explaining the importance of general involvement by the principal, by stating: *"I think if they see me [the principal] you know being proactive and being involved in whatever they are doing…"* (I-2, S-H, P-H1). I similarly noted that a participant mentioned *"if the principal was involved it would make a big difference"* (FN, 18 September 2018). Being more specific, Schools D and E suggested that a principal can initiate *"a functional committee with a working policy"* (PRA-1, S-D and E), as captured in Photograph 4.5.
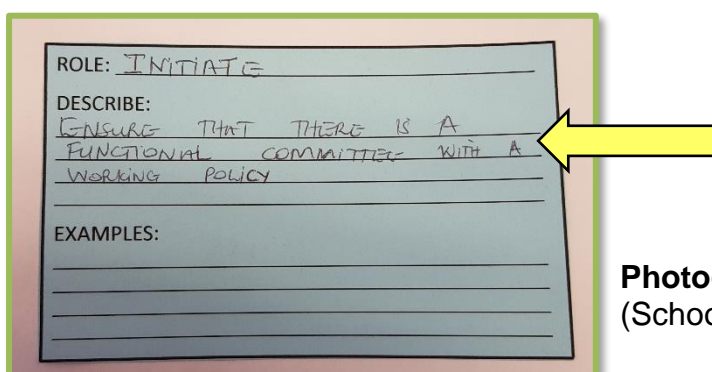
Photograph 4.5: Initiating committees (Schools D and E)

Finally, participants seemingly valued motivation by the principal who, in their view, could take the lead in garden activities. School C stated on their poster that "*principal should be part of the garden (physically present)*" as a way of motivating staff when they see the principal as forming "*a part of planting and irrigation" (*PRA-1, S-C). My observations confirms this potential role of a school principal. I namely wrote: *"[the deputy principal] is very creative and an industrious person who is constantly motivated to improve and progress the garden"* (FN, 18 September 2018). This specific deputy principal's passion for the garden was contagious and one could see how she influenced those around her to share her dreams for the garden. In this school (School F), both the principal and deputy principal supported the garden initiative, thereby possibly contributing to success.

4.2.2 THEME 2: PROVIDING SUPPORT

Theme 2 concerns different ways in which principals can support school-based vegetable garden initiatives. Refer to Appendix E (Table E.2) for the inclusion and exclusion criteria I utilised to identify the three sub-themes.

4.2.2.1 Sub-theme 2.1: Motivating teachers and learners to be involved, and allowing them time in the garden

Participants indicated that support by a principal is visible when she/he encourages and motivates others, recognising the work being done and allowing teachers and learners to spend time in the school-based vegetable garden. Various contributions captured the importance of school principals doing this, for example "*…she encourages us all the time to do the garden"* (I-5, S-G, P-G1), "*motivate teachers, learners and parents"* through "*commending"* (PRA-1, S-B), and "*supportive, passion and motivated us. She visits the garden and taking pictures"* (PRA-1, S-G), with the latter captured in Photograph 4.6*.* I reflected on this idea in my research journal in the following way: *"It seems for the most part that many principals do play a good role and they are very encouraging in the gardens"* (RJ, 18 September 2018).
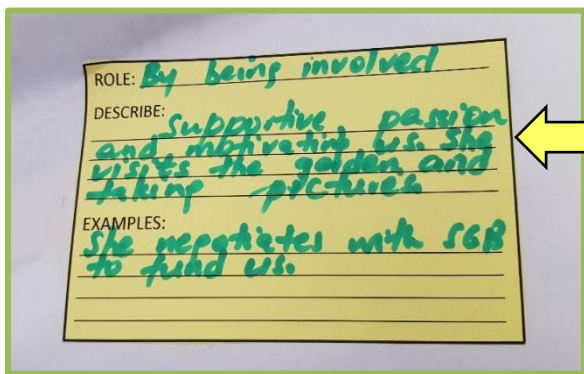
Photograph 4.6: Supporting participation in the vegetable garden (School G)

Teachers from School H confirmed this role in stating on their poster, *"encourage her staff members to be involved"* (PRA-2, S-H), while School C noted the following: *"motivation and inspirations to the teachers"* (PRA-2, S-C). In further support, School G stated that their principal *"…must see that all members are actively involved and always follow up and motivate"* (PRA-1, S-G). The principal of School E seemingly believed that by being involved, she could encourage others to become involved too. She said *"if the principal is involved the teachers would be involved and the learners would be involved, you know it's a ripple effect…"* (I-1, S-E, P-E1). My observations of the vegetable garden at School I confirmed that principal involvement would breed further involvement and motivate others to contribute, captured as follows:

> *"while we were walking around, there were children coming in and out of the garden, working in the planting areas, and the worm garden…I think the school and the principal has taken great initiative to give the learners the freedom to apply themselves in the garden"* (RJ, 18 September 2018).

During the PRA-based workshop, when listening to the responses and feedback of the various groups of participants, I realised that teachers could potentially be further motivated and encouraged to participate if they were recognised for their contributions. For Schools D and E, encouragement entailed to *"think outside of the box for ways and means to applaud the good work by all involved"* (PRA-1. S-D and E), as captured in Photograph 4.7. I similarly reflected on this potential role of a school principal, stating that, *"One thing that really stood out for me from the feedback during the workshop, is how important it is to these teachers to be recognised for their work and to be praised for the effort that they've put in to the gardens"* (RJ, 06 June 2018).
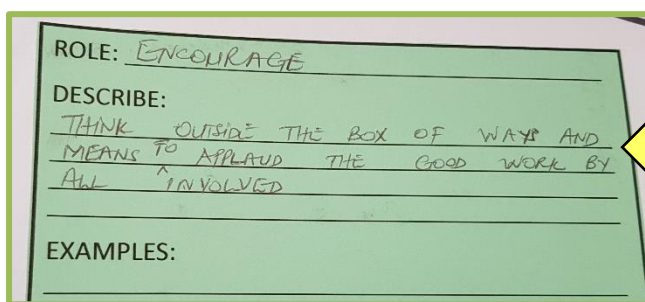
Photograph 4.7: Encouragement through recognition (Schools D and E)

Another important factor identified by the participants as important for the success of school-based vegetable gardens, relates to school principals allowing teachers and learners to spend time in the garden. A participant from School A explained this view in the following way: *"the teachers go with the learners to the garden….one class goes and then another class goes. We do have periods…"* (I-3, S-A, P-A1). A participant from School G similarly noted that she *"always take my learners maybe before the school comes out, maybe for 15 minutes just to pick the weeds. We are not deep in the garden we are just helping, so also taking them to learn how to do the gardening"* (I-5, S-G, P-G1). School B confirmed this, as can be seen in Photograph 4.8, by stating on their poster, *"make time for teachers"* (PRA- 2, S-B), to go to the garden*. We were also able to observe this during our visit to school I, as captured in Photograph 4.9.
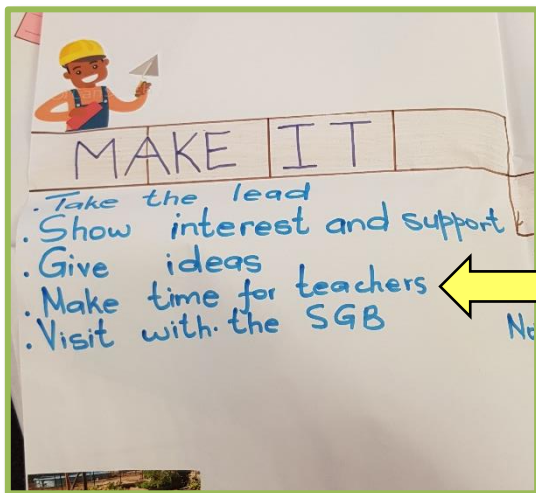
Photograph 4.8: Allowing teachers time in the garden (School B)

Photograph 4.9: Learners and teachers spending time in the garden

4.2.2.2 Sub-theme 2.2: Providing resources and encouraging involvement in fundraising

Participants indicated another supportive role that principals can fulfil as providing resources or access to financial and other resources. Schools A, H and E for example referred to principals playing an important role in collecting funds and mobilising resources, with School A explaining this as follows: *"yes, she gave us funds. We buy seedlings, so she gave us money to go buy the seedlings"* (I-3, S-A, P-A1)*. The idea was confirmed by School C, where the participants mentioned that the school principal can organise sponsors*, "…to buy tanks, seeds, and garden tools"* (PRA-1, S-C). A

participant from School G supported this idea by stating that their principal *"negotiates with the SGB to fund us"* (PRA-1, S-G)*.*

Participants furthermore referred to fundraising, noting the following: *"all teachers and learners to have a market day"* (PRA-2, S-C)*.* The value of fundraising was explained in more detail by School G, when a participant said: *"…if we get more, we can end up selling the vegetables for the school. It will help for the fundraising of the school"* (I-5, S-G, P-G1)*.* School A, as can be seen in Photograph 4.10, affirmed fundraising as a good opportunity for principals to support their teams in accessing resources for school-based vegetable gardens by capturing the following on their poster: *"get/direct us to funders and create opportunity to access funding"* (PRA-1, S-A)*.*
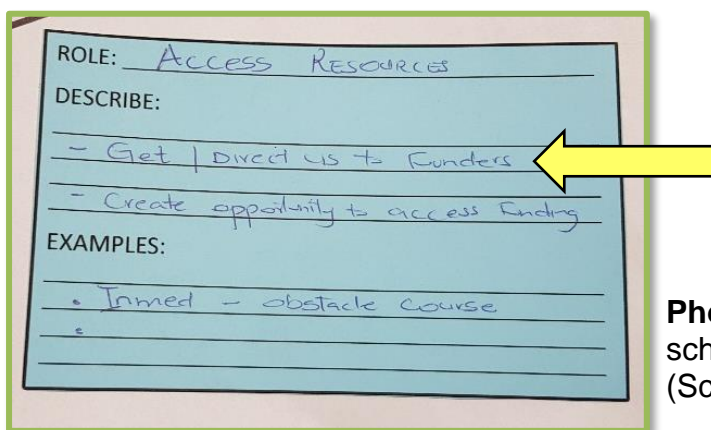
Photograph 4.10: Role of the school principal in resourcing funds (School A)

As such, it seems clear that the participants valued the role of school principals in either driving or supporting fundraising activities for school-based vegetable gardens. After observing how resources were used to maintain some of the gardens during the second field visit, I reflected in my journal in the following way: *"It also just shows then the impact of the principal going out and finding the funding to grow the garden…"* (RJ, 19 September 2018).

4.2.2.3 Sub-theme 2.3: Accessing networks of support and sources of information

Participants seemingly valued the role of a school principal in ensuring the success of a school-based vegetable garden by identifying networks that can provide resources, as well as gathering sources of information. Closely related, another supportive role of school principals, as identified by the teachers participating in the study, relate to the promotion of school-based vegetable gardens to visitors and stakeholders, with

the aim of networking in order to obtain external support. School H specifically referred to the role of the principal to "*show visitors and stakeholders the garden*" (PRA-2, S-H), as depicted in Photograph 4.11.
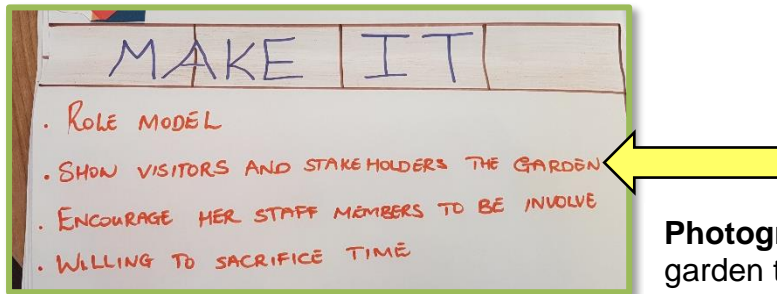
Photograph 4.11: Showcasing the garden to others (School H)

School I similarly recognised the importance of school principals in showcasing their vegetable gardens in order to build and maintain strong relationships with sponsors and organisations who could assist with funding. A participant explained this as follows: *"And what is important to the funders of the garden is to see progress, something that is sustainable, something that is sustainable. Nobody wants to fund something then they have to account for the funds from their business, there's nothing to show"* (I-4, S-I, P-I1). I was similarly able to recognise the importance of a well-kept school garden that is looked after in encouraging involvement from outside parties. I reflected on this by noting, *"…seeing the development and growth that has come out of the school's gardens who have invested in it, really showed the impact of how these gardens can help the schools and the communities"* (RJ, 19 September 2018).

School I referred to the University of Pretoria as such a network when stating on their poster, "*allowing outside people to research and work*" for example "*University of Pretoria and NGO's*" (PRA-1, S-I). For School H, it was seemingly also important that the principals become involved in the gardens to "*see that things are happening and to network with people*" (I-2, S-H, P-H1). The participant elaborated on the potential value of fulfilling such a role, by saying, "*…and then the department seeing that we have this beautiful garden, you know they wanted to be a part of it through a nutrition programme…*" (I-2, S-H, P-H1).

Most schools agreed that networking can result in possibilities to access and obtain resources. School H, for example, stated, "*all the tools we use in our garden were sponsored by the Dept of Agriculture*" (I-2, S-H, P-H1). In this regard, School C, as can be seen in Photograph 4.12, shared the idea that principals can arrange

networking opportunities by, for example, *"make workshops with other schools"* (PRA-2, S-C), which may in turn support those involved in vegetable garden projects. During the PRA-workshop I observed the participants' need for sharing and gaining information from peers. In this regard, I noted, *"this may show the need and want to learn from one another"* (FN, 28 May 2018).
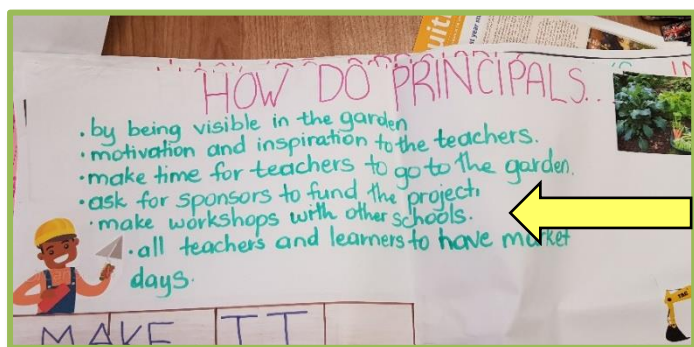
Photograph 4.12: Arranging workshops with other schools (School C)

4.2.3 THEME 3: PRINCIPAL-RELATED FACTORS THAT MAY HAVE A NEGATIVE IMPACT

Theme 3 reports on some factors associated with school principals that may have a negative impact on the success of school-based vegetable gardens. Refer to Appendix E (Table E.3) for a summary of the criteria I relied on to identify the sub-themes.

4.2.3.1 Sub-theme 4.1: Limited interest, involvement or support for the garden

According to the participants, limited interest or involvement by a school principal in a vegetable garden initiative may negatively impact on the success of the garden. The one major challenge for their garden identified by a teacher participant from School E relates to the principal not being interested. This teacher explained that *"the principal is not involved in any, in anything, in anything in the garden"* (I-1, S-E, P-E1). When further discussing this, the participant confirmed her wish that the principal would be *"…interested in it and trying to solve problems that could help the garden, you know because at the end of the day it's the school's garden"* (I-1, S-E, P-E1), thereby highlighting the potential negative effect of a principal not being involved. I reflected on this interview in the following way: *"It was great to see how passionate [the participant] was about the school gardens, but at the same time sad to see how much stress she was under being the only teacher who really showed an interest in the garden"* (RJ, 18 September 2018).

Schools C, D and G shared similar experiences and stated that principals may "break it" for school-based vegetable gardens if they are not optimally involved in such projects. Both Schools C and G stated: *"showing no interest"* (PRA-2, S-C, S-G). School F similarly noted, as can be seen in Photograph 4.13, the negative effect of this as they mentioned *"she does not take full responsibility i.e.: she does not involve herself"* (PRA-1, S-F). I captured my observations after visiting School E in the following way: *"The principal at the school is fairly new and so he hasn't shown much interest in the garden either"* (FN, 18 September 2018).
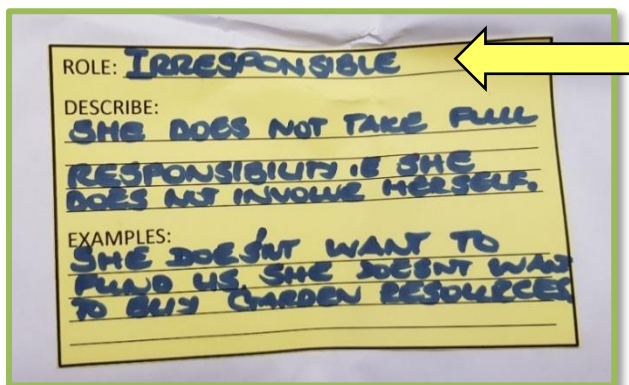
Photograph 4.13: Principal being viewed as irresponsible due to being perceived as not involved (School F)

Participants identified related challenges such as a principal not being able to find funders or resources as a possible negative influence on the success of school-based vegetable gardens. Schools D and E for example described this, as captured in Photograph 4.14, by noting *"by not providing what's needed"* (PRA-2, S-D and E). School H similarly referred to *"no sponsors, seeds and tools"*. In confirmation, School C stated, *"by being passive (in looking for sponsors and promoting the project)"* (PRA-2, S-C). Closely related, a teacher participant form school E explained that, *"So, there is a problem with funds as well. There's no one else involved, like coming to help, now for instance, like sponsors for seeds or soil or volunteers, like parents there is no parents coming to volunteer"* (I-1, S-E, P-E1). As such, the effect of limited involvement and interest by school principals were seemingly perceived as having broad implications in terms of, for example, obtaining and accessing resources and being able to make a success of a garden project.
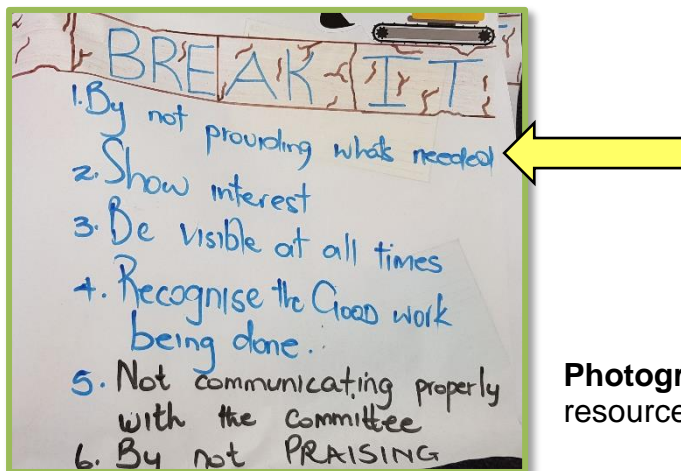
Photograph 4.14: Principals not providing resources (Schools D and E)

A participant from School E indicated yet another related negative factor impacting the success of their garden, in referring to the lack of support she perceived from the principal and teachers at her school. The participant indicated the perception of being the only one who was dedicated to the garden, often struggling to get recognition or the help she needed, even though a garden committee had been established at the school. She explained her experiences in the following way: *"the committee I have why are you here what is the point because I'm alone and I feel like what if I wasn't as involved and what if I didn't care?"* (I-1, S-E, P-E1). I reflected on this contribution in my research journal, stating, *"Her frustration could be felt when we asked about the support she receives"* (RJ, 18 September 2018).

4.2.3.2 Sub-theme 4.2: Not recognising the teachers' role and the value of the garden

Participants were seemingly of the view that, if school principals do not display recognition of the role of teachers, or of the value of school gardens, the success of the gardens will be negatively impacted. Schools A, C, D, E and G all acknowledged certain negative actions by school principals that may hinder the growth and development of school-based vegetable gardens. Schools C, D and E, for example, referred to limited recognition having a negative effect by stating on their poster, "*no recognition for the committee members*" and [not] "*recognise the good work being done*" (PRA-2, S-C, S-D and E), as included in Photograph 4.15.
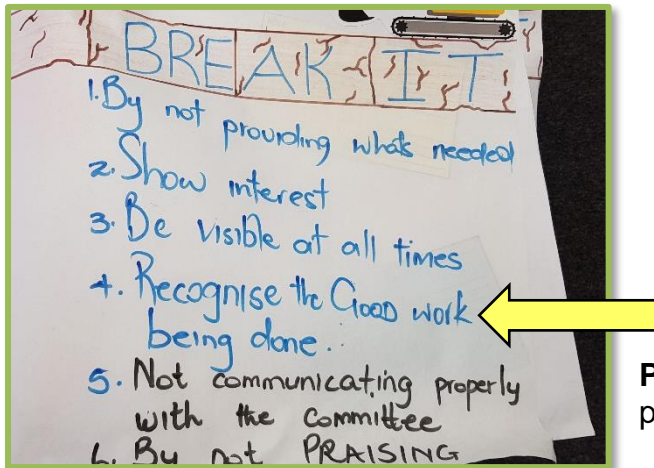
Photograph 4.15: Principals not providing recognition (Schools D and E)

A further potential negative effect on the success of school-based vegetable gardens was related to school principals not supporting role players to take care of garden activities. School B, for example, referred to their principal "*not allowing time for the project*" and "*not allow the teachers to attend workshops*" (PRA-2, S-B)*.* This experience was affirmed by School A, who stated on their poster, "*excluding the garden from day to day activities*" (PRA-2, S-A).

Another potential negative effect entails school principals not being supportive*,* as perceived by the participants. School G, for example, noted on their poster, "*by not being supportive*" *(*PRA-2, S-G) (see Photograph 4.16)*,* while School H similarly stated, "*not supportive*" (PRA-2, S-H)*.* School A identified yet another potential negative effect when a principal would "*sees the project in isolation of school curriculum".* This relates to a principal not acknowledging the value of a school-based vegetable garden in the curriculum (PRA- 2, S-A).
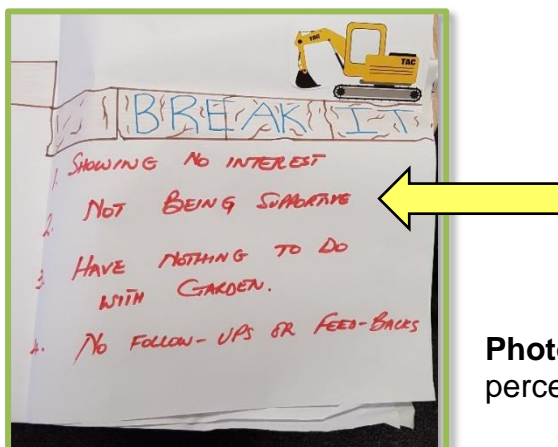
Photograph 4.16: Principals being perceived as unsupportive (School G)

4.3 FINDINGS OF THE STUDY

In this section I relate the identified themes and sub-themes to the existing literature I presented in Chapter 2.

4.3.1 Importance of school principals being holistically informed about the value and challenges of school-based vegetable gardens

In this study I found that teachers expect school principals to understand and acknowledge the value of school-based vegetable garden initiatives, and their potential for the school and the learners. Teachers emphasised the importance of school principals being understanding of how a vegetable garden can be used not only as a teaching tool, but as something that can assist in improving the school, helping learners and even the community to eat healthier. This idea of understanding and recognising the value of garden projects is supported by Barr and Saltsmash (2014), who found that principals will be effective when they take leadership based on their own knowledge, investment and interest. Moos (2011) similarly supports this finding by mentioning that principals are required to be aware that schools are placed in, and form part of, local communities in every way, whether it be culture, social circumstances or caring for future generations. This idea implies that vegetable gardens can be regarded as sources of support for the members of schools as well as their communities in resource-constrained contexts.

Furthermore, I found that the teachers who participated appreciate a principal who is informed and has knowledge of people involved in the garden team committee, and of the progress made based on their efforts. In order for this to be possible, the principal must know the team and their tasks, and encourage input from people in the community and the parents of the school. If principals possess updated knowledge about vegetable gardens, they can present on and showcase the gardens during feedback to funders or in obtaining additional funds. It follows that principals who serve on garden committees themselves will add additional benefit.

Rossow and Warner (2000) confirm this finding by stating that, as part of the prerequisites of being a principal, the principal must create consensus amongst teachers by allowing them to assist one another in different tasks, and then share feedback in order for the principal to build expectations for success. My finding is furthermore supported by Balyer et al. (2015) who propose the idea of a collaborative

environment in a school where the principal divides teachers into smaller effective teams for collaborative efforts, and then believes in these teams to assist in a leadership capacity, provide and encourage, and take part in important decision-making opportunities.

I also found that it is important for a school principal to understand the needs and challenges that a garden committee may face while trying to develop and sustain a school-based vegetable garden. Teachers specifically indicated that principals need to know what is happening in order for the principal to advise and assist the garden team, but also to make the necessary changes required to improve the garden. This finding aligns with what Prew (2009) found in his study, indicating that principals need to realise their role in school development programmes and are expected to engage in active communication with staff members. Legro and Ryan (2015) similarly found that collaboration amongst school members, parents and the community is needed to resolve problems, under the leadership of an effective principal who can facilitate such collaboration. This idea is furthermore supported by Meresman et al. (2009) who found that school gardens will be successful when a school principal put a plan of action into place to address challenges, therefore overcoming conflict.

Lastly, I found that the participants valued recognition by the school principal and regarded this as important to succeed. Teachers thrived when their efforts were acknowledged and recognised as this highlighted the role they fulfilled in supporting the garden. Schumaker and Sommers (2001) similarly found that, once committees have been formed and are functioning, the principal needs to provide support to the individuals who form part of a group aiming for positive change in a school. Therefore, support by the principal is important and may impact negatively if not shown to the role-players. Aligning with this are the challenges faced by many teachers in resource-constrained schools, resulting in experiences of limited support or opportunity to enhance their careers or the school-community (Du Plessis, 2015).

4.3.2 Importance of school principals being actively involved and encouraging others to participate in vegetable garden projects

Feeling supported and as though the principal shares the passion and dream for the development of a vegetable garden was experienced in a positive way by the teachers in this study. In this regard the findings of my study indicate that teachers can be

encouraged to be involved and strive for success of vegetable garden projects if principals are involved and support them. The principles of Invitational Education theory support this finding by emphasizing the importance of respect, consideration of people as valuable and capable, displaying trust, having confidence in people and being able to acknowledge the integrity and abilities they hold (Steyn, 2005). It follows that if school principals implement Invitational Education theory, it may have a positive effect on school-based vegetable gardens. This finding also aligns with Novak's (2009) view that in order to be an effective leader, a school principal needs to be committed to growing the school on one hand, but also developing people as human resources on the other.

The teachers in this study furthermore indicated the need for principals to be actively involved in vegetable gardens, not only by gaining resources and funds, but by being hands-on and leading by example. In support, Damons and Abrahams (2009) discuss this trend in their research on promoting healthy eating in schools, indicating that in order for school programmes to be successful, the principal needs to be involved from the start with implementation activities, believe in the initiative, be committed, be willing to make sacrifices and work hard with the belief that a difference is being made. Harris (2002), as well as Quila and Tylio (2014) support this finding by stating that principals can show integrity when walking the talk and providing consistent support, as well as modelling healthy lifestyle choices to the learners. This finding is furthermore supported by Somerset and Markwell (2008) who found in their research on school gardens in Brazil, that a school principal can contribute to the success of a vegetable garden by being a leader and facilitator of programmes, and by initiating and creating strategic plans to help the people who are involved overcome conflict, and solve the problems and challenges they experience. Specific to the South African context, this idea is supported by Rendall-Mkosi and colleagues (2013) highlighting the many roles that a principal may play in implementing the national school feeding scheme through buying food, managing resources and writing reports.

Curtis and O' Connell (2011) define effective leadership as the ability to influence people so that they will be able to enthusiastically strive towards achieving goals. I found this to be prominent in the current study as teachers indicated the need to be motivated, encouraged and rewarded for working in school gardens. In this regard,

teachers valued mere principal involvement in the garden as encouraging and as a way of motivating teachers and learners to also want to get involved. One of the principles of Invitational Education theory aligns with this finding as it states that an effective leader will intentionally invite people to grow and develop through programmes and policies which will allow them to grow (Steyn, 2005). My finding is furthermore supported by Ngcobo and Tikly (2010), who state that a vision shared amongst the members of a school will encourage people to work collaboratively towards change and school success. The finding is also confirmed by Ylimaki et al. (2011) who found that the school principal will play a vital role in school improvement by cultivating and sustaining relationships between parents, the community and school members, as this will encourage all involved to become even more involved in facilitating positive change.

A silence I identified in the results I obtained relates to the role of the school principal in distributing leadership. Existing literature states that an important dimension of effective school leadership is the ability of the principal to distribute leadership among the members of the school as a way of creating personal development, as well as fostering collaboration (Ngcobo & Tikly, 2010; Southworth, 2009). The fact that the participants in the current study did not refer to this dimension may perhaps be ascribed to the fact that the members of the various garden committees shared responsibilities rather than fulfilling individual roles without realising that leadership was distributed in a natural way in this manner. This may perhaps also be ascribed to the finding that principals were seemingly not sufficiently involved in the school-based vegetable gardens at some of the schools, therefore not realising the need to identify leaders that could oversee the gardens. These potential reasons are, however, mere hypotheses that require further research before coming to a conclusion.

Although only a few participants indicated that their principals played no role whatsoever in the vegetable gardens at their schools, all groups of teachers indicated the potential negative impact on a garden in such cases of a principal having no interest or not being involved. This view is supported by Damons and Abrahams (2009), who regard the school principal as key to the implementation of any programme or project at school from the moment of inception of the project.

4.3.3 School principals' role in providing material and financial support

In my study, the importance of school principals in providing resources and finding or encouraging funds to be sourced was emphasised for the development and sustainability of school-based vegetable gardens. Teachers indicated an expectation of principals to provide seeds and gardening tools for school gardens, but also be able to find sponsors to fund gardens or arrange opportunities for the school to hold fundraising events. This finding supports what Barnett (2013) states, namely that participation by educational stakeholders will support the quality of education, and furthermore help schools improve in taking ownership. In addition, the author states that stakeholders may assist disadvantaged groups, and mobilise the necessary resources to build school capacity.

Prew (2009) found that engagement in school improvement will be directed by the community rather than the school itself. This can be seen as a contradictory finding as the results I obtained emphasise the school as a central role-player, yet with networking and sponsors in support of any school efforts. I more specifically found that the school and school-based role-players (specifically principals) tended to reach out to the community and surrounding businesses to find the means necessary to sustain vegetable gardens in many of the schools involved in this study. In some cases, however, the community was indicated as somewhat reluctant to become involved in maintaining school-based vegetable gardens. Further research into the role of community support is thus required in order to explain how schools with vegetable gardens can gain the interest of the surrounding community.

Another vital role of the school principal highlighted by the current study concerns principals' efforts to network and make connections outside of the school and community in support of school-based vegetable gardens. This role was emphasised as important not only for gaining resources and sponsors for funds, but also in being able to source and share information about vegetable gardens. Novak (2009) supports this finding by stating that school-based programmes are supposed to take people from inside the school outside, and bring people from outside the school inside, as a way of conveying the message that schools are well-connected institutions. Stanley et al. (2004) similarly support the finding I obtained by commenting that processes that give life to a school should be defined by a democratic attitude, the ability to employ

collaborative and cooperative procedures, and through continuous networking with members of the schools, learners, teachers and the wider community.

Finally, the teachers who participated in my study indicated the necessity to be allowed to spend time in the garden in order for them to be able to teach learners about how to grow a garden to full potential, and to help with the maintenance of a garden. This finding aligns with what Harris (2002) states in terms of distributed leadership implying that a school principal will praise others, involve others in decision-making and then create a space for staff to experience professional independence. Haigh (2011) supports this finding in commenting that teachers and learners must work together with mutual consideration and respect in order to build a long-term relationship, as well as to learn how to manage stress and conflict. As such, the findings of the current study emphasise the importance of a school principal allowing this possibility to be realised, facilitating a process whereby learners (and potentially the broader community) can learn and develop on multiple levels.

4.4 CONCLUSION

In this chapter I discussed the results of the current study, relying on excerpts from the data to support my discussions of the themes and sub-themes I identified. I then compared the results I obtained to the existing literature I presented in Chapter 2, based on the focus of my study.

In the next chapter, I come to conclusions in terms of the research questions I formulated. I contemplate potential contributions of my study and reflect on possible limitations. I also make recommendations for training, practice and further research.

CHAPTER 5 – CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION AND OVERVIEW OF PREVIOUS CHAPTERS

In Chapter 1, I provided an overview and my rationale for undertaking this research. I formulated research questions, stated working assumptions, and clarified key concepts. I also provided a brief description of the paradigmatic choices, and my conceptual framework. Next, I introduced the selected methodological strategies, and then concluded by referring to ethical considerations and quality criteria.

In Chapter 2, I discussed existing literature on effective leadership, and the required profile and role of school principals in the South African context. I focused on the potential role of a principal in school-based support initiatives, and then described the value of school-based vegetable gardens as an example of such initiatives. I concluded the chapter by explaining my integrated conceptual framework.

In Chapter 3 I described interpretivism as selected epistemological paradigm, and qualitative research as methodological approach. I discussed the way in which I utilised a case study design by applying PRA-principles, how I selected the cases and participants, and which strategies I used for data generation, documentation and analysis. I concluded by explaining aspects of research ethics and quality criteria.

In Chapter 4, I presented the results of the study in terms of the main themes and sub-themes I identified during inductive thematic analysis. I then discussed the findings I obtained in terms of the existing body of literature as presented in Chapter 2. In this final chapter, I come to conclusions in addressing the research questions I formulated in Chapter 1. I contemplate possible contributions of the study and identify limitations. Finally, I make recommendations for training, practice and future research.

5.2 CONCLUSIONS

In this section, I draw conclusions from the findings of the current study. I first address the secondary research questions, and then the primary question.

5.2.1 Secondary research question 1: *How do teachers conceptualise effective leadership in a resource-constrained school context?*

The teachers who participated in the current study conceptualised effective leadership in resource-constrained school contexts based on the actions and support that principals can provide. More specifically, effective leadership was related to a principal who would model positive behaviour and lead by example, by being involved in, for example, a school-based vegetable garden, in helping to maintain the garden. Furthermore, a principal who is knowledgeable about the garden was valued, implying that a principal would be well-informed about the achievements, needs and challenges of the garden committee. Participants used words such as "involved", "supportive", "encouraging and motivating", "giving recognition" and "buy-in" when discussing effective leadership, specifically in the context of principals supporting school-based vegetable gardens.

The majority of the participants who took part in the current study were satisfied with the level of commitment and involvement that their principals demonstrated in school gardens, with only two of the nine schools indicating that their principals did not play an effective role. As such, I can conclude that, if staff members and learners experience a school principal as informed and involved in a school-based vegetable garden, the chances of success are high. In relating this conclusion to my conceptual framework, it seems important that principals display leadership and management by involving themselves in school programmes, but also by intentionally inviting others (such as garden committee members) to share the role of managing such initiatives. Furthermore, a school principal is required to give regular feedback to others involved, such as garden committee members on, for example, the value, use, needs and challenges experienced, thereby demonstrating that she/he is informed about what is happening in the project, and can therefore provide the necessary help and support when needed.

5.2.2 Secondary research question 2: *How can school principals support school-based vegetable garden projects?*

Based on the findings of the current study, I can conclude that school principals can support school-based vegetable garden projects through motivation and

encouragement, networking with stakeholders, resource provision, and finding sponsors to fund such projects. Participants who experienced their principals as appreciative of the work they conducted and supported them in their endeavours, were more inclined to succeed in vegetable garden projects as they felt motivated and encouraged. In addition, I found that principals can demonstrate support by sharing the garden committee's passion and engaging both members of the school and community to become involved. I, therefore, propose that if a school principal is mutually compassionate about a garden and acknowledges the hard work and effort of the garden committee and learners, they can support the success of the project.

I furthermore found that principals need to be active networkers who constantly seek outside stakeholders to invest in their school gardens. This will only be possible when a school principal values the garden as a source of potential learning opportunity for learners, food enrichment for learners and the community, and a source of income for the school. The specific role of a principal in this regard relates to showcasing the project and encouraging stakeholders to invest in the sustainability and maintenance of the garden, by providing financial or human resource support.

Additionally, principals should value the importance of fundraising and sharing of information. In addition to principals providing materials and resources, I thus conclude that school principals should encourage fundraising activities in order to obtain money for the resources needed to sustain school-based vegetable gardens in order for such projects to be successful. Even though several of the participating schools had sponsors to assist with funding, and provide skills and knowledge about gardening, in other schools where sponsors were not present, the need for the principal to be on board with fundraising activities was evident. In addition to sourcing financial assistance, principals can provide support by seeking sources of information by, for example, arranging joint discussion sessions with other schools or sending staff members to workshops to extend their knowledge and skills.

5.2.3 Secondary research question 3: *How may school principals hinder the success of school-based vegetable garden initiatives?*

Based on the findings of the current study, I can conclude that principals who display limited interest and involvement in school-based vegetable gardens, and who do not value and recognise those involved or the vegetable garden itself, may hinder the

success of such gardens. Limited interest and involvement may in turn result in insufficient funds and resources being obtained, therefore making it difficult for a garden committee to ensure success. Furthermore, if a school principal does not encourage participation and allow teachers and learners to spend time in the garden, a vegetable garden cannot be optimally utilised, limiting the chances of success. Closely related, if a principal does not acknowledge the value of a vegetable garden as a source of learning opportunities, and as an academic tool for both learners and teachers, this too may result in a vegetable garden being underutilised.

I furthermore argue that if principals do not encourage and praise those who are involved in a school-based vegetable garden, teachers and learners may not feel motivated, and therefore lack the necessary interest to be involved in supportive school initiatives. When this occurs, garden committee members may either not apply themselves to the success of the garden, or the ones involved may find it hard to get additional staff members on board to assist in the maintenance and sustainability of gardens, resulting in limited success of such projects.

In linking these conclusions to my conceptual framework, I posit that a principal who motivates and encourages others will create an environment where collaboration is nurtured, and where individual assets can be embraced and developed. However, if such an environment is not provided, gardens may not be well maintained or sustained. Such a scenario will in turn result in challenges for not only the learners who rely on these gardens as a source of food and knowledge, but also for outside stakeholders who, as a result, may not want to invest in such projects.

5.2.4 Primary research question: *How do teachers view the role of school principals in the success and sustainability of school-based vegetable gardens?*

Based on the findings of the current study, I can conclude that teachers view school principals as important for the success and sustainability of school-based vegetable gardens. Teacher participants who are involved in school gardens themselves were able to identify multiple ways in which their school principals added to the success of their school gardens. First and foremost, a principal is required to share the dream of a garden and acknowledge teacher and learner involvement, as this will motivate

others to be involved, and to also value the garden as a potential learning opportunity and source of nutritious food.

The active involvement of a principal in school-based vegetable gardens is not only important in motivating others to become involved, it is also a way in which effective leadership can be seen first-hand. Active involvement with the garden committee and in the garden itself implies that a principal will be well-informed about the activities and achievements in the garden, yet also of the needs and challenges faced by the garden committee. In response, a principal can provide feedback and ideas which can support success. In accordance with my conceptual framework, the school principal forms part of the foundation of creating success for school-based support initiatives such as garden projects. Therefore, a principal should not only practice effective leadership through positive actions, but also by creating a space for others which may foster self-development. According to the asset-based approach, a principal who acknowledges that individuals have the potential and capacity to create change, can utilise a school-based vegetable garden as a way of facilitating change in people and also in the broader school community.

I furthermore found that a principal who acknowledges that the school itself cannot provide all the required resources and materials for a school garden will provide leadership by creating opportunities to raise funds or source potential funders. Therefore, by allowing the garden committee with opportunities to raise funds, they can address challenges and needs, thereby supporting sustainability and maintenance of garden projects. Furthermore, a principal will play a vital role in identifying external resources when a school itself cannot provide the necessary resources through fundraising initiatives. In this regard, a principal can invite the local community, as well as the local and provincial institutions and businesses to become involved or provide funding for a garden. These actions and institutions, according to my conceptual framework, are seen as assets that can contribute to the success of school-based vegetable garden initiatives as they may not only be financial sources, but can also be sources of knowledge and skills.

On the other hand, I found that limited interest or involvement of school principals in school-based garden initiatives can be considered as ineffective leadership. In such cases, the role of the principal can be perceived in a negative light, potentially leaving

members of staff demotivated, feeling unsupported and alone in the work they do. In this regard, I argue that school principals may hinder the optimal development of individual assets of individuals when not valuing the role that staff members or learners play in projects such as school-based vegetable gardens. In addition, the ineffectiveness of a school principal may result in the potential of a school garden not being realised, and the needs of learners and the broader community not being met.

5.3 POSSIBLE CONTRIBUTIONS OF THE STUDY

This study contributes to the broader findings of the STAR, SHEBA and FIRST-GATE projects, more specifically in terms of the role of school principals in the success and sustainability of school-based vegetable gardens, observed over the years to varying extents at the schools who have participated. As such, this study may also contribute to existing literature on successful school-based projects and the key role of school principals in these. In general, this study may thus add to existing literature on effective leadership by principals, when schools undertake supportive initiatives.

Another possible contribution of the study relates to the opportunity for the teacher participants to share information on their experiences of school-based vegetable gardens with each other during the course of my study. This may potentially have created opportunities for teachers who have experienced concerns or needs in terms of their school gardens, to gain some knowledge or ideas from peers that may have assisted them in addressing the problems they faced.

Furthermore, this study contributes to the body of knowledge on the value of school-based vegetable gardens in resource-constrained contexts. Teachers namely valued school-based vegetable gardens as a source of nutritious food, as well as curriculum enrichment and skills transferral. In addition, the role of the school principal in engaging both teachers and learners to become involved in school-based vegetable gardens, and identify and access external support by other stakeholders, is seen as an important contribution indicating the way in which such projects may be supported by school principals for success.

5.4 CHALLENGES AND LIMITATIONS

One of the challenges I experienced during the research process relates to language differences between the participants and myself. I specifically found that, during the

PRA-based workshop and interviews, I occasionally felt unsure of what was said and had to employ some strategies clarify what the participants contributions entailed. In such cases, I namely asked participants to repeat themselves whenever something was unclear to me, included member checking, and engaged in regular discussions and reflection sessions with my supervisor on what I had observed.

Another challenge I encountered relates to the time frame in which the PRA-based workshop occurred. As the workshop was conducted after school hours at a central venue, time was restricted and the possibility of being rushed existed. However, based on thorough preparations, the way in which the prompts were formulated, and guidance by my supervisor in conducting the PRA-based workshops with these participants who were familiar with such a process of data generation, I did not perceive this challenge as a limitation. To this end, participants managed to discuss and report on all questions posed to them. In support, the follow-up interviews that we conducted enabled me to clarify uncertainties and obtain more in-depth information on the discussions that occurred during the PRA-based workshop.

Finally, I experienced a possible limitation during the second field visit when conducting individual interviews at different schools. At one of the schools specifically, the interviewee displayed a level of limited involvement and did not seem to be well informed about the school garden as she was new to the school, and could thus also not share a lot of ideas on the role of the school principal in their school's garden. However, this did not result in a lack of information as I utilised multiple data generation and documentation techniques and did not have to rely on interviews only.

5.5 RECOMMENDATIONS

In this section I formulate recommendations for training, practice and future research.

5.5.1 Recommendations for training

Based on the findings of this study, I recommend that prospective school principals receive training on the value of school-based vegetable gardens, and how to support such initiatives through effective leadership. I furthermore recommend that, as part of such training, principals be guided on how to involve members of staff, learners and the community in a collaborative way to encourage the involvement and responsibility of various members in support of success. It is important for prospective school

principals to be trained on how to apply effective leadership skills in the context of sustaining school-based interventions. Closely aligned, prospective teachers can benefit from being trained to take on delegated management responsibilities in order to assist principals where necessary, by sharing the load of work as part of distributed leadership practice. In addition to students benefiting from such training, I recommend in-service training workshops in these areas for principals and teachers already in the profession.

After observing the value of teachers getting together to discuss and share their experiences on school-based vegetable gardens, I furthermore suggest that neighbouring schools that have implemented school-based vegetable gardens meet on a regular basis to share ideas and experiences. In addition, I recommend that teachers who fulfil a leading role in school-based vegetable garden maintenance and development attend training courses on gardening in order to further enhance their knowledge and skills base so that school-based vegetable gardens can be used to their potential. Closely related, I suggest in-service training for teachers on how to utilise school-based vegetable gardens when presenting the school curriculum, or how to include garden activities in some way throughout the school day, for example, as a reward system or free time activity for learners.

5.5.2 Recommendations for practice

I recommend that practicing teachers be allowed the opportunity to voice their experiences and opinions with their principals in a controlled environment in such a way that may encourage additional input and investment from all members involved in school-based vegetable gardens. I furthermore recommend that principals and teachers who form part of a garden committee meet regularly to discuss the progress of their vegetable gardens and formulate future plans. I also suggest that garden committees from different schools meet from time to time to discuss and share experiences, and to assist one another with the needs and challenges experienced.

In addition to this, I recommend that schools with school-based vegetable gardens dedicate one day per school term for fundraising that can assist with resources required to maintain the gardens. Another recommendation relates to encouraging garden committees to choose one committee member per month as "champion" in recognition of his/her contribution towards the development and success of the

garden. This may encourage other members to become even more involved, and may also encourage staff members who do not form part of the garden or the committee to become involved and invest some time in the school-based vegetable garden.

5.5.3 Recommendations for future research

Based on the findings of this study, I recommend the following areas for future research:

❖ Factors determining the levels of school principals' interest and involvement in school-based interventions.
❖ Ways in which principals can encourage teachers, learners and community members to take part in school-based interventions such as vegetable gardens.
❖ Fundraising strategies that may support the development and sustainability of school-based vegetable gardens.
❖ Perceptions of school principals on the value of school-based vegetable gardens and how they can build on and further develop these.
❖ Ways in which community involvement in school-based vegetable gardens can be enhanced.

5.6 CONCLUDING REMARKS

In this study I explored teacher perceptions of the role of school principals in the success and sustainability of school-based vegetable gardens. My study formed part of three broader projects where vegetable gardens have previously been implemented, with varying levels of success. The findings of the current study highlight that teachers perceive principals as playing an important role in the success of school-based vegetable gardens. Effective leadership was related by the teacher participants to principals leading by example and providing or recruiting the necessary resources for school-based vegetable gardens to be a success. In summary, teachers indicated the need for school principals to be well-informed and knowledgeable on their school gardens, and to show support by utilising multiple acts of invitational leadership.

On the contrary, the participants viewed principals as ineffective leaders when not involved in school-based initiatives (such as gardens), thereby having a negative impact on the success and sustainability of such projects. In general, it seems as though the majority of the teacher participants acknowledged the positive roles that

their principals fulfilled, which they then linked to the success and sustainability of their school-based vegetable gardens.

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APPENDICES

Appendix A: Informed consent letter

Appendix B: Semi-structured interview schedule

Appendix C: Written data

       C.1 - Field notes from first visit

       C.2 - Field notes from second visit

       C.3 - Research journal

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Appendix D: Visual data

       D.1 - Photographs taken during PRA- workshop

       D.2 - Photographs taken during interviews

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Appendix E: Inclusion and exclusion criteria for results

APPENDIX A – INFORMED CONSENT LETTER

REQUEST FOR PARTICIPATION AND INFORMED CONSENT
TEACHERS

Dear Sir/Madam

I am currently busy with an MEd study in Educational Psychology at the University of Pretoria on the following topic: *"Teacher' perceptions of the role of the school principals in the success and sustainability of school-based vegetable gardens".* My study forms part of the FIRST-GATE project, led by Prof Ronél Ferreira, in which you have been participating in recent years. In my study I will aim to work with teachers in order to gain their understanding and insight into the effective leadership skills that school principals used in order to maintain successful school-based vegetable gardens.

You are herewith requested to participate in my study. Your participation is voluntary and you may withdraw from the study at any time if you wish to do so. All information you provide will be treated as confidential and your name will not be made public to anyone or when presenting findings. We will use pseudonyms to protect your identity. You will also not be asked to provide any information that could result in your identity being made public. You will have full access to the generated data during your involvement, as well as to the final results of the project. The generated data will be stored in a safe place at the University of Pretoria for 15 years. As this is a funded project data will also be available in an open repository for public and scientific use where needed.

For the purposes of my study you will be requested to participate in participatory workshop sessions, taking the form of group discussions and some writing/drawing activities. These will be recorded in the form of posters, photographs and audio-recordings. For these workshop sessions you will be asked to tell us about the leadership skills and qualities of the school principal which you have identified and whether or not assets of the community were used by the principal to maintain the school-based vegetable gardens.

The benefit of this study is that the findings will be used to inform other schools about what skills and assets are needed in order to maintain and sustain school-based vegetable gardens in order for their growth to be a success for the schools and community. For you, a potential benefit entails that you may gain knowledge and insight into different effective leadership skills and qualities that may help you progress as a teacher, as well as build an active team relationship with the teachers and staff who form a part of the project. We do not foresee any risks from this project and will respect your dignity at all times and not harm you in any way.

If you are willing to participate, please sign this letter to indicate your consent. This will mean that you agree to participate willingly and that you understand that you may withdraw from the study at any time. Under no circumstances will your identity be made known to others. If however, you would like your face to be shown when photographs are published, kindly tick the relevant block below.

Warm wishes

_____   _____

Miss Lauren Jordaan(Researcher)   Prof Ronél Ferreira (Supervisor)
Telephone number: 082 352 6355   email: ronel.ferreira@up.ac.za
e-mail: la.jordaan16@gmail.com

Faculty of Education
Fakulteit Opvoedkunde
Lefapha la Thuto

INFORMED CONSENT
TEACHERS

Title of research project: *Teacher perceptions of the role of school principals in the success and sustainability of school-based vegetable gardens.*

I, _____ the undersigned, in my capacity as teacher at _____ (name of school) hereby agree to participate in the above-mentioned research. I understand that my contribution will be treated as confidential and anonymous, and that I may withdraw from the study at any time, if I wish to do so.

My face may be shown on photographs

YES	NO

Signed at _____ on_____2018.

_____   _____
Participant   Researcher

_____
Witness

APPENDIX B - INTERVIEW SCHEDULE

SEMI-STRUCTURED INTERVIEW SCHEDULE

The following questions will guide individual interviews:

1. When did the school implement the school-based vegetable garden?

2. What makes it difficult to grow a school-based vegetable garden in a resource-constrained environment/community?

3. What leadership skills do you think are important when implementing a school-based initiative such as the vegetable garden?

4. What leadership skills did your school-principal exert when implementing the school-based vegetable garden?

5. What leadership skills do you think the school principal should have used more? And why?

6. Describe some ideas that the school principal used in order to show support for the school-based vegetable gardens?

7. Which assets from the school or community did the principal utilise to help with the implementation process?

8. Describe any incidents where the school principal made decisions which may have hindered the success and sustainability of the vegetable garden.

APPENDIX C.1 - FIELD NOTES FROM PRA-BASED WORKSHOP

Field notes: PRA-based workshop, 28 May 2018	

• Teachers are engaging with their posters actively, taking ownership of the process
• They're willing to participate
   o Some teachers are taking their own notes and taking pictures of the posters
• All the teachers are listening very attentively
• All nine schools are here
• Teachers taking time to fill out posters, thinking about what to write
• One group has written a draft of their answers in pencil before they write everything in pen
   o Discussing and reflecting intently
• One teacher has been on the phone intermittently
   o Not taking part
• Some teachers taking charge in their groups
   o All working well together and really engaging with the posters
• Poster 2 – group (who was writing in pencil first) are still writing in pencil and discussing ideas before writing in pen
• Some groups systematically working through posters
   o Others are less careful
   o Generally, majority are very attentive and taking careful consideration when completing and filling out their posters
• Teachers critically engaging with their posters
   o Really discussing what they are contributing to the posters
• Decided not to get in-depth feedback as teachers/participants are writing so much in their posters
   o Feedback from each group on one aspect of their feedback of their posters
• Some teachers are very apprehensive about writing about make it or break it of principals.
   o Not too keen to give feedback on those posters
	Passion? A want to know more about improving gardens? May show their keen interest in learning more about gardens and sharing the success of gardens
	
	This may show the want and need to share experiences and learn from each other. They all made the effort to attend.
	
	Some of these teachers are on the committee and are in charge of the gardens. For example, the vice principal from Walmer Primary
	
	May be a respect or cultural thing, could possibly be because they don't want to speak badly of principals who are not doing a good job. There may also be other participants who they can't trust and may go and speak about what is being said. We are also new researchers, so although they know Prof Ronel, they might still be gaining mine and Tegan's trust.

APPENDIX C.2 - FIELD NOTES FROM SECOND FIELD VISIT

Please note that this is just a sample of the analysed field notes made during individual interviews. The complete set of field notes is included on the compact disc (CD) attached to the last page of the mini-dissertation.

School E (Participant interviewed: E1) The teacher we spoke to seemed to be in a good spirit and happy to speak to us. She was very passionate and had a lot to say. Ronel asked the questions while Tegan and I observed in order to get an idea about what type of questions to ask. She spoke a lot about her role with the garden and emphasized that she was basically the only teacher really interested in working in the garden. She works with her grade 4 learners and tries to incorporate the garden as much as she can into their lessons. She uses the garden as a reward incentive where learners are rewarded time in the garden. The school has a gardener who also plays a huge role in the maintenance of the garden. He helps a lot with the planting and growing of the vegetables. Lauren mentioned that not too many school parents or community members seem interested in the garden. They will sometimes come around and see how it's doing but they seldom, if ever, get involved. ▮▮▮▮ really emphasized that she is the only one who really has a passion for working in the garden, and she came across as quite unhappy about it. She often mentioned that she would like more help.	Getting learners interested in the garden Teacher passion plays a huge role in garden success
The principal at the school is fairly new and so he hasn't shown much interest in the garden either. ▮▮▮▮ mentioned that IF the principal was involved that it would make a big difference. She mentioned the role of the principal as being an encouraging, and leading by example so the school would become more interested in the maintenance of the garden. It would mobilise them. She also mentioned that it would be good if the principal promoted healthy eating through the garden. Lastly, it would help a lot with funding if the principal was involved and would help to get more resources for the garden.	Lack of interest versus what is expected
It was really interesting to go out to the field and meet one of the teachers who has a real passion for the garden. Just by listening to ▮▮▮▮, it was possible to see how much the garden meant to her and how much she wanted it to succeed. It was also clear that she was quite frustrated at the fact that she didn't receive much help.	Negative effect of lack of principal involvement
School G (Participant interviewed: G1) When we arrived Professor Ebersohn went to go walk around and look at the gardens while I interviewed ▮▮▮▮ She first took me to see the principal and then we went to another room. ▮▮▮▮ was very interested in talking and remembered me from the previous data collection session (PRA- based workshop). The people involved in the garden is mostly the learners (grade 3 and 7), the teachers, gardener and care-taker, and the	Learners are hands on in the garden

kitchen ladies who cook the food. The learners are involved through weeding the garden and in helping maintain. She mentioned that since the involvement of the gardener there has been a huge improvement in the garden. He does a lot of the work. The food from the garden (mostly spinach) is used to feed the children at school. Water used to be a challenge; however they have a borehole on property now and so that helps a lot with the irrigation of the garden. Another challenge she mentioned is getting more people involved. ████, although happy to talk, did not have much detail of the success of the garden to share. She came across as quite shy.	
With regards to the role of the principal there is a new stand- in principal who is well involved in the garden. She has a huge interest, is very supportive and hands on.	Principal is involved and interested, gives good support
████ mentioned that there was an old lady from the community who used to help with the digging in the garden, but she has since passed away. The gardener is also sick and so the caretaker has been helping with the garden and with the maintenance.	
After interviewing ████, I was given a chance to go and see the garden with ████ and Prof Ebersohn. It was very interesting to see and I was amazed at the small size of the garden especially because she says it is used to feed all the children. The garden mostly had spinach as she mentioned, and it was surrounded with a wire fence. We were also able to see all the new improvements at the school such as the library and the new reading centre.	
School I (Participant interviewed: I1)	
I was amazed at the size and beauty of this garden. It was beautifully maintained and has a big variety of vegetables and herbs. ████ is a very knowledgeable woman, who has big dreams for the garden. She is so passionate about the garden and puts a lot of effort in to maintain it. She showed us her essential oil garden which she plans to use in the future to make creams and oils. Before we started recording, she told u about how the garden is a huge influence on the children, and inspired them for future jobs. There is a committee of 4 teachers which are involved in the maintenance of the garden, however it seems as though most teachers have an interest. There are a number of children who volunteer in the outdoor classroom during the day. They also have a worm garden which is a compost heap they use for the garden. She mentioned how the children feed the worms.	Sharing the passion, being involved Value of the garden
████ had a lot of positive things to say about the principal she mentioned that if the principal is not invested then neither are the teachers and so this has a huge influence on the garden. Other roles include networking and finding resources for the garden, finding funding and giving advice and to help the teachers. The principal has had very positive impact on the success of the garden.	Positive effects of principal involvement

APPENDIX C.3 - RESEARCH JOURNAL

Please note that this is just a sample of the analysed my research journal. The complete analysis of the research journal is included on the compact disc (CD) attached to the last page of the mini-dissertation.

Research journal	
06 June 2018 – reflection on data collection from last week I was feeling a bit anxious about the data I collected on my posters as I don't think it was enough, however after reflecting on it, I do think that even though it is not a lot of data, it is still quite rich in detail. One thing that really stood out for me from the feedback during the workshop, is how important it is to these teachers to be recognized for their work and to be praised for the effort that they've put in to the gardens. I can imagine it being a really difficult job trying to implement, grow and develop a garden in a rural area, with minimal resources and then finding ways to build it in to the school culture. Although the teachers were a bit more reluctant to answer my posters, I do think it may have been a platform for them to really consider how much impact their principal has made, if any at all and to then be able to really voice their opinions. After looking at my posters, I also feel like the teachers repeated themselves a lot on poster 1 and 2, but at the same time I do think that then confirms to me the roles they consider to be very important for making these vegetable gardens a success. So rather than focusing on the negative, I'm going to try look at my data in a different light. **Data generation session 2** **18 September 2018 - Interview day** Today we flew out to PE again to do some interviews. We met with Prof Ronel and Prof Ebersohn at a school not too far from the airport. The first teacher interviewed was also named ▮▮▮▮, and Prof Ronel took hold of the first interview to show me and Tegan more or less what questions to ask and what to expect. It was great to see how passionate ▮▮▮▮ was about the school gardens, but at the same time how much stress she was under being the only teacher who really showed an interest in the gardens too. Her frustration could be felt when we asked about the support she receives, and she was very honest in sharing her experiences of other teachers and the principal. She seemed very grateful that there was a gardener there to help her, and seemed to have great ideas and future plans for the garden and what she wished it could be used for.	Willingness to learn from each other

We then split up, Tegan went with Prof Ronel, and me with Prof Ebersöhn. I was nervous but excited to conduct an interview by myself, and to my surprise the teacher I interviewed was very happy to discuss the role of the principal. This made me feel very much at ease and I felt as though the conversation was able to flow. There were a few instances where I was not too sure about what she was saying but this again comes back to multicultural differences and language differences which is always something to take into account when doing research, especially in SA. It was interesting to hear the difference in support and input from teachers and principals compared to the first interview with ███████. I followed Prof Ebersöhn and the teacher around while they looked at the school, and it was great to see new editions such as a library and reading centre where the kids were able to further their education. It really seems to me that this school places focus on improvement and growth for the learners in all areas.

I really enjoyed the rest of the day and found that the teachers were more willing to chat one on one than in a group setting and therefore I was able to gather good information about the role of the principals. It seems for the most part that many principals do play a good role and they are very encouraging in the gardens.

I feel lucky that I was able to see some of the gardens first hand and it really was such a great experience. The █████ primary school garden is amazing and so well established. It is great to see the effort that is going into the gardens and the impact It has for the schools and the children. █████ primary for me, was the highlight of my day. To see the size and quality of the gardens was amazing, and the excitement it brings to the teachers and children is great. While we were walking around, there were children coming in and out of the garden, working in the planting areas, and the worm garden. The interesting thing was that they were also quite independent in the garden, and although we were there having a tour, the teachers and principal didn't find the need to have to show them what to do and hover over them. This tells me that the learners already have experience, and have learnt about what to do in the garden. I think the school and the principal has taken great initiative to give the learners the freedom to apply themselves in the garden.

Teachers want to be recognized and rewarded for their hard work

APPENDIX C.4 - TRANSCRIPT OF INDIVIDUAL INTERVIEWS

Please note that this is just a sample of the analysed transcript of the individual interviews. The complete transcript is included on the compact disc (CD) attached to the last page of the mini-dissertation.

Interview 1: School E, participant E1	
Participant R: I briefly told you that we would like to find out what you've been doing in the vegetable garden. And you said a lot, a lot of it now while we were walking but I'd really want Tegan and Lauren to also hear what you're saying. What we're interested in is over the time, who have you involved in your vegetable garden? Because why is it looking great in other words who are all the people who have been involved? Who do you think are the important role players in the vegetable garden? There's two questions, that's the one question we would like you to talk to. R: Any other teachers that work with you or are you the one with the dreams and the strategies?	
P: Unfortunately, I am the only one. I do call them, let's go to the garden guys that's as much as I can do. Ja, but usually when like last year when there was a lot of harvesting to do I would call Mr ... and we would harvest and bring it down to the office, show everyone and they would take pictures and then put them for sale so that we can make some money to buy pesticides and things. I know that we should give to the SMP, to the nutrition, usually there's not so much. Like we have 1000 learners, you see, so the things that we get something back the things that we keep we get I would use, I would prefer, also to sell them so that we can get something back so that I can buy more if I need soil, if I need... Because we struggle with a lot of pests and we don't get funds. If when and when I do get money I cash in and my wages get used. So, there is a problem with funds as well. There's no one else involved, like coming to help, now for instance, like sponsors for seeds or soil or volunteers, like parents there is no parents coming to volunteer. Cause I saw the presentations from the other schools, wow! But here there's none of that. I'm not sure, I'm not quite sure what the problem is if people just if they're not interested. I know last year there was an uncle across the road who used to come and help but he was quite old and he couldn't do, he couldn't manage the bigger garden it was a lot from him (data pertaining to fellow students focus).	Ways of raising funds for the garden committee Lack of interest or involvement, which pertains to lack of funding
R: … second question I would like to ask is, with school projects but that can be any school projects of which vegetable gardens is one example what do you think is the role of a school principal in having such projects be successful or not successful? And we won't tell the principal what you say [Laughs]	
P: I think the principal should be involved; the current principal has been here now for few months but I haven't seen him in the garden yet like involved at all. I don't think he knows all the problems that we face. I spoke to you know, I spoke to the chairperson and I told her about all the challenges and I even told the gardener go and speak to them go and speak to the principal. Because I'm doing my best maybe they think I'm lying so the	Principal being informed of needs and challenges of the garden

gardener should just go and speak to them and tell them that this is the challenge. The principal is not involved in any, in anything, in anything in the garden.	No involvement
R: And you think that the principal should be involved in the garden?	
P: Because of all the challenges and if he could see what I'm talking about then I'm sure there would have been changes. Dripping taps, the hose pipe that can't work now at that tap there and the pests eating up the produce like what's the point in watering and taking care of it and nurturing it when there's pests and we need money for that.	Need for understanding by the principal
R: What would you think, what would such a role entail what if you can dream, if you can give us the dream scenario of the principal what would the principal do in the project?	
P: Okay, firstly he should be involved and then get the colleagues involved like the teachers. It's difficult to get the whole class involved because you can just imagine the chaos in the garden, they probably tramp on everything. If each teacher can have a group a special group, you know you have your leader in the class just a group of leaders that can go into the garden and experience that and then maybe they could encourage the rest of the learners to change their attitude and show teacher that you are able to control yourself when you're outside of the class you know. And I think then once, if the principal is involved the teachers would be involved and the learners would be involved, you know it's a ripple effect but I don't know maybe it's things the kind of things that you are interested in. I was raised with gardening and things, some people they don't want to get dirty, they don't want to get their hands dirty. I don't know how many times, how many times I've hurt my hands on the plants in the garden and I just wanna take them out there. But I think it's what is, what makes mostly a passion if he's not, if he doesn't want to be involved like you can't, you can say that he can you know people are always where they want to be in charge of something just to get the title of being involved in it and then they're not involved at all, like not at all. They don't even go and check on anything so the principal might just say no he's involved but then he's not involved at all. So people, I don't know.	Can support/facilitate teacher involvement Allowing time in the garden Can facilitate teachers and learners to be involved (example) Lack of interest, involvement Creating a false perception
R: So your dream would be that he's in the garden from time to time and see what's happening there and to know what's happening there and you also mentioned that discussions with him perhaps discussions with you and him.	
P: Yes. And being interested in it and trying to solve problems that could help the garden, you know because at the end of the day it's the schools garden. And a lot of times people will be like one of the teachers was like "Oh Ms what are you doing here, you're trespassing yeah" and I'm like excuse me I'm the only one checking on the garden I didn't know you were watching the garden what's the point of watching who goes in there if you're not going to come and help with the garden, you know.	Showing interest Assisting with problem solving
R: So you basically feel that the principal has the power to mobilize the other teachers and children to get involved to get a stronger team going for the vegetable garden?	
P: Yes and to promote healthy eating, we do have people like Woolworths and Pick n Pay, but it's basically our responsibility. I know I taught science before and that is a major, like a garden because I plant the beans and all of that in the class and it's part of photosynthesis and all of that and even though it's vegetables you can still see, you can still see what comes of watering and the produce that you get from it. Yeah.	Motivating others Promoting healthy eating

L: Do you feel like if the principal was more involved you would get more support from the community and you would get more funding, things like that? P: I do think that, I do think that. Even the committee, the committee I have why are you here what is the point because I'm alone and I feel like what if I wasn't as involved and what if I didn't care? then nobody would care, then what's the point of getting seeds to put it away for what? R: The committee that you talk of, is the committee does it... P: They all come together for meetings and maybe give input and asks who's going to the workshop that's all, that's it. R: And then you do the work... P: Yes T: Sorry, who's involved in the committee? P: Ok, involved in the garden and the committee, nobody. I was involved in the garden before I was part of the committee because they didn't know, I didn't even know there was a committee because I was I used to speak to the gardener the previous gardener and I was very interested in what he was doing and I used to check on the gardens. I would, when he was busy I would ask him a lot of questions I would tell him if you're not here I'll let my kids come and check on the garden. When he was fired I just decided, hey nothing is happening here and the lettuce and everything is gonna die so I'll just take over and then the committee called me and asked me "do you wanna be part of the committee?" and I was like oh there's a committee, wow you guys are there but not there. You're there but not there. R: That links to what you said about the principal because it should be discussed it should be... P: But last year we didn't have a principal and he came in about February or something like that but still yeah so much has happened in the garden now and still nobody... ja...	Effect on garden absence of principal

APPENDIX D.1 - PHOTOGRAPHS TAKEN DURING PRA-BASED WORKSHOP

FIELD VISIT 1

Explanation of posters to participants

Teacher participants compiling Poster 1

Making field notes while walking around and assisting

Assisting some of the teacher participants

Feedback on Poster 2 by a teacher participant

APPENDIX D.3 - PHOTOGRAPHS TAKEN DURING INTERVIEWS

SECOND FIELD VISIT

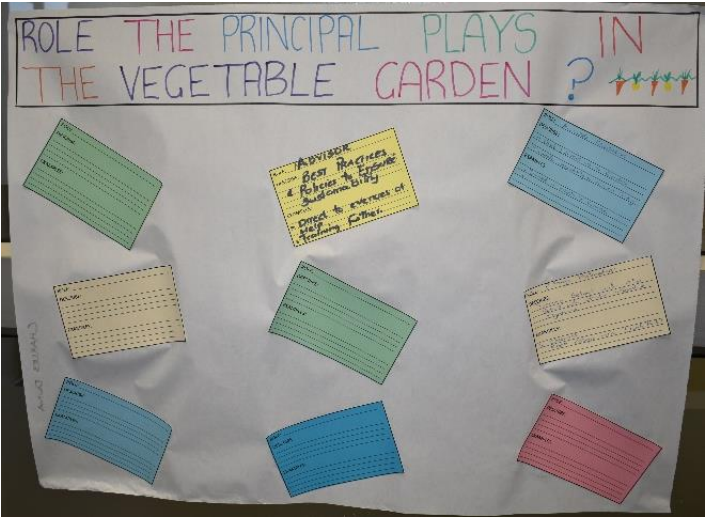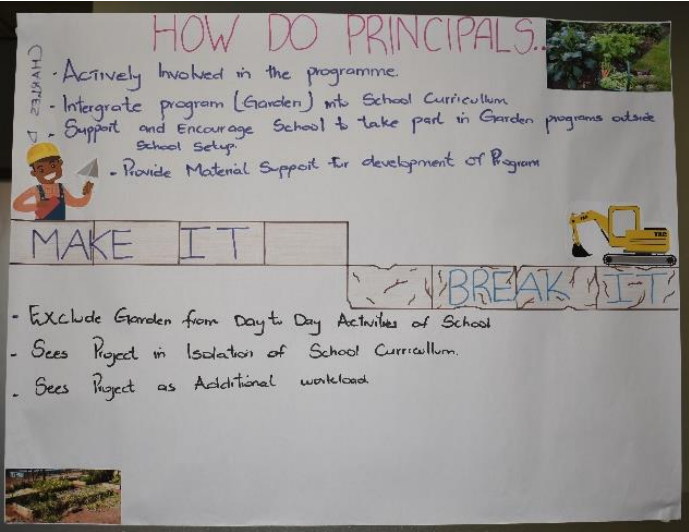Interview 2: School garden in progress (School H)

Interview 4: School garden progress (School I)

Interview 4: Teacher describing what is planted in the garden and giving us a tour (School I)

APPENDIX D.3 - PHOTOGRAPHS OF PRA-POSTERS (MATRICES) WITH ANALYSIS

Please note that this is just a sample of the analysed matrices. The complete set of matrices is included on the compact disc (CD) attached to the last page of the mini-dissertation.

Poster no:	Posters: PRA-workshop- 28 May 2018	Analysis
	School A	
1		**Roles Identified:** • Source funders
2		**Make it:** • Support • Encourage **Break it:** • See garden in isolation

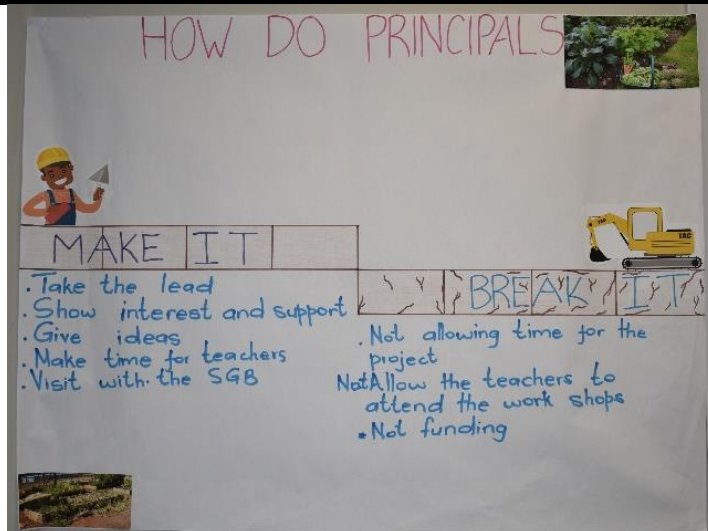| School B			
1			**Roles Identified:** • Lead by example • Motivate teachers through commending • Best practices and policies for sustainability
2			**Make it:** • Allow time for teachers **Break it:** • Not allow time for teachers in the garden or to go to workshops

APPENDIX E - INCLUSION AND EXCLUSION CRITERIA FOR THE RESULTS

Table E.1: Inclusion and exclusion criteria for Theme 1

Theme/ Sub-theme	Inclusion criteria	Exclusion criteria
Theme 1: Being informed and involved	All data referring to a school principal knowing what is happening in a school garden, or being involved in the planning and management of the garden.	Any reference to the school principal focusing on or being involved in other tasks or roles in the school.
Sub-theme 1.1: Sharing the dream and being positive about the garden and its value.	All data referring to a principal's compassion for and drive to develop a school-based vegetable garden, due to the principal understanding the value of the garden.	Any data relating to the principal's knowledge of the garden team or their activities, or to the principal being actively involved.
Sub-theme 1.2: Being informed of the garden team's composition, activities and needs	All data related to a principal's knowledge of the people involved in the garden, what is done in the garden and which needs and challenges are experienced by the garden team.	Any reference to a principal's understanding of the value of, and sharing the dream for a school-based vegetable garden, or to being actively involved in garden activities.
Sub-theme 1.3: Being actively involved	All data referring to the role of the principal as part of the garden committee and of being actively involved in garden activities.	Any data referring to a school principal's understanding of a garden's value, or having knowledge of the garden team, or their activities, needs or challenges they face.

Table E.2: Inclusion and exclusion criteria for Theme 2

Theme/Sub-theme	Inclusion Criteria	Exclusion Criteria
Theme 2: Providing support	All data relating to different ways in which school principals support the development and maintenance of school-based vegetable gardens.	Any reference to support that is focused on task or programme development and maintenance.
Sub-theme 2.1: Motivating teachers and learners to be involved, and allowing them time in the garden	All data related to principals motivating members of the school or community to be involved in school-based vegetable gardens.	Any reference to school principals encouraging fundraising to gather resources, or different forms of networking, for school-based vegetable gardens.
Sub-theme 2.2: Providing resources and encouraging involvement in fundraising	All data relating to different forms of resource provision and fundraising encouraged by a school principal.	All data referring to forms of networking by a school principal, and motivating members of the school and community to be involved in school-based vegetable gardens.
Sub-theme 2.3: Accessing networks of support and sources of information	All data referring to different forms of networking and information gathering by a school principal.	All data related to the provision of resources and fundraising encouraged by a school principal, and motivating members of the school and community to be involved in the school garden.

Table E.3: Inclusion and exclusion criteria for Theme 3

Theme/Sub-theme	Inclusion Criteria	Exclusion Criteria
Theme 4: Principal-related factors that may have a negative impact	All data related to school principals or their actions negatively affecting the success of school-based vegetable gardens.	Any reference to actions by people other than school principals that may negatively affect school-based vegetable gardens.
Sub-theme 4.1: Limited interest, involvement or support for the garden	All data referring to principals who are not optimally involved or interested in school-based vegetable gardens and the effect these may have.	Any data related to principals not allowing teachers or learners to spend time in school-based vegetable gardens or not recognising their roles and the value of the garden.
Sub-theme 4.2: Not recognising teachers' role and the value of the garden	All data referring to teachers' experiences of not being supported by the principal to spend time in the garden, not being recognised for their contributions, or of the garden not being valued.	Any reference to principals displaying limited interest or involvement in school-based vegetable gardens or not supporting teachers in their efforts.