

**EVALUATION OF A SCHOOL-BASED HEALTH PROMOTION INTERVENTION
IN A RESOURCE-CONSTRAINED COMMUNITY**

by

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Declaration

I, Mandiza Dinah Ngwenya, student number 04402316 hereby declare that this thesis, *Evaluation of a school-based health promotion intervention in a resource-constrained community* is submitted in accordance with the requirements for the Philosophiae Doctor degree at the University of Pretoria, is my own original work and has not been submitted to any other institution of higher learning previously. All sources cited or quoted in this thesis are indicated and acknowledged with a comprehensive list of references.

Mandiza Dinah Ngwenya

30 August 2018

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- Data storage requirements.

Dedication

In loving memory of the late Jan Somthwalo and Toporosa Linah Skhosana, my loving parents, for their disciplined upbringing and love; especially their inspiration and motivation that enabled me to achieve this great success. Schobo sika Musi, Nkunzi yako gwazani, Schobo sakobatstsheleni, S'hlahla somyezani esinganhlalwa ziinyoni, sihlalwa zinkonjani zababhemi, Skhosana Thamana!!

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Abstract

The purpose of this study was to evaluate the outcome of a school-based health promotion intervention that was implemented in three primary schools in a resource-constrained community in Bronkhorstspuit, South Africa, among Grade 4 to 6 learners. I accordingly investigated the learners', teachers' and parents' experiences, perceptions and potential behavioural changes in terms of healthy food practices after the implementation of the Win-LIFE (Wellness in Lifestyle, Intake, Fitness and Environment) intervention. The study forms part of a broader institutional project.

I followed an evaluation research design, applying Participatory Reflection and Action (PRA) principles, an interpretivist paradigm and a qualitative approach. The conceptual framework was based on Bronfenbrenner's (1979) bio-ecological theory and Bandura's (1986) social cognitive learning theory. A purposeful sample of 31 learners, 18 teachers and 31 parents participated in PRA-based data-generation and documentation activities. In addition, I used observation-as-context-of-interaction, field notes, research diaries and audio-visual techniques.

In terms of results, the teacher-participants valued the PRA-based nature and their involvement as partners in developing and implementing the intervention. They also perceived the intervention as valuable to others, experienced some challenges during the implementation and made certain recommendations for future

implementation. The parent-participants indicated that they gained knowledge about healthy food practices because of the Win-LIFE intervention. They started applying their newly gained knowledge yet required additional guidelines. Finally, the learner-participants' experiences (reported as part of two master's studies) of the enriched Life Skills curriculum (Bentley, 2016) and Natural Sciences and Technology curriculum (De Vos, 2017) were positive. They valued the experiential and cooperative learning approach and supportive facilitators, resulting in positive learning outcomes and their application of the newly gained knowledge, despite some challenges they identified.

The findings thus indicate that the Win-LIFE intervention was valuable to teachers, learners and parents, increasing their awareness of, as well as their knowledge and skills regarding healthy eating practices (food choice, production, preparation and storage) and healthy living, thereby enabling them to adopt a healthier lifestyle. Furthermore, the teachers' repertoire of teaching strategies was extended. The learners, on the other hand, began to engage in their own learning more actively, based on the confidence, discipline and ability that they gained to retain information. Learners also transferred their knowledge and skills to their parents and other family members.

Key words:

- Enriched school curricula
- Food choice
- Food consumption
- Food preparation
- Food production
- Food security
- Health-promotion intervention
- Participatory Reflection and Action (PRA)
- School-based intervention
- Wellness in Lifestyle, Intake, Fitness and Environment (Win-LIFE) intervention



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29 July 2018

To whom it may concern

I, Marina van der Merwe, ID no. 680420 0110 087, state hereby that I am the editor of Mandiza Dinah Ngwenya's dissertation (evaluation of a school-based health promotion intervention in a resource-constrained community).

I completed a certificate in editing from the University of Pretoria and have more than 25 years' experience in the industry. I worked as an editor (in a permanent position) at SITA (State Information Technology Agency) until 31 July 2017, where I had been responsible for editing documentation for last 23 years. Currently I am self-employed.

Best regards

A handwritten signature in blue ink that reads 'MvdMerwe' followed by a flourish.

Marina van der Merwe

(083 376 7367)

NOTE: I take no responsibility for the student not submitting the edited document. However, the redlined document is available on request.

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CHAPTER 1

OVERVIEW OF THE STUDY

1.1 INTRODUCTION

This study forms part of a broader institutional project, situated in and funded by the University of Pretoria's Institute for Food, Nutrition and Well-being as well as Multotec who provided additional funding. As part of the broad research project, co-researcher Karien Botha (doctoral student) developed a school-based health promotion intervention (Win-LIFE: Wellness in Lifestyle, Intake, Fitness and Environment) which was implemented in three primary schools in the Bronkhorstspuit area (Gauteng, South Africa) with 1465 Grade 4 to 6 learners. Following the implementation phase of the project, the current study aimed to investigate the effect of the Win-LIFE school-based health promotion intervention. As part of the aim of the broader project to determine how learners may potentially apply and transfer newly gained knowledge about and skills pertaining to healthy food practices to their families and the community, the current study thus aimed to explore, describe and explain the value of the intervention as perceived by teachers, learners and the learners' parents.

Today, many countries in the world face challenges related to poverty, unemployment, poor housing, HIV&AIDS and food insecurity. Faber, Witten and Driemie (2011) point out that, despite South Africa being a food secure country in terms of comprehensive food availability it is listed by the World Health Organisation 2002 (WHO) as one of 36 high-burden countries, being home to many undersized children. Poverty is regarded as the major contributing factor to food insecurity in this country, which can be directly related to unhealthy food practices.

Pinstrup-Andersen and Watson (2011) define poverty as a state where people do not have adequate access to some key magnitudes of well-being. Poverty is increasingly observed as a multi-dimensional concept of dispossession, which is associated with health, education and human dignity (Pinstrup-Andersen & Watson, 2011). As many people in resource-constrained communities in South Africa face the challenge of poverty, they are typically also challenged in terms of food security,

health and well-being. It follows that ongoing research into potential intervention strategies that may address food insecurity and promote a healthy lifestyle is required to maximise any positive effect they may have on the health and well-being of people, especially those who reside in resource-constrained communities.

Food and diet are viewed as basic needs for human existence and well-being (Wicks, Trevena & Quine, 2006). The health of people who lack sufficient food may furthermore be compromised by them being undernourished or over eating once they obtain food. Faber *et al.* (2011) explain that poor families often cope with poverty by adopting repetitious diets that mainly include starches, with slight or no animal products and inadequate vegetables and fruits. Furthermore, despite proper food consumption being a basic requirement for a healthy balanced lifestyle, the eating patterns of people in resource-constrained communities are typically determined by the availability of food and not by meaningful choices.

According to Wicks *et al.* (2006) food insecurity implies the following possibilities: not having enough food (quantitative construct); limitations in terms of the quality and diversity of accessible foods (qualitative construct); feelings of anxiety and restricted choice about the quantity and quality of accessible food (psychological construct); and limitations related to food practices, food sources and roles and interactions with other people (social construct). Most people from resource-constrained communities lack both sufficient quality and quantity of food in their households. As nutrition plays a key role in the development of people's physical, mental, social and emotional well-being, food insecurity will have a negative impact on people's physiological health as well as their psychological well-being. To this end, Sorsdahl, Slopen, Siefert, Seedat, Stein and Williams (2011) emphasise that uncertainty about the availability of food, and whether food insufficiency occurs, may affect an individual's social and mental health due to feelings of aggravation, anxiety and even depression concerning food supply.

In attempting to address unhealthy eating lifestyles in resource-constrained communities, various interventions have been implemented over recent years. Interventions include examples that focus on a total antioxidant capacity in diets (Louwens, 2009), community-based agricultural initiatives in the context of food and

nutrition (Faber *et al.*, 2011), refined taxonomy of behaviour change techniques to help people change their physical activity and healthy eating behaviours, (Michie, Ashford, Sniehotta, Dombrowski, Bishop, & French, 2011), health promotion in Danish schools (Simovska, Nordin, & Madsen, 2015), Dairy intake and related self-regulation improved in college students using online nutrition education (Poddar, Hosig, Anderson-Bill, Nickols-Richardson, & Duncan, 2012) as well as food security enhancing efforts (Pinstrup-Andersen, 2009). Based on the need for ongoing research in this field that may subsequently result in social change, research into school-/community-based interventions that may address food insecurity remain a priority in South Africa. Because of intervention studies, people in resource-constrained communities may potentially be empowered to obtain food production skills and how to market their produce to develop economically. In the case of such interventions the outcome needs to be assessed and monitored in terms of possible value and successes, with the view of promoting food security in resource-constrained communities.

As already stated, different interventions have been implemented across the globe with the aim of promoting health and well-being over recent years. A study conducted by Pinstrup-Andersen, Pelletier and Alderman (1995) for example, focused on vitamin A deficiency, with the aim of encouraging people to eat vegetables that contain vitamin A. Another study conducted by Louwens, Rautenbach and Venter (2009) focused on Total Antioxidant Capacity (TAC) in the diet to address inadequate diets that may compromise people's health and well-being. Presently, the University of Pretoria is conducting the broader Win-LIFE intervention (2014-) of which this study forms part, focusing on the development, implementation and outcome a health promotion intervention in a resource-constrained community.

1.2 BACKGROUND TO THE WIN-LIFE INTERVENTION

The Win-LIFE school-based health promotion intervention involves the enrichment of the existing Grade 4 to 6 school curricula, as stipulated by the national Curriculum Assessment Policy Statement (CAPS). The Win-LIFE intervention specifically focuses on how enriched nutrition and environmental education knowledge, which form part of the Life Skills and Natural Sciences and Technology subjects for Grade

4 to 6 learners, may affect the health and well-being of learners and potentially be transferred to others. One of the broader project's assumptions is that if learners are taught about nutrition that centres on healthy food practices and food gardening skills, they may potentially transfer newly gained knowledge and skills to their parents or other family or community members. As such, the Win-LIFE intervention can be viewed as a school-based initiative that may potentially promote healthy food practices in resource-constrained communities.

The broad Win-LIFE project entailed four phases. The first phase involved the development of the intervention, and took place from 2012 to 2014, in consultation with 30 participating teachers and 17 experts in the fields of Life skills and Natural Sciences and Technology. In 2014, the second phase commenced, involving the training of 24 Grade 4 to 6 teachers to implement the intervention in three selected schools in South Africa. The third phase ensued in August 2014 when teachers who had been trained to do so, implemented the school-based health promotion intervention in these primary schools in the Bronkhorstspuit area. Phase four followed in 2015 when one of the three primary schools was selected for re-implementation of the intervention, which was done by two Master's students in Education¹ and one PhD student², involving Grade 5 learners. Following the implementation and re-implementation phases, my study aimed to determine the outcome and potential value of the Win-LIFE school-based health promotion intervention as perceived by the teachers, learners and the learners' parents.

1.3 PROBLEM STATEMENT AND RESEARCH QUESTIONS

As alluded to in the previous sections, various interventions in healthy food practices have been implemented in South Africa as well as internationally over recent years. Evaluation of such programmes or interventions is important to understand the potential worth or effect; it may in turn inform revisions or future initiatives. De Vos, Delpont, Fouché and Strydom (2011) refer to Rossi, Lipsey and Freeman (2004)

¹ Bentley, K., 2016. The experiences of Grade 5 learners of an enriched Life Skills curriculum (Master's Dissertation, University of Pretoria) and De Vos, M., 2017. The experiences of Grade 5 learners of an enriched Natural Sciences and Technology curriculum (Master's Dissertation, University of Pretoria).

² Botha, K. (In progress). Development and implementation of a school-based health-promotion intervention in a resource-constrained community (PhD thesis, University of Pretoria).

who define programme evaluation as the use of social research methods to systematically investigate the effectiveness of social intervention programmes in ways that are adapted to the political and organisational environment. They furthermore argue that these programmes are designed to inform social action to improve social conditions (Rossi *et al.*, 2004).

In applying this description to the current study and evaluating the Win-LIFE intervention I focused on the way in which the intervention reportedly benefited learners in terms of nutrition knowledge, more specifically related to food production, food choice, food preparation and food consumption. To this end, I explored the perceptions of teachers, learners and the learners' parents in collaboration with my co-researchers.

A limitation identified in existing interventions includes many interventions not comprising the active participation of participants in such a way that they can become problem solvers following the implementation of the interventions. For example, an intervention in vitamin A crop production (conducted by Pinstrup-Andersen *et al.* 1995) did not actively involve participants in positively changing their food behaviour. Even though the intervention yielded positive results regarding vitamin A food consumption, participants were seemingly not sufficiently empowered with comprehensive nutrition knowledge enabling them to make meaningful decisions regarding the production of vitamin A crops and to address deficiencies in their diets. Based on the methodological and empirical approach of the Win-LIFE project, my study comprised two expectations, namely to determine the possibility of healthy food practices being promoted, and to explore broad perceptions following the intervention, as well as the effect of the intervention.

Against this background, the primary research question of the current study is: ***How can the Win-LIFE intervention be used (or not) to promote healthy food practices and the well-being of people in resource-constrained communities?***

To answer the primary research question, I formulated:

- How was the current Grade 4 to 6 Life Skills and Natural Sciences and Technology CAPS school curricula enriched by the Win-LIFE intervention?

- How did teachers experience implementation of the Win-LIFE school-based health promotion intervention with Grade 4 to 6 learners?
- Which knowledge and skills did the learners gain that may potentially have a positive effect on well-being in their own and other community members' lives?
- Which knowledge and skills did parents gain in terms of food choice, food preparation, food consumption and food production following the Win-LIFE intervention?

1.4 PURPOSE OF THE STUDY

Grazino and Raulin (2004) point out that the purpose of programme evaluation research is to evaluate the extent to which a programme meets its goals. Seale, Gobo, Gubrium and Silverman (2004) emphasise that programme evaluation is primarily carried out to address social problems in a population or in a community setting. The purpose of this study was to determine the outcome and potential value of the Win-LIFE intervention in terms of the food practices and well-being of a resource-constrained community. More specifically, the aim was to explore, describe and explain the experiences of teachers, learners and parents (community members) concerning the implementation and outcome of the intervention. As such, I attempted to gain an in-depth understanding of how the Win-LIFE intervention promoted (or not) healthy food practices among learners (and the broader community) in a particular resource-constrained context.

As access to sustainable food is a key factor in promoting healthy nutrition, the focus of my study falls on learners' acquisition of nutritional knowledge and skills (or not) that may potentially support their own healthy eating and potentially that of their families. My aim was therefore to examine how Grade 4 to 6 learners were empowered to make healthy food choices, in order to ensure proper food safety and hygiene, as well as to consume nutritional food that can promote health and well-being, following their participation in the Win-LIFE intervention. More specifically, I attempted to determine the level of knowledge and skills that the learners acquired and how these may have influenced their parents' food-related knowledge, attitudes, perceptions and behaviours.

The significance of the current study lies in its contribution to the body of knowledge on food security and the importance of enhancing healthy food practices by means of interventions. More specifically, the potential value of school-based interventions is foregrounded in terms of knowledge and skills transfer by means of enriched curricula. If people can apply the knowledge they gain during interventions to promote healthy food practices, chronic diseases that threaten the lives of many people may be reduced and the well-being of people promoted. Determining the effect of the Win-LIFE school-based health promotion intervention, can enable the elaboration of the potential role of schools and enriched curricula in supporting health and well-being.

1.5 EVALUATING AN EXISTING INTERVENTION

Babbie (2011:335) mention that, according to Rutman (1984), “programme evaluation entails the use of scientific methods to measure the implementation and the outcome of programmes for decision-making purposes”. “Programme” is taken to refer to any intervention or set of activities that are mounted to achieve external objectives, that is, to meet some recognised social needs or to solve an identified problem. In this study, I focused on the evaluation of the Win-LIFE intervention that was implemented in three schools in a resource-constrained community, with the objective of promoting healthy food practices and the well-being of Grade 4 to 6 learners, with the implied possibility of them transferring newly gained knowledge and skills to their families and other community members.

According to Patton (2002), the purpose of an evaluation as part of research centres on three primary reasons, namely to make judgement calls on merit or worth, to improve programmes, and to generate knowledge (Babbie 2011). In this regard, Johnson and Christensen (2012) indicate that when interventions, or social and educational programmes, aim to improve conditions, evaluation research can be used to determine the outcome of a programme in a real-world setting and how it may be improved. In the current study the Win-LIFE intervention was implemented in three primary schools with the aim of promoting food security and healthy food practices in a resource-constrained community. The study thus aimed to determine the outcome of the intervention and how it can potentially be improved in accordance with the said guidelines.

Throughout, I therefore considered the specific research context and human factors while assessing the effect of the intervention, in support of Bless, Higson-Smith and Kagee's (2006) view that qualitative researchers cannot understand people or a phenomenon without understanding the context in which the participants live. Hartas (2010) emphasises the human factor as an important element in the evaluation of a programme, stating that the characteristics, attitudes, motivation and change in behaviour of stakeholders, evaluators, decision-makers and primary users (that is, individuals for whom the intervention is designed) may influence the nature of the evaluation's outcomes.

In determining the outcome of the Win-LIFE intervention, I focused on exploring the possibility of increased knowledge in nutrition, potentially resulting in the learners and the learners' parents' changed attitudes and perceptions in adopting alternative food practices in a resource-constrained community. The evaluation aimed to subsequently determine whether (or not) schools can be regarded as viable settings for the promotion of healthy food practices in resource-constrained communities by enriching existing curricula of Grade 4 to 6 learners. An advantage of this evaluation, as mentioned by Bless *et al.* (2006) is that the results of this study may furthermore potentially indicate neglected areas of research, neglected target groups and challenges associated with the intervention under investigation.

1.6 CONCEPT CLARIFICATION

In this section, I clarify the key concepts that underlie this study for the reader to understand the meaning I attached to the concepts while undertaking the study.

1.6.1 Programme Evaluation

Evaluate implies the process of ascertaining or setting the value of something or judging or assessing the worth of something (Collins Concise English Dictionary, 2012). In the research arena, Patton (2002) defines the concept as any effort that may increase human effectiveness through systematic data-based inquiry. Furthermore, Patton (2002) indicates that according to Rossi *et al.* (1999) programme evaluation entails the use of social research procedures to systematically investigate the effectiveness of social intervention programmes to inform social action in ways that can improve social conditions. According to

Graziano and Raulin (2004), the goal of programme evaluation is to generate evidence on whether, or not, a programme has accomplished the intended goals.

In this study, I determined the outcome of the Win-LIFE intervention programme which focuses on healthy food practices in resource-constrained communities. The evaluation of the programme involved an exploration of the views of the teachers who implemented the programme for Grade 4 to 6 learners as well as the experiences of the learners and their parents, who participated in the intervention.

1.6.2 School-based Intervention

Intervention implies the act of intervening, meaning to interfere, prevent or modify events (Concise Oxford English Dictionary, 2009). An intervention in the context of this study is broadly regarded as a programme that is implemented with the purpose of empowering people to address the challenges they face, specifically in a resource-constrained context. Babbie (2011) points out that such interventions form a special class of human actions that may be sustained in the social world. According to Babbie (2011) interventions of this nature imply sets of actions and decisions that are structured in such a way that successful implementation will lead to clearly identifiable outcomes and benefits.

Currently employed interventions in South Africa's vulnerable communities are often school-based or community-based. Neumark-Sztainer, Hannan, Story, Croll and Perry (2003) emphasise that schools hold the potential of making valuable contributions to the prevention and treatment of for example, obesity, since they can reach large numbers of young people through multiple venues (such as the classroom curriculum, physical education classes and school meals). In this study the Win-LIFE intervention entailed a school-based health promotion intervention programme that was implemented in three schools for Grade 4 to 6 learners in a resource-constrained community, aiming to promote food security and healthy food practices in the specific community.

1.6.3 Healthy Food Practices

Food practices refer to people's eating practices for nourishment. Healthy food practices thus imply people following a healthy eating lifestyle in their everyday lives

in support of their own health and well-being. Healthy food practices imply that food that is free of additives and preservatives, rich in dietary value, and beneficial to health, is consumed (Collins Concise English Dictionary, 2012). In this study, healthy food practices include sufficient and effective food choices, food production, food preparation and food consumption patterns.

According to the Collins Concise English Dictionary (2012), *food* is defined as any substance containing nutrients such as carbohydrates, protein and fats that can be eaten by a living organism. The concept *production* is defined as an act of producing or anything that is produced (Collins Concise English Dictionary, 2012). Food production is therefore defined as the production of food such as maize, wheat, vegetables and fruits for human consumption. *Choice* is defined as an act or instance of choosing or selecting, or as an opportunity or power of choosing (Collins Concise English Dictionary, 2012). Thus, the concept *food choice* implies the act of choosing food for human consumption according to an individual's preferences. *Preparation* is defined as an act or process of preparing (Collins Concise English Dictionary, 2012). As such *food preparation* is concerned with the preparation of food before cooking and during the cooking process. Finally, the Collins Concise English Dictionary (2012) defines *consumption* as an act of consuming or eating. *Food consumption* thus refers to the consumption of food that contains carbohydrates, proteins, fats and vitamins.

In this study *food production* thus refers to the skills that learners acquired such as how to prepare a vegetable garden, different types of soil, how to prepare compost, planting of seeds as well as crop rotation, with the aim of becoming food secure. Sufficient *food choice* refers to the ability to choose healthy food based on newly gained food-related knowledge. *Food preparation* skills entail the handling of food during the preparation of meals as well as the effective storage of food. Healthy *food consumption* involves the types of healthy food that people need to eat to nourish their bodies.

1.6.4 Resource-constrained Community

Resource-constrained implies a lack of supply or a lack of the necessary resources for economic wealth or for what could be resorted to in times of need (Collins

Concise English Dictionary, 2012). People who live in a resource-constrained environment thus lack the necessary economic resources to access other resources when required, such as healthy food to live a healthy life. Such a situation may for example result in people or communities not being food secure.

MacQueen *et al.* (2001) provide a general definition of a community, as referring to a group of people with diverse characteristics who are linked by social ties, share common perspectives and engage in joint action in certain geographical locations or settings. Similarly, Jary and Jary (1995) assert that the concept community refers to a set of social interactions functioning within certain borders, places or territories (Ferreira, 2006).

In this study, the concept resource-constrained community refers to the community where I conducted this study, which is situated in a semi-urban area in Bronkhorstspuit. Bronkhorstspuit is a small town that forms a triangle with Rayton and Bapsfontein, about 50 kilometres east of Pretoria, South Africa. It began as a railway station and lies on the border between Gauteng and Mpumalanga (Raper, Möller & Du Plessis, 1985). This town is surrounded by farming areas (semi-urban townships) and farms. Most people are unemployed and some work on the farms. People who are employed are often government employees such as teachers, police officers, nurses, social workers and clerks. The growing population is mostly unemployed and stays in informal settlements in a few Reconstruction and Development Programme (RDP) houses; yet most people stay in informal structures. Many learners depend on the national school-feeding scheme and after-school care centres for food, which once again indicates a food insecure community.

1.7 ASSUMPTIONS IN UNDERTAKING THE STUDY

The assumptions listed below are based on the literature review I conducted while conducting the study.

- I assumed that learners can incorporate knowledge gained at school in their daily living, for example knowledge on food behaviour and practices, and transfer this knowledge to their parents.

- I assumed that knowledge about nutrients, a healthy diet and the importance of physical activity in addressing health risk behaviours can promote the health and well-being of resource-constrained communities.
- I assumed that learners, teachers and learners' parents would be able to provide feedback on the outcome of the Win-LIFE intervention.
- I assumed that food security and nutrition-related knowledge are key factors in promoting health and that it can assist in combatting under-nutrition and poverty in resource-constrained communities.

1.8 UNDERLYING THEORETICAL PERSPECTIVES AND CONCEPTUAL FRAMEWORK

The premise of this study is embedded in Bronfenbrenner's (1979b) bio-ecological theory and Bandura's (1986) social cognitive learning theory. These theories informed the conceptual framework I subsequently developed for the study, as presented in Figure 1.1. An introduction to the underlying theory and conceptual framework follows. A more detailed discussion is included in Chapter 3.

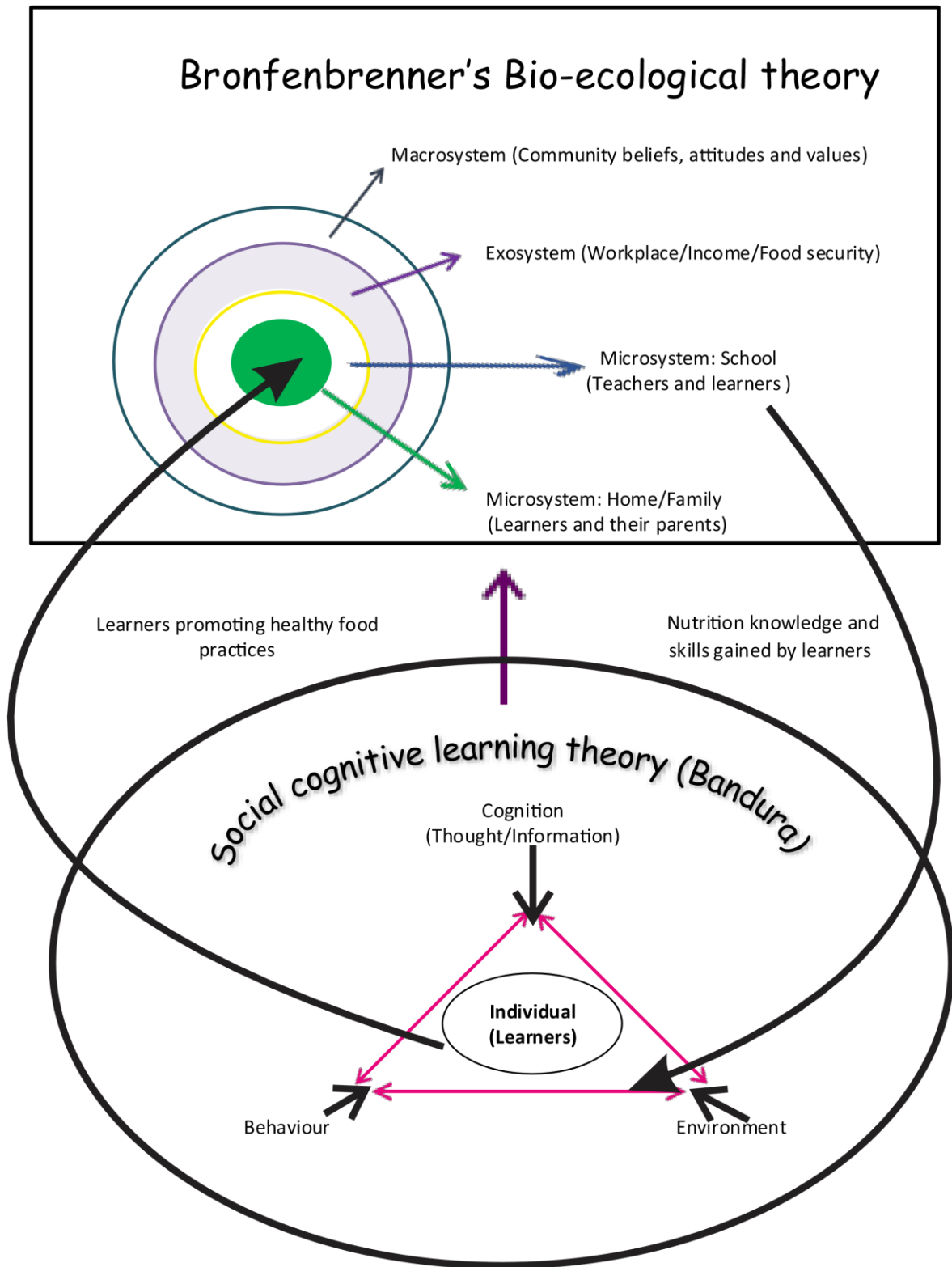


Figure 1.1: Conceptual framework of the study

Bronfenbrenner's (1979)³ bio-ecological theory offers an alternative approach to the biological, cognitive and socio-emotional dimensions of behavioural development. Bronfenbrenner and Morris (2006) mention that this theoretical position, as indicated by Bronfenbrenner (1977, 1979); Bronfenbrenner and Evans, (2000); as well as Bronfenbrenner and Morris (1998), like all integrative theories, advocates a dynamic, interactive model of individual-contextual relations and ascribes a key role to temporal processes and contextual details at multiple levels of organisations (that is, systems that are internal and external to an individual). Attention to the ecology of the individual, changing relations in the individual's micro- and macro-systems, as well as the historical embedding of systems gives description and explanatory power to the theoretical orientation that the theory proposes.

According to Bronfenbrenner's bio-ecological theory (1979) the home is a microsystem where children interact with their parents and where they can thus acquire food practices related to food production, food choice, food preparation and food consumption patterns. The school is seen as another microsystem where learners and teachers interact in a learning environment, and learners can for example, acquire nutrition-related knowledge and skills that may in turn promote healthy food practices at home. In this study, I specifically focused on how learners transferred newly gained nutrition knowledge and skills to their parents in adopting healthy food practices that could promote health and well-being.

Social cognitive learning theory (Bandura, 1986) views cognition as an important aspect of human behaviour. Learning is thus seen as an interaction between the environment (social world) and one's cognition (Muro & Jeffrey, 2008). In 1986, Bandura introduced a model of social learning that emphasises the role of cognition. It follows that Bandura's (1986) social-cognitive learning theory views human functioning as reciprocal interactions between behaviours, environmental variables, cognition and other personal factors. Human behaviour is explained in terms of continuous reciprocal interaction between cognitive, behavioural and environmental

³ I acknowledge the fact that I include dated sources, yet I relied on these sources as primary resources on the theory under discussion.

influences. Individuals are thus regarded both products and producers of their own environment and their social systems (Muro & Jeffrey, 2008).

In combining these two theories into a conceptual framework, I linked Bronfenbrenner's bio-ecological model of human development and Bandura's cognitive learning theory to explain the effect of the Win-LIFE intervention in promoting healthy food practices in a resource-constrained community. I therefore examined how cognition and information (nutrition knowledge and skills) gained by learners in the school environment, influenced the behaviour of parents (home environment) in adopting healthy food practices that could potentially support the community's health and well-being.

1.9 INTRODUCTION TO PARADIGMATIC PERSPECTIVES

I utilised interpretivism as an epistemological paradigm, as this enabled me to interpret the experiences of the participating teachers, learners and the learners' parents. I followed a qualitative approach that allowed me to gain an understanding of the participants' viewpoints, thoughts, feelings, intentions and experiences regarding the Win-LIFE intervention.

1.9.1 Epistemological Paradigm: Interpretivism

Interpretivism has its roots in hermeneutics, which entails the study of the theory and practice of interpretation (Maree, 2013). Henning, Van Rensburg and Smit (2004) state that according to interpretivist theory, knowledge is not only constructed by means of observable phenomena, but also through descriptions of people's intentions, beliefs, values and reasons, meaning making and self-understanding. Merriam (2002) emphasises that meaning is made when a person experiences something while interacting with other people or with society. Interpretivism therefore focuses on peoples' subjective experiences, how people "construct" their social world by sharing meanings and how they interact with or relate to one another (Maree, 2013).

I selected interpretivism due to my purpose of understanding the participants' viewpoints, perceptions, thoughts, feelings, intentions and experiences about the outcome of the Win-LIFE intervention regarding their food choices, nutrition-related

behaviour and patterns of thinking. De Vos, Delpont, Fouché and Strydom (2011) maintain that an interpretivist understanding or *verstehen* can enable a researcher to appreciate the subjective meaning of social action. This meaning can be discovered by means of language. As such, I relied on language to interpret the meanings that the participants attached to their experiences of the intervention. I constantly reflected on my understanding of the participants' meaning making to ensure that their voices are heard and not mine. Schwandt (1995) maintains that such reflexivity involves self-questioning and self-understanding, for "all understanding is self-understanding" (Patton, 2002:64).

1.9.2 Methodological Paradigm: Qualitative Approach

In investigating the outcome of the Win-LIFE intervention, I followed a qualitative approach. Babbie (2011) mentions that the qualitative researcher's emphasis is on studying human action in its natural settings and through the eyes of the actors or participants themselves. A qualitative approach thus implies the in-depth understanding of data (Babbie & Mouton, 2001). This approach can facilitate unique opportunities for people to share their experiences on natural events and situations.

To this end, a qualitative approach allowed me to understand how teachers experienced the implementation of the intervention among Grade 4 to 6 learners in the Life Skills and Natural Science subjects. I could furthermore gain insight into how the learners and their parents experienced the enriched Life Skills and Natural Science curricula and how they potentially gained knowledge about and skills in healthy food-related practices. I could also explore to what extent the learners transferred their newly gained knowledge and skills to their home situations.

1.10 OVERVIEW OF RESEARCH DESIGN AND METHODOLOGICAL STRATEGIES

An overview of the research process is provided in Figure 1.2. In the section that follows I introduce the methodological strategies I selected. More detailed discussions follow in Chapter 3.

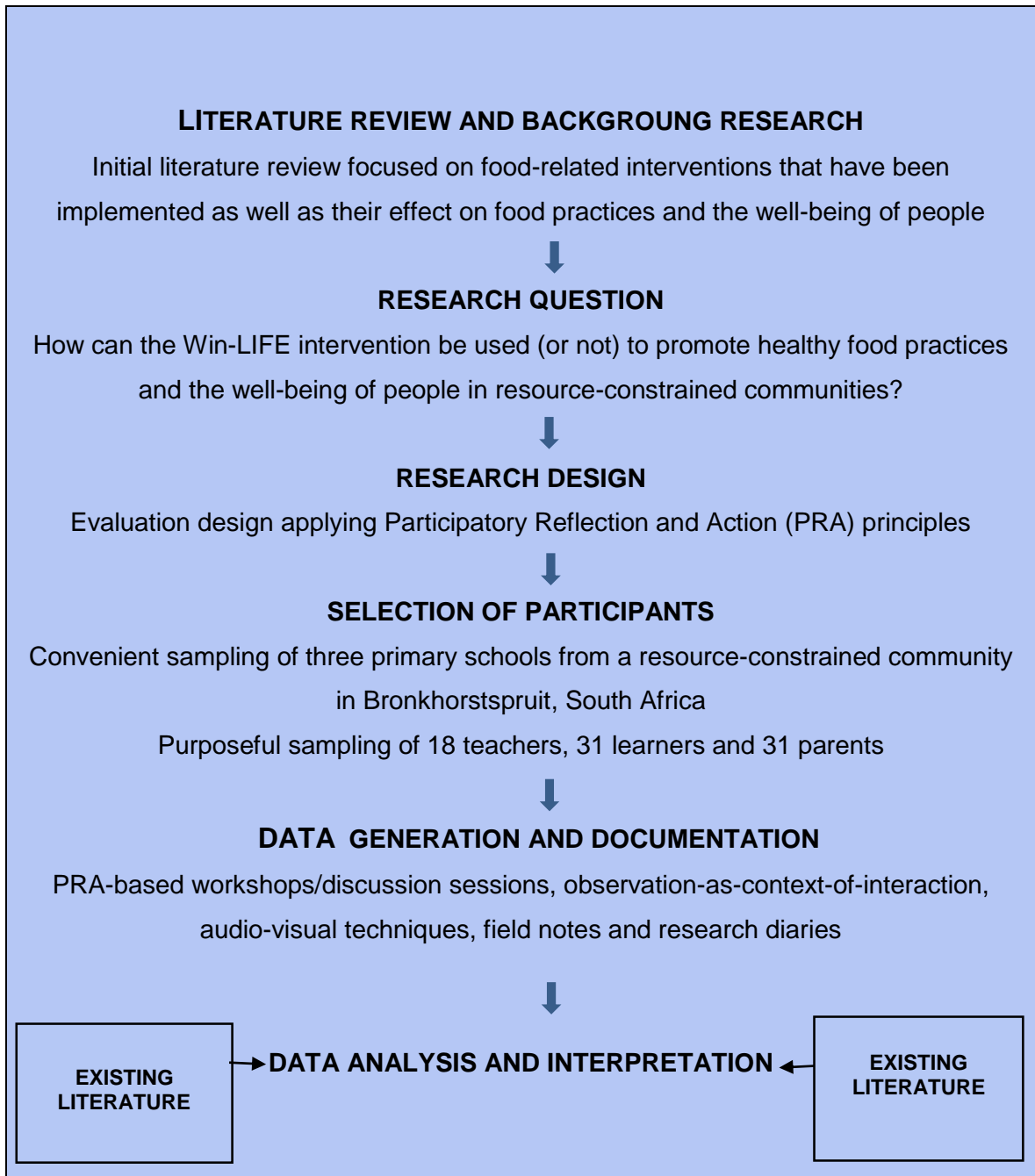


Figure 1.2: Overview of the research process

1.10.1 Research Design

I implemented an evaluation design, applying Participatory Reflection and Action (PRA) principles in exploring the outcome of the Win-LIFE intervention and the effect of the intervention on the food practices of the specific resource-constrained community. De Vos *et al.* (2011) point out that an evaluation design relates to the

way in which components (or ingredients) are put together to answer evaluative questions. By incorporating and applying PRA principles I was able to facilitate processes that allowed participants to reflect on their realities, with the potential of their reflections subsequently bringing about change in their behaviour.

The research process involved people reflecting on their food and nutrition-related practices, following critical and self-critical reflection and action (Denzin & Lincoln 2008). An advantage of applying PRA principles to this study is that it created a space for participants to provide detailed information while simultaneously reflecting on the information they provided. Some limitations of applying PRA principles are that it is potentially time-consuming, that participants may not be willing to openly share information about their experiences in an honest way and that findings cannot be generalised. I discuss my selected research design and the way in which I addressed the associated potential limitations in more detail in Chapter 3.

1.10.2 Selection of Participants

I relied on convenient sampling to select the research site, as this study forms part of a broad research project that has been undertaken in a specific community involving three specific primary schools. According to Patton (2002:448), “convenient sampling involves sampling by convenience; doing what’s fast and convenient”. In this regard, Punch (2006) maintains that convenient sampling saves time, money and effort but that this may be at the expense of credibility.

In selecting participants for the study, I purposefully selected 18 teachers, 31 learners and 31 parents who had been involved in or associated with the broader Win-LIFE project, to participate. The participants could thus all be linked to the enriched Grade 4 to 6 Life Skills and Natural Sciences and Technology school curricula. I include the selection criteria I applied for the various groups of participants in Chapter 3.

Advantages of applying purposeful sampling as indicated by Creswell (2012) include that this strategy provided me with a sample that was rich in information and enabled me to draw conclusions that are of value and credible. As I knew the characteristics of the sample I required, purposeful sampling as indicated by Johnson and

Christensen (2012) allowed me to implement my judgement in order to ensure that the sample was composed of elements containing the basic characteristics or typical attributes of the population of this study.

1.10.3 Data Generation and Documentation

I used several strategies to generate and document data for this study, namely PRA-based workshops/discussions with the various groups of participants, observation-as-context-of-interaction, audio-visual techniques, field notes and research diaries. PRA-based strategies can be applied in various research settings and across socio-economic strata (Chambers, 1994). PRA encloses several approaches and methods that may enable local people to share, enhance and analyse their knowledge of life and conditions with the potential of planning and acting accordingly (Chambers, 1994). It is assumed that people possess rich information about their situations and can share how they experience their conditions, and how they can use their knowledge to take action to improve their lives. As PRA-based strategies are typically visual by nature, I was able to generate data by means of visual and colourful methods during discussion sessions, which elicited information and allowed me to gain insight into and an understanding of the participants' perceptions, attitudes and views (Maree, 2013).

I selected PRA-based workshops and discussions as data-generation strategy with teachers and parents because it could potentially allow participants to express and share their experiential information at an equal level with the research team. To this end, Webber and Ison (1995) point out that PRA-based workshops can allow participants to express personal enthusiasm for action. In this study, it implied that participants had the opportunity to reflect on their food practices, with the possibility of such reflection resulting in action, and the promotion of their health and well-being. In addition to PRA-based sessions, teacher-participants completed an open-ended questionnaire to generate qualitative data about their experiences of the implementation of the Win-LIFE intervention.

Observation-as-context-of-interaction as data-generation strategy implied the possibility that I could gain an insider perspective of the group dynamics in the different research settings. Through observation-as-context-of-interaction, I was

able to become a member of the community where I observed the interactions of the participants (as experts or research partners) who possess rich information that they shared about their experiences of the Win-LIFE intervention (Ferreira, 2006). I subsequently spent ample time discussing participants' experiences and perceptions of food-related knowledge with them.

I also used *audio-visual techniques* to capture all PRA-based sessions in order to maintain accurate accounts of what was said, and to be able to complete authentic analysis and interpretation of the data. Johnson and Christensen (2012) indicate images to be one of the richest strategies of data generation. Data were thus generated by means of audio-visual techniques where all discussions and research activities were captured by way of recordings and photographs.

In addition, all research team members made *field notes* and kept *research diaries*. Field notes, as mentioned by Johnson and Christensen (2012), are records of what researchers believe to be important, in the form of notes that the observer writes down during and after observations. We recorded notes on what was observed during all PRA-based sessions. I edited my notes while my memory was still fresh. Creswell (2012) differentiates between two types of field notes, namely descriptive and reflective notes. In this study, I used both descriptive and reflective field notes, describing what transpired during the data-generation sessions to document all decisions made during the process (McMillan & Schumacher, 2014).

A *research diary* can be used to capture information during data-generation sessions. Engin (2011:297) points out that a research diary, as described by Gibbs (2007) and Silverman (2004) in research methodology literature, is a way to log decisions and write down reflections on the research process.

1.10.4 Data Analysis and Interpretation

According to Babbie and Mouton (2001), data analysis involves the breaking up of data into manageable themes, patterns, trends and relationships. The aim is to understand the various constitutive elements of one's data through an inspection of the relationships between concepts, constructs or variables, and to see whether any patterns or trends can be identified or isolated, thereby establishing themes and

related subthemes. Inductive thematic analysis is often done in qualitative studies, as was the case in this study.

During analysis of the data I thus identified patterns, categories and themes by firstly organising the data into abstract units of information. Punch (2013) explains that thematic analysis implies a method of identifying, analysing and reporting patterns (themes) in data. In analysing the data of this study, I was guided by the following steps (Punch, 2013): *Familiarising* myself with the data by reading and rereading the data as well as listening to audio-visual recordings; *generating initial codes* by coding interesting features of the data; *selecting themes and sub-themes* by identifying patterns that are similar; *reviewing the themes and sub-themes* to check that all of these present patterns; *defining the themes* identified; and finally *producing a report* on the analysis of the generated data (Punch, 2013). I thus worked back and forth between the themes and the database until I established a comprehensive set of themes and related sub-themes (Creswell, 2012).

Hartas (2010) identifies certain principles for inductive thematic analysis that I implemented throughout. Accordingly, I created clear and distinct codes (themes), and definitions (with all themes clearly defined and operationally different from each other; refer to Chapter 4 and 5). I also kept a code log book, guarded against creating too many themes and sub-themes and ensured that each theme (code) had a purpose. I did member checking with the participants to ensure that data generated were accurately coded. Creswell (2012:259) maintains that “member checking is a process in which the researcher asks one or more participants in the study to check the accuracy of the account”. The themes I identified enabled me to address the research questions based on my understanding of the participants’ experiences and perceptions (Denzin & Lincoln, 2008). In this manner, inductive thematic analysis enabled me to arrive at authentic and trustworthy findings and conclusions.

1.11 QUALITY CRITERIA

I aimed to meet the qualitative criteria of credibility, confirmability, transferability, dependability and authenticity in this study in order to ensure trustworthiness. Rigour in qualitative research is regarded as a means by which integrity and competence

as well as the legitimacy of a research process can be demonstrated (Tobin & Begley, 2004). Patton (2002) asserts that the *credibility* of a qualitative study depends on three distinct but related elements, namely rigorous methods of data generation; credibility of the researcher based on training, experience, track record, status and presentation of the self; and philosophical beliefs in the value of qualitative inquiry. I aimed to achieve credibility by using rigorous data-generation methods and through the experience I had gained as researcher in the past, supported by the experienced team of researchers collaborating in the broader project.

Babbie (2011) explains that *confirmability* is the degree to which the findings of a study are the product of the inquiry and not based on the biases of the researcher. Tobin and Begley (2004) similarly maintain that confirmability (comparable with objectivity or neutrality in quantitative studies) is concerned with data and the interpretation of findings not being figments of the inquirer's imagination but being clearly derived from the data. I used an audit trail and reflexivity as strategies to enhance confirmability. In this regard, McMillan and Schumacher (2014) explain that reflexivity involves a researcher's rigorous self-scrutiny throughout the entire process of inquiry.

Transferability refers to the extent to which findings can be applied in other research contexts or with other participants (Tobin & Begley, 2004). Patton (2002) asserts that no attempt is however made in formative evaluations to generalise findings beyond the settings in which the evaluations take place. As such, the findings of this study cannot be generalised yet may be transferred to similar contexts. Seeing that each research context is unique and participants construct meaning in their own unique way (Babbie, 2011), what applied to this resource-constrained community may thus not necessarily apply to another community. The reader will be able to decide to what extent the findings of this study may be applied to similar contexts, based on the rich and detailed descriptions of the research content and process I include in this thesis.

Babbie (2011) maintains that an inquiry must provide its audience with evidence that, if a study were to be repeated with the same or similar participants in the same

(or similar) context, the findings will be similar. According to Guba and Lincoln (1989), credibility is not possible without *dependability*. In conducting this study, I ensured that the process of research flowed logical and that it was traceable and clearly documented (Schwandt, 2001). I relied on reflexivity, which is central to an audit trail, thereby keeping a self-critical account of the research process, including my own internal and external dialogues.

Finally, according to Schwandt (2007), *authenticity* is important in naturalistic inquiries, as this implies an approach that aims to generate a genuine or true (“authentic”) understanding of people’s experiences. A genuine understanding implies the possibility of seeing the world from the participants’ or actors’ points of view. Thus, during this study I endeavoured to obtain a true understanding of the participants’ perceptions of their life-worlds and to present this in fairness. Throughout, I also attended to research ethics, respecting the fact that participants have the right to self-determination during the process of data generation and analysis. I discuss the strategies I relied on to enhance the trustworthiness of this study in more detail in Chapter 3.

1.12 ETHICAL CONSIDERATIONS

Because I was conducting research with human participants, I followed the ethical guidelines as stipulated by the ethics committee of the Faculty of Education (Ethics Committee, 2015), University of Pretoria. I informed the participants about the aim of the research before any data were generated and emphasised that they had the right to withdraw from the study whenever they wanted to. Throughout, my responsibility as researcher was to protect the participants from any harm or loss, with the aim of preserving their psychological well-being and dignity (Willig, 2008).

McMillan and Schumacher (2001) emphasise that *informed consent* implies a dialogue whereby participants are informed of the purpose of a study. In support of this, Cohen, Manion and Morrison (2007) indicate that the principle of informed consent is based on participants’ right to freedom and self-determination. It implies the right to refuse to participate if a participant does not want to participate. In this study, I distributed and discussed letters of informed consent with all participants prior to their involvement. As such, I ensured that participants fully understood how

they would be involved in the study, what the purpose of the study was and what the research process would entail. The various informed consent letters (parents and teachers) are included in Appendix C.

Cohen *et al.* (2007) state that participants should not be identifiable in print and that the role of researchers is thus to ensure that participants' *privacy is respected*. Similarly, Hartas (2010) maintains that it is the researcher's responsibility to limit any likelihood of identification. I treated all information that the participants provided as *confidential* unless agreed on with the participants. I also informed participants that the information generated during the study would be treated confidentially and that their *anonymity* would be respected by, for example, using pseudonyms when disseminating the findings. As visual data formed part of the data pool for this study, I obtained the participants' permission to take pictures, having them indicate the preference of their identities being shown or disguised when publishing photographs.

Seale *et al.* (2004) mention that *trust* is key to building good field relations. As qualitative researcher I spent sufficient time on building relationships with the participants. McMillan and Schumacher (2010) point out that deception may violate informed consent and privacy. In this regard I specifically considered the following three conditions: representing multiple voices, enhancing moral discernment and promoting social transformation. Throughout, I ensured that participants were not deceived about the purpose of the study or the processes involved. My position as an official of the Department of Education at the time of initial data generation implied the challenge of participants' responses potentially being influenced by the perceived power I held. I remained cautious and reflective of this challenge, and as a result did not generate data with teacher-participants but requested a co-researcher to facilitate these sessions on my behalf.

Creswell (2013) maintains that, as qualitative researcher, I had the ethical obligation to *protect participants* from any form of physical discomfort that may emerge from the research project. Participants were thus thoroughly informed about the potential impact of the investigation before field work commenced (De Vos *et al.*, 2011). In this regard, Flick (2013) furthermore highlights that the protection of participants

from harm is an ethical principle of “respect for the person,” which incorporates two ethical convictions, namely that individuals should be treated as autonomous agents and that people with diminished autonomy are entitled to protection. During data generation, participants were not harmed by, for instance, revealing information that would embarrass them or endanger their home lives, friendships or careers (Babbie, 2011). I provide more detailed discussions on the way in which I respected ethical guidelines in Chapter 3.

1.13 OUTLINE OF THE CHAPTERS

The chapters of this thesis are outlined below.

Chapter 1: Overview of the study

Chapter 1 provides background information and an overview of the study. I indicate the purpose of the study and formulate the research questions. I introduce the selected conceptual framework and paradigmatic choices and state the research design. I also stipulate the methodological strategies I used, and briefly refer to relevant quality criteria and ethical considerations.

Chapter 2: Challenges and interventions associated with healthy food practices

In Chapter 2 I present the literature review that formed the basis of this study. I discuss current literature that focuses on poverty, malnutrition and the health and well-being of people in resource-constrained communities. I also discuss school-based interventions as a possible way of promoting the health and well-being of people, how Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs) have been addressed in South Africa, as well as how this study was shaped in evaluating the Win-LIFE school-based health promotion intervention programme. I furthermore discuss cooperative learning that has been used as a teaching strategy in teaching learners about healthy food practices. I conclude the chapter with a discussion of my conceptual framework, drawing on the theories of Bronfenbrenner (1979) and the social cognitive learning theory of Bandura (1986).

Chapter 3: Research design and methodology

In Chapter 3, I discuss the evaluation design I used and how I applied PRA principles. I explain my choices of an interpretivist paradigm and qualitative approach. I describe how I selected the participants and elaborate on the research methodology of the study by discussing how I used PRA-based workshops, observation-as-context-of-interaction, audio-visual techniques, field notes and research dairies to generate and document data. I also explain the data analysis process I completed and how I attempted to adhere to quality criteria and ethical principles.

Chapter 4: Results on teachers' experiences and perceptions

In Chapter 4, I report the results of the study, following my evaluation of the school-based Win-LIFE intervention in terms of the teacher-participants' experiences and views. I present the themes and sub-themes I identified during inductive thematic analysis and include excerpts from the data in support of my discussions.

Chapter 5: Results on parents' and learners' experiences and perceptions

In Chapter 5, I present the results pertaining to parents' and learners' perceptions of the Win-LIFE intervention and its outcome. Presentation of the themes and sub-themes is once again accompanied by excerpts from the raw data, in support of my discussions.

Chapter 6: Synthesis and findings of the study

In Chapter 6, I synthesise the results I obtained. I interpret the themes and sub-themes I identified against the background literature I presented in Chapter 2. In my discussion, I highlight correlations, identify silences in the data and foreground new insights based on the findings of the study.

Chapter 7: Conclusions and recommendations

In Chapter 7, I come to conclusions in terms of the research questions I formulated in Chapter 1. I present the contribution of this study, reflect on the limitations I identified and then make recommendations based on the findings and conclusions of the inquiry.

1.14 CONCLUSION

In this chapter, I set the stage by providing an introduction and background information on the study, against which the rest of the chapters of the thesis can be read. I provided the purpose of the study and introduced the research design and methodology. As stated, the primary research question that guided this study is: *How can the Win-LIFE intervention be used (or not) to promote healthy food practices and the well-being of people in resource-constrained communities?*

In Chapter 2, I explore existing literature on the phenomenon under study. I focus on the way in which the MDGs and SDGs are/have been addressed, and then discuss the challenges of poverty and malnutrition in resource-constrained communities in South Africa. I explore existing school-based interventions as a possible way of promoting health and well-being, and contemplate how such interventions may potentially influence the food production, food choice, food preparation and food consumption behaviour of resource-constrained communities. I furthermore discuss the cooperative learning strategy employed during the Win-LIFE intervention in equipping learners with knowledge and skills on healthy food practices. I also explain the conceptual framework I relied on in undertaking this study.

CHAPTER 2

CHALLENGES AND INTERVENTIONS ASSOCIATED WITH HEALTHY FOOD PRACTICES

2.1 INTRODUCTION

Poverty often forms the focal point of people's food choices and eating practices. As a healthy diet forms the basis of human health, different research intervention programmes have been implemented globally as well as in South Africa, with the aim of reaching solutions to poor diets, as the latter is detrimental to people's health and well-being. Hawkes (2013) considers schools and other education settings as the primary context in which to deliver nutrition education. Hawkes (2013) furthermore attests that an unhealthy diet is one of the risk factors for non-communicable diseases (NCDs). He also believes that the inadequate consumption of fruit and vegetables will increase the risk of cardiovascular diseases and various forms of cancer. In support, Gibson (2016) indicates that healthy food practices pose a challenge to both rich and poor people, even though the poor typically face more challenges due to food insecurity.

In this chapter, I discuss common challenges that resource-constrained communities in South Africa face, and explore how poverty may contribute to unhealthy food practices in such communities. I then explore the importance of healthy nutrition regarding food production, food choice, food preparation and food consumption. I also contemplate the potential of school-based interventions in supporting people's food practices as well as the need for constant evaluation of such efforts. I furthermore examine the Millennium Developmental Goals (MDGs) formulated at the United Nations' World Summit in 2000 to understand how these goals have been achieved (or not) in eradicating poverty and hunger in the world; specifically, in South Africa. I also discuss the Sustainable Development Goals (SDGs) that followed the MDGs, focusing on sustainable development in the world in terms of economic development, environmental development and social inclusion (Sachs, 2012). Cooperative learning that was used during the teaching of the enriched curricula is also discussed. The purpose of the literature review I completed was to steer my study, identify limitations in the knowledge base on the

promotion of healthy food practices in resource-constrained communities, and ultimately contribute to the development of a conceptual framework.

2.2 COMMON CHALLENGES FACED BY RESOURCE-CONSTRAINED COMMUNITIES IN SOUTH AFRICA

In this section, I discuss poverty, hunger and malnutrition, the importance of healthy nutrition as well as school-based interventions as avenues to promote health and well-being. I also discuss cooperative learning that was utilised as a teaching strategy during the Win-LIFE intervention. I furthermore discuss how MDGs and SDGs are (or not) being addressed in South Africa to alleviate poverty while promoting sustainable development. I conclude with the conceptual framework that guided this study.

2.2.1 Poverty in South Africa

Poverty is defined as a condition of having little or no wealth or few material possessions (Oxford English Dictionary, 2018), with food insecurity being one aspect of poverty. Von Grebmer, *et al.* (2016) indicate that the Global Hunger Index (GHI) demonstrates progress with regard to hunger reduction in developing countries. Furthermore, these authors highlight that the GHI score for developing countries was 30.0 prior to 2016 yet that the 2016 score was 21.3, which indicates a reduction of 29 percent. Richter and Desmond (2008) attest that inequalities that existed prior to 1994 have influenced poverty in South Africa. These authors furthermore highlight that the HIV/AIDS pandemic contributed to many households being left without parents. As a result, many live in so-called child-headed households without adults to provide for their needs, specifically food. According to Aliber (2009), hunger experienced by children in South Africa increased from 1994 to 1998; however, it decreased from 2002 to 2007. Even though hunger declined, Statistics South Africa (2008a) indicated that 28% of people living in informal settlements (resource-constrained communities) still face hunger and yet these informal settlements account for only 13% of all the households living in metro municipalities (Aliber, 2009).

To this end, Labadarios *et al.* (2011) indicate that despite the political and economic advances seen in South Africa since 1994, the country is still afflicted by poverty

and unemployment. In support, Adato, Carter and May (2006:226) point out that “South Africa in the immediate post-apartheid period was characterised by high economic inequality and levels of poverty not usually found in an upper middle-income country”.

More specifically, Statistics South Africa (2014) indicates a poverty head count of 56% at the time and emphasises a strong link between levels of education and levels of poverty. In this regard, Labadarios *et al.* (2011) point out that between 1999 and 2008, food insecurity in South Africa was seemingly reduced from 52% to 25.9%; however, the number of people at risk of experiencing food insecurity remained the same. These authors indicate that most South African households struggle to obtain a better income on an annual basis. The estimated average income of the poor is less than R1000.00 per month, which is equal to US \$ 83.6 per month. As a result, such households find it difficult to buy sufficient food to feed their families. Considering the statistics mentioned above, interventions that may address poverty and promote food security, as well as the health and well-being of people in resource-constrained communities, remains a priority in South Africa.

Poverty can be regarded as the common denominator of malnutrition and food insecurity. In this regard, WHO/FAO (2003) report indicates that the World Health Organisation (WHO) and the Food and Agriculture Organisation (FAO) view poverty as the root cause of malnutrition. Hunger and malnutrition therefore remain among the most devastating challenges that the majority of the world’s poor and needy are facing. In this regard, nearly 30% of humanity was estimated as suffering from one or more forms of malnutrition in 2003 (WHO/FAO, 2003).

At a more comprehensive level, Pinstrip-Andersen and Watson (2011) emphasise that people who do not earn a sufficient income will suffer at different levels of their lives. These people may furthermore be negatively affected by malnutrition and hunger, which are detrimental to health and well-being. To this end, Alderman, Hoddinott and Kinsey (2006) mention that Glewwe *et al.*’s (2001) Longitudinal Health and Nutrition Survey study indicates that malnourished children generally start school late and that their performance in cognitive tests is typically poor. Malnutrition in the case of preschool children is specifically detrimental to their

cognitive and physical development, considering that it can negatively impact on growth and schooling.

2.2.2 Hunger and Malnutrition

Food security plays a pivotal role in promoting healthy food practices in especially resource-constrained communities. To this end, Pinstруп-Andersen (1990) explains that food insecurity will occur in situations where the availability of nutritionally adequate and safe food, or the ability to acquire food in legitimate ways, is limited or uncertain. Labadarios *et al.* (2011:891) also point out that “food security as an umbrella term includes (i) the availability of food that is nutritious and safe; (ii) an assured ability to procure and acquire food of good quality in a socially acceptable way (e.g. without resorting to emergency food supplies, scavenging, stealing or similar coping strategies”. As such, the WHO/FAO (2003) report highlights that food strategies should not merely be directed at making food available for all but should also aim for the consumption of adequate quantities of safe and good food that will make up a healthy diet.

Pinstруп-Andersen and Watson (2011) hold the view that hunger and malnutrition can be associated with more than half of the 9.5 million preschool children who die annually. The WHO/FAO (2003) report similarly indicates that worldwide, about 60% of the deaths among children aged five years and younger in developing countries can be associated with malnutrition. These authors furthermore state that the tragic consequences of malnutrition include death, disability, stunted mental and physical growth and, as a result, reduced national socio-economic development. To this end, the inability to access healthy food will lead to poor nutrition and, in turn, negatively impact the health and development of children.

Hunger or poor nutrition will, however, not only have a negative effect on children’s health but will also affect their scholastic performance. Bellisle (2004:S227) explains that “adequate brain function is a prerequisite for effective cognition and the performance of adequate behaviour”. This author specifically mentions that a poor nutritional status can affect a person’s ability to function and is relevant to school performance. According to Weinreb *et al.* (2002), the psychological effects of hunger on children may furthermore affect their physiological and emotional well-being and

negatively impact on their mental health or their ability to cope with stress. Another key factor that can contribute to poverty and hunger in resource-constrained communities is alcohol abuse, which may once again result in the inability to buy adequate food for the family.

Charlton and Rose (2002) maintain that the food supply in South Africa is adequate at national level and can feed the entire population; however, several studies (for example Income and Expenditure Survey [IES] and Household Subsistence Level [HSL], 1995; Charlton & Rose, 2002) provide evidence of undernutrition among certain sectors of the population. Marginal vitamin A levels, iron-deficiency, anaemia and stunting, which relates to chronic energy deficiency, all indicate serious public health problems in the country. As already indicated, such insufficient consumption of nutrients is often caused by household food insecurity, which can be defined as a household's lack of access to healthy food to satisfy the necessary dietary needs (Charlton & Rose, 2002).

Faber *et al.* (2011) mention that in 1995, the South African Department of Health initiated the Integrated Nutrition Intervention Programme (INIP) to address and prevent malnutrition for all by means of a comprehensive approach that addressed the underlying causes of malnutrition. However, despite various national nutrition and primary healthcare interventions emerging in South Africa under the auspices of the INIP, recent findings, in the context of both over- and undernutrition, indicate that adult and child malnutrition rates have increased and that health has thus further deteriorated (Faber *et al.*, 2011).

Various researchers believe that one of the factors leading to a poor diet is a change in diet. Pinstруп-Andersen and Watson (2011) hold a similar view and explain that food consumption patterns have markedly changed over recent years due to rapid industrialisation, urbanisation, economic development, market globalisation and westernisation. To this end, Rosegrant, Agcaoili-Sombilla and Perez (1995) attest that urbanisation and commercialisation are responsible for significant shifts in eating habits that have moved away from less expensive, high-energy foods such as cereals. Closely related, Raschke and Cheema (2008) indicate that sub-Saharan Africa's indigenous knowledge about food habits deteriorated during European

colonisation. These authors mention that ancestors of East Africa generally consumed wild game, wild birds and eggs, wild fish, wild insects such as grasshoppers and wild fruits and nuts that were nutritious; however, these food habits in East Africa changed during the 1400s. During that time, international trade led to the exchange of food and crops like plantain, banana, cocoyam, coconut and sugar cane became the local diet of East African people (Raschke & Cheema, 2008).

The WHO/FAO (2003) report furthermore indicates that adverse dietary changes include shifts in the structure of diets towards higher energy-dense diets with greater emphasis on fat and added sugars. As such, a higher saturated fat intake (mostly from animal sources) has reduced the consumption of complex carbohydrates and dietary fibre, fruits and vegetables. Oldewage, Theron, Napier and Egal (2011) similarly indicate that for the past 50 years, South Africa's nutrient consumption have shown changes such as an increase in total saturated fats, a decrease in total carbohydrates (carbohydrates rich in fibre) and an increase in refined carbohydrates (carbohydrates with less fibre), as well as rich foods with added sugar. Other changes observed include a decrease in dietary fibre (roughage) consumption and an increase in the consumption of total protein and animal protein foods. Closely related, metabolic syndrome involves a cluster of conditions, namely increased blood pressure, high blood sugar, excessive body fat around the waist and abnormal cholesterol or triglyceride levels that occur together and may in turn increase the risk of heart disease, stroke and diabetes (www.mayoclinic.org/...metabolic).

It seems clear that most people in South Africa have moved in the direction of following a westernised diet, whether poor or rich. Whereas local people in many South African communities used to eat traditional food such as "pap"/stiff porridge, a variety of vegetables, dried roasted maize, meat, sour milk, beans and peanuts, Pretorius and Sliwa (2011) confirm that such traditional diets have largely been abandoned in favour of western diets typified by an increased consumption of processed and easy-to-prepare foods. As a result, an increase in the intake of salt, sugar and saturated fat is currently evident. Frison, Smith, Johns, Cherfas and Eyzaguirre (2006) propose that urbanisation may play a role here, with many women being away from home and not able to attend to the nutritional needs of their

families. The absence of women from their homes for a large part of the day may lead to the replacement of traditional foods by “convenience” foods such as easy-to-prepare cereals, for example rice (Frison *et al.*, 2006).

Obesity and overweight are yet another challenge that is prevalent across the world and in South Africa. To this end, Gibson (2016) mentions that over-nutrition (also labelled as the “disease of the affluence”) in the form of overweight (excessive weight relative to height) and obesity (excessive body fat content), has become more prevalent in developing countries over recent years. The health implications of these conditions are furthermore exacerbated by physical inactivity.

2.2.3 The Importance of Attending to Healthy Nutrition

Healthy nutrition plays an important role in improving health, especially among children during their early developmental years. Puri *et al.* (2008) point out that 50% of a human being’s skeletal mass at maturity is accumulated during childhood. These researchers furthermore indicate that the composition of a diet can play an important role in building and maintaining bone mass throughout life, basically by providing bone-building nutrients such as calcium (Ca), Phosphorus (P) and vitamin D. Health risk factors such as malnutrition and underweight therefore affect the well-being of most people in resource-constrained communities.

The promotion of food security, which is embedded in the economic growth of a country, can enhance people’s health and well-being. Malik (2013) reports that many studies show a relationship between health and income, with the poorest sections of the population being the most vulnerable. This author indicates that the elimination of poverty and inequality requires political and social action, of which nutritional programmes such as school-based interventions can form part. Such interventions can thus address the socio-economic status of the poor to promote their health and well-being. Hence, the evaluation of school-based interventions that focus on health and well-being remains important.

Various examples of school-based intervention strategies that have been implemented exist, both globally and locally. More specifically, the successful promotion of healthy food practices in resource-constrained communities hinge on

nutrition education and food security. Hawkes (2013) maintains that the role of schools, over and above that of education, is to promote nutrition education. This author furthermore indicates that proper nutrition is essential for the physical and mental development of children and adolescents. As nutrition education alone will, however, have a limited effect on improving the nutritional status of people in resource-constrained communities, psychologists, sociologists and educationists have put various school-based interventions in place to empower people with knowledge about and skills in healthy food practices and food production skills. Such knowledge and skills will lead to more food security. In the context of this study, the Win-LIFE intervention has focused on enabling Grade 4 to 6 learners to acquire knowledge and skills that may promote healthy food practices.

2.2.3.1 Food production as a component of healthy nutrition

Food production entails the production of food that is consumed by human beings and animals. Food is generally produced by means of large- and small-scale farming, as well as vegetable gardens where crops like staple food, vegetables and fruits are produced. Pinstруп-Andersen and Watson (2011) regard crops like maize, rice and wheat as key crops that can provide food for the world's population. In this regard, Uphoff (2013:3) maintains that the "aim of agricultural enterprise should be to produce secure and healthy people, not just food". For people to access nutritious food, food production thus needs to be encouraged at all cost.

Food production is an essential activity that sustains human existence through the promotion of food security. Hamm and Bellows (2003:40) define food security as "a situation in which all community residents can obtain a safe, culturally acceptable nutritionally adequate diet through a sustainable food system that maximises self-reliance and social justice". As stated before, colonisation and industrialisation have, however, changed the course of food production in sub-Saharan Africa. To this end, Raschke and Cheema (2007) point out that east African countries such as Kenya, Tanzania and Uganda, for example, lost arable land in consequence of the so called "empty land" seizure or forceful removal movements. As a result, indigenous farmers in these areas could no longer continue with farming because they were forced to settle on small plots of marginal land that do not support agricultural farming. Production of food crops such as sorghum, finger and pearl

millet, beans, bambara groundnuts, bottle gourds, cowpeas and yam were subsequently hampered. Behnassi, Draggan and Yaya (2011) indicate that the 2008 Bulletin of the WHO report indicates that vegetable farming in Zimbabwe transformed the communities' food consumption patterns since the inception of small-scale intensive farming in the mid-1990s. According to this report, 96% of the households could subsequently afford at least three basic, decent daily meals with nutritious components such as meat, bread and butternuts, which many other rural households were not able to afford.

Large- and small-scale farmers generally maintain food production in South Africa (Baiphethi & Jacobs, 2009). Food production (Ottem, 2010) in urban areas can take many forms such as backyard, community, school, restaurant kitchen and rooftop gardens. In this regard, Baiphethi and Jacobs (2009) maintain that subsistence farming has the potential to improve the food security of poor families in both rural and urban areas in South Africa. This may reduce families' dependence on purchasing food in a context of high food price inflation while living in poverty.

School-based interventions can play a pivotal role in promoting food production by means of, for example, vegetable gardens. According to the WHO, (WHO/FAO 2003), vitamin A deficiency remains the single greatest preventable cause of childhood blindness and an increased risk of premature childhood mortality from infectious diseases, with 250 million children under five years of age suffering from subclinical deficiency. In this regard, Pinstrup-Andersen *et al.* (1995) point out that around 1.4 million preschool children suffer from eye damage because of Vitamin A deficiency. Hence, interventions in vitamin A crops production to combat vitamin A deficiency have been a priority over recent years.

To this end, Harris, Minniss and Somerset (2014) explain how a community-based food gardening initiative for Africa migrants in Australia has yielded positive results in promoting food security. This campus-based community food-gardening project was established in 2006 when 45 individual plots were identified and given to African migrants. For this project, migrants were allotted plots that were relatively flat with poor soil quality, had access to enough water and were provided with gardening resources such as wheel barrows, shovels, hoes, whipper, snipper and lawn

mowers as well as soil-conditioning products. The results of this study indicate that people successfully harvested crops that included traditional foods such as cassava and maize, as well as local foods such as pumpkins, bananas, tomatoes and strawberries.

In another example, Faber *et al.* (2011) implemented a community-based intervention that focused on vitamin A crop production of carrots, orange-fleshed sweet potatoes, butternut, pumpkin, mangoes, paw paws (*papaya* fruit containing vitamin A) and dark green leafy vegetables including spinach and wild-growing leaves. The aim of this intervention was to promote the consumption of vitamin A-rich food to support the diets of nutritionally at-risk populations. Increased vitamin A food consumption occurred, which, in turn, addressed nutrient deficiency. However, it was furthermore found in a study done by Faber *et al.* (2011) that a micronutrient deficiency cannot be addressed by merely focusing on products that provide vitamin A only. As such, these authors conclude that mono-crop production of low nutrient-content crops cannot translate into food and nutrition security. They argue that it is important to diversify the crops that are planted to include seasonal crops, ensuring year-round availability of food (Faber *et al.*, 2011).

The Ndunakazi project (Faber *et al.*, 2011) is yet another community-based food-production project that was implemented in the Eastern Cape in South Africa in 2006. The aim of this project was to promote food gardening, involving large numbers of mothers in nutrition education and agricultural training activities. The project equipped mothers with skills to plant pro-vitamin A-rich vegetables. The findings of this study indicate that gardening activities were sustained and that butternut, pumpkin and orange-fleshed sweet potatoes were consumed mostly during the first quarter/half of the year and spinach and carrots during the second half of the year. Therefore, the involvement of participants in an intervention can seemingly yield positive results and promote the sustainable production of vegetables in resource-constrained communities.

2.2.3.2 Food choice as a component of healthy nutrition

Food choice relates to people's eating lifestyle behaviour, with culture being a primary contributing factor. James (2004:351) holds the view that "nutrition-related

attitudes and behaviours are usually established early in life, and are primarily determined by cultural, psychosocial, and socioeconomic factors". It follows that it is difficult to separate the cultural and/or social dimensions of food choice from psychological and/or biological factors (James, 2004). As such, well-being is embedded in food that people eat.

Factors such as poverty, poor income, an increase in food prices and world economic meltdown may impact negatively on households' ability to make healthy food choices. Wrieden *et al.* (2006) assert that food choice is a function of both structural issues (food access, affordability and availability) mediated by personal status, and cultural beliefs. These authors furthermore believe that food choice is also influenced by public and private sector policies, responding to financial pressure and market forces (Wrieden *et al.*, 2006). Faber *et al.* (2011) point out that, for the rural poor, food security is typically compromised due to food choices, with price and availability forming barriers to a healthy diet.

Wordell, Daratha, Mandal, Bindler and Butkus (2012) conducted a school-based intervention in the United States of America to determine whether (or not) an altered school environment can influence the food choice of middle school students both in- and outside the school. The findings of the study indicate a positive association between a modified school environment and student food behaviour. This emphasises that policies related to school food environments are important and can be used to address, for example, obesity among young people. The study furthermore illustrates that interventions can play an important role in influencing positive food choice among students. Learners who attend institutions of learning such as schools, are assumed to be potential candidates for promoting healthy food practices, more specifically in terms of making healthy food choices. If learners are exposed to healthy food-related knowledge from an early age, it may possibly promote a healthy lifestyle. This implies the further benefit of this knowledge potentially being carried over to learners' families and community members.

Lytle *et al.* (2006) undertook another study in 16 schools in Minnesota with 3 600 middle-school learners. The purpose of their research was to examine the effect of an intervention designed to increase the availability of fruits, vegetables and lower-

fat foods in homes and schools. The findings indicate that the learners in the intervention schools' parents started making healthier choices when buying groceries than learners in control schools' parents. Compared to the control schools, the intervention schools also started including a higher proportion of healthy foods on their menus. No effects were, however, seen in terms of fruit and vegetable sales as part of regular meal pattern lunches. The study furthermore indicates that changes to the home food environment is usually challenging as families' decisions about food are shaped by various complex factors including taste and cultural preferences, as well as work and school schedules. In resource-constrained communities, economic factors also play a determining role in food choice.

In this regard, Falk, Bisogni and Sobal (1996) implemented an intervention on food choices, focusing on the relation between income and socio-demographic and other economic factors for the elderly. These researchers found that individuals from higher socio-economic status will generally consume healthier food such as fruit salads and vegetables, wholemeal bread and high fibre breakfast cereals (Herne, 1995). The findings furthermore indicate that the combination of a low income and the high prices of healthy food products can be regarded as one of the main causes of inadequate and poor diets among the elderly.

2.2.3.3 Food preparation as a component of healthy nutrition

Cleanliness and hygiene are prerequisites for the promotion of health. Healthy food preparation practices do not only entail the method of cooking but also the hygienic way of handling food by, for example, rinsing vegetables during meal preparation to remove dust, sand and any residual chemical spray (Hawkes, 2013). In this regard, Faber *et al.* (2011) indicate that school-based interventions can be used to introduce learners to such healthy food preparation and storage techniques, while providing nutrition information and encouraging learners to adopt healthy dietary habits.

The correct storage of food also forms part of healthy food preparation. To this end, Ahsan (2014) mentions five ways of effectively storing food, namely sun drying, air drying, oven drying, dehydrating and smoking; freezing; canning; pickling and salting. Ahsan (2014) thereby highlights the importance of correct food storage habits for food security.

As food insecurity is related to income status, it may be difficult for food-insecure individuals to practice low-fat food behaviour by, for example, consuming leaner cuts of meat or choosing specially manufactured low-fat products (Mello, Gans, Risica, Kirtania, Strolla and Fournier, 2010). These authors, however, maintains that other fat-lowering behaviours such as avoiding frying or adding fats to food, removing the skin of chicken, draining cooked hamburgers or making better choices are not cost-related and should be encouraged in any community. According to Mello *et al.* (2010), individuals are generally overweight because of personal choices, a lack of knowledge or a lack of healthy food preparation skills rather than due to cost issues. In this regard, the preparation of healthy food is something that can be learned and practiced to promote healthy eating practices.

Wrieden, Anderson, Longbottom, Valentine, Stead, Caraher, Lang, Gray and Dowler (2006) implemented a community-based intervention in cooking confidence, food preparation methods and dietary choices. These authors maintain that a diet rich in starchy carbohydrates, vegetables and fruits, as well as low in fats (especially saturated fats), is likely to delay cardiovascular diseases. Closely aligned, Rodriguez-Amaya (1997) points out that the retention of pro-vitamin A will decrease because of incorrect cooking methods. According to Bernhardt and Schlich (2006), vegetables need to be cooked to the point where they become tender. Careful timing is thus important, considering that overcooked vegetables will lose their nutritional value.

Larson, Story, Eisenberg and Neumark-Sztainer's (2006) study on food preparation by young people indicate that the most common barrier to food preparation is a lack of time, as experienced by 36% of the young adults who participated in the study. Young adults who were reported to less frequently consume fast food were also more likely to eat healthy food such as fruits, vegetables and wholegrain food. The results of this study therefore indicate how learners in a resource-constrained community can use their gained knowledge about healthy food preparation skills to support their health and well-being. These findings furthermore imply that school-based interventions may potentially have a positive outcome in terms of food

consumption behaviour. To this end, the findings of my study may potentially further contribute to findings in this field.

2.2.3.4 Food consumption as a component of healthy nutrition

Healthy food consumption entails eating food that is healthy and good for the body, and can promote a person's well-being (Spaargaren, Oosterveer & Loeber, 2012). Lallukka, Laaksonen, Rahkonen, Roos and Lahelma, (2007) hold the view that food consumption thus implies a social dimension and furthermore indicate that historical studies view food consumption practices as largely related to inequalities of economic and political power. Darmon and Drewnowski (2008) attest that different studies indicate that the consumption of healthy food is related to people with a high socio-economic status, while consumption of refined cereals is related to low socio-economic groups. Spaargaren *et al.* (2012) similarly maintain that food consumption cannot be understood as economic activity only, but rather implies an essential biophysical process that can promote human survival and a rich and sensitive socio-cultural activity. Without food, neither individual existence nor communal life is possible.

Food insecurity is associated with lower nutrient intake, for example a reduced intake of fruits and vegetables. Faber *et al.* (2011) point out that in South Africa, fruits and vegetables consumption is generally low. These authors furthermore mention that their analysis of the household availability of different foods indicated that 196g of fruits and vegetables were available to each person per day at a household level (Faber *et al.*, 2011). This constitutes about half of the recommended intake indicated by the WHO, stipulating a daily intake of more than 400g of fruits and vegetables by each person as protection against cardiovascular diseases and certain cancers. It follows that poverty, which prevails in resource-constrained communities, will have a distinct negative impact on the consumption of fruits and vegetables in such communities.

Several interventions have been implemented globally to promote healthy food consumption over recent years. The Food and Agriculture Organisation (FAO), for example, implemented a school-based intervention programme in rural schools in India with the aim of educating and sensitising learners in terms of hunger and

malnutrition aspects through a question and answer process. The focus of the intervention was to prevent hunger and malnutrition, with teachers facilitating the transfer of nutrition knowledge to learners by means of a set of model lessons (Bamji & Murthy, 2006). The findings of this study indicate that the learners' knowledge improved; however, it was not clear how new knowledge was translated into better nutrition behaviour in the community. In this regard, Ottem (2010) holds the view that information and education are not enough to change eating behaviour, but that the provision of healthy food in the settings that people frequently access, such as their homes, works, schools and communities, may have a positive outcome. Therefore, the consumption of healthy food may be difficult if such food is not readily available, as is typically the case in resource-constrained communities.

In another study, Mello *et al.* (2010) examined the relationship between food insecurity and low-income adults of Rholand Island's dietary behaviours. Questionnaires were implemented to assess fat-related food consumption and food preparation behaviours (specifically food choice and cooking methods that could lead to an increase or decrease in fat intake). The findings of this study among predominantly low-income adults who enrolled for the nutrition intervention indicate that the intake of fruit (with juice) was substantially higher in the food insecure group, while fruit intake (without juice) did not differ in terms of the participants' food secure state. As such, access to fruit juice through vouchers increased the consumption of fruits and fruit juice among low-income women. The findings of his study furthermore indicate that food security (obtained for example through vouchers given to low-income groups of people) can promote the consumption of healthy food.

Sorsdohl *et al.* (2011) implemented a household food insufficiency and mental health intervention on local ground. The aim of the study was to examine the relationship between food insufficiency and mental disorders in a nationally representative sample of South Africa. The findings indicate that the prevalence of household food insufficiency is high when compared to studies conducted in developed countries. Connell, Lofton, Yadrick and Rehner (2005) furthermore found that children with sufficient cognitive ability can sense when a shortage of food occurs in their households. These authors propose that children are generally aware of their parents' attempts to supply adequate food, but also that parents are

concerned about their inability to supply food security to the family when this is the case.

In another study conducted by Louwens *et al.* (2009), they focused on Total Antioxidant Capacity (TAC) in the diet in attempting to address inadequate diets that may compromise people's health and well-being. These authors maintain that food of plant origin, such as fruits, vegetables, grains and several beverages, can provide a variety of antioxidants to the diet. Such antioxidants can contribute to a decrease in cardiovascular disease, cancer and other chronic diseases such as diabetes mellitus and renal failure. Estimated findings, however, also indicate that the adult South African dietary TAC is below the TAC requirement (Louwens *et al.*,2009).

In their study, Michie, Ashford, Sniehotta, Dombrowski, Bishop and French (2011) developed a 26-item taxonomy of behaviour change techniques to extend the scope and improve the effectiveness of interventions that focus on changing health-related behaviours such as physical activities and healthy eating. Similarly, Simovska, Nordin and Madsen (2015) conducted a study in Danish schools to identify the gaps, tentions and possibilities related to the need to increase the quality and effectiveness of health promotion and health education in primary and lower secondary schools. The findings of the study indicate that while there is a strong policy focus on health and well-being in schools, there is a disconnection with regard to the utilisation of the health education curriculum by the municipal education consultants responsible for municipality's schools. Finally, Poddar, Hosig, Anderson-Bill, Nickols-Richardson and Duncan (2012) conducted a study in improving the consumption of dairy products by college students through online nutrition education. Findings of the study indicate that dairy intake was consistent with published literature which indicated the consumption of two servings of dairy products per day.

2.3 ADDRESSING THE MILLENNIUM DEVELOPMENT GOALS AND SUSTAINABLE DEVELOPMENT GOALS IN SOUTH AFRICA

The Millennium Development Goals (MDGs) were set by the United Nations in 2000 (Gibson, 2016) to address poverty in the world; more specifically in sub-Saharan Africa. In this section, I focus on how the MDGs have been addressed in sub-Saharan Africa, and more specifically for and in South Africa, to alleviate poverty and hunger and to promote food access to resource-constrained communities. Next, I also discuss how the Sustainable Development Goals (SDGs) have been addressed since the formulation of these, more specifically contemplating how climate change and environmental ills can be curbed when addressed alongside the formulated poverty-reduction objectives (Sachs, 2012).

2.3.1 Addressing MDGs in South Africa

As stated, the UN held a World Summit in 2000 where they agreed on eight MDGs to address poverty in the world, especially in developing countries, by 2015. This date was later moved to 2020 (Gibson, 2016). The summit namely agreed on the following MDGs: Eradicating extreme poverty and hunger (MDG 1); achieving universal primary education (MDG 2); promoting gender equality and empowering women (MDG 3); reducing child mortality (MDG 4); improving maternal health (MDG 5); combating HIV/AIDS, malaria and other diseases (MDG 6); ensuring environmental sustainability (MDG 7); and establishing a global partnership for development (MDG 8). In this section, I focus on MDGs 1, 2 and 8, as these goals are relevant to the focus of my study.

2.3.1.1 Addressing MDG 1

In terms of MDG 1, Gibson (2016) reported disappointing results during the World Summit's reconvention in 2002 to discuss the progress of the MDGs. Gibson's (2016) report explicitly indicates an average annual reduction of 6 million undernourished people at the time, which was well below the annual target of 22 million required to achieve the World Food Summit goal of reaching 400 million by 2015. During the 2005 World Summit, poor countries voiced their concerns about not achieving MDG 1, emphasising unequal economic policies that are often prescribed by richer countries and institutions such as the International Monetary Fund (IMF) and World Bank (Gibson, 2016).

In 2010, another UN Summit on the progress of the MDGs was convened. Preceding this summit, Garrity (2004) highlighted that the world had made significant progress in reducing hunger and poverty at that stage. More specifically, the percentage of food-insecure people had declined by more than half in the 30 years preceding 2004, even though the world population nearly doubled during this period. This author specifically mentioned that the percentage of the world's population that was food insecure at the time had dropped from 37% to 18%, and that food availability had improved in the developing world (Garrity, 2004).

According to the United Nation's Department of Public Information (April 2010), the number of undernourished people in Ghana dropped from 34% to 9% of the population between 1991 and 2004. Nicaragua similarly reduced its hunger rate by more than half during the period 2004 to 2006. Kataki and Babu (2002) maintain that increases in national income by means of agricultural development had a positive effect on the nutritional status of many developing countries. These authors indicate that changes in agricultural practices have improved nutrition and resulted in the production of different crops and vegetables that can contribute to micronutrient-enriched staple food grains as well as the production of fish and poultry. Therefore, some improvement is evident in terms of MDG 1, even though food insecurity is still a challenge in South Africa, and more specifically for people in resource-constrained communities.

According to Gibson (2016), food security can only be realised if availability, access and consumption of food are achieved in resource-constrained communities, yet also in the world at large. Faber *et al.* (2011) similarly propose that complementarities and synergies between food availability, access and consumption need to be aligned when undertaking interventions that can potentially address and strengthen food and nutrition security.

Because of high levels of poverty, inequality, unemployment and hunger (Malik, 2013), an array of policy interventions has been developed in South Africa to improve the negative circumstances and consequences associated with unemployment and inequality. For example, the overarching policy of the local government to address MDG 1 is by providing a "social wage" package that is

intended to reduce the cost of living for the poor. Leibbrandt, Woolard, Finn and Argent (2010:53) confirm this strategy by explaining “the widespread network of social grants existing in South Africa, which are central to the country’s anti-poverty policy. As a result, South Africa’s expenditure on welfare and social assistance has increased from R30.1 billion and 3,2% of GDP in 2000/01 to R104.4 billion and 4,4% of GDP in 2008/09 (National Treasury, 1998; 2009)”. This author indicates that by April 2009, 13.4 million South African citizens were benefiting from social grants. More recently, Hendriks (2013) confirmed that over 15 million people were relying on social grants at the time. This author is, however, of the view that even though such support is important in reducing hunger, it is not sufficient to lift people out of poverty or to ensure adequate nutrition.

Social wages in South Africa, according to Malik (2013), are packaged in different targeted forms, including free primary healthcare, no-fee paying schools, social grants (such as old-age pension and child-support grants) and Reconstruction and Development Programme (RDP) housing. The RDP was initially adopted as South Africa’s socio-economic policy framework as part of the 1994 White Paper (RSA, 1994) aimed to address the socio-economic problems, challenges and backlogs associated with apartheid. Malik (2013) furthermore indicates that other social wages include the provision of basic services in the form of reticulated water, electricity, sanitation and sewage as well as waste management to all households, and specifically to those categorised as poor, who often lacked this in the past.

2.3.1.2 Addressing MDG 2

MDG 2 aims to achieve universal primary education that can, in turn, address illiteracy and ignorance and empower children and adults with knowledge. Faber *et al.* (2011) maintain that education may play an important role in reducing child mortality, improving maternal health and combating HIV/AIDS, malaria and other diseases in developing countries. If people in resource-constrained communities use education as a way of developing themselves, they may gain knowledge about nutrition that can, in turn, potentially improve their health and well-being. More specifically, nutrition education can inform people of the different food types, their nutritious value and ways to adopt healthy food practices.

Nutrition education and food security can both be regarded as key factors that may potentially liberate people in resource-constrained communities from unhealthy food practices that are often influenced by food insecurity. In this regard, Pinstруп-Andersen *et al.* (1995) describe a project conducted in Philippine villages, indicating that nutrition education will, however, have a limited effect on improving nutritional status without an increase in household income when nutrition is provided without food subsidy. These authors are of the view that when a family's income is low and the quality of available food limited, nutrition education may not have the desired effect on food consumption and the nutrition status of a family. Hence, nutrition education alone may not necessarily translate into healthy food practices if not coupled with food security. To this end, Manoff (1987) attests that "there are limits to nutrition education because not every nutrition problem is an education problem" (Manoff 1987 in Pinstруп-Andersen *et al.*, 1995:68).

As far as MDG 2 is concerned, South Africa envisaged to attain the goal of universal primary education before the target date of 2015. By 2013, about 7.2 million or 58% of all South African learners were attending no-fee schools. At the time, there were 15 389 of these schools (Malik, 2013). Ndedi and Ijeoma (2003) indicate that the introduction of these no-fee schools has improved the target of promoting and providing universal primary education, nutrition, scholar transport and school health to all learners in previously disadvantaged populations, with a potential positive effect on the level of education in South Africa. Despite progress in this area, many other South African learners do not yet receive quality primary education and regarding those learners to which this privilege is available, many still drop out due to challenges such as poverty and child-headed households.

2.3.1.3 Addressing MDG 8

According to Lorzano, Wang, Foreman, Rajaratnam, Naghavi, Marcus, Dwyer-Lindgren, Lofgren, Phillips, Atkinson and Lopez (2011), MDG 8 envisages to achieve global partnership development by developing an open, rule-based, predictable, non-discriminatory trading and financial system (including a commitment to good governance, development and poverty reduction both nationally and internationally). Gibson (2016) similarly states that MDG 8 requires good governance to be in place and that partnerships with stakeholders other than

the local government, such as the private sector, non-governmental organisations and higher institutions of learning, are also formed.

In this regard, Malik (2013) indicates that South Africa has recently succeeded in strengthening important strategic linkages with major developing countries through the BRICS (Brazil-Russia-India-China-South Africa) partnership. BRICS countries have since built on existing cooperation, aiming to establish a new multilateral development bank. The value of global partnerships lies in the possibility of influencing policy makers by, for example, cutting food prices so that people can more easily afford food for their families. By doing this, food security and nutrition education may be addressed, thereby potentially promoting healthy food practices in especially resource-constrained communities. In this regard, Sachs (2012) holds the view that multinational companies from the private sector are critical in reaching MDG 8, seeing that they have the capacity to bring about solutions by way of policy development on environmental sustainability.

Developmental strategies to achieve MDG 8 entail the participation, contribution and reaping of benefits of different countries' populations regardless of differences. Kabeer (2005) describes the example of women accessing the labour market as an achievement for developing women in the world. The author points out that a study in Ecuador (Kabeer, 2005), for example, indicates that 80% of women in the flower industry managed their own wages at the time of the study. In Kenya, single women in the vegetable industry were also found to be managing and controlling their money, while married women tend to jointly manage their money with their husbands.

In South Africa specifically, MDG 8 has been supported by means of initiatives for the development of women citizens towards gender equality, which is enshrined in the Bill of Human Rights. The Bill of Human Rights, section 22.9 explicitly indicates that "every citizen has a right to choose their trade, occupation or profession" (Constitution of the Republic of South Africa, 1996:9). To this end, women in South Africa have access to education, healthcare and social services, and participate in social economic and political activities without being restricted by their gender. Kubheka (2004) furthermore indicates that in South Africa, 43% of the cabinet

ministers are women and that this number has increased from 30% in 1999. Therefore, an increasing number of high positions are held by women in the fields of politics, in higher-education institutions, health departments and the business sector in South Africa.

2.3.2 Addressing SDGs in South Africa

According to Sachs (2012), the SDGs embrace what is known as the triple bottom-up-line approach to human well-being. Kates, Parris and Leiserowits (2005:9) indicate that the Brundtland Commission defines SDGs as the “ability to make development sustainable to ensure that it meets the needs of the present without compromising the ability of future generations to meet their needs”. According to Griggs *et al.* (2013), the 2002 World Summit on Sustainable Development marked an expansion of the initially identified three pillars of sustainable development, being economic development, environmental sustainability and social inclusion. These authors at the time advocated an integration of the MDGs into global environmental targets, as captured in six SDGs that the United Nations formulated with the aim of achieving these by 2030. The SDGs namely entail thriving lives and livelihoods, sustainable food security, sustainable water security, universal clean energy, healthy and productive ecosystems and governance for sustainable societies (Griggs *et al.*, 2013).

Sachs (2012) posits that the SDGs provide an indication that the world has entered a new era where human activity is threatening fundamental earth dynamics. In terms of planetary boundaries, this author furthermore indicates that human activity is currently pushing critical global ecosystem functions past a dangerous threshold, which may endanger the whole planet. Some of these dangers include climate change, caused by human-caused gas emissions of greenhouse gases, massive environmental emissions and acidification of oceans. Griggs *et al.* (2013) similarly emphasises that water shortage, extreme weather deteriorating conditions for food production, ocean acidification and sea-level rises are dangers that threaten the world.

In view of the dangers that the earth faces, the need exists for sustainable environment maintenance intended for human survival. Kates *et al.* (2005:10) point out that “surveyed literature defines nature or environment as a source to support

human life but some of the sustainable development literature value nature for its intrinsic value rather than for its utility for human beings". The authors furthermore indicate that recent attention of the SDGs has shifted to human development, focusing on aspects such as increased life expectancy, education, equity and opportunity (Kates *et al.*, 2005).

In South Africa, some of the SDGs have been addressed through the implementation of interventions that promote healthy food consumption and may have a bearing on peoples' life expectancy. Education plays a pivotal role in equipping people with knowledge about and skills in how to produce food and can increase access to healthy food, thereby promoting healthy food consumption. The evaluation of such interventions is, however, important to ensure that they achieve the intended goals.

Sachs (2012) maintains that it is equally important for both poor and rich countries to achieve the SDGs, unlike the MDGs, which were mainly targeted at poor countries while rich countries were expected to add solidarity and assistance by means of finance and technology. To this end, the author indicates that, from 2015 to 2030, all nations will adopt economic strategies that can build sustainable technologies, appropriate markets and individual responsibility to ensure that human development is achieved; however, not at the expense of the environment.

2.4 SCHOOL-BASED INTERVENTIONS AS AVENUE TO PROMOTE HEALTH AND WELL-BEING IN RESOURCE-CONSTRAINED COMMUNITIES IN SOUTH AFRICA

Hawkes (2013) maintains that schools and other educational settings can be regarded as primary settings to deliver nutrition education. Schools have probably received more attention as a specific setting for nutrition education than any educational or other social context over the past 20 years. According to Stephan, Weist, Kataoka, Adelsheim and Mills (2007), children are a nation's most important resource in promoting health through schools and can both reduce common health problems and make education more efficient, which may ultimately lead to economic development. According to Pérez-Rodrigo and Aranceta (2001), schools can provide an avenue to reach out to large sections of the wider community, including young people and their families.

Various school- and community-based interventions in food production have been implemented in the world and in South Africa specifically in attempts to promote food security. To this end, Morgante and Magini (2013), in the Food Agriculture Organisation's (FAO) *Corporate Document Repository*, propose that investment in nutrition and education efforts are essential to break the cycle of poverty and malnutrition. Hence, the FAO views schools as important in contributing to any country's efforts to overcome hunger and malnutrition.

The WHO/FAO (2003) report highlights that current research often follows one of two approaches to promote healthy food practices. The first approach aims to improve the knowledge, skills and attitudes of children for them to understand food and nutrition issues, so that they can choose a healthy diet. The second approach centres on the relation between diets and chronic diseases. Even though Pinstrup-Andersen *et al.* (1995) indicate that the content of nutrition education has in the past been influenced by the medical model's general principles, where treatment (nutritional counselling) is seen as a prescription for curing a disease, with the patient following clear instructions, patients often do not actively participate in the planning of such a "cure" nor is the socio-economic context considered due to the focus on diseases rather than on people. This highlights the importance of school- or community-based interventions in food and nutrition education being informed by the needs of communities and the general objective of promoting the holistic health and well-being of people. Participants who are fully involved during the promotion of healthy food practices are likely to sustain such practices themselves.

As an example, Brown and Summerbell (2009) conducted a study to determine the effectiveness of school-based interventions that focus on changing dietary intake and the physical activity levels of learners to prevent childhood obesity. Even though the findings of this study were inconsistent, the findings suggest that a combination of dietary guidelines and physical activity in school-based interventions may prevent children from becoming overweight in the long term. As a result, schools are encouraged to provide a consistent environment that is conducive to healthy eating behaviours and regular physical activity to combat obesity among children.

Young people may benefit when learning from an early age what a healthy diet entails, as the knowledge gained about healthy nutrition during childhood years can be sustained in adulthood. Steyn, Lambert, Parker, Mchiza and De Villiers (2009) regard schools as established settings for health-promoting activities. These authors posit that schools have the theoretical advantage of influencing children's health-related beliefs and behaviours during their early years of development, which may subsequently be established as patterns during adulthood. Equipping young children with knowledge about and skills in healthy food-related behaviour during their formative years can therefore be regarded as a potential mechanism for influencing the culture and health beliefs of society.

As already indicated, in resource-constrained communities, poverty typically compromise healthy food practices. An inability to access healthy food will negatively impact on the health and well-being of all people. As such, by empowering people with knowledge about and skills in food production as well as ways of, for example, accessing seed, water and irrigation facilities, food production may be enhanced which may positively influence healthy food choice and healthy food consumption in especially resource-constrained communities. As such, school- and community-based interventions can be regarded as ways of equipping learners, parents and community members with knowledge and skills for healthy food practices. The practical involvement and participation of people who may benefit from such interventions is imperative in sustaining and applying the knowledge and skills that are acquired to promote healthy food practices.

The school- and community-based interventions to which I refer in this section highlight the potential of such initiatives to influence food practices in a positive way. Despite the potential value of existing studies foregrounding interventions, limited research has been done in terms of the involvement of participants during such interventions making decisions and taking ownership to change their behaviour for the better. In community-based interventions, where participants have been involved, such as in vegetable garden projects, change and sustainability seem evident; however, ongoing research is required in this field. Therefore, continued evaluation of school-based interventions is important to determine their effectiveness in promoting healthy food practices in schools and communities.

2.5 LEARNING STRATEGY USED DURING THE WIN-LIFE INTERVENTION

In this section I explain how cooperative learning was implemented as guiding strategy during the Win-LIFE intervention.

2.5.1 Cooperative learning

The Win-LIFE intervention employed cooperative learning as a teaching strategy in promoting healthy food practices with Grade 4 to 6 learners. Gillies (2008:329) indicates that according to Johnson and Johnson (2003) “cooperative learning involves students working together to accomplish shared learning goals”. Furthermore, Gillies (2008) mentions that cooperative learning helps learners to work together or to cooperate, learn to listen other fellow learners, share ideas, elucidate differences and construct new understanding (Johnson & Johnson, 2003; Webb *et al.*, 1995). As learners work together, group cohesion is enhanced, which enables them to reach their learning goals. According to Smith and Waller (1997:192), “cooperative learning is the instructional use of small groups so that learners work together to maximise their own and each others’ learning”. Slavin (1996) points out that cooperative learning has been found to have a positive impact on many aspects other than achievement, including intergroup relations, self-esteem, attitudes toward class and school, and the ability to work collaboratively with others.

To this end, Gillies and Boyle (2010) point out that Kuhn, Shaw and Felton (1997) found that when learners are involved in thinking about a topic through dyadic interaction, it increases the quality of reasoning about the topic. Similarly, Slavin (1996) indicates that cognitive perspective holds the view that interaction among learners during cooperative learning will increase learners’ achievement in mental processing of information. Gillies and Boyle (2010) mention that teachers need to know how to incorporate cooperative learning in the classroom curricula in order to promote open communication and engagement between teachers and learners, promote cooperative investigation, problem-solving and reasoning and provide learners with an environment where they can feel supported and emotionally secure (Johnson & Johnson 2003; Roseth, Johnson & Johnson, 2008). The current study views cooperative learning as a strategy that enhances cooperation between

teachers and learners in acquiring knowledge and skills on healthy food practices, that may potentially in turn improve their health and well-being.

2.5.2 Criteria for cooperative learning

Cooperative learning demands preparation and structuring in order to be successfully employed. Grenier, Dyson and Yeaton (2005) indicate that structures are techniques that are used for organising learners for interaction during cooperative learning. I discuss the basic elements or criteria for cooperative learning in this section.

2.5.2.1 Positive interdependence

Positive interdependence indicates that learners realise that their learning depends on each others' learning. Gillies (2007) highlights the view of Johnson, Johnson and Holubec (1990) who maintain that positive interdependence is established when group members understand that each member's contribution is indispensable in helping the group to achieve its goal. As such, working together to achieve a common goal is instilled in learners. Smith and Waller (1997) maintain that when learners are engaged in problem-solving activities, positive interdependence influences learners as group members to agree to solve a problem (goal interdependence) and to take responsibility in fulfilling their role (role interdependence).

2.5.2.2 Face-to-face promotive interaction

According to Smith and Waller (1997), cooperative learning affords learners with an opportunity to have face-to-face interaction when they communicate orally by explaining to each other how to solve problems and discuss concepts or newly gained knowledge. Furthermore, these authors assert that such face-to-face interaction is promotive since learners are able to assist, encourage, and support each other's efforts to learn.

2.5.2.3 Accountability/personal responsibility

Grenier, *et al.* (2005:31) point out that "individual accountability necessitates individual contributions to group goals". Slavin (1996) holds the view that group goals and individual accountability provide learners with an incentive to assist and

encourage each other to put effort on the task at hand. One of the requirements of cooperative learning is that the teacher needs to ensure that performance of each individual learner is measured and the group and individual get feedback on the results. As such, the group will know who needs assistance in completing the task and group members need to know that they cannot hitch-hike on the work of others. Furthermore, Smith and Waller (1997) indicate that accountability can be done by giving individual learners test, random calling on individual learners to present their group's answers, and giving an individual oral exam while checking group work.

2.5.3.4 Teamwork skills

Johnson and Johnson (1989) indicate that team skills such as leadership, decision-making, trust-building, communication and conflict management skills are necessary for effective functioning of the group. Furthermore, these authors maintain that teachers need to teach these skills firmly and precisely as academic skills since learners may not have worked cooperatively in learning situations before and may need these team skills to promote cooperative learning.

2.5.2.5 Group processing

According to Grenier *et al.* (2005), group processing comprises of a group discussion or evaluation of how well the group members have achieved their goals as well as maintaining effective working relationships among members. Gillies (2007) highlights that group processing is a type of assessment that involves learners reflecting on how they managed the learning process and the need to accomplish their goal. Effective functioning of the group may be evaluated by asking the following questions: "(1) What is something each member did that was helpful for the group and (2) What is something each member could do to make the group even better tomorrow?" (Smith & Waller 1997:196).

Finally, Smith and Waller (1997) maintain that cooperative learning is not putting learners side-by-side at the same table to have a conversation with each other, but ensuring that members of the group are devoted to a common goal, to promote each other's learning and success and to hold each other accountable to do their reasonable share of the work. These authors furthermore indicate that cooperative learning also relies on the use of interpersonal and small group skills to be

successful. The Win-LIFE intervention employed cooperative learning which afforded the learners with an opportunity to acquire knowledge and skills on healthy nutrition and how to start vegetable gardens. Learners worked together during their learning activities in achieving common goals while they supported each other.

2.6 CONCEPTUAL FRAMEWORK UNDERLYING THE EVALUATION OF THE WIN-LIFE INTERVENTION

I compiled a conceptual framework to guide me in undertaking this study by integrating concepts embedded in Bronfenbrenner's bio-ecological theory (1979b) as well as Bandura's social cognitive learning theory (1986). The generic underlying assumption that guided me is based on the principle that change in one system (for example the school) may result in change in another system (family or community) because of the individuals' experiences (Laszlo & Krippner, 1998). In this section, I explain the two theories I relied on and then describe the conceptual framework I compiled.

2.6.1 Bronfenbrenner's Bio-ecological Theory

Bronfenbrenner's theory of human development was initially developed as the ecology of human development model and later became known as the bio-ecological model, where human beings' biological entities are recognised (Bronfenbrenner, 1979b). According to Bronfenbrenner (Rosa & Tudge, 2013:246), "Ecology implies an adjustment between the organism and environment" The ecology of human development involves mutual accommodation between the active growing of human beings and the changing aspects of a developing person's immediate environment. The process of human development is affected by the quality of relationships between settings (systems) where individuals function and the larger contexts within which the settings are embedded over a certain period. According to Rosa and Tudge (2013), an individual's development will be influenced by the time the developing individual spent on and the quality of the individual's relationships or interactions with others (persons or objects). Bronfenbrenner and Morris (2006) named these ecological systems the microsystem, mesosystem, exosystem, macrosystem and chronosystem. In my study, the focus falls on the microsystem, exosystem and macrosystem.

According to Swick and Williams (2006), the microsystem comprises human beings' most immediate environment (physical, social and psychological). Structures in the microsystem layer include family, school or peer group and neighbourhood environments. In these immediate environments, a child's (or adult's) optimal development depends on the opportunities and structures that exist or are provided in the environment (Bronfenbrenner & Morris, 2006). This core entity provides a venue for children's initial learning about the world, offering children a reference point in the world. As such, the family provides the first environment (microsystem) where a child learns, among other things, about food behaviour that he or she may adopt during development towards adulthood.

In my study, the microsystem entails the home/family environment from which the participating learners come and function. At this level, the learners and their parents' relationships have a two-way impact – with parents impacting their children and *vice versa*. Interactions that occur in the microsystem (home) are referred to as proximal processes. Such proximal processes are found in parent-child and child-child, as well as teacher-learner relationships in the case of the school environment (Bronfenbrenner & Morris, 2006).

Bronfenbrenner indicates that each microsystem is unique and characterised by unique challenges and successes that may have an influence on a child's development (Bronfenbrenner & Morris, 2006). Therefore, a family's nutrition-related behaviour will have an influence on each individual family member too. The environment of a family system will generally influence food practices such as food choice, food preparation and food consumption. If the family system in which a child grows up thus provides the necessary opportunities, the child will have the advantage to optimally develop; however, the opposite is also true. As such, a family that is food secure holds the potential to provide their children with healthy food and subsequently healthy food practices.

Bronfenbrenner and Ceci (1994) indicate that for parents to further their children's learning and skills acquisition, parents need knowledge and resources from outside the home environment. These authors highlight the fact that families who live in environmental contexts that can provide the required resources have an advantage

in the sense that the proximal processes taking place in such contexts may deliver the needed goals.

Schools are systems or contexts where people (teachers) hold knowledge and possess the necessary know-how to teach children. Schools can thus be regarded as microsystems in which learners interact with teachers to acquire knowledge and skills that may have a positive impact on them and potentially on teachers and parents. Applying this to my study, I investigated how the school as learning environment (microsystem) potentially enabled learners by means of the Win-LIFE intervention to acquire knowledge about and skills in food production, food choice, food preparation and food consumption, which could potentially influence their families in adopting healthy food practices. As economic factors generally determine a family's status regarding food provision, the ecological system can have an indirect influence on children in the family as exosystem (Berk, 2000).

The exosystem defines the larger social system in which an individual (child) does not function directly but that may have an indirect effect or influence on the individual, such as a work environment or stress experienced at work (Berk, 2000). In terms of my study, the ecological system refers to the workplace of the participatory learners' parents that may indirectly affect the food practices of the home or family. An exosystem can be empowering, for example when parents have a high income and are able to provide enough healthy food for the family. In the same manner an exosystem can, however, hinder optimal functioning, for example when stress at work negatively affects the family (ecology) pertaining to its interdependence and well-being (Swick & Williams, 2006).

As stated previously, a lack of an income (indirect influence of the exosystem) may negatively impact on the health and well-being of a family, at both an emotional and a psychological level. Generally, people who are food insecure experience emotional and psychological stress due to the lack of food and the inability to prepare healthy meals that can promote health and well-being (Sorsdohl *et al.*, 2011). People living in resource-constrained communities often share food-related behaviours with others due to a similar economic status, cultural beliefs and community values.

Bronfenbrenner's macrosystem refers to the large system or outer-most layer that represents cultural beliefs, societal values, political trends and community acts, which can be a powerful source of energy in people's lives (Berk, 2000). Enthoven (1978) points out that the macrosystem entails attitudes, beliefs, values and ideologies inherent to the systems of a society and culture. According to Ryan (2001), the macrosystem will have a cascading influence throughout the interactions of all other layers. This author furthermore mentions that communities have the potential to influence people down to the level of individual families.

Attitudes, beliefs, values and cultural practices typically influence people's eating patterns. Cultural practices involve indigenous knowledge systems (IKSs), which will have an influence on the food practices of people in resource-constrained communities. The macrosystem in my study refers to the resource-constrained community in which I conducted the study with the aim to understand how the people in this community benefitted (or not) from adopting healthy food practices for their families. It follows that I aimed to equip learners, as relevant participants, with nutrition-related knowledge and skills, implying the possibility that they can potentially influence the community to adopt healthy food practices. In this study, I thus examined the practical transference of the nutrition knowledge that the learners gained in the classroom and how it potentially influenced parents and family members to develop healthy food practices in families and even in the broader community.

2.6.2 Social Cognitive Learning Theory

Muro and Jeffrey (2008) describe Bandura's model or social cognitive learning theory as a theory that focuses on the role of cognition during learning, thereby codetermining human behaviour. Social cognitive learning theory thus views human behaviour in terms of the continuous reciprocal interaction between cognitive, behavioural and environmental influences. The theory furthermore sees individuals as both products and producers of their own environments and social systems. Bandura (1986, 1999) distinguishes between the physical basis of human thought and its construction and functional use. As far as the functional use of the human mind is concerned, the author holds the view that the mind is generative, creative, proactive and reflective rather than reactive.

According to Bandura (1986), people do not act without thinking but are self-examiners of their behaviour through reflective self-consciousness. In the family system, parents will influence their children through ways of upbringing and, in turn, be influenced by their children. This reciprocal influence also occurs in the school system between teachers and learners. Applying this to my study, cognition refers to the knowledge or information that learners acquired at school (learning environment) by means of the Win-LIFE intervention and which they then potentially used or transferred to their parents in adopting healthy food practices.

Martin (2004) posits that social cognitive learning theory (SCT) perceives learning as knowledge that is acquired through the cognitive processing of information. This author furthermore explains that the social part of the theory acknowledges the social origins of most of human thought, that action implies what individuals learn by being part of society and that “cognitive” recognises the influential contribution of thought processes to human motivation, attitudes and action. According to Martin (2004), human beings possess basic capabilities that can influence behaviour in the environment. These human capabilities relate to the skills of symbolising, forethought, vicarious learning, self-regulation and self-reflection (Martin, 2004). For my study, I focused on self-regulation and self-reflection aspects.

Self-regulatory capability implies internal self-set standards that can initiate and regulate behaviour. In other words, people are not seen to behave because of others' demands but because of their capacity to regulate their own behaviour from within (Martin, 2004). The author highlights Bandura's belief that most learners will have acquired a considerable amount of self-regulatory capacity by the time they enter school. In support, self-reflection or self-reflective consciousness can enable people to think about and analyse their experiences and thought processes (Martin, 2004). To this end, social cognitive learning theory implies a holistic conception of selfhood, indicating that individuals can reflect on their experiences just like when carrying out any action. In terms of my study, I viewed participating learners and parents as capable of reflecting on newly gained food-related knowledge and to potentially change their food-related behaviour following such reflections. Self-regulatory behaviour in my study furthermore refers to the potential ability of learners

to transfer newly gained knowledge to their parents or family members in support of the promotion of healthy food consumption practices in the community.

The ability to reflect on oneself and the adequacy of one's thoughts and actions therefore prominently features in social cognitive learning theory (Bandura, 1991). Lent, Brown and Hackett (1994) attest that in social cognitive learning theory, human behaviour is extensively motivated and regulated by the ongoing exercise of self-influence. To this end, Bandura (1991) is of the view that people are neither driven by inner forces nor automatically shaped and controlled by the environment. Bandura (1991:249) argues that "if human behaviour were regulated by external outcomes, people would behave like weathervanes, constantly shifting direction to conform to whatever momentary social influence happened to impinge upon them". Bandura (1991:249) furthermore posits that "people possess self-reflective and self-reactive capabilities that enable them to exercise some control over the thoughts, feelings, motivation, and actions". In my study, I viewed the participating teachers, learners and parents as self-reflecting beings that can reflect on newly gained (food-related) knowledge and skills and may take action in adopting health practices.

Muro and Jeffrey (2008) view social learning as a collective process. These authors indicate that, in contrast to earlier theories, learning is perceived as social or collective action by people who share a common goal or interest about what they want to achieve. In the current study, the Win-LIFE intervention aimed to empower learners with food-related knowledge and skills for them to not only apply it in their own lives but to potentially influence their parents and family members to also apply healthy food practices. As such, social learning that transpired in the classroom may not only have affected individual learners but could have implied a collective action that could, in turn, potentially lead to social change in the community. I used PRA-based strategies during data generation as this approach recognises participants as experts who possess knowledge and skills that can be used in support of positive change by means of collective activities.

2.6.3 Integrating Bronfenbrenner's and Bandura's Theories into a Conceptual Framework

In Figure 2.1, I illustrate the way in which I integrated central concepts and underlying principles of Bronfenbrenner's bio-ecological theory (1979b) and Bandura's social cognitive learning theory (1986). An explanation of the conceptual framework follows.

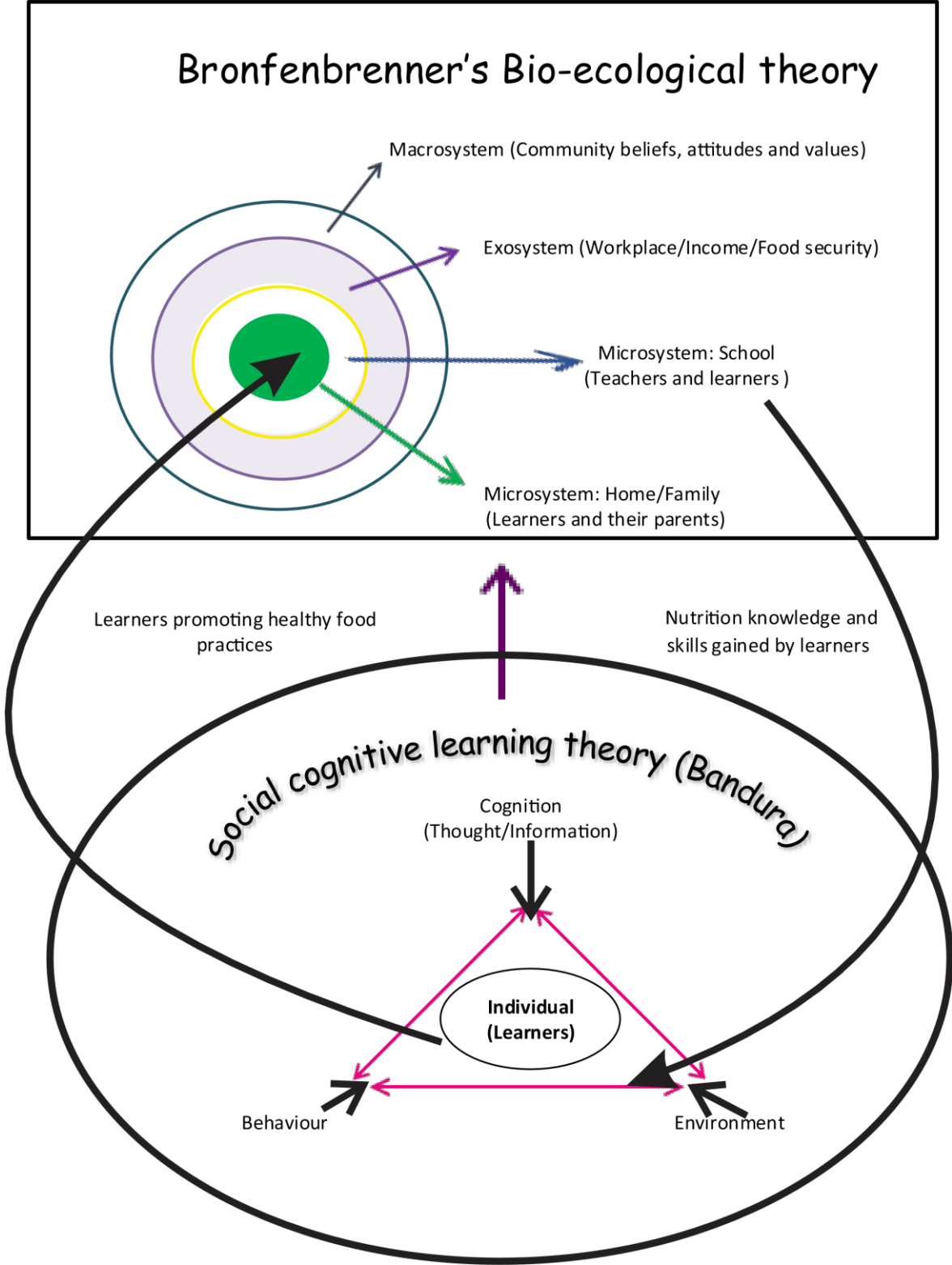


Figure 2.1: Conceptual framework of the study

In my study, I relied on Bronfenbrenner's bio-ecological theory (1979b) and Bandura's (1986) social cognitive learning theory that have been adapted for the current study as captured in Figure 2.1. This framework guided me in determining the outcome of the Win-LIFE health promotion intervention and in interpreting the results I obtained. The elements of evaluation in this study consisted of teachers, learners and parents who were involved as groups of participants.

In terms of Bronfenbrenner's (1979b) bio-ecological theory, Figure 2.1 indicates the various systems and what these entail for my study. More specifically, the microsystem (home) of the participating learners and parents provided proximal interaction processes between learners and their parents, with an implied influence of the home environment on the learners and parents' food consumption practices. In addition, the school as microsystem implied close relationships between teachers and learners and, by implication, indirectly with their parents. Bronfenbrenner and Ceci (1994) indicate that parents require knowledge and resources outside their homes to further their children's learning. In my study, this microsystem (second inner circle) represents the school system, where participant learners and teachers interacted while acquiring knowledge and skills that parents potentially did not provide. In this study, teachers were equipped with knowledge and skills by means of their involvement in the Win-LIFE intervention. They also implemented the intervention on healthy food practices with Grades 4 to 6 learners by way of enriched Life Skills and Natural Science and Technology curricula. The assumption was that once learners were empowered in terms of healthy food practices, they could potentially transfer their newly gained knowledge to their parents with the aim of them also adopting healthy food practices that can promote health and well-being.

The third circle in this study, representing the exosystem (work place), represents participating parents' workplaces that may have indirectly influenced their children (learners). Participants in this study reside in a resource-constrained community, implying the possibility of high unemployment rates or parents earning limited income. This could have indirectly impacted on learners due to the potential lack of sufficient healthy food in these households.

The outer-most circle, the macrosystem, represents the community's attitudes, cultural beliefs, values, ideologies and political trends (Berk, 2000) that can act as a powerful source of energy in the community. In terms of this study, the macrosystem represented the resource-constrained community in which the study was conducted, with my study investigating how learners who gained knowledge about healthy food practices potentially influenced their parents/family or community members in terms of healthy food practices in this specific community.

By including Bandura's social cognitive learning theory (Martin, 2004) in my conceptual framework, I foregrounded how human beings' behaviour can be influenced by cognitive processes in a specific environment. In my study, Bandura's (1986) theory thus allowed me to understand and explain how individuals (learners) who had obtained information on healthy food practices in a school (environment), used their cognition and reflected on the newly gained knowledge, potentially transferring their knowledge to their parents or family members by adopting healthy food practices (changed behaviour).

Finally, the arrow from Bandura's theory to that of Bronfenbrenner's microsystem and back indicates how I interpreted the way participating learners reflected on what they had gained and may (or not) have transferred to others following their participation in the Win-LIFE intervention. In my study, I thus viewed the learners as social beings who hold the potential to bring about social change in their specific context regarding the promotion of healthy food practices. Finally, the two-way direction of the arrow represents my view on how learners used the information on healthy food-related practices obtained in the school environment and transferred that knowledge to their homes and community in adopting food production, food choice, food preparation and food consumption behaviour to improve their health and well-being.

2.7 CONCLUSION

In this Chapter, I discussed existing literature that informed this study. I focused on the challenges that resource-constrained communities in South Africa typically face. I specifically highlighted poverty, hunger and malnutrition, as well as the importance of healthy nutrition for the well-being of people. I then explored school-based

interventions as one possible way of promoting the health and well-being of people in South Africa. I discussed the importance of striving towards reaching the MDGs and SDGs and how these have been addressed in South Africa over recent years. Furthermore, I discussed the cooperative learning strategy used with Grade 4 to 6 learners during the Win-LIFE intervention. I concluded the chapter by explaining the conceptual framework I compiled for this study, which is embedded in Bronfenbrenner's bio-ecological theory (1979) and Bandura's (1986) social cognitive learning theory.

In Chapter 3, I provide a detailed discussion of the research methodology that I used to evaluate the outcome of the Win-LIFE school-based health promotion intervention. I also discuss the paradigmatic perspectives that guided me and explain my research design, focusing on how PRA principles directed me in selecting participants and undertaking the study. I then describe how I generated and documented data and stipulate how I completed thematic inductive data analysis. I also reflect on quality criteria and the ethical guidelines I respected in conducting this study.

CHAPTER 3

RESEARCH DESIGN AND METHODOLOGY

3.1 INTRODUCTION

In Chapter 2, I discussed existing literature on the way in which the MDGs and SGDs are being and have been addressed in South Africa over recent years, the prevailing challenge of poverty and malnutrition, the importance of healthy nutrition regarding food production, food choice, food preparation and food consumption in resource-constrained communities, cooperative learning as well as school-based interventions as a potential way in which to promote healthy food practices in South Africa. I concluded the chapter by explaining the conceptual framework of this study.

In my discussions, I indicated how the promotion of healthy food practices in resource-constrained communities seems to be imperative in enhancing the health and well-being of people. In this regard, school-based interventions can potentially fulfil a pivotal role in promoting healthy food practices in South Africa. Even though food security does not guarantee healthy food practices, education in nutrition-related practices may potentially promote healthy eating and a positive life-style among people in resource-constrained communities. Determining the outcome and potential value of such school-based interventions therefore seems critical.

In the current chapter, I discuss the paradigmatic choices, research design and methodology I implemented in exploring the outcome of the Win-LIFE intervention that was implemented in three primary schools in a resource-constrained community in South Africa. I explain how I generated, documented and thematically analysed the data and further discuss ethical considerations and how I attempted to ensure rigour.

3.2 PARADIGMATIC PERSPECTIVES

In this section, I discuss the epistemological and methodological paradigms I used to explore the participants' experiences and perceptions of the perceived outcome of the Win-LIFE intervention.

3.2.1 Epistemological Paradigm: Interpretivism

The epistemological paradigm of this study is embedded in interpretivism. Lincoln and Guba (1994:108) point out that epistemology “is a way of understanding and explaining how we know what we know”. Interpretivism advocates that people differ and that their subjective meaning making in their social world needs to be respected. In this regard, Gephart (1999) argues that interpretivists assume that knowledge and meaning making relates to acts of interpretation and that there is no objective knowledge that can be taken as independent of human thinking and reasoning. Interpretivism thus enabled me to understand the participants’ experiences, viewpoints and perceptions regarding the outcome of the Win-LIFE intervention based on their own meaning making. To this end, Thanh and Thanh (2015) indicate that the interpretive paradigm generally allows researchers to view the world according to the participants’ perceptions and experiences. These authors furthermore state that McQueen (2002) describes this as viewing the world through the “eyes” of individuals who assign their own meaning to the reality or their life-worlds.

I adopted an interpretivist stance based on my belief that human science is concerned with *Verstehen* (understanding) rather than *Erklaren* (explaining), as is typical of the Natural Sciences (Hughes, 2012). To this end, Schwandt (2007) denotes that interpretivism assumes the meaning of human action to be inherent in action, implying that an enquirer’s task is to unearth meaning. In this study, my interest focused on how participants interpreted their experiences, how they constructed their life-worlds and which meanings they ascribed to these experiences. My overall purpose was to understand how the participants made sense of their newly gained knowledge about healthy food practices that could in turn potentially promote their own health and well-being.

According to Maree (2013), interpretivism is based on the belief that human life can only be understood from within and that it cannot be observed as an external reality. Hence this study was conducted in a specific community to understand the participants’ reality from within. As the human mind can be regarded as a purposive source or origin of meaning, I was able to develop a sense of understanding of the

meanings that the participants imparted to the phenomenon under study, as well as to their social context.

During my study, I remained aware of the above-mentioned assumptions while generating data in collaboration with the participants. The rich in-depth information that emanated from the discussions allowed me to make sense of the meanings that the participants imparted regarding the outcome of the Win-LIFE intervention in terms of their adoption of healthy food practices.

Schwandt (2007) emphasises that interpretivist tradition embraces two views on what meaning entails and how it can be grasped or understood. According to these authors, the meaning of an action firstly resides in the consciousness of the actor (his or her intentions, motivations, desires, attitudes or beliefs). As the enquirer, I thus had to unearth the participants' meanings. Secondly, an action is seen to hold meaning not because of an actor's intentions but due to it forming part of some larger system of actions.

Cohen and Crabtree (2006) attest that observation and interpretation underpin the interpretivist paradigm. To observe implies that a researcher will gather information about events, while the act of interpretation relates to the meaning making of such information by drawing inferences or by judging the match between information and some abstract pattern. As a researcher, I observed and discussed my interpretations with the participants to confirm that the information I obtained is correct. This enabled me to gain understanding of the meanings that the participants assigned to their social worlds. All interpretations were set in a specific moment and therefore located in the specific resource-constrained community, while I conducted the research. Interpretations, as Cohen and Crabtree (2006) indicate, are, however, open to reinterpretation and negotiation by means of dialogue.

Closely related, Punch (2006) emphasises that reflexivity entails a researcher's involvement in the research process, and that a researcher will act on the world and the world on the researcher (Wetherell, Taylor & Yates, 2001). In guarding against being biased, I used different methods to generate data and continuously relied on

reflexivity. Inductive data analysis furthermore enabled me to interact with the participants as partners and to check my interpretations of their experiences during member checking discussions. Other potential challenges (Maree, 2013) related to interpretivism include that reality is typically observed from within, in accordance with people's subjective experiences. To this end, I aimed to obtain an insider's perspective by becoming an instrument in data generation. I focused on how participants attached meaning to their realities in this specific context yet guarded against biased observations and interpretations.

As an interpretivist researcher (Bryman, 2004:14), I thus attempted to gain access to the participants' "common-sense thinking" to interpret their meaning making. Through PRA-based discussions and by compiling PRA-posters, participants could voice their experiences and the meanings they attach to these experiences. As interpretivism implies that "there are multiple realities of the phenomena and may differ with regard to time and place" (Maree, 2013:60), I formulated a conceptual framework to enable me to link the abstract (theory) and the concrete, thereby enriching my understanding of the participants' meaning making (Maree, 2013).

3.2.2 Methodological Paradigm: Qualitative Approach

I followed a qualitative approach, focusing on the way in which participants had constructed meaning. The qualitative research approach created opportunities for the participants to share their experiences of events (the outcome of the Win-LIFE intervention) in their natural setting (Smith, 2007). Thus, in this study, I attempted to understand the participants' points of view in terms of their experiences. In this regard, Seidman (2013) indicates that Schutz (2006) calls this "subjective understanding". Bless *et al.* (2006:338) similarly state that "qualitative researchers are typically interested in the lived experiences of individuals, groups and communities".

According to Seidman (2013), lived experiences can primarily be accessed through language. Therefore, the words that the participants used to express their points of view and the words that I used to interact with them, allowed me to gain insight into the meanings that the participants attributed through language. To understand their experiences, I entered their life-worlds and aimed to obtain an insider view.

Seidman (2013) emphasises that meaning can, however, not be understood in isolation. Hence, for me to understand how the participants made sense of their newly gained knowledge about healthy food practices, I had to also understand their environment and context.

According to Flick (2013:176), participants in qualitative studies are “good informants” who are typically knowledgeable about the phenomenon under study. In this study, the qualitative approach enabled me to generate rich information from the participants, who were viewed as knowledgeable about their own food-related practices as well as how they could potentially adopt healthy food practices to improve their health and well-being. Another reason why I chose a qualitative approach is that this approach emphasises a holistic perspective. In this regard, Johnson and Christensen (2012) maintain that a phenomenon is a complex system that is more than the sum of its parts. As such, this study focused on understanding the outcome of a specific intervention as a whole regarding food practices in a resource-constrained community, by considering the teachers, learners and parents’ views.

In qualitative research, validity can potentially be questioned, requiring the researcher to plan for rigour. To this end, Tobin and Begley (2004) state that rigour implies the ways by which integrity and competence can be demonstrated (Aroni *et al.*, 1999) as a way of foregrounding the legitimacy of a research process. These authors furthermore indicate that without rigour, qualitative research may be regarded as fictional journalism and as worthless in contributing to knowledge construction.

Another potential challenge of a qualitative approach is the generation of rich, in-depth and complex data. I addressed this potential challenge by designing PRA-matrices that could facilitate rich and lively discussions. The in-depth knowledge I gained enabled me to expand my understanding through non-verbal as well as verbal communication, processing the information (data) and then checking my interpretations with the participants. In this regard, Creswell (2012) believes that this can confirm the accuracy of interpretations while allowing for further exploration of unusual or unanticipated responses during member checking discussions. Thus,

member checking afforded the participants the opportunity to clarify information, add information or correct me where I interpreted the information incorrectly.

As a human data-generation instrument, I furthermore had to face my own possible bias. Rather than trying to eliminate bias or “subjectivity”, it was important for me to identify and monitor potential biases in terms of how this could shape the data-generation process and my interpretation of the data (Merriam, 2002). I thus relied on reflexivity, which, according to McMillan and Schumacher (2014), involves rigorous self-scrutiny to ensure a credible study. As a black female literate researcher, conducting a study in a black community where literacy levels are often low, I had to ensure that my background did not obscure or shape the direction of the study and that I remained focused on generating authentic data (Creswell, 2012).

To this end, I relied on my interpersonal skills as well as my experience as a psychologist to build trust with the participants, to establish good rapport with them and to maintain sound relationships, being non-judgemental and respecting the community’s norms, as highlighted by Creswell (2012). This seemingly allowed the participants to remain open and to share their experiences and views with me. I furthermore applied my experience as researcher “through emphatic understanding and respected the participants’ perspectives” (McMillan & Schumacher, 2014:356).

Finally, I remained aware of Richardson, Goodman and Vine’s (2011) indication that qualitative studies may be time consuming and that findings cannot be generalised across populations. As the goal of this study was to understand the extent to which the knowledge and skills that learners gained during the Win-LIFE intervention may have influenced (or not) their parents and the broader community in adopting healthy food-related practices, I did not aim for generalisability. The reader and other researchers working in this field can determine the extent to which the findings of this study may be transferred to similar contexts.

3.3 RESEARCH DESIGN AND METHODOLOGY

In this section, I discuss the evaluation research design I implemented, my selection of participants, the data-generation and documentation techniques I used and the

thematic analysis I completed. Refer to Figure 1.2 in Chapter 1 for an overview of the research process.

3.3.1 Research Design

I implemented an evaluation research design (De Vos *et al.*, 2011), applying PRA principles (Chambers, 2004). As already stated, the evaluation of the Win-LIFE intervention focused on the outcome of the intervention in promoting (or not) healthy food practices in a specific resource-constrained community. Throughout, I acknowledged that the participants possess expert knowledge about their life-worlds, which I do not possess as outside researcher. I thus regarded participants as research partners whom I could learn from in terms of their experiences and perceptions of the intervention under study. The focus fell on sharing knowledge (Chambers, 1994), firstly among the participants when working in groups and compiling visual presentations, and secondly in collaboration with the research team during data-generation activities and discussions. As a result, information was generated as participants shared their views, experiences and perceptions of the outcome of the Win-LIFE intervention.

Chambers (1994) maintains that local people will share knowledge with outsiders on condition that such outsiders (researchers) restrain themselves from putting forward their own ideas or imposing their personal reality. I, as a researcher, thus guarded against imposing my ideas on the participants and focused on respecting them as individuals, allowing their voices to be heard and not my own. I aimed to understand how newly gained knowledge made sense to them by following an evaluation design. Throughout, I aimed to remain relaxed, to listen attentively and to set aside any biases so that I could hear the participants' concerns, priorities and views as explained by Chambers (1994).

Johnson and Christensen (2012) point out that when interventions and social or educational programmes, which are aimed to improve conditions, are implemented, evaluation research can allow for a suitable design to determine the outcome of such programmes in real-life settings. The aim would be to determine how an intervention can be improved. According to Johnson and Christensen (2012), evaluation research specifically involves the process of determining the worth, merit

or quality of an evaluation object such as an educational programme. Similarly, Weinbach (2005:2) defines evaluation as "... the systematic use of research methods to make judgement about the effectiveness and the overall merit, worth, or value of some form of ... practice". In the current study, I investigated the outcome of the Win-LIFE intervention to understand the experiences of the learners who participated in the intervention, the teachers who were involved in implementing the intervention and the learners' parents who may potentially have benefited.

Patton (1990) describes evaluation research as applied research, with the primary objective to determine the extent to which a given programme or procedure can lead to change or specific desired results. According to Patton (1990), the unique purpose of such studies is to inform action, to enhance decision making and to subsequently apply knowledge to solve human and social problems. In this sense, evaluation research can be useful in making human action and interventions more effective. Decision makers, policy makers and others who aim for social change, can also rely on such research (Patton, 1990). Furthermore, Patton (1990:105) indicates that "where outcome is evaluated, without knowledge of implementation, the results seldom provide a direction for action because decision makers lack information about what produced the observed outcome". In this study, I was specifically interested in the outcome of the Win-LIFE intervention in meeting the needs of a specific community, that is, adopting (or not) healthy food practices that may enhance health and well-being.

Some advantages of my selected research design had been the limited resources I needed and the possibility of gaining rich information while collaborating with different participant groups (Graziano & Raulin, 2004). These researchers believe that an evaluation design depends on a researcher's ability to secure the cooperation of people who are not necessarily committed to maximise internal or external validity or rigour. Applying PRA principles and viewing participants as expert partners assisted me in obtaining such cooperation. In addition, I spent ample time on establishing sound rapport with the participants. I also selected times that suited the participants to share their experiences, perceptions and views on the intervention, in a safe space where they had the opportunity to contribute openly.

As PRA has no blueprint and encourages diversity in information acquisition, this choice thus allowed me to create a space for participants in which to share as much information as they wanted to and to also reflect on the information they provided. As such, participants became rich sources of information. Another advantage of this choice is that the participants were actively involved in discussing the problems they faced at the time, in this case the promotion of healthy food practices. This emphasised the importance of the enquiry, and the participants could further see the potential value of gaining answers to the problems they were facing. According to Mukherjee and Chambers (2004), participants can determine much of the agenda to gather, express and analyse information, as well as to plan the way forward. As a researcher, I thus fulfilled the role of facilitator, learner and consultant, establishing rapport, convening meetings and catalysing discussions.

Chambers (1994) maintains that self-critical awareness and responsibility is important when conducting PRA research. As a researcher, I remained self-critical in terms of my interaction with the participants and continuously reflected on my behaviour, experiences and interpretations, in both my research diary and during discussions with my supervisors. These reflections included that I had to embrace possible errors to learn to do better, while using my own judgement throughout. More specifically, this process involved continuous reflection on my practice by means of a spiral of cycles of critical and self-critical-reflection and action (Denzin & Lincoln, 2008).

A potential challenge of evaluation research when applying PRA principles is the possibility of such a study being time consuming. Another challenge is that participants are not necessarily willing to openly share information about their experiences in an honest way when among their peers. In addressing these potential challenges, I planned well in advance, involved as many participants as possible and used open-ended questions in generating rich, in-depth and detailed information (Creswell, 2012). I also spent ample time on building sound relationships and trust with the participants before any data-generation activities commenced as explained by Ferreira (2006).

3.3.2 Selection of Participants

In selecting schools and participants, I relied on both convenience and purposeful sampling as Creswell (2012) indicates. I conveniently selected three primary schools that have been participating in the broader Win-LIFE project since 2012, and then purposefully selected 18 teachers, 31 learners and 31 parents as participants. The participants were Grade 5 learners who participated in the second-round implementation of the enriched Life Skills and Natural Science and Technology curricula as part of the Win-LIFE intervention, teachers who taught the above-mentioned subjects to Grade 4 to 6 learners, as well as the Grade 5 learners' parents who were involved in the second-round implementation of the intervention.

According to Patton (2002), convenience sampling is neither purposeful nor strategic. A potential challenge associated with convenience sampling is the possibility of participants being limited to those who have been involved in a specific group, intervention or programme (Win-LIFE in this case) (Johnson & Christensen, 2012). Researchers may furthermore face the challenge that some participants are no longer available to provide feedback after the implementation of an intervention, due to moving to other schools (for example learners), being promoted to other schools or having resigned (for example teachers). To overcome this potential challenge, I involved as many participants as possible from those who initially took part in the Win-LIFE intervention during post-intervention data-generation sessions, for them to voice their experiences, perceptions and views.

For purposeful sampling (Patton, 1990), researchers intentionally select individuals to learn and better understand a specific phenomenon (Creswell, 2012). Creswell (2012) indicates that the basic standard for selecting participants is that they should be "information rich". In this regard, Patton (2002) asserts that the logic and power of purposeful sampling lie in the selection of information-rich cases for a study, from which one can learn a great deal about a phenomenon, which, in turn, relates to the purpose of an inquiry. As such, the participants in this study were selected purposefully to obtain trustworthy information about the outcomes of the Win-LIFE intervention in the specific resource-constrained community.

Purposeful sampling is also referred to as judgemental sampling (Rubin & Babbie, 2005), because the researcher (De Vos *et al.*, 2011) will determine the composition of elements that contain basic characteristics or certain attributes of a population that can serve the purpose of a study, according to the researcher's judgement. The different groups of participants in this study, as well as the related selection criteria for each group, are summarised in Table 3.1.

Table 3.1: Selection criteria

Participants	Total number	Selection criteria
Learners	31	<ul style="list-style-type: none"> • Grade 5 learners from one of the selected primary schools. • Learners who attended the Win-LIFE intervention sessions during implementation. • Learners who attended most of the intervention sessions. • Learners who were available after school hours. • Learners whose parents provided informed consent and the learners informed assent.
Teachers	18 School A School B School C	<ul style="list-style-type: none"> • Teachers from the three participating schools. • Teachers who attended training on the Win-LIFE intervention in 2014. • Teachers who facilitated the enriched Life Skills and Natural Sciences and Technology curricula as part of the Win-LIFE intervention.
Parents	31	<ul style="list-style-type: none"> • Parents of Grade 5 learners from the selected primary school. • Parents of learners who participated in the second-round implementation of the Win LIFE intervention. • Parents who were available after school hours to participate in data-generation sessions.

A potential disadvantage of the selection procedures I used is that it limited participants to only those involved in the Win-LIFE intervention and, in the case of the learners, to those who participated in the second-round of the Win-LIFE intervention implementation. However, considering that Sandelowski (2000) and

Charmaz (1990) believe that purposeful sampling concerns people who experienced a specific phenomenon, I did not regard my specific focus on the Win-LIFE intervention as a limitation. Furthermore, I focussed on rather forming firm relationships of trust with all participants, which could enhance the possibility of gaining rich information from this specific sample. My selected methods of data generation were also rigorous, allowing for information that enables the reader to gain comprehensive insight into the participants' experiences of the intervention.

3.3.3 Data Generation and Documentation

Data were generated in collaboration with learners, teachers and parents. Two MEd students fulfilled the role of co-researchers (Bentley and De Vos) and focused on the experiences of the learners who participated in the second round of implementation of the Win-LIFE intervention and the knowledge and skills they subsequently gained. Co-researcher Karien Botha conducted data generation among the teachers who implemented the Win-LIFE intervention, on my behalf. This was done due to my occupation as district official at the Department of Education at the time, and the implied challenge that teachers could potentially view me as being in a power position. I thus decided to not directly engage with the teachers so that they could provide open and authentic contributions. However, for data generation with the parents, I took full responsibility.

I used PRA-based workshops and discussions with the various participant groups, observation-as-context-of-interaction, qualitative questionnaires, field notes, research diaries and audio-visual techniques for this study. Table 3.2 provides an overview of the various data-generation and documentation activities. More detailed discussions follow in the subsequent sections.

Table 3.2: Overview of field visits and data-generation and documentation activities

Participants	Date	Researcher	Data generation and documentation
Learners (n=31)	19/10/2015 21/09/2015	Bentley (MEd) and De Vos (MEd) assisted by Botha (PhD) and myself	<ul style="list-style-type: none"> • PRA-based workshops and discussions • Audio-recordings • Field notes and research diaries • Visual techniques
Teachers (n=18)	24/11/2015	Botha (PhD) assisted by co-supervisor Fraser	<ul style="list-style-type: none"> • Open-ended qualitative questionnaires • PRA-based workshops and discussions • Audio-recordings • Field notes and research diaries • Visual techniques
Parents (n=31)	25/11/2015	Ngwenya, assisted by Ferreira (supervisor)	<ul style="list-style-type: none"> • PRA-based workshops and discussions • Audio-recordings • Field notes and research diaries • Visual techniques

3.3.3.1 PRA-based workshops and discussions

According to Chambers (1998:280), PRA “brought a notable idea that it is right and possible for poor and marginalised people to conduct their own analysis and take action”. To this end, PRA is viewed as participatory in nature and empowering rather than extractive (Chambers, 1994; Chambers & Mayoux, 2003). PRA research can generate both qualitative insights and quantitative data, is cost effective and has the potential to increase downward accountability (Chambers & Mayoux, 2003; Gaventa, 1980; Fals-Borda, 1984; Fals-Borda & Rahman, 1991). I relied on PRA-based strategies to generate and document qualitative data for this study.

During PRA-based workshops and discussions, the participants were able to provide authentic information about their personal experiences (Chambers & Mayoux, 2003) as these sessions created opportunities for the participants to express and openly share their experiences with the research team and other

participants. According to Chambers (1994; 1998), PRA involves participants in such a way that they can take the lead and feel free to share their perceptions and experiences.

PRA furthermore advocates a reversal of roles. I, as the researcher, thus learned from the participants (Chambers, 1994) and had to restrain myself during discussions not to impose my ideas on their own reality. In this regard, PRA advocates trade-offs between rigid and diverse data-generation methods that can result from open-ended participatory processes (Chambers, 1994; Mukherjee & Chambers, 2004). As such, PRA generally yields in-depth, rich and realistic information.

Empowerment is another characteristic of PRA. In this regard, Chambers (1994;1998) indicates that PRA generally empowers participants while making them aware of their responsibility to take action and change their lives for the better rather than providing them with solutions. As such, PRA can create solutions that participants may sustain.

I used PRA-based workshops and discussions for all three participant groups, as summarised in Table 3.2. These sessions each lasted between 60 and 150 minutes. For all groups, participants were divided into small groups of five to six members in each group. I posed several prompts and questions, asking the small groups to discuss these, to document their ideas on posters (matrices) and to then report back to the larger group. Throughout, I also relied on open-ended questions to encourage the participants to voice their experiences in an unconstrained way (Creswell, 2012; Fourie, 2010). Table 3.3 provides an overview of the prompts that guided the PRA-based sessions for the various participant groups.

Table 3.3: PRA-prompts

Participants	PRA-prompts
Learners	<p>Enriched Life Skills curriculum: Compile a breakfast, lunch or supper plate using real food items.</p> <ul style="list-style-type: none"> • What did you like? • What did you not like? • What was fun? • What was difficult? <p>Enriched Natural Sciences and Technology curriculum: How to plant seed and explain this process to a larger group.</p> <ul style="list-style-type: none"> • What did you learn? • What did you enjoy? • Who has a vegetable garden at home? • Did you tell your parents about vegetable gardens? • What did you tell your parents?
Teachers	<p>Win-LIFE interventions' initial PRA-based workshop in 2013; training in April 2014; implementation at the school in August 2014 and re-implementation in July 2015</p> <ul style="list-style-type: none"> • What did you like about this? • What was challenging? • What could we have done differently?
Parents	<p>Food choice, food production, food preparation and food consumption</p> <ul style="list-style-type: none"> • What did you learn? • How did you use the information?

PRA-based workshops with learner-participants thus focussed on what they had gained from the Win-LIFE intervention. In terms of the enriched Life Skills curriculum, learners, for example, discussed and demonstrated the knowledge they gained about healthy nutrition, food choice and food preparation. For the enriched Natural Sciences and Technology curriculum, PRA-based activities focused on knowledge that the learners gained about environmental education with, for example, the planting of vegetables, preparation of vegetable gardens, making compost and different types of soil and vegetables. Photographs 3.1, 3.2 and 3.3 provide examples of the PRA-based data-generation activities with learners and the posters they compiled.



Photograph 3.1: Discussing the value of the enriched Natural Sciences and Technology curriculum



Photograph 3.2: Discussing the value of the enriched Life Skills curriculum



Photograph 3.3: Visual representation of PRA-poster made by learner-participants

In exploring the teachers' experiences of the implementation and outcome of the Win-LIFE intervention, co-researchers Botha and Fraser facilitated one PRA-based workshop. The session lasted 150 minutes and teachers were prompted to reflect on the value of the Win-LIFE intervention, the challenges they experienced during the training and implementation of the enriched curricula among Grade 4 to 6 learners, and improvements that could be made to the intervention. Transcriptions and visual data of this session are included in Appendix G. Photographs 3.4 and 3.5 capture visual representations of the PRA-based workshop with teachers and a poster they compiled.



Photograph 3.4: Teachers engaging in a PRA-based activity

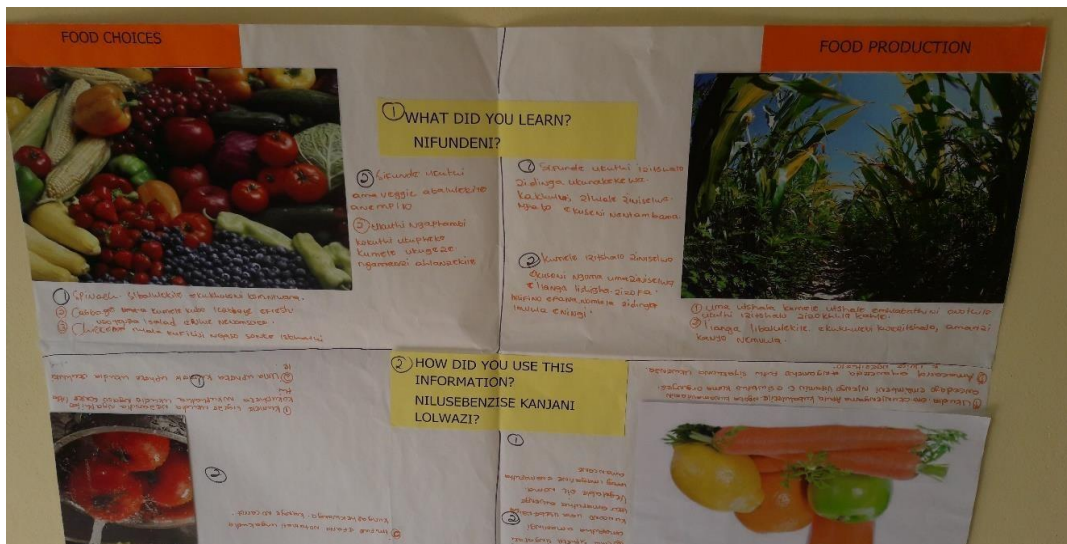


Photograph 3.5: Visual representation of PRA-poster compiled by teacher-participants

Finally, the learners’ parents who had been involved in the Win-LIFE intervention shared their views and experiences of the intervention during a PRA-based workshop that took place at the school where the intervention was re-implemented. This session lasted 150 minutes and was conducted after hours. Refer to Appendix F for the related transcripts of this session, and to Appendix G for visual data. Photographs 3.6 and 3.7 capture this phase of data generation.



Photograph 3.6: Parents engaging in a PRA-based activity



Photograph 3.7: Visual representation of a PRA-poster compiled by parent-participants

During all PRA-based workshops and discussions, I guarded against sharing my views and focused on the participants' voices and ideas throughout, regarding them as experts. During this process, I gained some understanding of how the participants constructed meaning in terms of their experiences of the outcome of the Win-LIFE intervention. As facilitator, I thus encouraged parent-participants to openly share their experiences in a way they preferred. I continuously employed reflexivity, allowing myself to be self-critical regarding my role in the study, as well as my personal background and culture, so that these would not affect the participants' contributions or my interpretations, as indicated by both Chambers

(1994) and Creswell (2013). I furthermore reflected on the data and my interpretations in order to understand the participants' meaning making (Nieuwenhuis, 2007; in Maree, 2013).

As already indicated, visual data were generated in the form of PRA-matrices that participants compiled and then discussed in the larger groups. Chambers (1994) points out that local people (whether they can read or not) can map, draw, list items and score matrices, thereby relying on visual ways to present and analyse complex realities. During PRA-based sessions, all discussions were audio-recorded and later transcribed verbatim. Photographs were also used to capture the PRA-based sessions and compiled matrices (Bryman, 2004).

An advantage of relying on PRA-based activities for this study is the way it allowed me to involve groups of people in joint activities; people who could collaborate in generating data. Participants were invited to share as much information as they wanted to, thereby avoiding a rigid way of data generation. To this end, Chambers (1994) attests that PRA seeks diversity or variability rather than establishing a general or average view. For PRA-based discussions, Silverman (2004) similarly indicates that participants' opinions, attitudes, beliefs, values and understandings can be regarded as valid. I relied on good facilitation skills to obtain rich in-depth information from the participants (De Vos *et al.*, 2011). Establishing sound rapport with the participants was, however, a prerequisite for meaningful discussions, as also emphasised by De Vos *et al.* (2011). These authors maintain that the quality of data can be enhanced if the researcher maintains good relationships with all participants throughout a project (De Vos *et al.*, 2011). As Neuman (2002:360) indicates, "such relationships are built on mutual trust, cooperation and the knowledge that relationships will be terminated at some later stage when the inquiry has been completed".

Another advantage of implementing PRA for data generation is that the material I required was generally cost effective and easy to obtain. Furthermore, the data-capturing techniques I used enabled me to capture accurate and authentic data, as generated by the participants. In this regard, I also allowed parent-participants to use their home language during PRA-based discussions when sharing their

personal experiences as recommended by Bornman (2009) in Fourie (2010) which proved to be another advantage. I was able to communicate with participants both in isiZulu and Sepedi, and later translated both these languages into English when transcribing the discussions, at no extra cost.

Challenges associated with PRA research include the amount of data generated, which can be time consuming to transcribe and analyse (Chambers, 1994). I aimed to address this challenge by planning thoroughly. I furthermore carefully drafted the open-ended questions and used pictures that could prompt fruitful discussions among the participants as they actively shared their experiences (Chambers, 1994). Planning involved the division of activities into different categories that would allow participants to engage in a specific activity and staying focused. Another potential challenge of PRA is the lack of a so-called blueprint that prescribes the time-frame in which to complete each activity during the PRA-based discussions. I attempted to address this potential challenge by confining to the number of open-ended questions that I planned to ask, which allowed the participants to share rich, concise and relevant issues about their experiences of the Win-LIFE intervention.

To overcome the potential challenge of time-consuming data analysis and inexact interpretations, I conducted member checking with the participants, thereby ensuring that their views are accurately represented. Reflexivity assisted me in ensuring that I did not impose my feelings or experiences on the participants' views, allowing their voices to be heard (Chambers, 1994). Finally, in terms of the potential challenge of the study lacking representativeness and not being generalisable, I aimed for rigour in terms of data-generation methods, selected the sample purposefully and included the participants' thick descriptions and rich accounts of their experiences and perceptions in this thesis (Lincoln & Guba, 1985). As such, transferability of the findings as well as the methodology may be a possibility.

3.3.3.2 Open-ended qualitative questionnaires with teacher-participants

Regarding the teacher-participants, I included an open-ended qualitative questionnaire (Appendix E) in addition to the PRA-based activity and discussions to explore the teachers' individual experiences of the implementation and perceived outcome of the Win-LIFE intervention. According to Richardson (2011), qualitative

research focuses on the quality of a phenomenon or experience. To this end, Bryman (2004) indicates that using open-ended questionnaires in qualitative research may afford participants the opportunity to respond in their own terms or to answer questions as extensively as they want to, as open-ended questions do not suggest specific kinds of answers. Creswell (2012) holds a similar view, stating that open-ended questionnaires may afford participants an opportunity to voice their experiences and to respond in different ways without being constrained by the researchers' ideas or findings.

Furthermore, Bornman (2009) attests that open-ended questionnaires allow participants to be creative in their self-expression and to share rich, detailed information on complex issues. Such questionnaires can thus enable a researcher to tap into certain kinds of responses that may reveal the participants' knowledge about the phenomenon under study. As such, the researcher will be able to explore new areas about which he or she has limited knowledge and to gain insight into salient issues (Bryman, 2004).

During data generation for this study, the teacher-participants were firstly requested to complete the questionnaire individually to indicate their experiences of the Win-LIFE intervention before participating in PRA-based activities. In this manner, open-ended questionnaires elicited authentic personal experiences and perceptions regarding the implementation of the intervention in the respective schools before the teacher-participants shared their views as a group. Data generated in this manner shed light on how teachers made meaning of the intervention they implemented, specifically in their life-worlds or contexts. Thus, this enabled me to understand the teachers' experiences in terms of the specific environments in which they operate. To this end, qualitative research emphasises the importance of context to understand participants and their experiences, perceptions or values (Bryman, 2004).

Both Bornman (2009) and Bryman (2004) highlight that although open-ended questionnaires are useful in yielding rich information in qualitative research, they may be time consuming and require more effort from the participants than close-ended questions. Another potential challenge is that participants sometimes share

extensive information that may result in rambling responses. Fourie (2010) and Bornman (2009) indicate that highly educated participants or participants with strong views on an issue will also have an advantage over others. I attempted to address these challenges by including audio-visual data-capturing techniques and transcribing data immediately after data-generation sessions. In addition, the questionnaire was limited in extent, not allowing too extensive responses.

3.3.3.3 Observation-as-context-of-interaction

Creswell (2013) maintains that observation is a well-accepted strategy for qualitative data generation. Observation entails the use of one's senses in a systematic process of data generation. Patton (2002) points out that the fundamental distinction between observational and other data-generation strategies concerns the extent to which an observer becomes a participant. Johnson and Christensen similarly (2012) maintain that a participant-as-observer will attempt to take the role of insider (participant), close to that of the participant. Closely related, Maree (2013) indicates that observation implies the potential of providing a researcher with an insider's perspective on group dynamics and behaviours in a research setting.

Angrosino and Mays de Perez (2000) advocate a shift away from thinking of observation as strictly being a data-generation technique, to also viewing the context in which those involved in a study collaborate and interact. As the contexts or participants' life-worlds will play an important role in the construction of meaning, observing participants in their contexts is imperative to understand the meaning they attach to a phenomenon. Observation-as-context-of-interaction provided me with the opportunity to enter the participants' space or context as research partners. During the PRA-based workshops and discussions, observation-as-context-of-interaction furthermore enabled me to engage with the research information, subsequently building an understanding of the participants' experiences of the outcome of the Win-LIFE intervention.

Observation-as-context-of-interaction supports the basic principles that underlie PRA research, namely that participants are experts who possess rich information (Chambers, 1994; Patton, 1990). I, as a black South African female researcher,

entered a resource-constrained community with the aim of observing the participants' interactions and contributions as partners in this context. To understand the participants' experiences and perceptions during the PRA-based discussions, I guarded against my own biases based on my background, to not obscure any information the participants shared. I relied on reflexivity to continually do self-reflection during observations. To this end, Flick (2013) maintains that reflexivity involves the process of turning back on oneself to ensure that the processes of knowledge generation and production become the subject of investigation. This process concerned my role in and social position on both the product and process of my study.

An advantage of being a participant-observer and using observation-as-context-of-interaction is that I could experience and "feel" the participants' life-worlds and how this had shaped their meaning making. Another advantage that Johnson and Christensen (2012) highlight entails that I was able to establish and maintain sound relationships with the participants and could easily request permission to generate and record data with their collaboration. Relying on my personal experiences and ability to engage with others, I was able to also show empathic understanding of and profound respect for the participants' perspectives (McMillan & Schumacher, 2014). Participants seemingly felt free and relaxed during interactions, which, in turn, enhanced their participation in an authentic manner.

However, according to Johnson and Christensen (2012), a potential challenge of participant-observation and observation-as-context of-interaction, is the possibility that participants may not necessarily behave naturally, considering that they are aware of being observed. I guarded against this challenge by establishing sound relationships with the participants and relying on the trust among us. Other challenges of this technique are that it may be taxing and time consuming and that it is not always easy to make accurate field notes when participating during observation. I attempted to overcome these potential challenges by planning ahead, making audio-visual recordings of all the discussions and taking photographs. I also compiled field notes during and immediately after data-generation sessions, and debriefed and reflected with my co-researchers and supervisors on a regular basis (Wimmer & Dominick, 2014; Guba & Lincoln, 1982).

3.3.3.4 Audio-visual techniques

According to Bryman (2004), photographs can fulfil different functions in research. Photographs may be used for data generation, to illustrate a certain view point or to prompt participants into a discussion. In this study, photographs are viewed as a data source (Bryman, 2004). Johnson and Christensen (2012) attest that visual data such as photographs, drawings and PRA-matrices can be taken as qualitative data.

Visual data generation thus afforded me an opportunity to capture information that was not necessarily communicated verbally. I did not capture visual data as an add-on, supplement or illustration, but combined visual and verbal accounts to best communicate the participants' perceptions, experiences and contributions (Seale *et al.*, 2004). To this end, photographs of the context, observations and PRA-based matrices, as well as the transcribed data from the discussions of the PRA-matrices, provided me with an authentic way to document the generated data (Johnson & Christensen, 2012). Recording and documenting all discussions afforded me the opportunity to revisit recordings at later stages as required and to obtain a clear understanding of what was said as well as of additional information that was not captured on the posters.

An advantage associated with audio-visual techniques is that these strategies can provide accurate accounts of what transpired in the field. However, a potential disadvantage is that such methods may be financially taxing when additional arrangements need to be made for external transcribers. Seale *et al.* (2004) attest that audio-visual equipment is generally expensive, which may pose a challenge to researchers. Recordings may furthermore be distracting and hamper participants' natural participation if distracted. In this regard, Drew *et al.* (2007) attest that even though audiotapes are generally accurate and indispensable, some participants may find recordings intimidating. To this end, recordings may potentially reduce participants' enthusiasm and therefore requires trust and reassurance that all recordings will be destroyed after an inquiry had been completed, as voices may be recognised (Drew, Hardman and Hosp, 2007). As a result, I informed the participants about the recordings before data generation commenced and explained my reasons for the recordings, as well as the strategies I would employ

to protect their identities. I also developed good relationships of trust during informal discussions with the participants before making any recordings. This enabled me to document accurate information while the participants felt safe to share their views.

3.3.3.5 Field notes and research diaries

Creswell (2012) defines field notes as text (words) that a researcher records during observations. Patton (2002) similarly states that field notes contain descriptions of what the researcher observes. Field notes (refer to Appendix D) therefore capture what people say and can include direct quotations or an as-near-as-possible recalling of direct quotations, or recordings of what was said during observed activities. Creswell (2012) distinguishes between two types of field notes, namely descriptive and reflective field notes.

In this study, I used both descriptive and reflective field notes because I focused on explaining the meaning that participants assigned to their experiences. According to Creswell (2012), descriptive field notes record captions of events, activities and people. During field visits I thus recorded my observations and reflected on the data that were generated. McMillan and Schumacher (2014:358) view “reflective field notes as related to a reflexive journal, and as the continuous recording of decisions” made during a study. As such, a reflexive journal can trace the researcher’s ideas and personal reactions throughout a study.

Patton (2002) mentions that field notes generally contain the observer’s feelings, reactions to experiences and reflections in terms of personal meaning making and the significance of what had been observed. Patton (2002) furthermore mentions that in a qualitative enquiry, the observer’s own experiences form part of the data. As a participant observer, as Creswell (2012) points out, I assumed the role of “inside” observer whenever I engaged in data-generation activities. A challenge of being a participant observer is the difficulty I experienced to take notes while participating. As a result, I noted most of my observations as soon as possible after leaving the research site while these were still fresh in my mind. Another potential limitation is the inability to “see” what participants experience internally, with the effect that my observational data merely related to the external activities I was able

to observe. Audio-visual data capturing, however, enabled me to document the data and to revisit data-generation sessions when needed.

In using research diaries as technique, I (as well as my co-supervisors) was thus able to record my observations and experiences in the field (Nadin & Cassell, 2006). I could furthermore regularly reflect on the research process and potential insights I gained as the study progressed. Nadin and Cassell (2006) indicate that reflection involves the interpretation of experiences, allowing researchers to be self-critical of personal interpretations. I thus used a research diary to reflect on my experiences and perceptions of how the participants made meaning of what they had experienced. As indicated, I also relied on the rest of the research team's diaries as supportive and enriching data source for my study.

3.3.4 Data Analysis and Interpretation

I conducted inductive thematic analysis of the qualitative data that were generated. According to Braun and Clarke (2006), this approach to data analysis involves a process of coding without trying to fit data into a pre-existing coding frame, or a researcher's analytic preconceptions. As such, thematic inductive analysis is data driven. Thomas (2006) refers to such an approach as one that primarily uses detailed readings of raw data to derive concepts, themes or a model by means of the interpretations that an evaluator or researcher makes from the raw data.

Analysis of the data began during the data-generation phase, while I was involved in the research process. Based on Huberman and Miles' (2002) statement that qualitative data is generally vast and unstructured, I followed a so-called "framework" for analysis involving well-defined procedures, steps and stages. More specifically, I followed Punch's (2006) outline of systematic interpretation of the data according to six identifiable stages. The path through these six steps or stages was, however, not a one-way path and required me to go back and forth through the stages as I identified and refined relevant themes and features.

In conducting the analysis, I firstly organised the raw data by transcribing all discussions and taking pictures of all PRA-matrices that the participants had compiled. Creswell (2012) indicates that transcriptions involve the process of

converting audiotape recordings into analysable data. The data transcriptions enabled me to familiarise myself with the raw data, as I studied all written reports and visual data in addition to listening to the recordings. As a second step, I read through the data several times to familiarise myself with the information. I listened to the audio-recordings again to ensure that the correct information had been transcribed. During this process of reading and rereading, I made notes in the margins, as suggested by Creswell (2012). I sifted each data set, cross-referencing and corroborating where possible to get a clear picture of the data. At this stage, I was able to form a first impression of the participants' experiences, perceptions and viewpoints. This phase of familiarisation (as pointed out by Huberman and Miles, (2002), also afforded me the opportunity to gain an overview of the richness, depth and diversity of the generated data. I noted patterns that emerged as I continued to read, which, according to Punch (2006), formed the first, sketchy foundations of my analysis.

After gaining an overview of the data, I began with the coding process. Creswell (2012) defines coding as the process of reducing text or an imaged database into themes and descriptions of people, places or events. In addition, Punch (2006) views coding as the process of finding and defining features in data. During this stage, I examined written data line by line and asked myself what the participants were saying to start identifying possible patterns, categories and themes. As such, I started organising the data into abstract units of information and paraphrased or assigned a code label to text segments. I worked back and forth between the themes and the database until I established a comprehensive set of potential themes and related sub-themes (Creswell, 2012). My aim was to understand the various constitutive elements of the data by inspecting the relationships between concepts, constructs or variables, as well as by determining whether (or not) I could identify or isolate any patterns or trends to later establish themes and related sub-themes.

I coded the raw data to a point where data was saturated, I then searched for commonalities between codes and brought these together. In this way, I grouped the patterns I identified in the data to form possible themes and sub-themes. In this regard, Braun and Clarke (2006:81) state that "a theme captures something

important about the data in relation to the research question". In finalising the themes and sub-themes, I once again had to go back and forth. I continued reflecting on my formulation of possible themes to ensure that the participants' views can be authentically represented in the form of trustworthy findings.

During stage 4 of the analysis process, I again reviewed the themes, drawing them together to form more coherent groups where possible. Now and then I had to go back to the original data asking myself whether (or not) the data support the themes I were finalising and if there were sufficient data to justify these themes. Howitt (2010) regards this back-and-forth process as desirable, seeing that it may improve the analysis. After I finalised the themes I had to clarify them. For this step, I ensured that the themes and sub-themes I finalised, as mentioned by Punch (2006), were conceptually discrete and representative of the data in a meaningful way.

To further ensure the credibility and accuracy of my data analysis, I did member checking with the participants on the 1 March 2017 (teacher-participants and 7 March 2017 (parent-participants). The validation of preliminary results entailed that the participants confirmed the accuracy of the information that had been generated and the analysis that followed (Creswell, 2012). Member checking also afforded the participants the opportunity to add additional views where they felt it was necessary. This process enabled me to confirm my understanding of what the participants shared and to write this research report.

3.3.5 Ethical Considerations

As a qualitative researcher, I understand that it is my responsibility to preserve the dignity of participants. I conducted research among human participants and followed the ethical guidelines stipulated by the ethics committee of the Faculty of Education, University of Pretoria (Ethics Committee, 2015). Throughout, I had the responsibility to protect the participants from "any harm or loss at all times with the aim of preserving their psychological well-being and dignity" (Willig, 2008:19).

3.3.5.1 Permission for research, informed consent and voluntary participation

Before conducting this study, the Gauteng Department of Education (GDE) as well as the Gauteng North District office, which is directly responsible for the schools

where the study was undertaken, granted me permission to conduct my research at the selected schools. Permission for this study was obtained as part of the permission obtained for the broader Win-LIFE project (refer to Appendices A and B).

Johnson and Christensen (2012) point out that the principle of informed consent refers to the fact that a person, once given pertinent information, is viewed as competent and legally free of others' desire to make a decision whether (or not) to participate in any given study. Similarly, Cohen *et al.* (2007) believe that informed consent is based on participants' right to freedom and self-determination. This implies the right to refuse participation in a study. Such a right to refusal implies the following four elements: competence, voluntarism, full information and comprehension (Cohen *et al.*, 2007).

In this study, I distributed and discussed letters of informed consent among and with all participants prior to their involvement. I ensured that the participants fully understood how they would be involved in the study, what the purpose of the study was and what the research process entailed. I also explained that participation was voluntary and that the participants had the right to withdraw from the study whenever they wanted to, without being penalised. The various informed consent letters (parents and teachers) are included in Appendix C. As Bentley (2016) and De Vos (2017) explored the learners' experiences, the informed assent letters form part of their studies.

In obtaining informed consent from the teachers and parents, I ensured that the participants were responsible, mature individuals (competent) who could make their own decisions. I encouraged the participants to ask questions and to clarify any uncertainties (McMillan & Schumacher, 2001). In confirmation of this approach, Drew *et al.* (2007:58) attest that "voluntary consent is concerned with each individual's ability to exercise the free power of choice without the intervention of force, fraud, deceit, duress or any other form of constraint or coercion".

As stated, participants were fully informed about the research process and that the raw data would be kept safe for 15 years before being destroyed. I followed this

process to ensure that the participants understood and could comprehend the situation they would be involved in. As such, I was able to observe and respect the rights of the participants (Cohen *et al.*, 2007).

3.3.5.2 Privacy, confidentiality and anonymity

In my quest for truth by means of research, I had to ensure that I did not conduct my study at the expense of the participants' privacy. Cohen *et al.* (2007) maintain that privacy implies more than just simple confidentiality and means that a person has the right not to take part in research, not to have his or her home intruded into, not to answer telephone calls or emails, and to engage in private behaviour in a private place without the fear of being observed. Johnson and Christensen (2012) attest that privacy thus broadly refers to controlling other people's access to information about a person.

I protected the privacy of the participants through anonymity by keeping their identities safe. Hartas (2010) maintains that it is a researcher's responsibility to limit any likelihood of participants being identified. I treated all information that the participants provided as confidential unless agreed on with the participants. In this regard, Johnson and Christensen (2012) indicate that confidentiality, in the context of a research study, refers to an agreement with the researcher about what he or she can do with the research participant's information. I accordingly informed the participants that I would treat the shared information confidentially and that I would respect their anonymity by, for example, using pseudonyms when disseminating the findings. As I included visual data as a data source, I had to obtain the participants' permission to take pictures during PRA-based activities. Most of the participants opted for their identities to be shown on these photographs, thereby waiving anonymity. Those who did not choose this option were not photographed, in protection of their identities.

3.3.5.3 Trust, deception and empowerment

Seale *et al.* (2004) regard trust as core to the relationship between a researcher and the participants. I spent ample time during initial informal discussions with the participants to establish firm relationships of trust before the generation of data commenced. It was my responsibility to build such trusting relationships to create

an atmosphere of honesty and respect for human dignity. To this end, I guarded against deceiving the participants about the study or the purpose of the research.

McMillan and Schumacher (2014) point out that deception may violate informed consent and privacy. According to Wimmer and Dominick (2014:72), “deception is deliberately providing false information while concealment is withholding certain information from the participants”. Deception can take the form of either an omission or commission on a researcher’s part (Drew *et al.*, 2007). My responsibility in adhering to the ethical principles of research therefore implied that I fully informed the participants about all important aspects of the study. I did not provide any false information or withheld information about the investigation, either partially or in total.

In conducting this study, I furthermore strived to represent multiple voices, to enhance moral discernment and to promote social transformation (McMillan & Schumacher, 2014). The perceived power of my position as an official at the National Department of Education could, however, potentially have influenced teacher-participants’ responses. I remained cautious and reflective of this potential challenge. As a result, I did not generate data with the teacher-participants but requested co-researcher Botha to facilitate these sessions on my behalf.

3.3.5.4 Protection from harm (physical and psychological)

During the study, I adhered to the ethical obligation to protect participants within all possible reasonable limits from any form of physical discomfort that could potentially emerge (Creswell, 2013). Hence participants were informed beforehand about the potential impact of the investigation (De Vos *et al.*, 2011). Flick (2013) highlights that protection from harm implies “respect for the person”, which comprises at least two ethical convictions, namely that individuals should be treated as autonomous agents and, secondly, as persons with diminished autonomy who are entitled to protection.

During data generation, I thus did not harm the participants by for example revealing any information that could embarrass them or endanger their home life, friendships or careers (Babbie, 2011). I conducted both PRA-based discussions and other

informal interactions with the participants with the necessary respect for all the participants, who were free to voice their objections or differing views.

3.3.6 Rigour of the Study

Rigour in qualitative research is regarded as a means by which to demonstrate integrity and competence (Aroni *et al.*, 1999). This implies legitimacy of the research process (Tobin & Begley, 2004). I discuss the way in which I aimed to adhere to quality criteria in the subsections that follow.

3.3.6.1 Credibility

Patton (2002) asserts that the credibility of qualitative research depends on distinct but related elements such as rigorous methods of data generation, credibility of the researcher based on training and experience, the track record of the researcher, the status and presentation of the self and the philosophical beliefs in the value of qualitative inquiry. I relied on my experience as a former researcher and psychologist, as well as on continuous research training and my supervisors' expert support to ensure credibility. In addition, I employed multiple methods during data generation such as PRA-based workshops and discussions, field notes, research diaries and visual techniques.

I furthermore relied on strategies such as member checking, prolonged engagement with the participants, and an audit trail as part of this thesis (Tobin & Begley, 2004). The included audit trail (Maykut & Morehouse, 1994) may allow the reader or other researchers to assess the accuracy of the data generated, how it was analysed and how I have arrived at the conclusions I come to in the final chapter of this thesis (Wimmer & Dominick, 2014). In this regard, Guba and Lincoln (1982) hold the view that credibility relies on whether (or not) data sources (most often human beings) find a researcher's analysis, formulation and interpretation credible. In this regard, I conducted member checking with the participants to ensure that the generated data had been analysed and interpreted correctly.

The trustworthiness of this study was furthermore enhanced by prolonged engagement (Lincoln & Guba, 1989) with the participants at the research site, as well as discussions about the emerging themes with critical experts (supervisors)

to ensure that the analyses were grounded in the generated data (Marshall & Rossman, 2011). This was done to ensure that my final presentation of the results is in accordance with the participants' views and perceptions. In further support, prolonged engagement and persistent observation of learner-participants during re-implementation of the Win-LIFE intervention afforded me the opportunity to obtain an insider perspective of the participants' meaning making while generating data.

My co-researchers in the current study assisted me in generating credible data, relying also on their field notes and research diaries. This strategy furthermore enhanced the credibility of this study, seeing that we shared our observations among us as researchers, addressing biases where needed (Wimmer & Dominick, 2014; Guba & Lincoln, 1982). I furthermore employed reflexivity to ensure credibility. As I had to be critical of myself as a researcher, I regularly reflected on myself as a Black female researcher conducting a study in a Black community faced with limited resources, in such a way that neither my cultural background or gender nor my position as psychologist and district official would obscure authentic data generation, analysis and interpretation of the results (McMillan & Schumacher, 2014). I allowed participants' voices to be heard as they gave meaning to their experiences of healthy food practices. Throughout the study, I reflected on observations as well as data generation during the PRA-based workshops and discussions to ensure that the participants' views would be presented correctly and that their voices will be heard.

3.3.6.2 Confirmability

Babbie *et al.* (2011) refer to Guba and Lincoln's (1989) discussion of a confirmability audit, denoting an adequate trail to enable readers to determine whether (or not) conclusions, interpretations and recommendations can be traced to the data sources and if the study thus supports them. Guba and Lincoln (1982) maintain that confirmability does not lie with a researchers' certifiability, but that it is based on the extent to which the generated data confirm the research processes and findings.

Among other strategies, I employed reflexivity to enhance confirmability (McMillan & Schumacher, 2014). Throughout the data-generation process, I reflected on my biases to prevent it from interfering with the participants' meaning making. I also

had to reflect on my understanding of the participants' views to not misrepresent them. Reflexivity therefore enabled me to be critical of my language use in order to represent the participants' words as authentic as possible. By using audio-visual data-generation techniques I allowed their voices to be heard distinctly. I furthermore ensured confirmability by presenting evidence (an audit trail) of how I arrived at my interpretations and conclusions of the study (Wimmer & Dominick, 2014).

3.3.6.3 Transferability

As the current study is qualitative in nature, it focused on a small group of people among whom data were generated in a specific context. Generalisability of the results is therefore not applicable. However, Creswell (2012) maintains that transferability of results can contribute to trustworthiness. In qualitative studies, where no correct or "true" interpretation exists when analysing data and reaching findings, subjective individual meanings may be attached to results (Tobin & Begley, 2004). However, if a researcher includes detailed descriptions of the research process, as well as the insight gained into and the obtained understanding of a specific phenomenon under study, transferability of the results to other similar contexts is possible.

To enhance the transferability of this study I thus employed purposeful sampling, affording me the opportunity to involve participants who are information rich (Patton, 2002). Silverman (2004) holds the view that purposive sampling illustrates some characteristics or processes that are of interest for a specific study. Furthermore, I employed multiple rigorous data-generation and documentation techniques as well as sound analysis procedures to make credible interpretations. I used multiple data sources and encouraged the participants to openly share their views, which I documented in detail (Marshall & Rossman, 1999). Furthermore, I allowed the parent-participants to contribute in their home language, which increased rapport and proved to be essential in enhancing rich information (Bornman, 2009; Fourie 2010).

I also used reflective and descriptive field notes (Creswell, 2012) and added what Geertz (1973) calls thick descriptions to give rich accounts of the phenomenon

under study, thereby ensuring that the participants' voices are heard (Bryman, 2004). I furthermore included visual data of the PRA-based posters in Appendix G and transcripts of the discussions in Appendix F, as evidence of the participants' contributions. This will all enable the reader to understand the participants' experiences. Finally, I employed reflexivity to challenge my biases during data analysis, thereby allowing the participants' voices to be heard.

3.3.6.4 Dependability

Dependability, according to Guba and Lincoln (1989), refers to the extent to which a research process is logical, traceable and well-documented. According to Tobin and Begley (2004:392), "dependability is achieved through the process of auditing".

Auditing implies that others can examine a researcher's data-generation methods and result interpretation, as these are traceable. Auditing furthermore entails the process of ensuring that comprehensive records are kept of all stages of a research process and that they are accessible (Bryman, 2004).

Dependability indicates that a study is reliable and trustworthy because the researcher followed logical research processes. In this regard, Guba and Lincoln (1982) maintain that dependability implies the "stability" of a study after a researcher has addressed all unpredictable changes. In this study, I used different techniques and strategies such as PRA-based discussions, field notes, research diaries and member checking, in collaboration with the rest of the research team. I also include documentation of the generated data in the various appendices, thereby providing evidence of the processes I followed, to enable the reader to understand or trace the study.

3.3.6.5 Authenticity

Authenticity is the term used in qualitative research to indicate a genuine or "true" understanding of participants' experiences (Tobin & Begley, 2004). Authentic understanding implies that the world is viewed from the actors' or participants' points of view. It furthermore refers to a researcher's fairness in showing different realities of the participants' experiences of a phenomenon under study (Lincoln & Guba, 1994).

In this study, I aimed to ensure that the participants' experiences and perceptions are represented as accurately as possible, thereby allowing their voices to be heard. Lincoln and Guba (1994) identify four forms of authenticity, namely ontological, educative, catalytic and tactical authenticity. As the participants constructed their own meanings regarding healthy food practices, ontological authenticity could be enhanced (Tobin & Begley, 2004). The data that were generated also enabled me to view the phenomenon under study from the participants' perspectives, thereby making educative authenticity possible, assisting the reader in appreciating the viewpoints that the participants constructed. Finally, this study stimulated forms of actions such as catalytic authenticity and tactical authenticity because the participants were empowered to seemingly make certain choices to improve their food-related practices (Tobin & Begley, 2004).

Guba and Lincoln (1982) hold the view that authenticity or the "true value" of a study depends on applicability, consistency and neutrality. Applicability indicates the extent to which the findings of a study are applicable to other contexts. Consistency determines whether (or not) findings will be the same if a study is repeated, involving the same or similar participants. In terms of neutrality, authenticity implies that a study's findings will not represent the researcher's biases, motivations, interests and perspectives but the participants' views and the research processes. In the current study, no findings are neutral because I employed reflexivity throughout to guard against my biases influencing the findings to ensure the authenticity of the study. Regarding the application of the findings to other similar contexts, the reader can decide how suitable this will be, considering the rigour and research processes that I followed in conducting the study.

3.7 CONCLUSION

In this chapter, I explained the methodology of the study. I described interpretivism as my selected epistemology of this qualitative study, as well as the reasons for these choices. I discussed the research design and methodological strategies I used and explained how I adhered to ethical considerations. I concluded the chapter by explaining how I strived to enhance trustworthiness in terms of relevant quality criteria.

In Chapters 4 and 5, I present the results of the study, focusing on the teacher-participants' experiences and perceptions in Chapter 4, and the results related to the parent-participants and learner-participants' experiences and perceptions in Chapter 5. I present the results in terms of the themes and sub-themes I identified following inductive analysis. I also illuminate my discussions with excerpts and direct quotations from the data.

CHAPTER 4

RESULTS ON TEACHERS' EXPERIENCES AND PERCEPTIONS

4.1 INTRODUCTION

In Chapter 3, I focused on the methodology I employed to investigate the outcome of the Win-LIFE intervention that was implemented in three primary schools in a resource-constrained community in South Africa. I explained interpretivism as the selected epistemological perspective and the qualitative approach I followed, justifying these in terms of the purpose of this study. I also explained the research design as well as the data generation, documentation and analysis techniques that I used. I concluded the chapter by discussing ethical considerations and reflecting on the rigour of the study.

In the next two chapters I present the results of the study in terms of the participating teachers' experiences (Chapter 4), the parents' experiences (Chapter 5) and the learners' experiences (Chapter 5). When discussing the results, I include verbatim quotations and excerpts from the data, thereby presenting sections of the rich information that the participants shared. As an introduction to Chapter 4, Figure 4.1 provides an overview of the themes and sub-themes I identified in terms of the teacher-participants' experiences and perceptions.

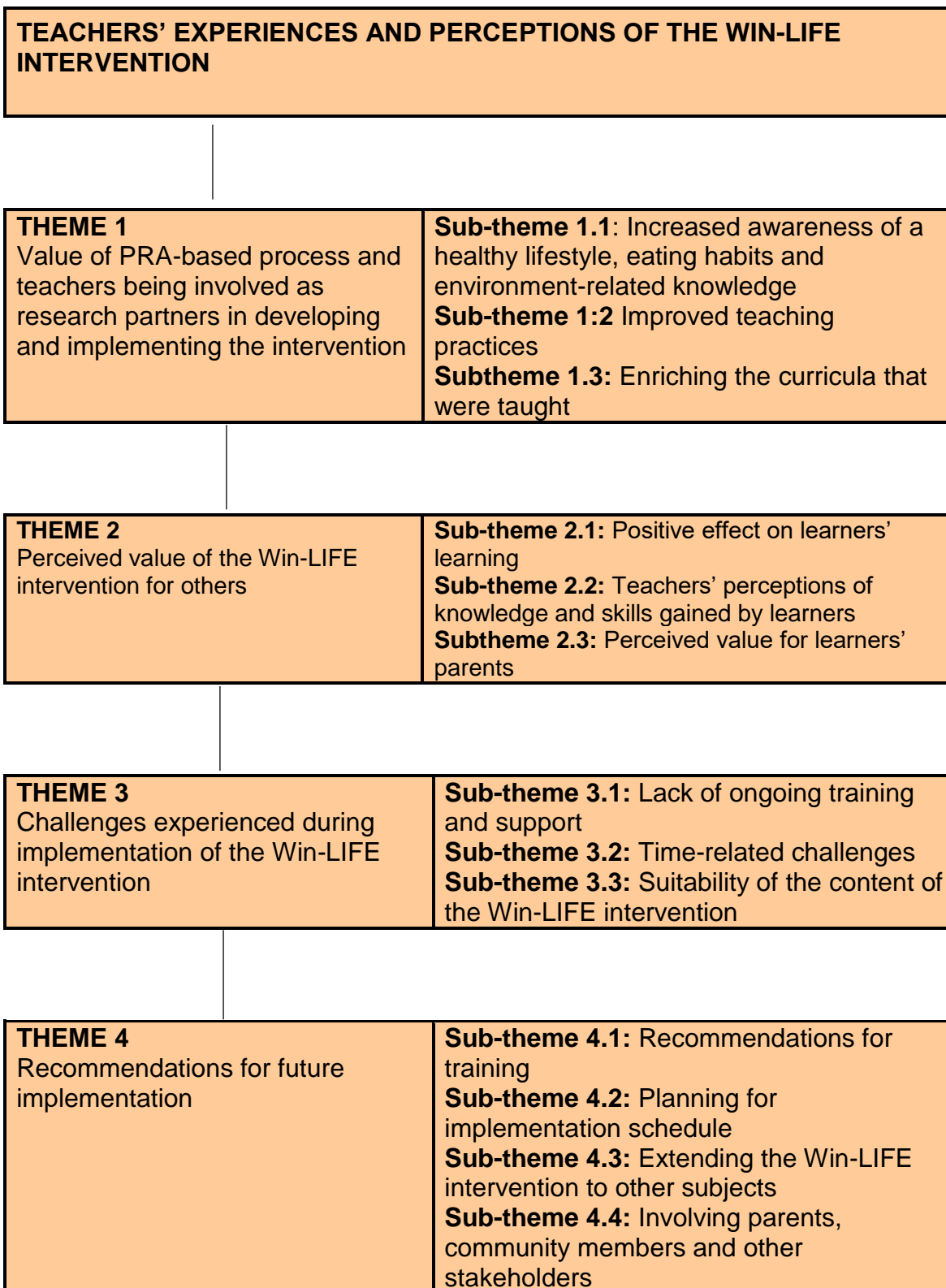


Figure 4.1: Overview of results on teachers' experiences and perceptions

4.2 THEME 1: VALUE OF PRA-BASED PROCESS AND TEACHERS BEING INVOLVED AS RESEARCH PARTNERS IN DEVELOPING AND IMPLEMENTING THE INTERVENTION

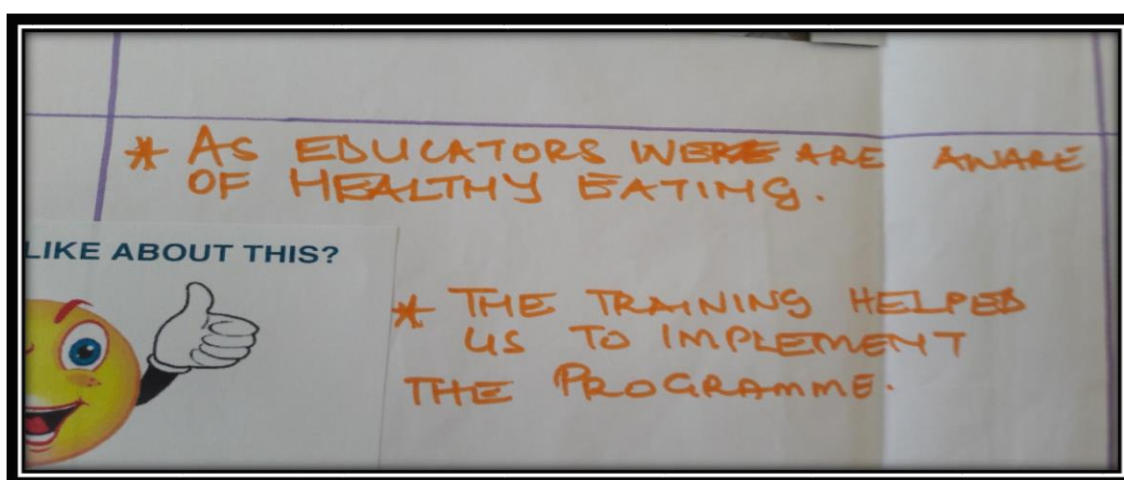
The first theme that I identified concerns the teachers' perceptions of the value of the PRA-based process and their involvement as research partners. The participants valued their participation in the research process. They indicated that they gained information about healthy living, about how to implement alternative teaching strategies and about how to enrich the curricula they presented. Table 4.1 provides an overview of the sub-themes of Theme 1 in terms of the inclusion and exclusion criteria I relied on when identifying these themes.

Table 4.1: Inclusion and exclusion criteria of Theme 1

SUB-THEME	INCLUSION CRITERIA	EXCLUSION CRITERIA
Sub-theme 1.1: Increased awareness of a healthy lifestyle, eating habits and environment-related knowledge	Data related to the value of the PRA-based process and teacher involvement, with specific reference to their increased awareness of a healthy lifestyle, eating habits and environment-related knowledge.	Data related to improved teaching practices or teachers enriching the curricula that were presented because of their involvement in the PRA-based research process.
Sub-theme 1.2: Improved teaching practices	Data related to the value of the PRA-based process and teacher involvement in terms of improved teaching practices.	Data indicating increased awareness among teachers of a healthy lifestyle, eating habits and environment-related knowledge, or teachers enriching the curricula they taught, as a result of their involvement in the PRA-based process.
Sub-theme 1.3: Enriching the curricula that were taught	Data related to the value of the PRA-based process and teacher involvement, with specific reference to teachers enriching the curricula that they taught because of their participation.	Data indicating the value of the PRA-based process and teacher involvement as teachers' increased awareness of a healthy lifestyle, eating habits and environment-related knowledge or improved teaching practices.

4.2.1 Sub-theme 1.1: Increased Awareness of a Healthy Lifestyle, Eating habits and Environment-related Knowledge

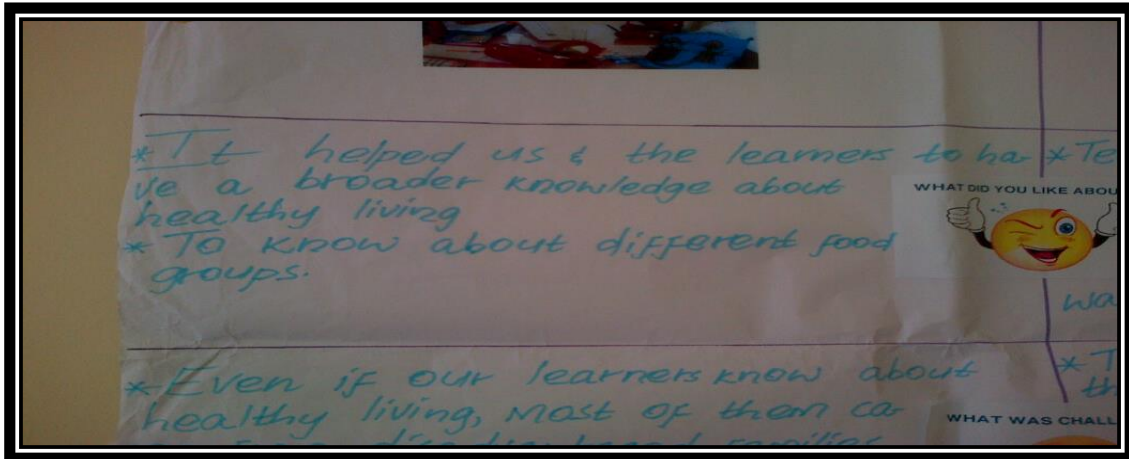
The teacher-participants seemingly valued their participation in the PRA-based workshops and the development of the Win-LIFE intervention, as these workshops resulted in their own increased awareness of a healthy lifestyle, healthy eating habits and environment-related knowledge. In this regard, they stated as follows: “As educators, we are aware of healthy eating” (PRA-2⁴, School A), and “We have learned about healthy living” (PRA-2, School A). This experience was visually presented when compiling a PRA-poster, as captured in Photograph 4.1.



Photograph 4.1: Awareness of healthy eating (School A)

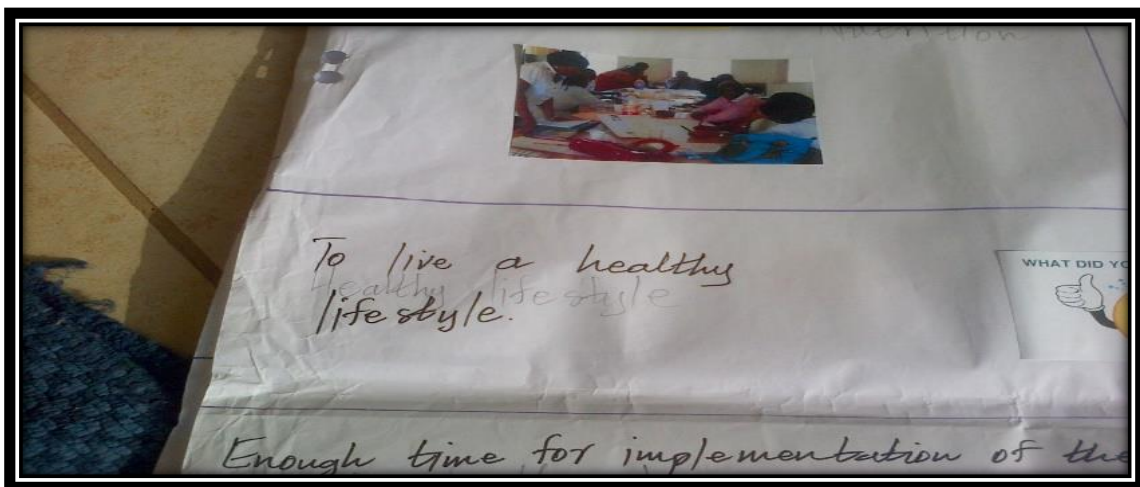
The participants specifically indicated that the PRA-based workshops assisted them in gaining a broader knowledge about healthy living and the various food groups, as well as what their new knowledge entailed. In this regard, School B reported the following: “It helped us and learners to have a broader knowledge about healthy living. To know about different food groups” (PRA-2, School B). In support of this explanation, Photograph 4.2 provides a visual representation of the participants’ views on their newly gained knowledge about healthy eating and the different food groups.

⁴ Henceforth, the following abbreviations apply: PRA-1 = PRA-based workshop conducted by Botha at the University of Pretoria in April 2014; PRA-2 = PRA-based workshop conducted at School A on 24 November 2015; Q = Teacher questionnaire; FN = Researcher Ngwenya’s field notes during member checking; CR = Co-researcher Botha’s field notes; P = Participant.



Photograph 4.2: Increased knowledge about healthy living and the various food groups (School B)

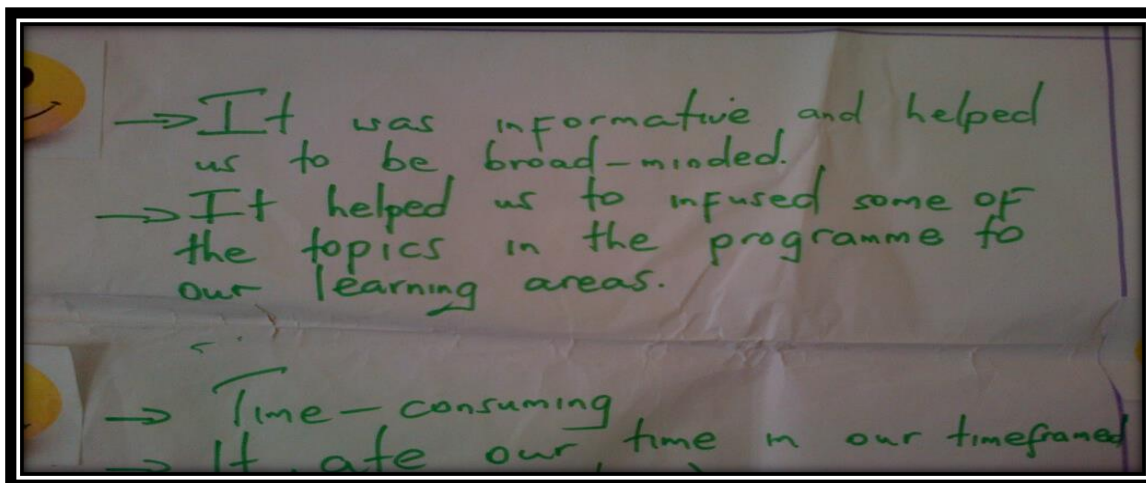
The participants of School C similarly mentioned that discussions sensitised them towards following a healthy lifestyle. Their view is captured in Photograph 4.3, which represents the PRA-poster they compiled.



Photograph 4.3: Awareness of a healthy lifestyle (School C)

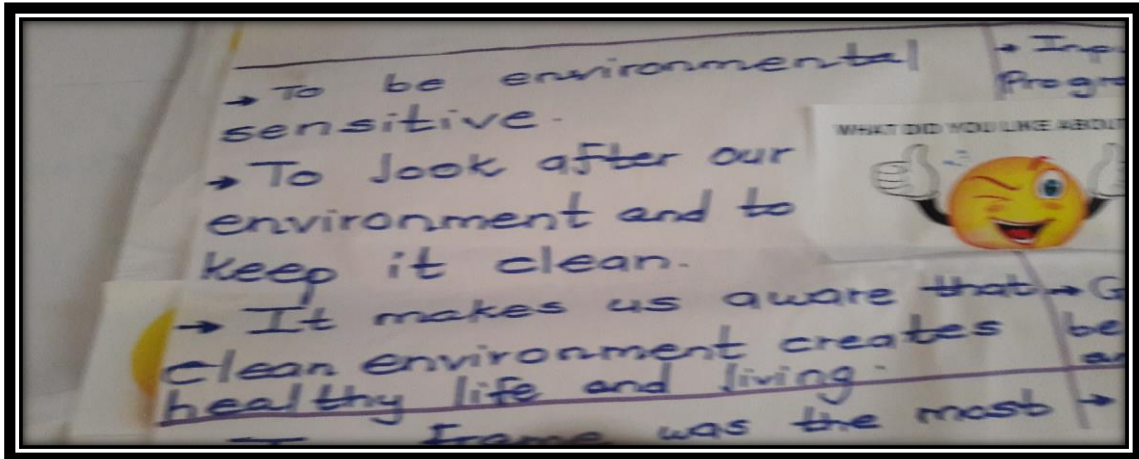
In further support, a teacher-participant from School C said the following: *"It has made me realise that it's important to eat healthy"* (Q-P3, School C). This participant furthermore indicated the following: *"I told the learners in my class on a daily basis how important it is to eat healthy. You think better, feel better and look better ... you can also do more physically"* (captured in CR, 24 November 2015, line 62, School C). The participants from School B similarly reported that their participation broadened their minds and provided them with information about food-related

issues. The following verbatim extract affirms these participants' views: "*It was informative and helped us to be broad-minded*" (PRA-2, School B), as captured in Photograph 4.4.



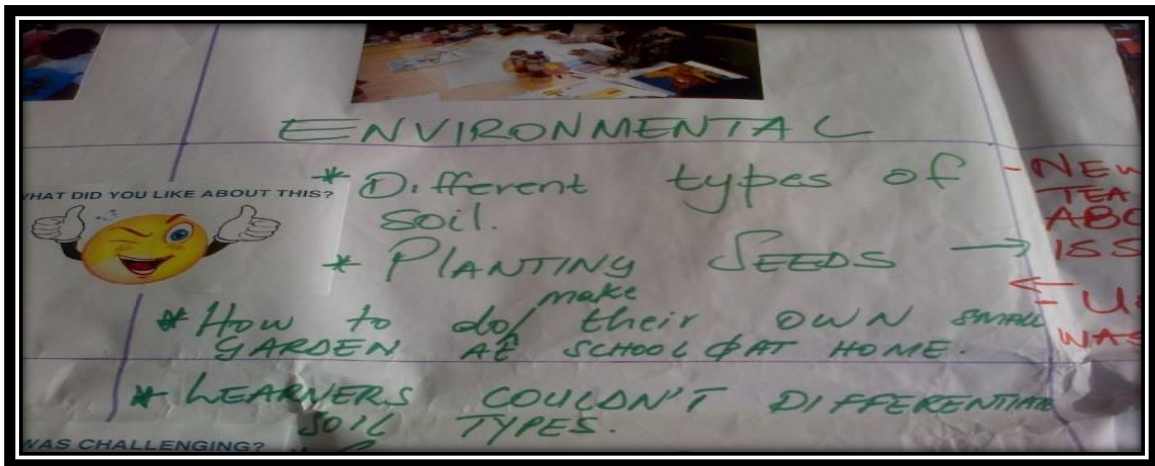
Photograph 4.4: Information gained about healthy eating (School B)

During member checking, the participants confirmed the value of their involvement as research partners in the development of the Win-LIFE intervention by stating that: "*It was helpful a lot especially with food*" (FN, 1 March 2017, line 5, School B). Another participant from School B said: "*I personally love it*" (FN, 1 March 2017, School B). The participants seemed to specifically value the information they received as educative, as captured in the following contribution: "*The programme is educative and very informative to everyone*" (Q-P1, School B). In addition to gaining information about healthy eating habits and a healthy lifestyle, participants reported that their participation also broadened their knowledge and skills regarding their environment. They specifically indicated that they learned to be sensitive to the environment, how to look after it and how to keep it clean. To this end, the participants from School B noted the following: "*To be environmental sensitive. To look after our environment and keep it clean. It makes us aware that clean environment creates healthy living*" (PRA-2, School B), as captured in Photograph 4.5.



Photograph 4.5: Newly gained knowledge about the environment (School B)

In terms of the environment-related knowledge and skills that the participants gained, they referred to various topics and mentioned the following: “*Planting seeds on cotton wool was the most interesting experience*” and “*Different types of soil. Planting seeds*” (PRA-2, School C). Additional ideas are captured in Photograph 4.6, which represents a PRA-based poster that the participants of School C compiled.



Photograph 4.6: Topics on which information and skills were obtained (School C)

Thus, because of their participation in the PRA-based intervention, the teacher-participants experienced higher levels of awareness of what a healthy lifestyle entails, as well as environmental awareness that can contribute to healthy living.

They apparently realised the importance of healthy surroundings and the production of food by way of, for example, vegetable gardens, in ensuring access to healthy food.

4.2.2 Sub-theme 1.2: Improved Teaching Practices

The participants reported that their participation in the PRA-based process and development of the Win-LIFE intervention resulted in improved teaching practices. It seems as if their participation promoted their teaching in the sense that they started applying alternative teaching strategies, enriching their teaching with colourful resources and focusing on the practical application of learning content, which aligns with the approach followed for the Win-LIFE intervention.

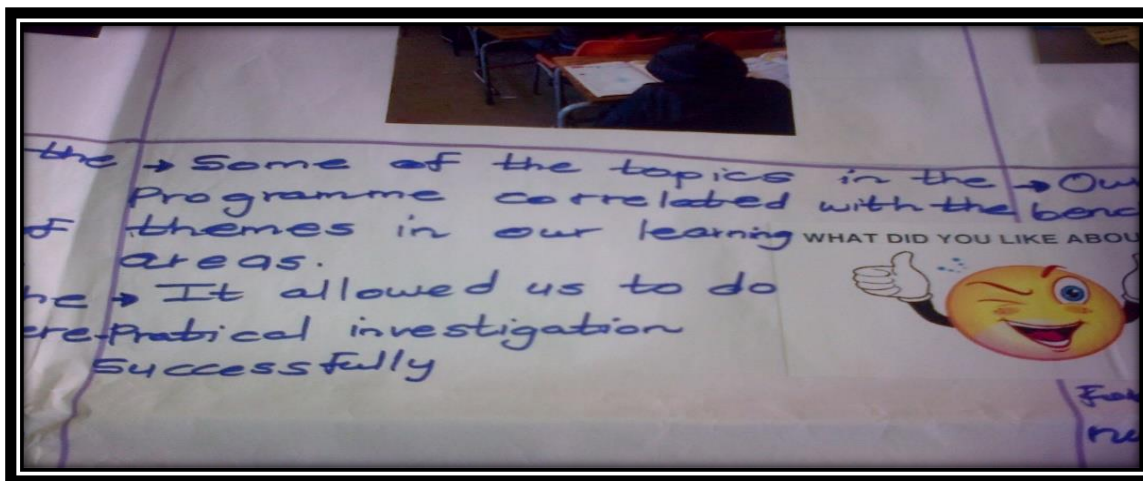
The participants from School A, for example, said: “*It makes teaching Life Skills and Natural Sciences and Technology (NSTECH) easy*” (PRA-2, School A). The participants from School C similarly indicated that they acquired alternative methods for teaching their learners about environmental issues and nutrition. The following extract from the data attests to this positive experience: “*New methods of teaching our learners about environmental issues and nutrition. The use of pictures was exciting*” (PRA-2, School C), as captured in Photograph 4.7.



Photograph 4.7: Acquiring ideas on alternative teaching methods (School A)

Participants indicated that they specifically found the teaching of certain aspects of the content to be easier after participating in the PRA-based workshops. They said: “*As teachers, it was easy for us to teach about food pyramid*” (PRA-2, School A).

The participants from School B furthermore reported that the PRA-based workshops assisted them with practical investigation activities in the classroom, as depicted in Photograph 4.8.



Photograph 4.8: Gaining ideas on the application of practical investigations (School B)

The participants seemingly valued the ideas they gained on assisting learners in class with the completion of activities. In this regard, a participant from School C said: *“Also when they were doing living organism, it was very helpful in assisting learners to complete their NSTECH activities”* (Q-P5, School C). In addition to acquiring ways of assisting learners in class, the participants’ involvement as research partners in the Win-LIFE project apparently enriched their teaching methods due to the use of colourful resources. According to the teacher-participants, the format of the Win-LIFE intervention had a positive outcome. A participant from School B explained: *“Learners enjoyed the books because most of the things were practical and the book was also attractive”* (Q-P2, School B), and was supported by the following contribution from a participant of School A: *“We usually discussed about the positive attitude the learners had when using the booklets”* (Q-P3, School A).

The participants thus reported that colourful resources enriched their teaching to such an extent that learners seemingly visibly enjoying classroom activities. One of the participants explained this view as follows: *“Learners enjoyed to use the books. They were doing activities given to them”* (Q-P3, School C). In support, my co-

researcher noted her observations in this regard as follows: “... *enjoyed the books, the practical activities and the books were attractive ... full of colour*” (CR, 24 November 2015, line 54, School C). The participants furthermore elaborated that the learners apparently found the resources to be informative and interesting, saying: “*Informative, the activities and the colour of the pages made it appropriate and interesting to learners*” (Q-P1, School C). My co-researcher noted the same perception in her field notes, stating that: “... *it made it appropriate and interesting to the learners*” (CR, 24 November 2015, line 46, School C).

4.2.3 Sub-theme 1.3: Enriching the Curricula that were Taught

This sub-theme captures the perceptions of the teacher-participants in terms of the way in which the Win-LIFE intervention enriched the subject curricula that they taught the Grade 4 to 6 learners. Participants reported that they experienced the intervention programme as interesting and to be correlating well with life and living in terms of the Life Skills curriculum. A participant from School B specifically referred to the programme being easy to teach, especially when correlating with the themes of the CAPS curriculum, stating the following: “*It was easy when it correlated with the theme of the lesson*” (Q-P4, School B).

Participants furthermore reported that they experienced the Win-LIFE intervention as being educational. My co-researcher captured this idea as follows: “*They found the programme to be useful. They mentioned that the programme was informative and educational-learners learned a lot from it, because of all the information included, which is based on CAPS*” (CR, 24 November 2015, line 46). A participant from School C similarly noted that the Win-LIFE intervention aligned well with the Natural Sciences and Technology (NSTECH) curriculum content and that it was subsequently easy to teach. This view is captured in the following contribution: “*It integrated a lot with our NSTECH Grade 4 syllabus or content. That made it easy for me as an educator to teach*” (Q-P5, School C).

In addition to enriching the Life Skills and Natural Sciences and Technology curricula, the participants indicated that the Win-LIFE intervention also enriched the teaching of the Biodiversity curriculum for Grade 7 learners. One of the participants explained this as follows: “*During the teaching of Biodiversity in Grade 7s I asked*

Grade 6 educators to borrow me the books for Win-LIFE to practically integrate it to my lesson” (Q-P2, School B). Other participants similarly integrated some of the intervention topics in their respective subjects. They indicated that: *“It helped us to infuse some of the topics in the programme to our learning areas”* (PRA-2, School B).

4.3 THEME 2: PERCEIVED VALUE OF THE WIN-LIFE INTERVENTION FOR OTHERS

The second theme I identified on the teachers’ experiences and perceptions relates to the perceived value of the Win-LIFE intervention for others, namely learners and their parents. Table 4.2 provides a summary of the sub-themes of Theme 2 in terms of the inclusion and exclusion criteria I implemented.

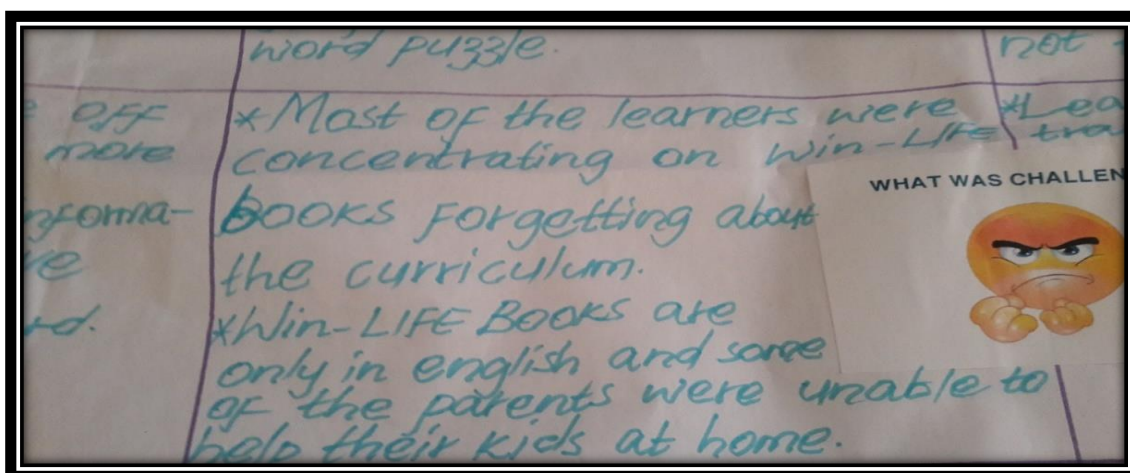
Table 4.2: Inclusion and exclusion criteria of Theme 2

SUB-THEME	INCLUSION CRITERIA	EXCLUSION CRITERIA
Sub-theme 2.1: Positive effect on learners’ learning	Data referring to the positive effects of the Win-LIFE intervention on learners’ learning.	Data that relate to the value of the Win-LIFE intervention in terms of the teachers’ perceptions of knowledge and skills gained by learners or the value of the intervention for parents, as perceived by the teacher-participants.
Sub-theme 2.2: Teachers’ perceptions of knowledge and skills gained by learners	Data indicating to teachers’ perceptions of knowledge and skills gained by learners because of the Win-LIFE intervention.	Data related to the value of the Win-LIFE intervention in terms of its positive effect on learners’ learning or the perceived value for parents.
Sub-theme 2.3: Perceived value for learners’ parents	Data related to the value of the Win-LIFE intervention for parents, as perceived by the teacher-participants.	Data referring to the value of the Win-LIFE intervention in terms of the teachers’ perceptions of knowledge and skills gained by learners.

4.3.1 Sub-theme 2.1: Positive Effect on Learners' Learning

According to the participants from School B, learners responded positively to the Win-LIFE intervention. One of the participants explained her experience as follows: *"Learners were impressed by the time I introduced it to them. They were interested about it and keen to know and acquire knowledge from it. They really liked it"* (Q-P1, School B). A participant from School C, in support, added that learners were impressed with the intervention and eager to acquire knowledge by means of this avenue. This experience is captured in the following extract taken from the data: *"Learners were very impressed ... they were interested in the books and keen to know and acquire knowledge ... they liked it"* (CR, 24 November 2015, line 56, School C).

In this regard, the participants reported that learners were more interested in the Win-LIFE booklets than in the curriculum-based work. The participants from School B explained this as follows: *"Most learners were concentrating on Win-LIFE books forgetting about the curriculum"* (PRA-based 2, School B), as also illustrated by Photograph 4.9. The learners' interest in the colourful booklets thus reportedly resulted in higher levels of motivation and their dedication to learn, as perceived by the teacher-participants. In this manner, the Win-LIFE intervention seemingly addressed affective outcomes, that in turn enhanced learners' learning.

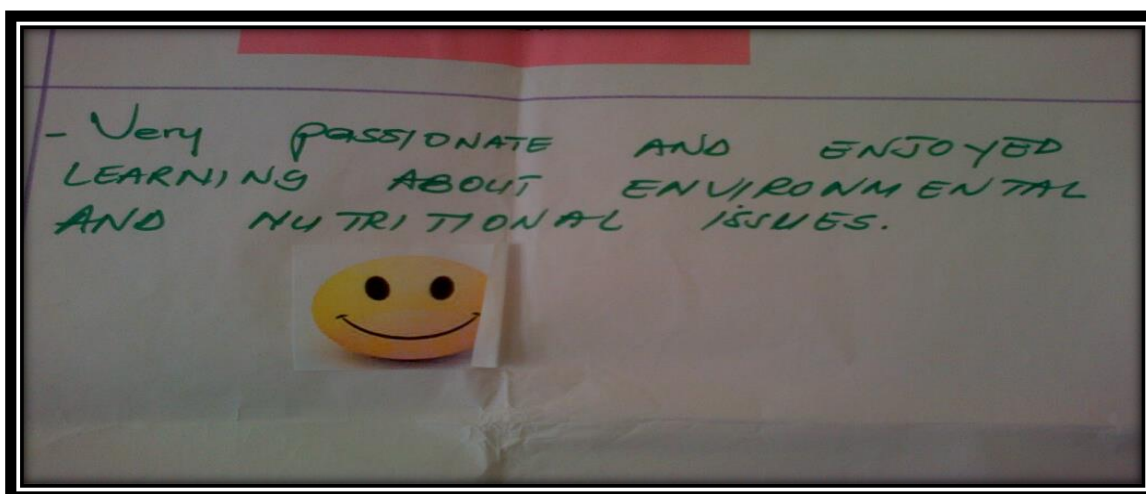


Photograph 4.9: Learner involvement in Win-LIFE intervention (School B)

Closely related, teacher-participants viewed the language used in the booklets as simple and accessible for learners. A participant from School B remarked: *"No, it*

was simple because the language is simple and easy to understand by learners” (Q-P3, School B). My co-researcher documented similar views, stating the following: *“The information is easy to understand ... language is simple and the content is easy to understand for both learners and parents”* (CR, 24 November 2015, line 61, School B).

According to the teachers, the Win-LIFE intervention had a positive effect on the learning of the learners who participated. The participants from School C emphasised that the learners, as a result, became passionate about and enjoyed the learning process during implementation of the Win-LIFE intervention. They said: *“Very passionate and enjoyed learning about environment and nutrition issues”* (PRA-2 School C), as captured in Photograph 4.10.



Photograph 4.10: Positive effect on learning (School C)

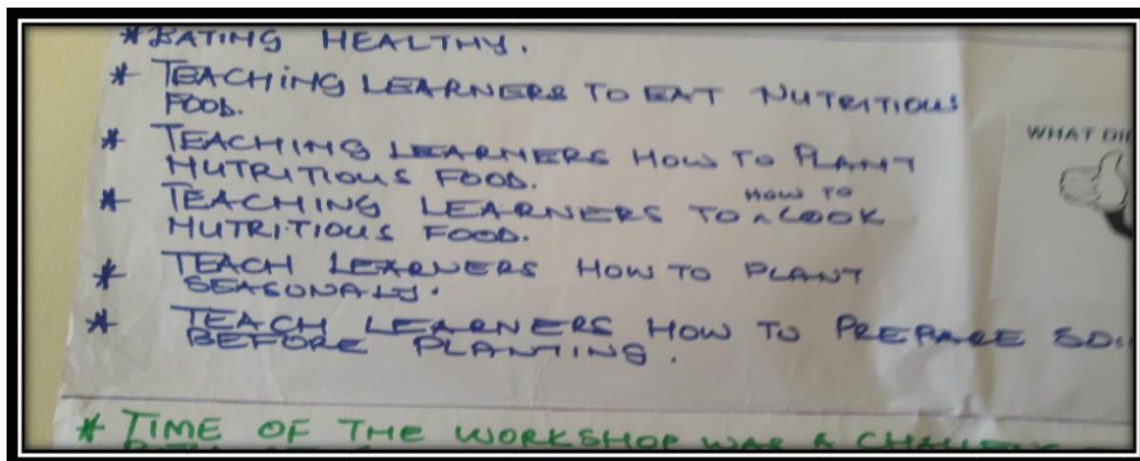
My co-researcher’s observations confirm this view, as captured in the following excerpts: *“Win-LIFE was enjoyable and pleasurable ... the kids loved it”*; and *“Learners enjoyed it, while they learned”* (CR, 24 November 2015, line 55, School C). In further support, a participant from School A summarised her experience in the following way: *“What I liked about the programme is that the learners enjoyed it while they were learning. Some of them worked together with their parents who gave me good feedback”* (Q-P4, School A).

While elaborating on the intervention's effect on the learning that took place, teacher-participants indicated that the learners were, for example, interested in and enjoyed learning about different types of soil, saying that: "*Learners found it very interesting and all enjoyed it especially the different types of soil*" (Q-P5, School C). In addition, the participants from School C indicated that learners: "... *enjoyed learning about environment and nutrition issues*" (PRA-2, School C). Thus, the learners apparently experienced the learning processes in various subjects and topics as positive. Overall, the participants viewed the Win-LIFE intervention as favourable and indicated that it was inspirational. They seemingly agreed that it should have been implemented at an earlier stage, as summarised in the following contribution: "*I should think the programme should have started long ago since it is inspirational*" (Q-P4, School B).

4.3.2 Sub-theme 2.2: Teachers' Perceptions of Knowledge and Skills gained by Learners

In the teacher-participants' view, the Win-LIFE intervention taught the learners to eat nutritious meals and highlighted the importance of healthy food. In addition, it was the participants' perception that the learners apparently also learned how to cook healthy food and eat a balanced diet because of the intervention. Participants namely said: "*Teaching learners to eat nutritious food. Teaching learners how to cook nutritious food*" (PRA-2, School A), and "*They know the importance of healthy eating. They have learned how to cook healthy food*" (PRA-2, School A). Another participant added that: "*The programme teaches the learners how to eat balanced meal with nutrients at all time*" (PRA-2, School A).

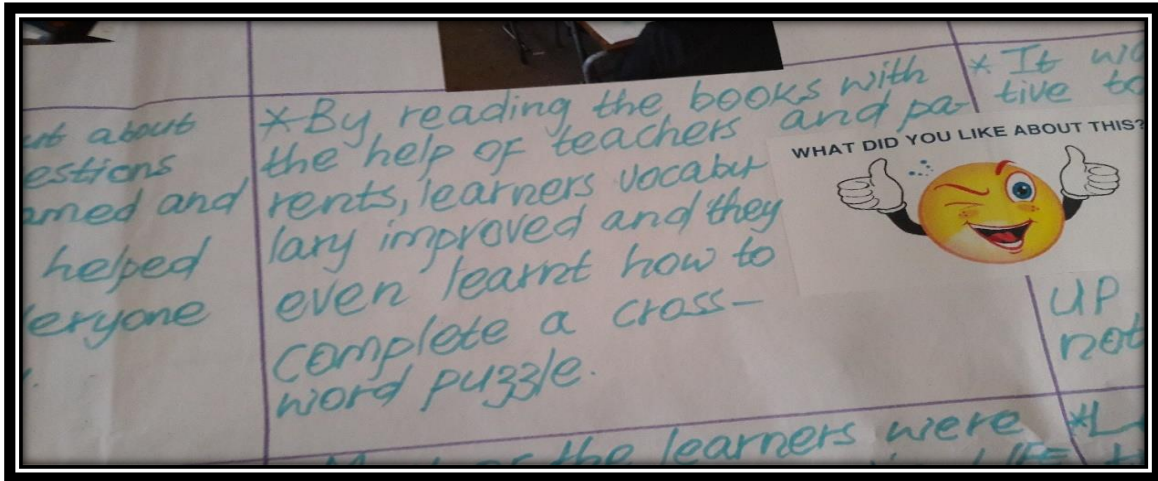
In addition to perceivably gaining knowledge about healthy food and nutrition, the learners' knowledge and skills regarding environment-related aspects were perceived to have increased. The participants reported that the learners learned how to prepare soil and plant nutritious food during the different seasons, saying that: "*Teaches learners how to prepare soil before planting. Teaches learners how to plant nutritious food. Teaches learners how to plant seasonally*" (PRA-2, School A), as also depicted by Photograph 4.11.



Photograph 4.11: Increased knowledge on planting (School A)

Other participants elaborated on the perceived value of the intervention in the following way: “*They know how to live in a healthy environment. They know about different types of soil*” (PRA-2, School A,). Similarly, another participant indicated that: “*It teaches learners and family members about healthy living and different food groups and the importance of having a vegetable garden*” (Q-P2, School B). While elaborating on this idea, some participants reported that the Win-LIFE intervention taught learners how to plant seeds, saying the following: “*Planting seeds. How to make their own small garden at school or at home*” (PRA-2, School C).

The participants furthermore apparently held the view that the Win-LIFE intervention improved the learners’ reading skills. Teacher-participants specifically reported that the learners’ vocabulary improved and that they were subsequently able to complete crossword puzzles and word searching with more success. A participant from School B explained: “*By reading the books with the help of teachers and parents, learners’ vocabulary improved and they even learned how to complete a cross word puzzle*” (PRA-2, School B), as illustrated in Photograph 4.12.



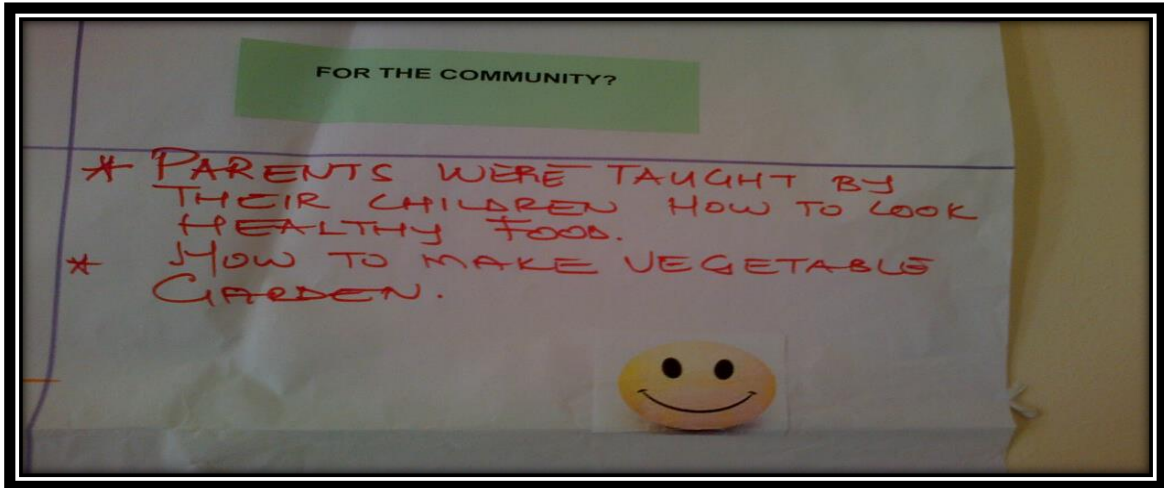
Photograph 4.12: Positive effect on learners' vocabulary (School B)

Finally, the participants related learners' increased knowledge to the process of learning through play. A participant from School B explained it as follows: "*They also enjoyed part of word puzzles to complete the blocks and part of word searching. They were playing and learning at the same time*" (Q-P2, School B).

4.3.3 Sub-theme 2.3: Perceived Value for Learners' Parents

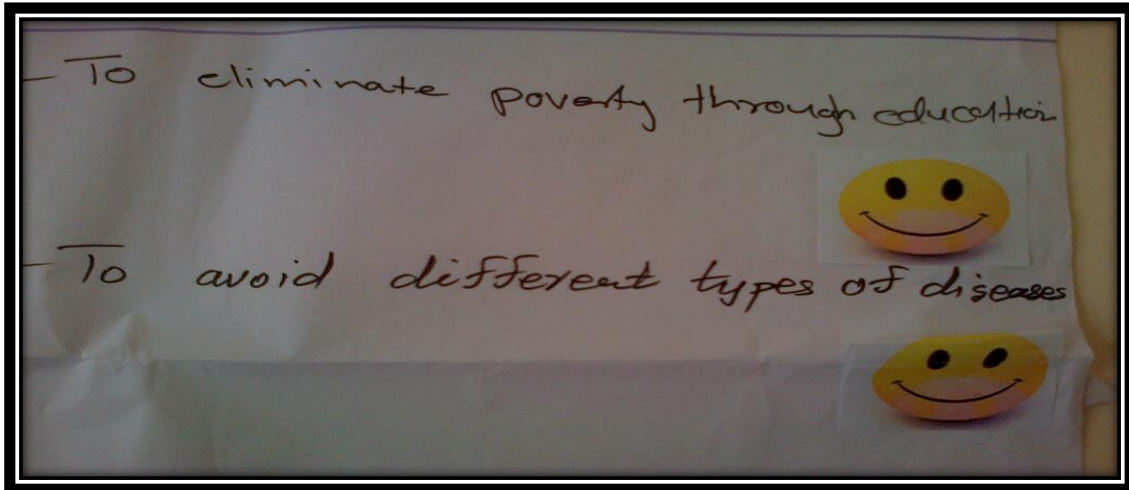
According to the teacher-participants, the Win-LIFE intervention was of value to the parents as well, who allegedly enjoyed being part of the project. The participants seemingly held the view that the learners empowered their parents in terms of, for example, healthy eating habits and starting vegetable gardens, indicated in the contributions such as the following: "*Learners shared their information with the parents*" (PRA- 2, School A), and "*They acquired knowledge and information through their involvement with their children's homework*" (CR, 24 November 2015, line 47, School C). These contributions furthermore highlight the apparent value of the joint home-based activities.

A participant from School A elaborated in the following way: "*What I liked about the programme, some of the parents were involved in acquiring knowledge on how to eat balanced, healthy food at their homes*" (Q-P3, School A). In confirming the other schools' contributions, participants from School A indicated the following: "*Parents were taught by their children how to cook healthy food and how to make vegetable gardens*" (PRA-2, School A). Photograph 4.13 represents this contribution.



Photograph 4.13: Value of intervention for parents (School A)

The participants from School B also mentioned that the Win-LIFE intervention informed both learners and parents about healthy living, food groups and the importance of starting and maintaining a vegetable garden. A participant from School B summarised this by stating that: *"It teaches learners and family members about healthy living and different food groups and the importance of having a vegetable garden"* (Q-P2, School B). A participant from School C elaborated on the potential positive effect of the intervention, referring to the following: *"It educates learners and parents about healthy lifestyle. It educates parents how to eliminate poverty through education by helping them and giving them the correct way of planting in the yard"* (Q-P2, School C). Other participants from School C similarly mentioned that if all parents could learn and implement the intervention in their homes, it would have a positive effect in the community. My co-researcher captured this view as follows: *"If all parents can learn one thing from this programme and implement it at their homes... imagine the effect we will see here at school and the effect on this poor community"* (CR, 24 November 2015, line 51, School C). In addition to the potential value it holds to eliminate poverty, the participants stated that the intervention could also contribute to preventing diseases. They said: *"To eliminate poverty through education. To avoid different types of diseases"* (PRA-2, School C), as captured in Photograph 4.14.



Photograph 4.14: Elimination of poverty and prevention of diseases (School C)

Finally, the participants from School C contemplated that the intervention had the potential to bring teachers, learners and parents together. According to the participants, the intervention could teach parents to rely on themselves, in turn having a positive effect on the community. My co-researcher captured this in her field notes by stating: *"If this programme was implemented successfully in all the involved/participating primary schools ... it would have brought parents, learners and teachers together ... this would have taught parents to rely on themselves and would actually affected our community in a positive way"* (CR, 24 November 2015, line 52, School C). The participants from School B agreed and related the parents' healthy food consumption behaviour to the well-being of the community, as captured in the following field notes: *"If parents and I can also start to eat healthier ... the community will become healthier"* (CR, 24 November 2015, line 62, School B).

Overall, the teacher-participants seemingly held the view that the parents experienced the intervention as educative, and acquired knowledge from their children. Participants from School C said the following in this regard: *"... the programme was educational to parents-they could acquire knowledge and information through their involvement with their children's homework"* (CR, 24 November 2015, line 47, School C). Several participants referred to parents' feedback. In this regard, a participant from School A, for example, said: *"What I liked about the programme is that learners enjoyed it while they were learning. Some of them worked with their parents who gave me good feedback"* (Q-P4, School A).

Another participant from School B mentioned that some parents had asked her about the intervention programme and the workbooks at church. In addition, one of the participants mentioned that a parent had asked a copy of the workbook because she wanted to share the information with her friends. The focus of the parent's attention is captured in the following field notes: "... parent said she read through some of the information in the Environment Education (EE) books and now knows more about vegetables garden ... parent asked a copy of her own wants to share the information with some of her friends. The teacher gave her the book and the parent was so grateful" (CR, 24 November 2015, line 59, School B).

4.4 THEME 3: CHALLENGES EXPERIENCED DURING IMPLEMENTATION OF THE WIN-LIFE INTERVENTION

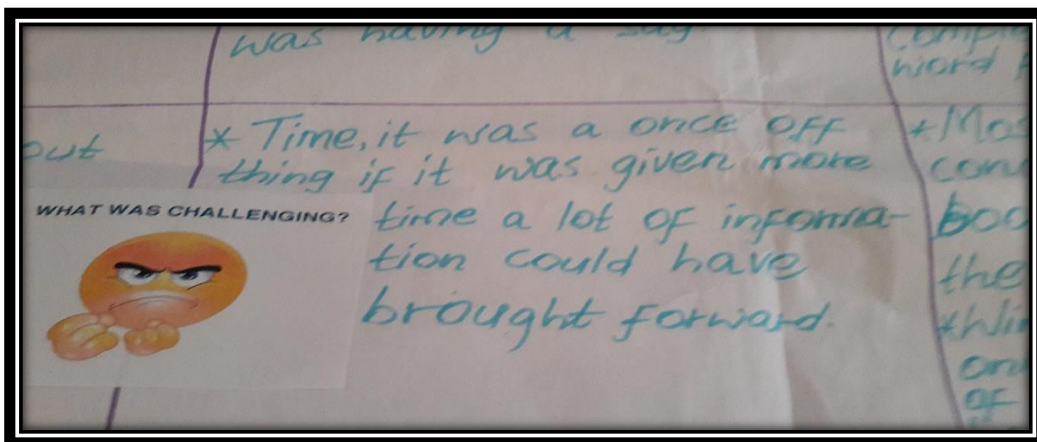
Theme 3 reports on the challenges the teacher-participants experienced during the implementation of the Win-LIFE intervention in the three primary schools in the selected resource-constrained community. Three sub-themes emerged, relating to the lack of sufficient training, time-related challenges and the suitability of the Win-LIFE intervention content. Table 4.3 provides the inclusion and exclusion criteria for Theme 3 and the related sub-themes.

Table 4.3: Inclusion and exclusion criteria of Theme 3

SUB-THEME	INCLUSION CRITERIA	EXCLUSION CRITERIA
Sub-theme 3.1: Lack of ongoing training and support	Data that relate to any challenge experienced during implementation of the Win-LIFE intervention due to limited training and support.	Data referring to time-related challenges or the suitability of the content of the Win-LIFE intervention.
Sub-theme 3.2: Time-related challenges	Data that relate to any challenge experienced during implementation of the Win-LIFE intervention due to time constraints.	Data that refer to challenges experienced due to limited training and support, or the suitability of the Win-LIFE intervention content.
Sub-theme 3.3: Suitability of the content of the Win-LIFE intervention	Data that relate to challenges experienced during implementation of the Win-LIFE intervention in terms of the suitability of the content of the Win-LIFE intervention.	Data that refer to challenges experienced during implementation of the Win-LIFE intervention due to limited training and support, or time-related challenges.

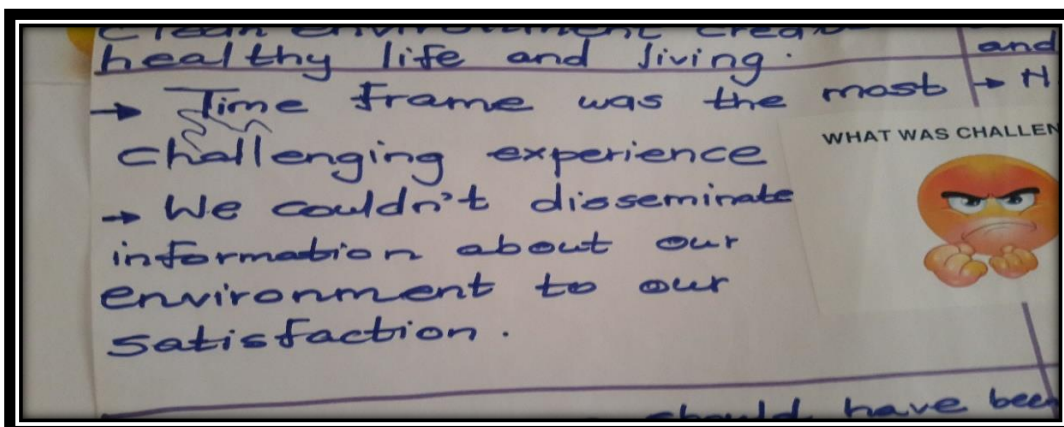
4.4.1 Sub-theme 3.1: Lack of Ongoing Training and Support

The participants indicated a need for continued support and training during the implementation of the intervention. They also reported that the initial training they received was too limited. The participants regarded their participation in only one PRA workshop/training session as insufficient and stated that, if given more time, they could have shared more information with others. In this regard, the participants in School B said: *“Time, it was a once off thing, if it was given more time a lot of information could have been brought forward”* (PRA-1, School B), as captured in Photograph 4.15.



Photograph 4.15: Training perceived as being limited (School B)

These participants furthermore said: *“We couldn’t disseminate information about our environment to our satisfaction”* (PRA-1, School B). Their experience is captured in Photograph 4.16.

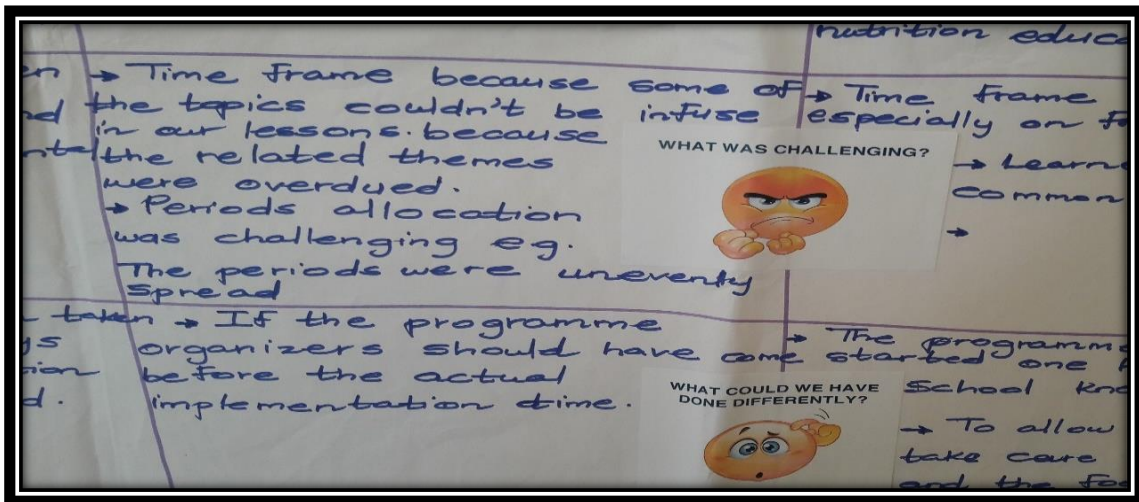


Photograph 4.16: Time for discussion during PRA-based workshop perceived as limited (School B)

The participants apparently required ongoing training to gain better knowledge about the implementation of the Win-LIFE intervention while being involved in the process. A participant from School B indicated the following: *“If workshop could be conducted more often, enough information will be acquired”* (PRA-1, School B). The participants furthermore indicated the view that continued support could have assisted them in ensuring that they did not leave out anything when implementing the intervention. In this regard, a participant from School B said: *“Refresher workshop will assist us to check if we have left/omitted other things on the training. We will be able to review what we were trained on”* (FN, 1 March 2017, School B). A participant from School C added that: *“More workshops or training and also do follow-ups”* (QP5, School C).

4.4.2 Sub-theme 3.2: Time-related Challenges

The participants referred to challenges they experienced due to the time of implementation of the Win-LIFE intervention in their schools. This time-related challenges comprised the specific time of implementation in the academic year as well as the time available for implementation in terms of the selected subjects. In terms of the time of implementation, the participants pointed out that it was difficult to implement the intervention at the stipulated time due to the number of periods allocated to them for the specific subjects, as well as the extent of the stipulated work that had to be covered, based on the national CAPS curriculum. The participants mentioned that by the time they implemented the intervention, the specific content had often already been taught, as confirmed by the following statement: *“Timeframe because some of the topics couldn’t be infused in our lessons because the related themes were overdue. Periods allocated was challenging e.g. the periods were unevenly spread”* (PRA-2, School B). This challenge is also depicted in Photograph 4.17.



Photograph 4.17: Timeframe and period allocation as challenges (School B)

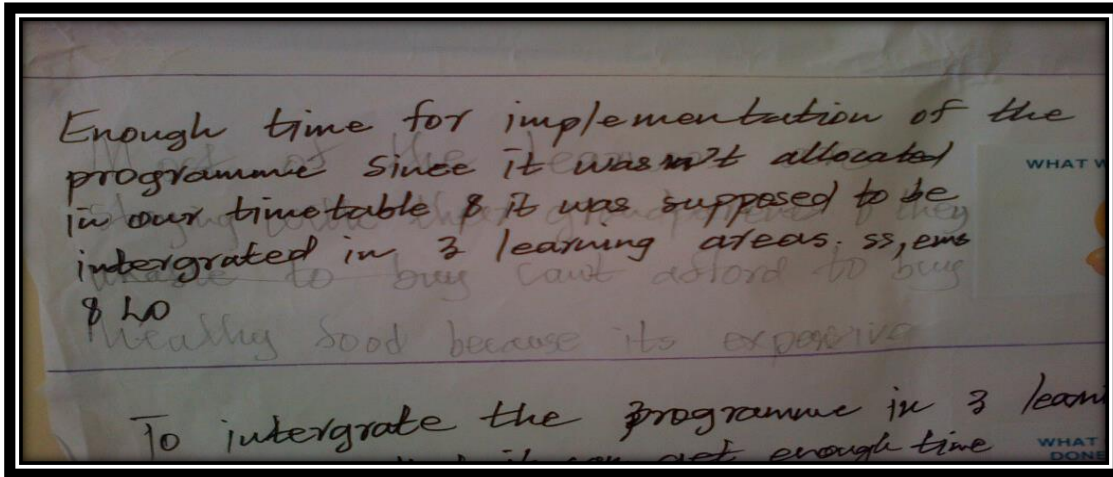
Consequently, the participants experienced a challenge to align the content of the intervention with the themes of the national school curriculum, more specifically in terms of the Life Skills curriculum. A participant from School A indicated as follows: *“The content of the programme did not align with the Life Skills content ...”* (Q-P1, School A). Another participant from School A added that: *“I tried to fit Win-LIFE into the curriculum”* (Q-P4, School A). Participants from School B confirmed this with the following statement: *“Life and living content is taught/fall during the first term. Officials wanted to see ATP taught/followed”* (FN, 1 March 2017, line 7, School B). Closely related, a participant from School C shared her view of: *“Integrating the programme into our daily activities in the classroom was at times challenging as the themes were in different terms but we managed”* (Q-P3, School C).

Participants furthermore apparently experienced the time available to implement the Win-LIFE intervention in the selected subjects as being limited. The participants from School C explained this as follows: *“Periods allocated was challenging e.g. the periods were unevenly spread”* (PRA-2, School C). They added that: *“Enough time for implementation of the programme since it wasn’t allocated in our timetable and it was supposed to be integrated into three learning areas SS⁵, EMS⁶ and LO⁷”* (PRA-2, School C). Photograph 4.18 provides a visual representation of this report.

⁵ Social Science

⁶ Economics and Management Sciences

⁷ Life Orientation



Photograph 4.18: Limited time to implement the intervention (School C)

A participant from School C elaborated by explaining that Life Orientation periods were limited on the timetable and that it was thus difficult to implement the intervention in the time available in class. The participants indicated that they, as a result, used afternoons to implement the intervention in this subject. One participant from School C said: *“The difficult part of the programme was time. Since LO has limited number of periods it was not easy to implement the programme. Mostly we used afternoon to implement because is not integrated in LO”* (Q-P2, School C). Another participant from School C added the following: *“Mostly we used afternoon to implement because is not integrated in LO”* (Q-P3, School C).

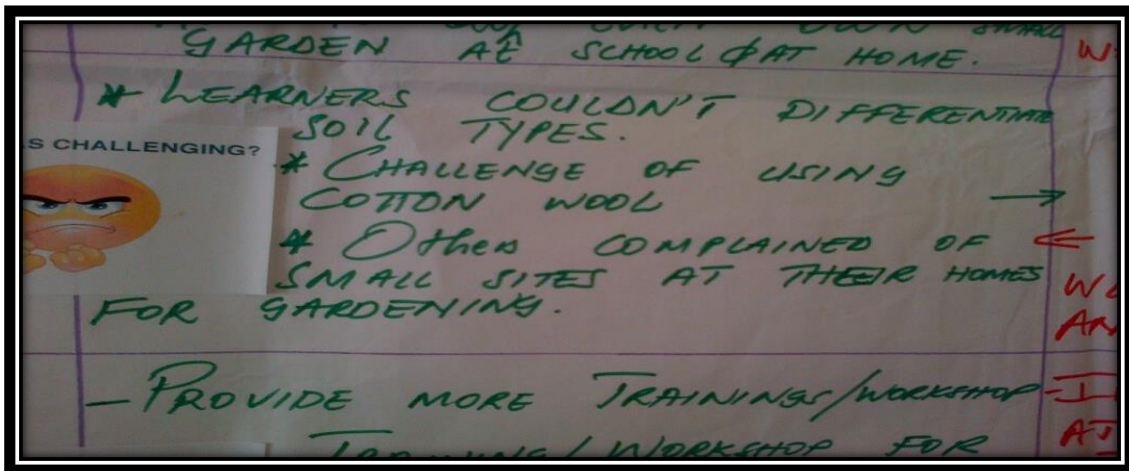
Closely related, some participants reported that they experienced the facilitation of the Win-LIFE intervention during school periods as a challenge, as they had to stop teaching the stipulated curriculum content at that time to focus on the intervention. Thus, according to the participants, the intervention programme took up the time allocated to Life Skills lessons according to the Annual Teaching Plan (ATP), instead of being integrated into the curriculum, as was the intention with the Win-LIFE intervention. A participant from School A explained: *“Sometimes the programme was so difficult to implement it because I was supposed to stop my teaching programme (lesson plan) and accommodate the programme”* (Q-P2, School A).

In summary, the participants reported that it was difficult for them to teach and match the prescribed national curriculum with the Win-LIFE intervention in the time available for teaching. To this end, the participants from School A said: *“As*

educators it was difficult to cover the curriculum and implement the programme” (PRA-2, School A). Another participant added the following: *“I tried to fit Win-LIFE to the curriculum”* (Q-P4 School A). A participant from School B similarly indicated the following: *“Workload, if you concentrate a lot on Win-LIFE books, you are left behind on the curriculum work and you encounter a problem in submission of mark sheets by not complying”* (Q-P2, School B). Consequently, the participants experienced the implementation of the intervention as an additional workload due to time-related challenges, rather than as an enriching activity.

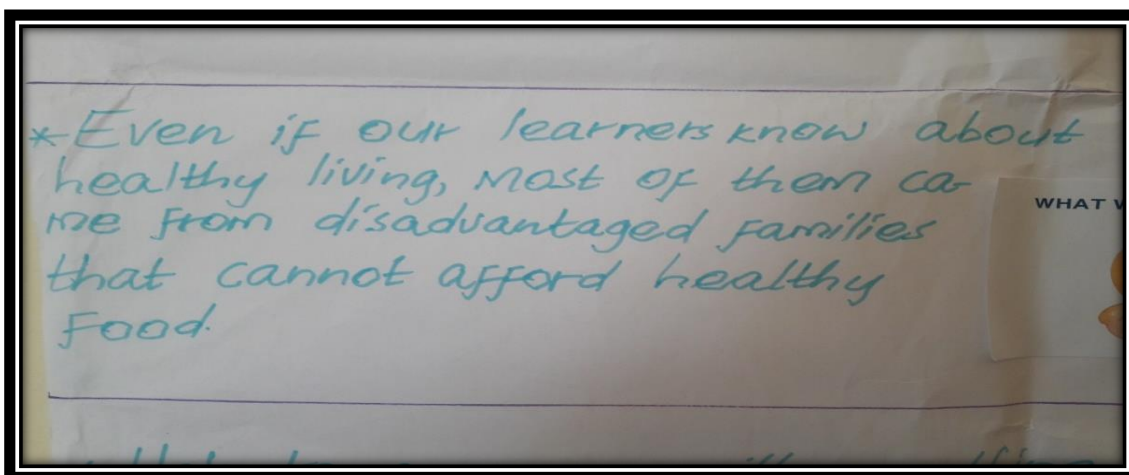
4.4.3 Sub-theme 3.3: Suitability of the content of the Win-LIFE Intervention

Teacher-participants mentioned the suitability of the Win-LIFE intervention content as a concern. The challenges they experienced specifically relate to the level of language used and the activities given to learners, the alignment of the intervention themes with the themes of the national school curriculum, difficulty in assessing the effect of the intervention and limited parental involvement due to levels of literacy. The participants namely indicated that the learners seemingly experienced the language of the intervention (English) as being difficult. They stated that: *“Learners were not able to understand some of the words”* (PRA-2, School A). In this regard, participants in School C reported that the learners experienced a challenge when learning about the different types of soil. They indicated that the learners also had difficulty with activities such as planting seeds using cotton wool, even though they apparently enjoyed the activity. A participant from School C said: *“Learners couldn’t differentiate types of soil. Challenge using cotton wool. Others complained about small sites at their homes for gardening”* (PRA-2, School C). Another participant from School C added the following: *“Learners were finding it difficult to do planting of seeds using cotton wool but they enjoyed it too”* (Q-P5, School C). Photograph 4.19 captures this contribution:



Photograph 4.19: Difficulties that learners experienced during the intervention (School C)

The participants seemingly also found it difficult to determine the effect of the intervention. They explained that even though they educated the learners on a healthy lifestyle, the learners come from disadvantaged backgrounds and may not necessarily be able to access healthy food. The participants from School B said the following in this regard: *“Even if our learners know about healthy living, most of them come from disadvantaged families that cannot afford food”* (PRA-2, School B), as depicted in Photograph 4.20.



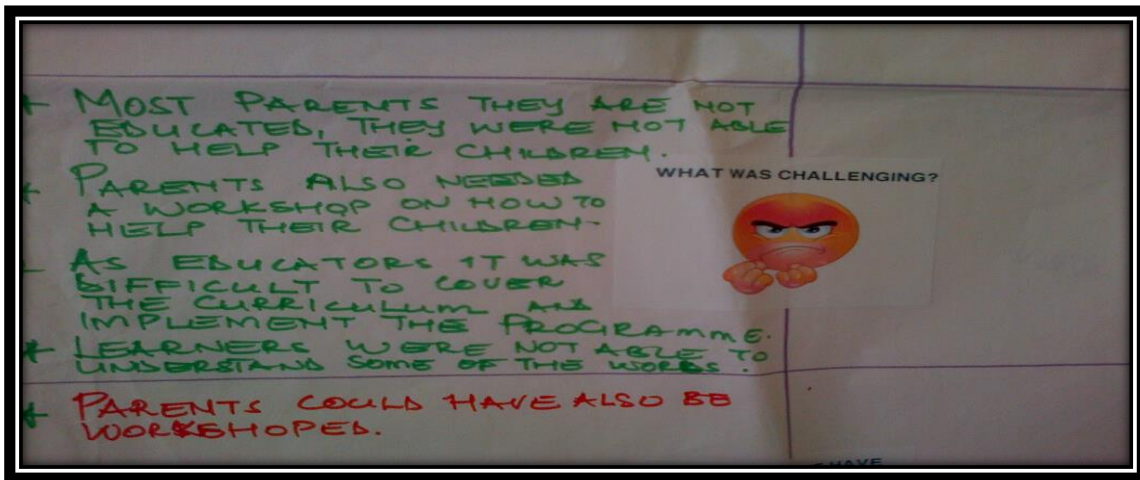
Photograph 4.20: Challenge of healthy lifestyle for learners from disadvantaged families (School B)

A participant from School B later added the following: *“The community is poor so they need food that they can afford”* (FN, 1 March 2017, line 8, School B). The

participants from School C similarly indicated that learners may not be able to access healthy food because it is expensive. They said: *“Can’t buy healthy food it is expensive. Others complained about small sites at their home for gardening”* (PRA-2, School C). In this regard, the participants reported that many learners stay with family members such as grandparents, which can create its own challenges. A participant from School C stated the following: *“Teaching the learners about healthy lifestyle because most of them are staying with their grandparents”* (Q-P3, School C).

Another challenge that the participants experienced related to determining the broader effect of the Win-LIFE intervention entails the fact that they were not able to visit the homes of the learners to enquire whether, or not, parents had learned anything as a result of the intervention. The participants from School B reported that: *“We don’t know whether the learners informed their parents or not since there was no time to visit their homes”* (FN, 1 March 2017, line 9, School B). Similarly, School A participants indicated that they were not able to determine if the learners had transferred any information to their parents, saying that: *“We could not actualise the practical because we could not visit learners’ homes to see if the planting of seeds was really happening”* (Q-P1, School A). The teacher-participants furthermore indicated that due to time constraints, they could not meet with the parents, stating the following: *“Yes we also could not meet the parents as our time was limited ... we also could not do home visits”* (CR, 24 November 2017, line 68, School A).

Where the participants referred to limited parental involvement during the implementation of the Win LIFE intervention, they related this to levels of literacy, noting that some parents did not help their children due to the parents not being educated or literate. The participants from School A, for example, said: *“Most parents are not educated they were not able to help their children”* (PRA-2, School A), as also captured in Photograph 4.21.



Photograph 4.21: Limited parental involvement due to literacy challenge
(School A)

In this regard, a participant from School A stated the following: *“Parents did not do the part meant for them so there were some gaps”* (Q-P1, School A). Closely related, participants from School B indicated that the parents were not able to help their children with their homework because the intervention books were in English. The participants from School B namely said: *“Win-LIFE books are only in English and some of the parents were unable to help their kids at home”* (PRA-2, School B). Another participant from School A mentioned the following: *“The parents also did not support their children especially when they were supposed to help them with the questionnaire at home”* (Q-P3, School A).

Finally, the participants related limited parental involvement to the lack of cooperation with the school in some cases. A participant from School C said the following in this regard: *“Learners were finding it difficult to do planting of seeds using cotton wool but they enjoyed it. They also asked their parents to assist them but there was no co-operation between the school and the parents”* (Q-P5, School C). Another participant added the following: *“Although your intervention (programme) ‘include’ parents my experience was that there was no cooperation between our school and parents ... parents did not cooperate and worked through the parts meant for them ...”* (CR, 24 November 2015, line 67, School C).

4.5 THEME 4: RECOMMENDATIONS FOR FUTURE IMPLEMENTATION

Theme 4 reports on the recommendations that teacher-participants made regarding the future implementation of the Win-LIFE intervention. The four sub-themes relate to recommendations for training and ongoing support, planning for the implementation schedule, extending the Win-LIFE intervention to other subjects and, lastly, involving parents, community members and other stakeholders. Table 4.4 provides the inclusion and exclusion criteria I relied on in identifying these sub-themes.

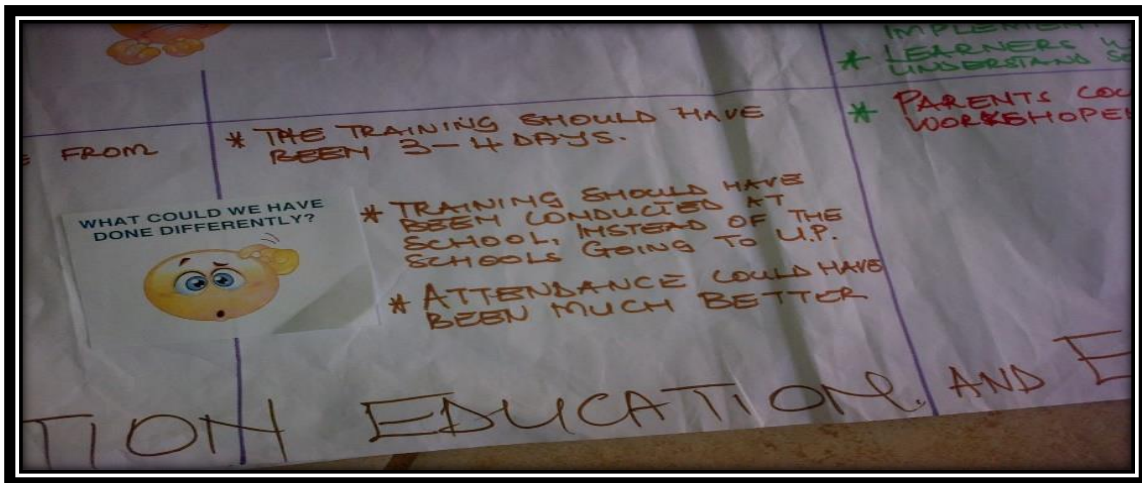
Table 4.4: Inclusion and exclusion criteria of Theme 4

SUB-THEME	INCLUSION CRITERIA	EXCLUSION CRITERIA
Sub-theme 4.1: Recommendations for training	Data related to recommendations that the teacher-participants made regarding training before implementing the Win-LIFE intervention.	Data entailing recommendations that relate to a detailed implementation schedule, extending the Win-LIFE intervention to other subjects, or the involvement of parents, community members and other stakeholders.
Sub-theme 4.2: Planning for implementation schedule	Data referring to recommendations on more detailed planning and a structure for implementing the intervention.	Data that relate to recommendations for training, extending the Win-LIFE intervention to other subjects, or the involvement of parents, community members and other stakeholders.
Sub-theme 4.3: Extending the Win-LIFE intervention to other subjects	Data related to recommendations for extending the Win-LIFE intervention to other subjects.	Data that relate to recommendations for training, planning the implementation schedule, or more strongly involving parents, community members and other stakeholders.

SUB-THEME	INCLUSION CRITERIA	EXCLUSION CRITERIA
Sub-theme 4.4: Involving parents, community members and other stakeholders	Data related to recommendations for better involvement of parents, community members and others stakeholders.	Data that relate to recommendations for training, a detailed implementation schedule or extending the Win-LIFE intervention to other subjects.

4.5.1 Sub-theme 4.1: Recommendations for Training

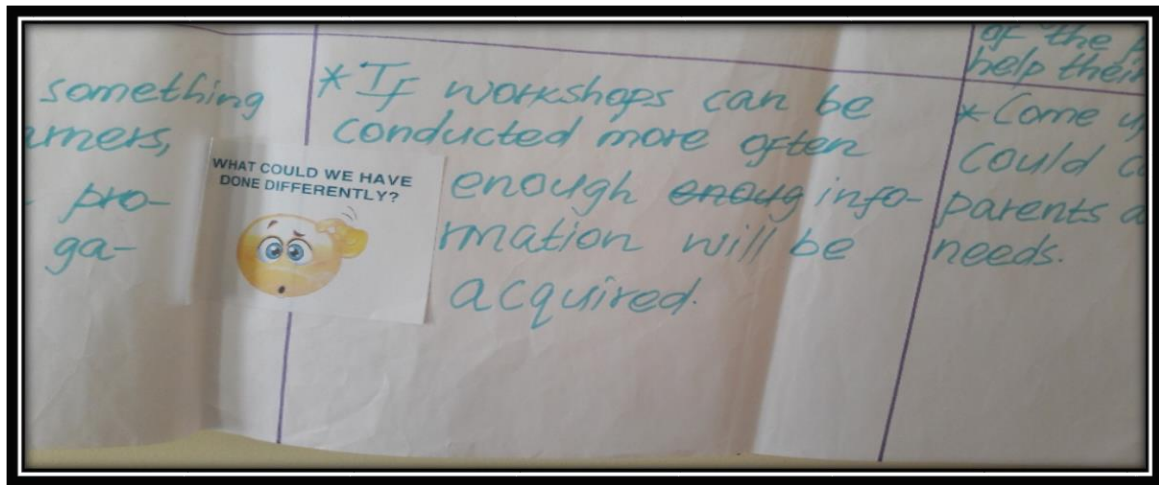
The teacher-participants indicated that they required more than one day's training before implementing the Win-LIFE intervention. They thus reported that the workshop (training) on the implementation of the intervention was too short and that it did not provide enough exposure to the content or teaching methods of the intervention. In addition to their recommendation for more intensive training, they said that such training should take place at the school (rather than at a separate venue) to allow more teachers to attend. At School A, participants namely said: *“The training should have been 3 - 4 days. Training should have been conducted at school not at UP. Attendance could have been much better”* (PRA-2, School A), as captured in Photograph 4.22.



Photograph 4.22: Recommendations for training (School A)

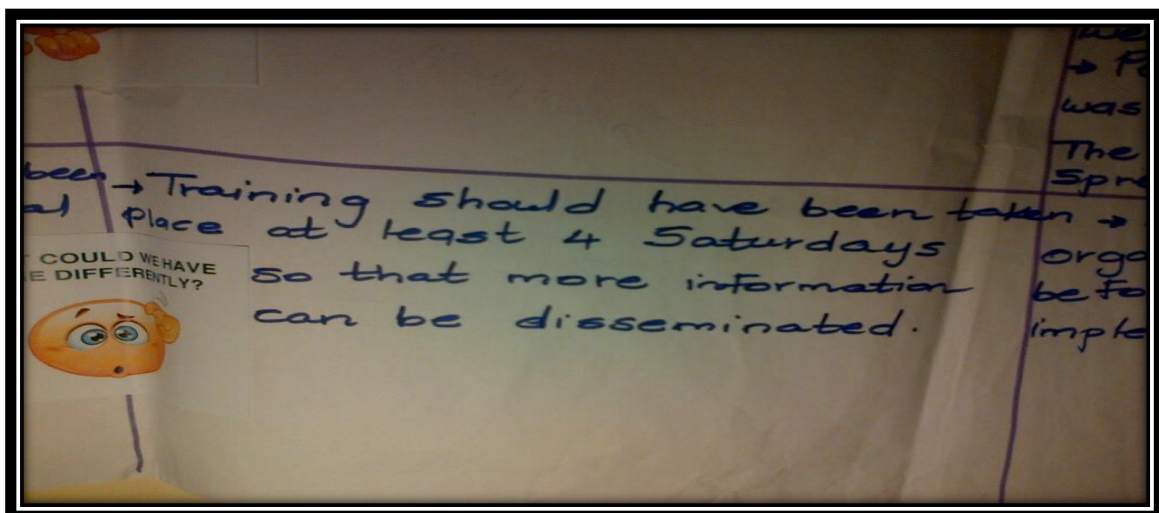
The participants from School B similarly indicated that they required more regular training for them to acquire more information before facilitating the intervention with the learners. The participants stated the following: *“If workshops can be conducted*

more often, enough information will be acquired” (PRA-2, School B), as indicated in Photograph 4.23.



Photograph 4.23: Need for continuous training (School B)

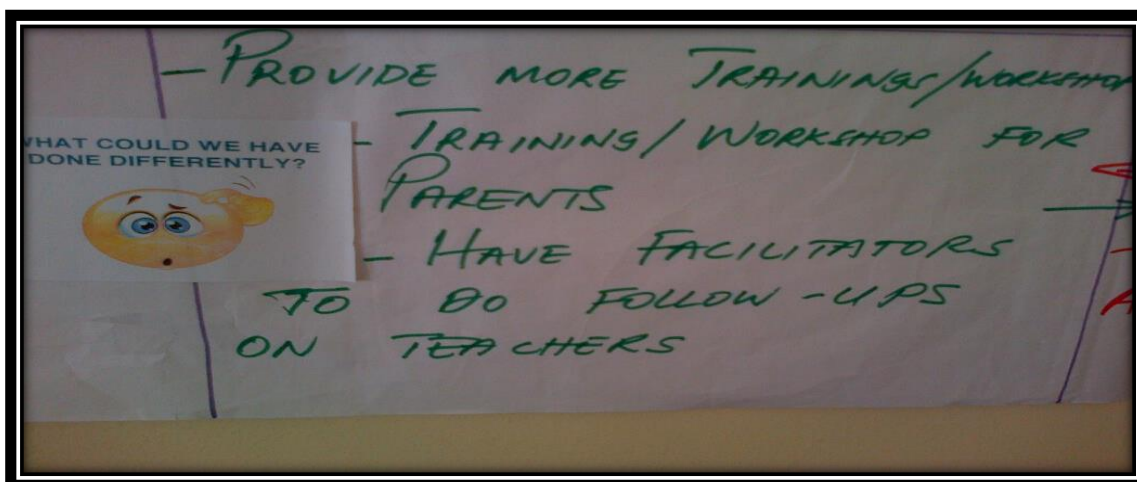
The participants from School B elaborated and shared the view that longer training can enable the facilitators and the participants to share more information. The participants from School B suggested that: “*Training should have taken place at least 4 Saturdays so that more information can be disseminated*” (PRA-2, School B.), as captured in Photograph 4.24.



Photograph 4.24: Recommendations for longer training (School B)

Participants from School C supported this suggestion and mentioned the value of more workshops for both the implementation of the intervention and the facilitators

who monitor the process. A participant from School C said: “*Provide more training workshops. Training for parents. Have facilitators to do follow-ups on teachers*” (PRA-2, School C). Photograph 4.25 provides a visual representation of this recommendation.



Photograph 4.25: Providing more training and regularly following up on teachers (School C)

Another participant emphasised that the facilitation of the intervention required ongoing support or workshops to assist the teachers in implementing the intervention. A participant from School C said: “*If the programme can get the support or workshop to help educators to teach it*” (Q-P4, School C). A fellow teachers’ contribution supports this, who stated: “*More workshops or training and also do follow-ups*” (Q-P5, School C).

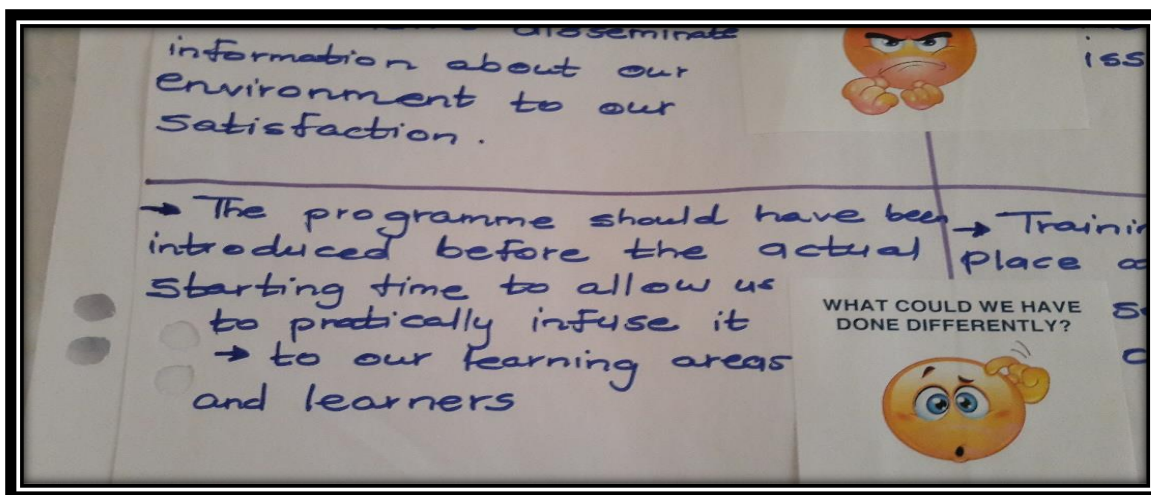
In summary, in addition to more workshops and training, the participants seemingly required ongoing support through, for example, regular visits from University representatives. They explained this need as follows: “*... UP visited regularly, but some of the teachers said that they would prefer more workshops and training-this would serve as a form of support to them*” (CR, 24 November 2015, line 43, School C). The teacher-participants furthermore indicated that a workshop after the initial training could have added value and allowed them to review the discussions and content that were covered during the initial training workshop. Participants namely said: “*Refresher workshop will assist us to check if we have left or omitted other*

things on the training. We will be able to review what we were trained on” (FN, 1 March 2017, line 17, School C).

4.5.2 Sub-theme 4.2: Planning for Implementation Schedule

The participants recommended a more structured plan for the implementation of the intervention if it was to be repeated in future. They reported that the time at which the intervention was implemented in the schools could have been better if first discussed with Department of Education district officials. The participants from School A said the following in this regard: “*They should have asked the time from the District*” (PRA-2, School A).

The participants more specifically suggested a closer alignment between the intervention programme and the subjects or learning areas involved. Participants from School B namely said: “*The programme should have been introduced before the actual starting time to allow us to practically infuse it into our learning areas*” (PRA-2, School B). As captured in Photograph 4.26, the participants therefore seemingly required more thorough planning and a thorough introduction to the programme prior to their implementation of the intervention.



Photograph 4.26: Recommendation to thoroughly introduce the programme before implementation (School B)

In this regard, the participants also indicated that the programme organisers could visit schools more often before the actual implementation of an intervention. They

said: *“If the programme organisers should have come before the actual implementation time”* (PRA-2, School B).

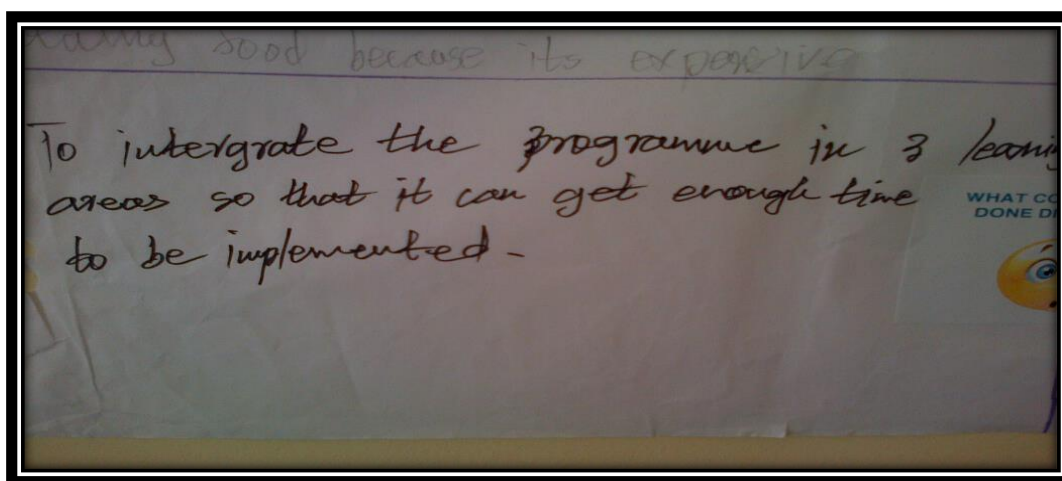
Regarding the preferred time of implementation, participants believed the intervention programme would fit in best at the beginning of a school year, to align with the Life Skills curriculum specifically, as well as for teachers to be able to integrate the intervention topics more easily into the themes covered in the national school curriculum during that period. The participants from School C said: *“Introduce/invite us at the beginning of the year (Term 1)”* (PRA-2, School C). In support, a participant from School A confirmed this idea as follows: *“Start the programme at the beginning of the year. Align the programme so that it fits correctly in Life Skills”* (Q-P1, School A), and later added: *“Align the programme so that it fits correctly in Life Skills”* (Q-P1, School A).

Another participant from School C similarly recommended the following: *“Start the programme in January and properly integrate it into the themes”* (Q-P1, School C). During the PRA-based discussions, my co-researcher recorded the following in this regard: *“Others indicated time as a challenge and suggested that the programme should actually start at the beginning of the year”* (CR, 24 November 2015, line 44, School C).

4.5.3 Sub-theme 4.3: Extending the Win-LIFE Intervention to other Subjects

The participants apparently valued the Win-LIFE intervention and recommended that it be extended to other subjects such as Economic and Management Sciences (EMS) and Social Science (SS). To this end, a participant from School C said: *“Let the programme integrate in some learning areas like SS, EMS so that it can get enough time”* (Q-P2, School C). The participants explained that a subject such as EMS could potentially assist learners in understanding profit and loss when learning about vegetable gardens. In this regard, the participants from School B said: *“To be introduced to other grades. The project to be extended to EMS subject. In EMS they will learn profit and loss as they buy seeds and sell vegetables. It can align well with Geography on the types of soil”* (FN, 1 March 2017, line 12, School B).

In support, participants from School C also indicated that the intervention should be extended to other learning areas, as noted by my co-researcher: *“The programme also needs to be incorporated in other learning areas”* (CR, 24 November 2015, line 45, School C). The participants from School C furthermore reiterated that : *“To integrate the programme into three learning areas so that it can get enough time to be implemented”* (PRA-2, School C). Photograph 4.27 provides a visual representation of the relevant PRA-poster indicating this view.



Photograph 4.27: Recommendation for extension of the intervention to other subjects (School C)

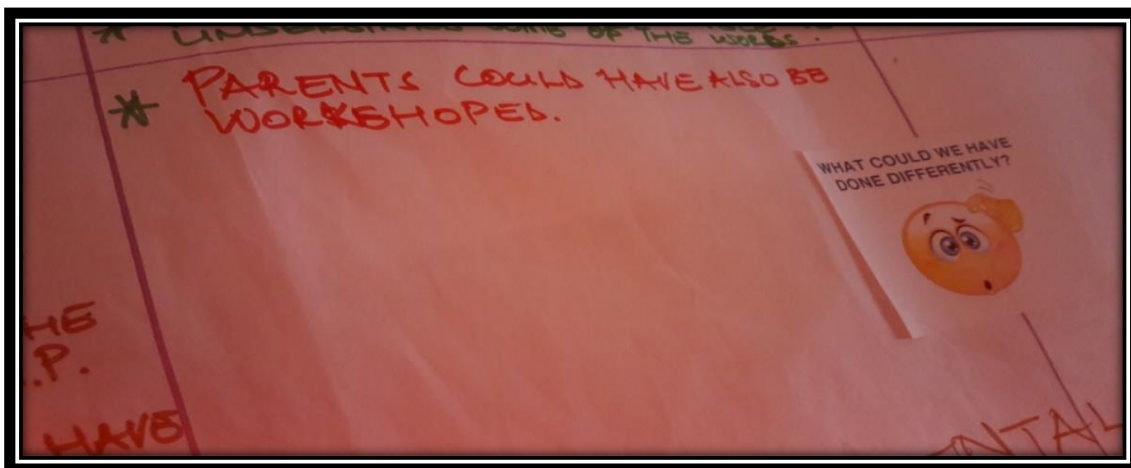
In addition, the participants recommended that the Win-LIFE intervention should include assessments during the implementation phase. A participant from School A said the following in this regard: *“Maybe at the end to give out test, assessment to the learners”* (Q-P3, School A). Finally, teacher-participants suggested that the research team should visit the schools to facilitate practical activities with the learners, providing examples of implementation options. A participant from School B namely suggested the following: *“If time allowed you could have come to the classroom to do it practically with my learners especially Grade 7”* (Q-P3, School B).

4.5.4 Sub-theme 4.4: Involving Parents, Community Members and other Stakeholders

The teacher-participants recommended more active involvement of the parents and other community stakeholders as imperative for the successful implementation of the intervention. They indicated that the parents and grandparents could also benefit

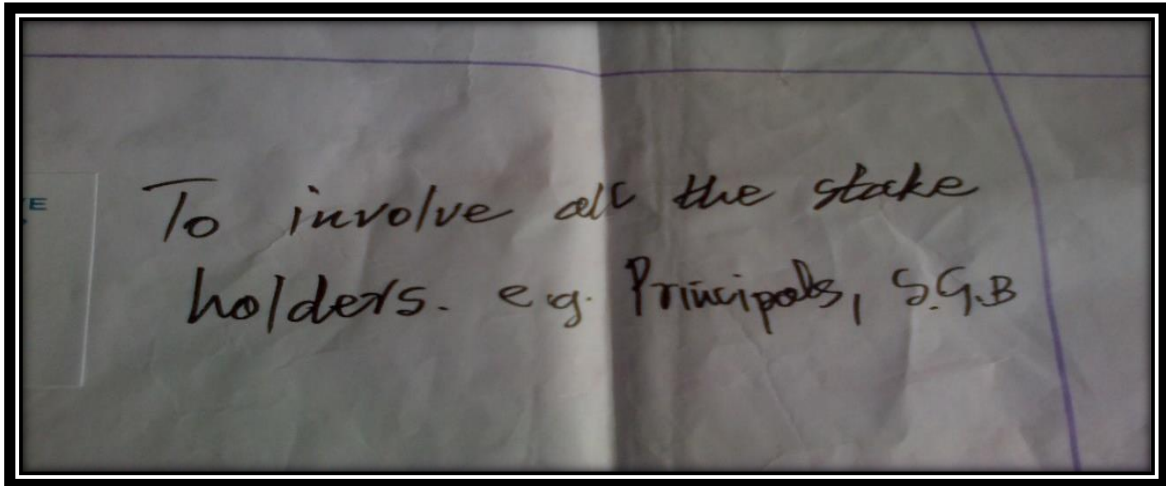
from a workshop on the intervention, seeing that this could assist parents and caregivers in supporting the children with their homework activities. The participants from School A, for example, indicated that: *“Parents needed a workshop on how to help their children”* (PRA-2, School A). Participants from School C added: *“Provide more trainings/workshops for parents”* (PRA-2, School C).

During member checking, the participants from School C confirmed that grandparents seemed keen to assist the children with homework activities, but that they required guidance on what to do and how to go about providing such support. The participants from School C namely said: *“Grandparents are keen in helping their children hence workshop for the parents is necessary”* (FN, 1 March 2017, School C). Photograph 4.28 confirms this recommendation made by the teacher-participants.



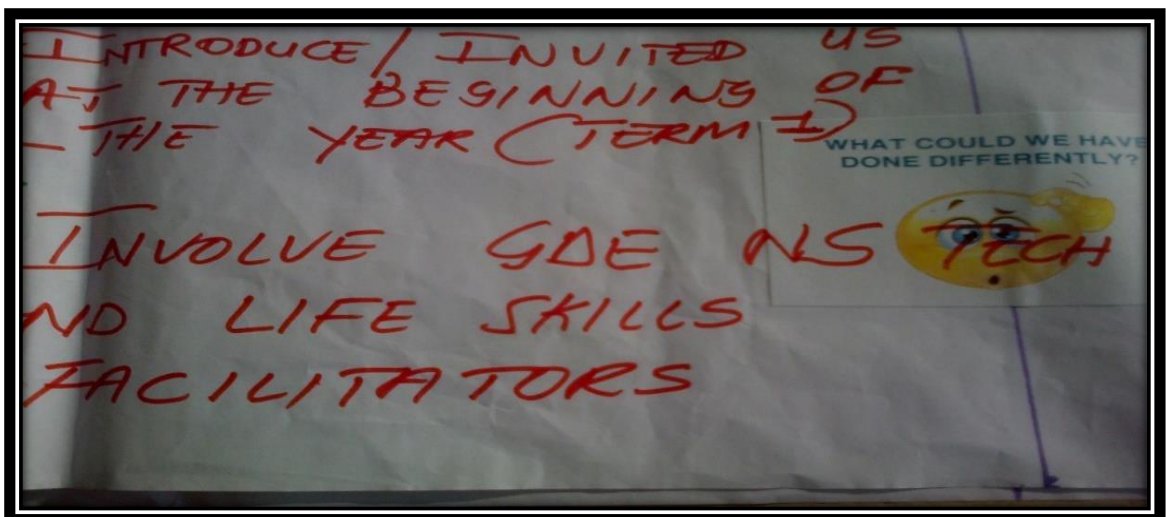
Photograph 4.28: Recommendation to facilitate workshops with parents
(School C)

Another recommendation that the teacher-participants made relates to the involvement of other stakeholders such as other educators, principals and School Governing Body (SGB) members during workshops on the intervention. In this regard, a participant from School C said: *“To workshop all educators”* (Q-P3, School C), which is supported by the following contribution: *“To involve all the stakeholders e.g. principals, (SGB)”* (PRA-2, School C). This recommendation is captured in Photograph 4.29.



Photograph 4.29: Recommendation to involve other stakeholders (School C)

The participants furthermore suggested that the intervention workshops should include district officials as facilitators, to enable them to monitor the teachers during the implementation of the Win-LIFE intervention. The participants from School C stated: *“Involve GDE NSTECH and Life Skills facilitators”* (PRA-2, School C), and later added: *“Have facilitators to do follow-ups on teachers”* (PRA-2, School C). Photograph 4.30 captures this recommendation.



Photograph 4.30: Recommendation to involve District officials from the education department (School C)

Finally, the teacher-participants shared the view that the intervention could be community-based rather than school-based. They reiterated that the community faces poverty and has to gain knowledge about food that they can afford. The

participants highlighted the potential value of the intervention to the community if they were to learn about healthy food and nutrition. They referred to several strategies that could potentially assist them. In this regard, the participants from School B, for example, said: *“The community is poor so they need food that they can afford. If it was a community project or imbizo not school-based it would have benefitted the parents in the following ways: The community would have learned about healthy nutrition. Using own resources that they have such as tyres to plant vegetables. Planting their own vegetable garden and putting food on the table”* (FN, 1 March, 2017, line 14, School B).

4.6 CONCLUSION

In this chapter, I reported on the results I obtained in terms of the teacher-participants' perceptions of the Win-LIFE intervention. I discussed the four themes that emerged during thematic analysis of the data. These relate to the value that teachers gained by being involved as research partners in the PRA-based process, the teachers' perceived value of the Win-LIFE intervention for others, the challenges they experienced during implementation of the Win-LIFE intervention, and recommendations they made for the future implementation of the intervention.

In Chapter 5, I firstly present the results of the parent-participants in terms of their experiences and views on the Win-LIFE intervention. Secondly I discuss the results pertaining to the learner-participants' experiences of the Win-LIFE intervention, which students Bentley (2016) and De Vos (2017) explored and reported on for their master's studies.

CHAPTER 5

RESULTS ON PARENTS' AND LEARNERS' EXPERIENCES AND PERCEPTIONS

5.1 INTRODUCTION

In Chapter 4 I reported the results I obtained on the teacher-participants' views and experiences of the implementation of the Win-LIFE intervention in the three selected primary schools. In this chapter, I present the results concerning the parent-participants' and learner-participants' perceptions. I namely report on the parents' experiences and views in terms of the value and potential application of the Win-LIFE intervention. In addition, I report on the learners' experiences of the intervention based on my synthesis of two completed M Ed⁸ studies.

5.2 RESULTS ON PARENT-PARTICIPANTS' EXPERIENCES AND PERCEPTIONS

As an introduction to this section, Figure 5.1 provides an overview of the three identified themes and related sub-themes in terms of the parent-participants' experiences and perceptions of the Win-LIFE intervention.

⁸ Bentley, K. (2016). The experiences of Grade 5 learners of an enriched Life Skills curriculum; and De Vos, M. (2017). The experiences of Grade 5 learners of an enriched Natural Sciences and Technology curriculum.

PARENTS' EXPERIENCES AND PERCEPTIONS OF THE WIN-LIFE INTERVENTION

<p>THEME 1 Gaining knowledge about healthy food practices because of the Win-LIFE intervention</p>	<p>Sub-theme 1.1: Food choice Sub-theme 1.2: Food production Sub-theme 1.3: Food preparation Sub-theme 1.4: Food consumption</p>
<p>THEME 2 Applying newly gained knowledge</p>	<p>Sub-theme 2.1: Purchasing different types of food Sub-theme 2.2: Starting vegetable gardens to produce fruits and vegetables Sub-theme 2.3: Preparing and storing food in a hygienic and healthy way Sub-theme 2.4: Applying healthy eating guidelines</p>
<p>THEME 3 Requiring additional knowledge and guidelines</p>	<p>Sub-theme 3.1: Need for more information about types and functions of food that is beneficial to health Sub-theme 3.2: Need for additional guidance on vegetable gardens Sub-theme 3.3: Need to obtain and understand guidelines for healthy food preparation and storage</p>

Figure 5.1: Overview of parents' experiences and perceptions of the Win-LIFE intervention

5.2.1 Theme 1: Gaining Knowledge about Healthy Food Practices because of the Win-Life Intervention

This theme captures the knowledge and insight that the parents (as reported by them) gained because of the Win-LIFE intervention regarding healthy food choices, food production, food preparation and food consumption patterns. Table 5.1 provides an overview of the sub-themes of Theme 1 in terms of the inclusion and exclusion criteria I relied on.

Table 5.1: Inclusion and exclusion criteria of Theme 1

SUB-THEME	INCLUSION CRITERIA	EXCLUSION CRITERIA
Sub-theme 1.1: Food choice	Data that refer to new knowledge that the parent-participants gained about healthy food choice because of the Win-LIFE intervention, with specific reference to types of healthy/nutritious food and the value of healthy food.	Data related to knowledge gained about healthy food practices because of the Win-LIFE intervention in terms of food production, food preparation and food consumption.
Sub-theme 1.2: Food production	Data related to knowledge gained about healthy food production because of the Win-LIFE intervention, with reference to the preparation or planting of vegetables and nourishing plants for healthy growth.	Data referring to knowledge gained about healthy food practices in terms of food choice, food preparation and food consumption.
Sub-theme 1.3: Food preparation	Data that concern knowledge gained about healthy food preparation because of the Win-LIFE intervention, with reference to hygienic/cleanliness of food handling and cooking.	Data that relate to knowledge gained about healthy food practices in terms of food choice, food production and food consumption.
Sub-theme 1.4: Food consumption	Data referring to knowledge gained about healthy food consumption because of the Win-LIFE intervention, with reference to healthy eating/balanced meals and the benefits of healthy eating.	Data related to knowledge that the parents gained about healthy food choices, food production and food preparation practices.

5.2.1.1 Sub-theme 1.1: Food choice

This sub-theme reports on the knowledge and insight that the parents reportedly gained in terms of healthy food choices that can, in turn, promote healthy living. The

parent-participants apparently gained knowledge about the types of healthy or nutritious food, as well as the benefits of healthy food. In terms of the knowledge they allegedly gained about healthy food choices, the parent-participants in Group D reported that they gained knowledge about how to choose suitable food when buying at the store. They said: “... *know what to buy when going to the store because there are a lot of things that we buy*” and also: “*we learned to buy healthy food, vegetables and fruits*” (FN⁹, 25 November 2015, line 33).

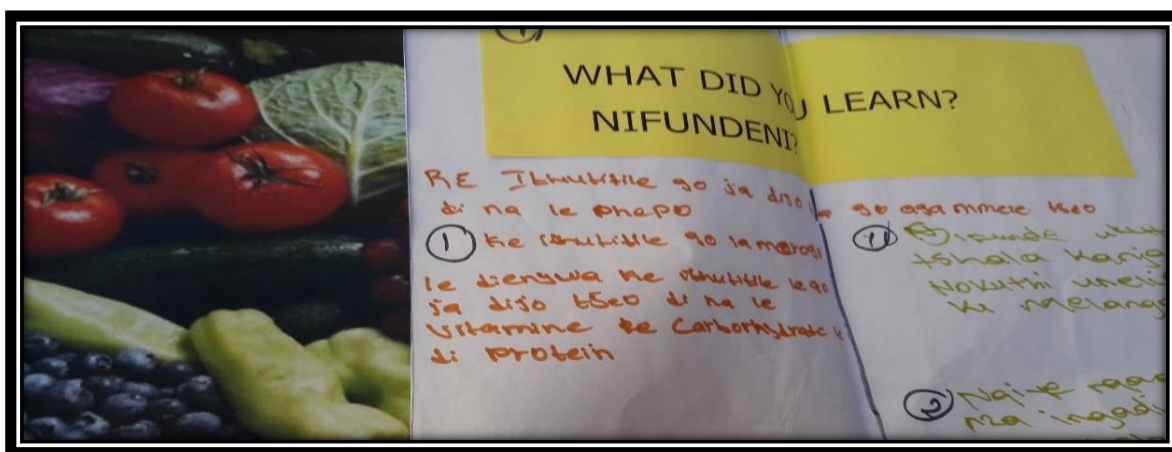
The participants specifically emphasised the importance of buying fruits and vegetables, referring to “... *cabbage, green pepper, onion and tomatoes*” (PRA-3, School B, Group D), and declared that the following: “*We learned that the food we eat should include more vegetables rather than eating a lot of porridge (pap)*” (PRA-3, School B, Group A). I noted this contribution in my reflective field notes in the following way: “... *participants indicated that they learned about eating different types of food. They furthermore mentioned that the plate must be colourful, indicating food like starch, meat, and vegetables not to eat the same type of food daily*” (RF, 25 November 2015, line 28). The participants in Group E similarly reported their increased knowledge about buying healthy food by saying: “*We learned to buy healthy food, vegetables and fruits*” (PRA-3, School B, Group E).

Parent-participants’ apparent increased insight into the importance of purchasing fruits and vegetables seemingly related to their realisation of the value of such choices to their health and well-being. The participants in Group F, for example, mentioned the importance of fruits such as apples and oranges, as well as vegetables such as carrots, in terms of nutrients and the value to healthy functioning. They said: “*Apples are important because they have vitamin C like oranges that are healthy for the body. Carrots are healthy for the eyes and we may also make juice out of them*” (PRA-3, School B, Group F). The participants also referred to the importance of vegetables for children’s growth due to the nutrients they contain, reporting as follows: “*Vegetables are important in the growth of children because they have nutrients and vegetables like spinach, cabbage, and*

⁹ Henceforth the following abbreviations apply; PRA-based workshop conducted at School B on 25 November 2015; = PRA-3; Reflective field notes = RF

lettuce” (PRA-3, School B, Group F). The participants in Group E added that: “We learned that vegetables are important and healthy” (PRA-3, School group E).

Participants therefore apparently gained knowledge about healthy food and related nutrients that may benefit healthy functioning as a result of the Win-LIFE intervention. In addition to the importance of fruits and vegetables, the participants in Group B indicated that they learned about herbs and the importance of the various nutrients contained in the different food groups. They said: “We learned about nutritious food ... learned about herbs and fruits that have vitamins, carbohydrates and proteins. I have learned about different types of food. We have learned about nutrients that we get from food like proteins” (PRA-3, School B, Group B). This contribution is also captured in the following reflective field notes: “Participants seemed to have gained insight that food contains nutrients such as proteins, carbohydrates, vitamins they get from different types of food” (RF, 25 November 2015, line 22), and is furthermore evident from the notes in Photograph 5.1,¹⁰ taken from the PRA-based activity on the knowledge that parents gained following the Win-LIFE intervention (captured in Sepedi).



Photograph 5.1: Knowledge gained about nutritious food (Group B)

As already indicated, the participants seemingly related healthy food choices to the benefits of healthy functioning. The participants in Group C, for example, reported on the importance of nutritious food for health, immunity and school performance.

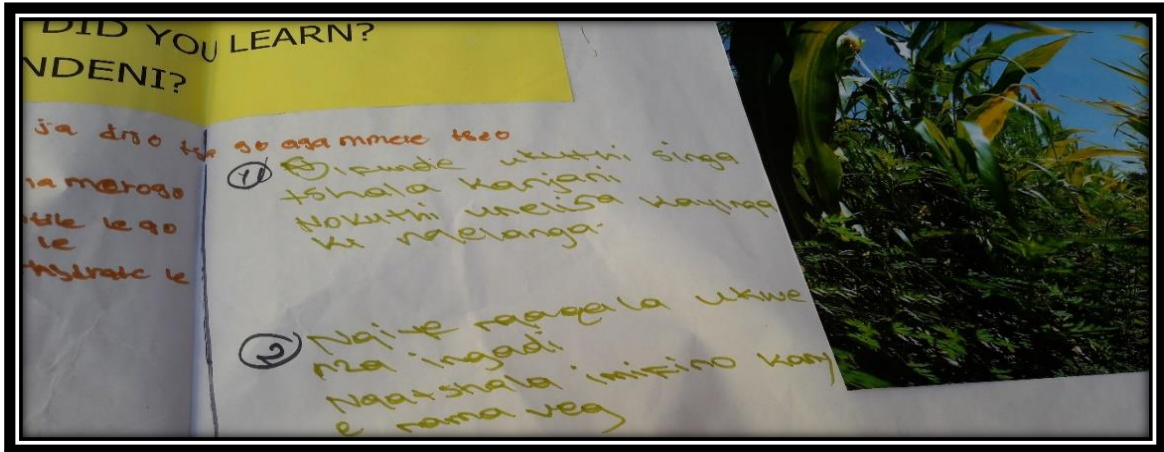
¹⁰ Translated to: “We learned about nutritious food. I have learned about herbs and fruits that have vitamins, carbohydrates and proteins”.

They namely said: “... *it is important to choose nutritious food that builds the body in order for the immune system to fight diseases and to learn at school*” (PRA-3, School B, Group C). This contribution is once again also noted in the following reflective field notes: “*Participants indicated the importance of eating healthy food as they realised that healthy food strengthens their immune system and also helps the brain so that learners can learn*” (RF, 25 November 2015, line 29). As a result, the parent-participants allegedly also gained insight into healthy food choices for their children. The participants in Group F summarised the benefit of their newly gained knowledge about promoting healthy food to their children by saying: “*We have learned that we should not give children junk food like a quarter (bread and achar). We have learned that we should give children healthy food that help them to grow. We have learned about nutrients we get from food like proteins*” (FN, 25 November 2015, line 64).

5.2.1.2 Sub-theme 1.2: Food production

This sub-theme concerns the knowledge that parents seemingly gained about food production, following their children’s participation in the Win-LIFE intervention. The participants indicated that they gained knowledge and related skills on preparing and starting vegetable gardens and nourishing plants to ensure healthy growth. When reporting on this outcome of their children’s participation in the Win-LIFE intervention, a participant in Group A explained their increased knowledge as follows: “*To prepare my own garden at home*” (PRA-3, School B, Group A). In support, a participant in Group B indicated that: “*We learned on how to plant and how many times to water*” (PRA-3, School B, Group B). In confirmation, Photograph 5.2¹¹ furthermore captures participants’ reports in this regard (in isi Zulu as mother-tongue).

¹¹ Translated to: “We learned how to plant and how many times to water”.

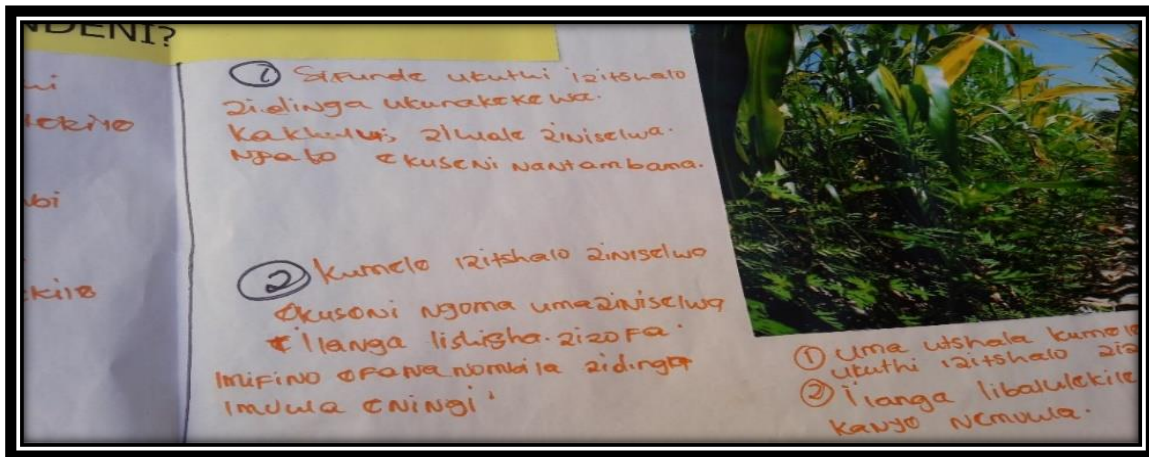


Photograph 5.2: Planting and watering (Group B)

The participants in Group D similarly reported that they learned how to plant vegetables and said: *“I have learned to plant vegetables, potatoes and onions”* (PRA-3, School B, Group D). Participants furthermore indicated that they gained knowledge about soil preparation. During a PRA-based activity, the participants in Group B explained this, as captured in my field notes: *“Before planting, the soil must be right-(fertile). Plants should be spaced in between so that they can get enough air. How to plant different vegetables, like beetroot, spinach etc.”* (FN, 25 November 2015, line 50), and: *“Participants indicated their increased knowledge on planting on fertile soil as they mentioned how to space plants to ensure that they grow well namely vegetables”* (RF, November 2015, line 19).

In addition, several participants referred to the knowledge they gained about maintaining and looking after their vegetable gardens. The participants in Group F, for example, said: *“We have learned that plants need to be cared for and to be watered in the morning and afternoon. Plants should be watered in the morning, because when the sun is too hot they will die. Crops like mealies need a lot of rain water”* (PRA-3, School B, Group F). This contribution is also captured in Photograph 5.3¹².

¹² Translated to: *“We learned how to plant and how many times to water per day. I started to prepare a garden and planted vegetables”*.



Photograph 5.3: Nourishing of plants (Group F)

Closely related, the participants in Group E reported that they learned that: “... *plants need the sun and water*” (PRA-3, School B, Group E). In support and further elaboration, the participants in Group C mentioned: “*Not to use too much water when watering and to use rain water*” (PRA-3, School B, Group C).

Hence, the participants seemingly gained new knowledge about the basic requirements for gardening, as well as which factors to consider and attend to when starting and maintaining a vegetable garden. To this end, the participants in Group B reported that they learned about “... *different crops and how to nourish them*” (PRA-3, School B, Group B). When referring to the basic requirements for a vegetable garden, the participants in Group F reported the following: “*The sun, water and rain are important in the growth of the plants*” (PRA-3, School B, Group F). Participants furthermore apparently realised the importance of fertile soil as a basic requirement, as captured in the following field notes: “*To fertilise the soil by making compost is important in the growing of plants*” (FN, 25 November 2015, line 48).

5.2.1.3 Sub-theme 1.3: Food preparation

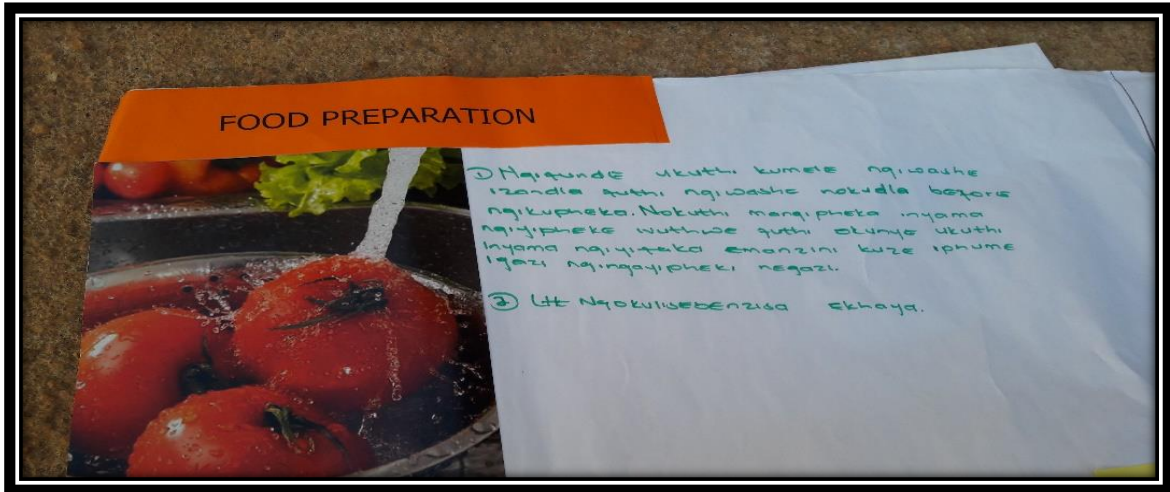
In terms of food preparation, the participants seemingly gained insight into the importance of hygiene and cleanliness when handling food and/or while cooking. In addition, the participants gained knowledge about preparing food in a healthy way. Almost all the participant groups explained the importance of rinsing food and washing their hands prior to preparing meals. A few examples of contributions in this regard include the following:

- “All cooked food needs to be rinsed first. Again rinse the hands before touching the food” (PRA-3, School B, Group A).
- “We learned that we begin by rinsing hands. We also learned that we rinse the food that we are going to cook” (PRA-3, School B, Group E).
- “We should always clean our hands before handling food and when we cook” (PRA-3, School B, Group F).
- “We learned that the rinsing of hands is vitally important in preventing germs” (FN, 25 November 2015, line 52).

Parent-participants furthermore reported that they also learned to rinse their hands before eating, in addition to rinsing their hands when cooking. This hygiene-related food preparation behaviour that the participants mentioned is also captured in my reflective notes, as follows: “*Knowledge gained concerning hygiene and cleanliness of hands during handling of food and cooking was shared by most of the groups*” (FN, November 2015, line 53). The participants in Group C similarly said: “*We learned about rinsing the hands before eating*” (PRA-3, School B, Group D), and Group B confirmed this as follows: “*Before we cook we rinse our hands and food*” (PRA-3, School B, Group B).

In addition to repeated reference to hygiene and cleanliness when working with food, the parent-participants indicated acquired knowledge about healthy food preparation practices. A participant in Group B, for example, said: “*I have learned to cook different types of food like starchy food, herbs and to drink milk daily, clean water and fruits*” (PRA-3, School B, Group B). The participants furthermore mentioned that they had gained new knowledge about the following: “*... to reduce fat. We also learned to reduce salt when cooking food*” (PRA-3, School B, Group B). In support, a participant in Group C said that they “*... have learned to rinse hands and food before cooking. Again so that when cooking meat ... to rinse the blood then to cook it well*” (PRA-3, School B, Group C). Photograph 5.4¹³ provides visual evidence of the parent-participants newly apparently gained knowledge.

¹³ Translated to: “I have learned that I need to rinse hands, before touching food and that when I cook meat I need to rinse the blood in order to cook it well”.



Photograph 5.4: Healthy food preparation (Group C)

Closely related, the participants in Group F reported that they realised the following: *“We need to cook different types of food. We have learned not to use a lot of fat”* (PRA-3, School B, Group F). I captured this contribution in my reflective field notes, stating that *“... one participant laughed at her previous cooking method saying that she used to fry eggs in deep oil with onions whereby she even waved her hands to show the amount of oil she used before”* (RF, 25 November 2015, line 26). In support of this contribution, the participants in Group B reported how they gained new knowledge about healthy cooking, as captured in the following field notes: *“We learned not to use too much fat or salt when cooking or to overcook food in order to preserve food nutrients”* (FN, 25 November 2015, lines 77).

5.2.1.4 Sub-theme 1.4: Food consumption

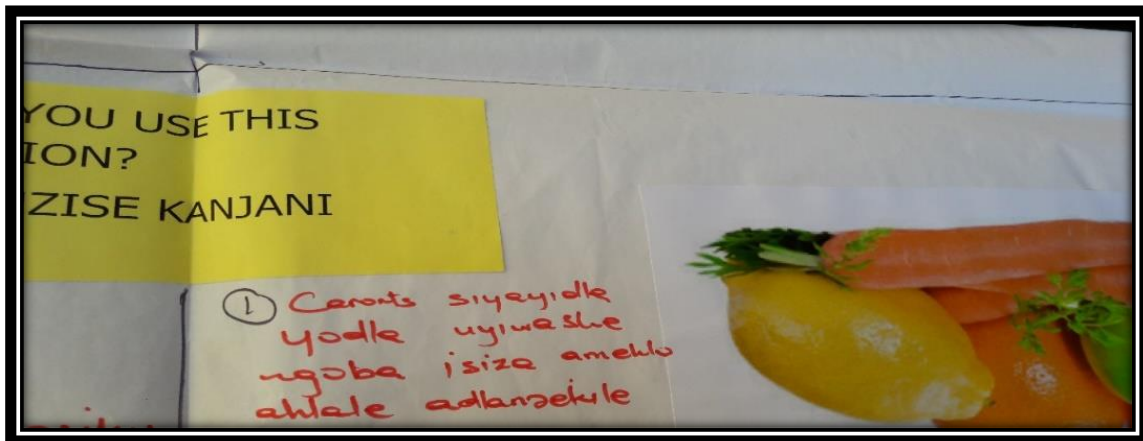
The parent-participants apparently gained knowledge about the benefits of healthy eating and balanced meals after their children’s participation in the Win-LIFE intervention. The participants in Group A, for example, referred as follows to their newly gained knowledge about the consumption of different food types: *“We have learned that other types of food can be eaten raw”* (PRA-3, School B, Group A). The participants in Group F referred to suitable choices and the value of various foods in more detail. They explained that: *“Apples are healthy for the body because they contain vitamin C like the oranges. Carrots are healthy for the eyes and we can also make juice with them and fruits. We are not supposed to eat too much starchy food. When we cook we don’t need to use a lot of fat. Again to use fat like vegetable fat or margarine that has little fat”* (PRA-3, School B, Group F). Thus, the participants

reportedly gained knowledge about the value of the various nutrients for the body, as well as the benefits of avoiding certain foods and reducing fat when cooking.

The participants in Group B elaborated that they gained knowledge about the preferred foods to consume, stating the following: *“We need to eat fruits, to drink more water and juice. To rinse fruits before eating them”* (PRA-3, School B, Group B). The participants in Group B continued by saying: *“We are supposed to reduce fatty food and to eat food such as starch, different herbs and to drink purified water. Like rice, macaroni, potatoes, milk and fish, chicken, yoghurt and cheese”* (PRA-3, School B, Group B). This report confirms that the participants gained insight into the benefits associated with reducing their fatty food intake but increasing their consumption of herbs and starch such as rice, as well as macaroni, fish, chicken, cheese, clean water and milk. I also noted this newly gained knowledge, capturing it as follows: *“We learned to eat more vegetables, fruits and to drink water, juice and milk no longer to eat a lot of pap (stiff porridge) the plate must be colourful with carbohydrates, protein and vitamins such as vegetables”* (FN, 25 November 2015, line 60).

In addition to gaining insight into what healthy eating as such implies, the participants seemingly gained new knowledge about the benefits related to healthy eating habits. The participants, for example, mentioned that *“Carrots are good in cleansing the eyes, and ... carrots are healthy for the eyes and we can also make juice out of them and fruits”* (PRA-3, School B, Group C). The participants in Group D similarly said: *“We eat raw carrots after rinsing them first and are healthy for the eyes”* (PRA-3, School B, Group D). Photograph 5.5¹⁴ represents a PRA-poster contribution on the benefits of eating carrots, captured in the mother-tongue of the parent-participants.

¹⁴ Translated to: “We eat carrots, rinse it because it helps our eyes to be pure”.



Photograph 5.5: Benefits of eating carrots (Group D)

In further support, and closely related, the participants in Group C indicated the value of oranges and the importance of water, saying that: *“An orange contains vitamin C and we may also use it to make juice. Water is very important for the body and we drink eight glasses of water a day”* (PRA-3, School B, Group C). Similarly, a participant in Group F mentioned the benefit of apples for the body in the following way: *“Apples are healthy for the body because they contain vitamin C like the oranges”* (PRA-3, School B, Group F). I captured the participants’ apparent increase in knowledge in the following reflective notes: *“Participants from different groups seemingly valued the importance of consuming fruits knowing that they contain vitamin C”* (RF, 25 November 2015, line 31).

5.2.2 Theme 2: Applying Newly Gained Knowledge

This theme reports on the application of the knowledge that the parents gained because of their children’s participation in the Win-LIFE intervention. Sub-themes relate to the purchase of different types of food, starting vegetable gardens, preparing and storing food in a suitable way and applying healthy eating guidelines. Table 5.2 provides an overview of the relevant sub-themes and the inclusion and exclusion criteria I followed.

Table 5.2: Inclusion and exclusion criteria of Theme 2

SUB-THEME	INCLUSION CRITERIA	EXCLUSION CRITERIA
Sub-theme 2.1: Purchasing different types of food	Data that relate to the application of newly gained knowledge with specific reference to purchasing different types of food.	Data related to the application of newly gained knowledge in terms of starting vegetable gardens, preparing and storing food in a proper way and applying healthy eating guidelines.
Sub-theme 2.2: Starting vegetable gardens to produce fruits and vegetables	Data related to the application of newly gained knowledge with specific reference to starting vegetable gardens to self-produce fruits and vegetables.	Data related to the application of newly gained knowledge in terms of food purchases, preparing and storing food in a proper way and applying healthy eating guidelines.
Sub-theme 2.3: Preparing and storing food in a hygienic and healthy way	Data referring to the application of newly gained knowledge with specific reference to preparing and storing food in a hygienic and healthy way.	Data referring to the application of newly gained knowledge in terms of food purchases, starting vegetable gardens and applying healthy eating guidelines.
Sub-theme 2.4: Applying healthy eating guidelines	Data that relate to the application of newly gained knowledge with specific reference to applying healthy eating guidelines.	Data related to the application of newly gained knowledge in terms of food purchases, starting vegetable gardens and preparing and storing food.

5.2.2.1 Sub-theme 2.1: Purchasing different types of food

This sub-theme captures the changes in the parent-participants' food purchase patterns in applying their gained knowledge about healthy food choices and the benefits these imply. From the various contributions, it seems that the parents' food choices changed for the good after their children's participation in the intervention. The participants, for example, mentioned that "... we choose healthier food than junk food such as bread and achar" (FN, 25 November 2015, line 85), and indicated that "spinach is important in the growth of children" (PRA-3, School B, Group F).

The parent-participants specifically demonstrated insight in terms of the perceived value of fruits and vegetables; and they tended to more frequently purchase these products after the intervention. For example, a participant in Group B said: *“I buy different types of fruits and vegetables. I have learned to buy vegetables like cornflower”* (PRA-3, School B, Group B). In support, the participants in Group F reported the following on their buying patterns: *“Cabbage: It should be a fresh cabbage. We are buying different vegetables not only cabbage”* (PRA-3, School B, Group F).

The participants in Group D also confirmed changed food purchasing patterns, indicating that they, as a result, avoided spending money on unhealthy food. They said: *“We are no longer buying like before. When we go to the store we choose correctly not like before. We no longer waste money on food that is unhealthy. We are now buying lettuce and beans”* (PRA-3, School B, Group D). I captured this contribution in my reflective field notes as follows: *“With regard to food choice, participants indicated that they have learned to choose healthier food and vegetables after realising the value of healthy food for their well-being”* (RF, 25 November 2015, line 17).

5.2.2.2 Sub-theme 2.2: Starting vegetable gardens to produce fruits and vegetables

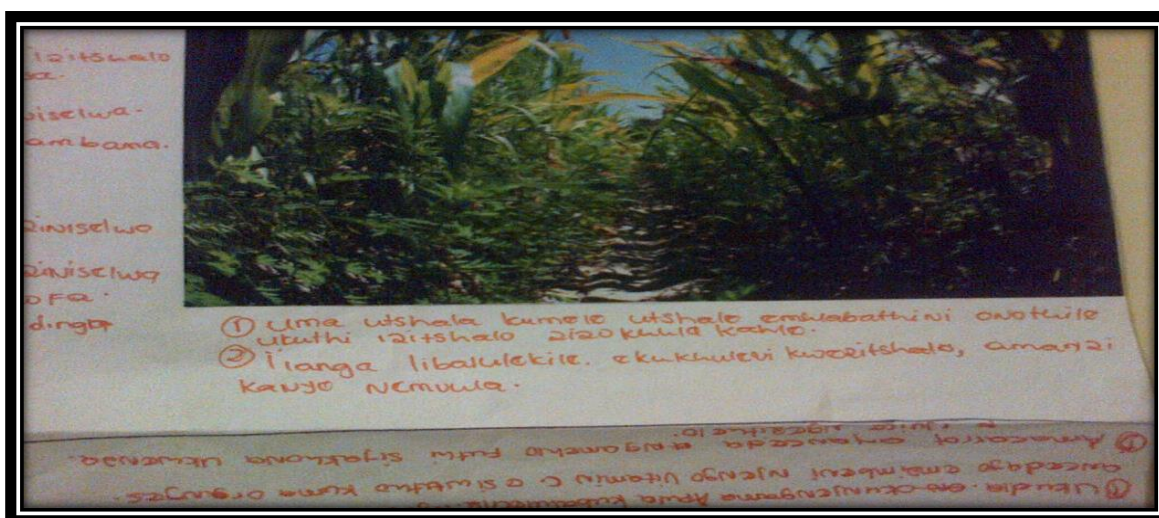
Following the Win-LIFE intervention, some parents apparently started their own vegetable gardens to produce their own food. To this end, parents mentioned the following:

- *“I started to prepare a garden and planted vegetables”* (PRA-3, School B, Group B).
- *“I prepared a garden at home”* (PRA-3, School B, Group C).
- *“(Planted) potatoes and onions”* (PRA-3, School B, Group D).

The parent-participants viewed food production at home in a positive light and realised that this could enable them to, for example, produce fruits instead of buying them. The participants in Group A indicated the following in this regard: *“To provide fruits to eat at home rather than buying at the stores every day”* (PRA-3, School B,

Group A). In addition to referring to fruits, the participants indicated that they also produced vegetables in their gardens. They indicated that vegetable gardens were of value to them because these could provide food security. I captured this idea of food production and its value in the following reflective field notes: “On food production participants realised after learning on food gardening, that it is important for them to start their own vegetable gardens that would assist them in producing healthy food than buying from the store” (RF, 25 November 2015, line 18).

In discussing the maintenance of vegetable gardens, the participants explained how they also applied their newly gained knowledge in terms of gardening skills. They reported as follows: “We prepared our own garden at home” (PRA-3, School B, Group E), and referred to: “... when planting ... to plant on a fertile soil so that plants can grow well. The sun, water and rain are important in the growth of plants” (PRA-3, School B, Group F). Photograph 5.6¹⁵ captures this PRA-poster and the participants’ emphasis on the importance of fertile soil.



Photograph 5.6: Planting in a fertile soil (Group F)

The participants explained how they applied their newly gained knowledge about gardening as follows: “... before planting, the soil must be right-(fertile). Plants should be spaced in between so that they can get enough air” (FN, 25 November, line 71). Despite applying their newly gained knowledge about vegetable gardens,

¹⁵ Translated to: “When planting we need to plant on fertile soil so that plants can grow well. The sun, water and rain are important for the growth of plants”.

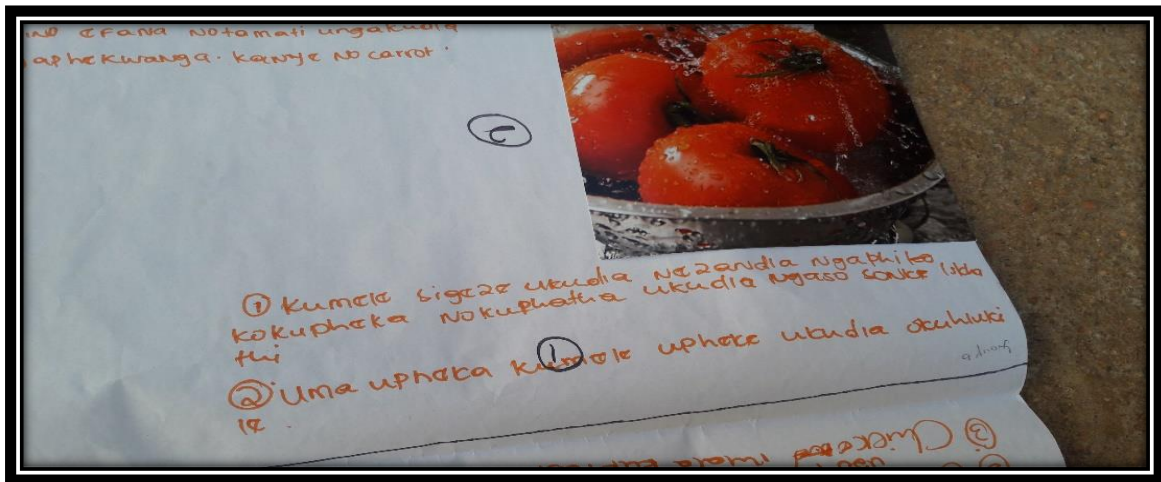
some participants, however, experienced challenges in terms of space, saying: *“We started the vegetable garden though we have a problem with space”* (FN, 25 November 2015, line 71). As a result, some participants suggested the following: *“... to start vegetable garden at school due to lack of space at home”* (FN, 7 March 2017, line 114, School B, P 1).

5.2.2.3 Sub-theme 2.3: Preparing and storing food in a hygienic and healthy way

In terms of food preparation and storage, the participants allegedly also applied the knowledge they gained after the Win-LIFE intervention. They reportedly attended to the way in which they handled and prepared food, being more aware of hygiene and applying healthier cooking methods.

As far as cleanliness and food hygiene are concerned, the participants indicated that they realised the importance of rinsing their hands as well as the food they were about to prepare. The participants in Group A, for example, reported that they applied the newly gained knowledge by *“... rinsing the hands before touching food”* (PRA-3, School B, Group A). This practice is also captured in the following field note: *“... we ensure that they rinse hands before touching food or cooking”* (FN, 25 November 2015, line 75). The participants in Group D similarly reported that they started rinsing food and applying healthier cooking methods based on their newly gained knowledge. The participants in Group D namely said: *“We started to rinse the food and how to use salt and fat”* (PRA-3, School B, Group D). In further support, the participants in Group F said the following: *“To be clean before one starts cooking”* (PRA-3, School B, Group F), while the participants of Group B said: *“We are always supposed to rinse the food and hands before cooking ...”* (PRA-3, School B, Group B). Photograph 5.7¹⁶ provides a visual representation of this emphasis on hygiene when preparing food.

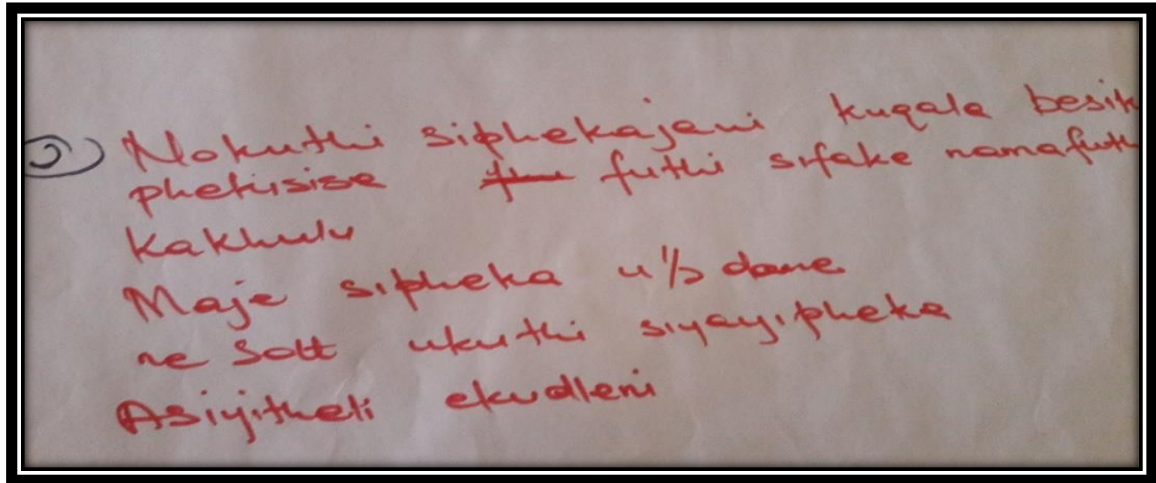
¹⁶ Translated to: “We need to rinse hands and food before cooking it. We need to cook clean/hygienic food”.



Photograph 5.7: Cleanliness of hands and food before cooking (Group F)

When elaborating on their application of healthy and safe food preparation guidelines, the participants explained how their cooking methods had improved after the intervention. The participants in Group B, for example, referred to their newly gained knowledge and how they applied this, as follows: *“I have learned to cook different types of food like starchy food, herbs ...”* (PRA-3, School B, Group B). The participants in Group D similarly indicated how they had assessed their previous cooking methods and improved on these as follows: *“We checked how we cooked, before we over cooked food and used more fat. Now we cook half-done food and salt is cooked no longer poured raw on food when eating”* (PRA-3, School B, Group D), as also captured in Photograph 5.8¹⁷.

¹⁷ Translated to: “How we cooked, before we over cooked food and used more fat. But now we cook half-done food and cook salt and no longer eating it raw”.

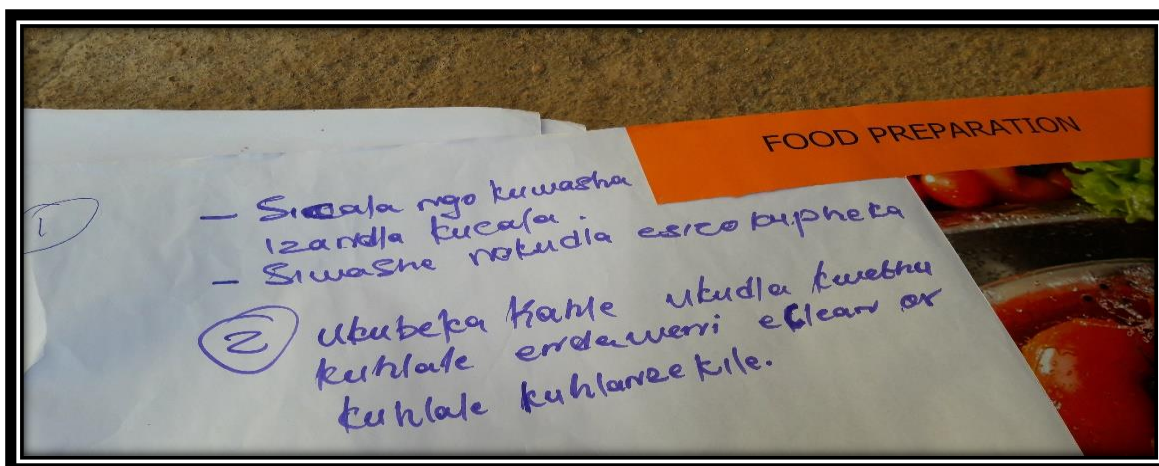


Photograph 5.8: Improved cooking methods (Group D)

In terms of the application of specific food preparation guidelines, the participants reported that their cooking methods had improved; they mentioned that they focused on, for example, reducing the use of fat. In this regard, the participants in Group F said: *“When we cook we don’t need to use a lot of fat. Again to use fat like vegetable fat or margarine that has little fat”* (PRA-3, School B, Group F). I captured the participants’ reported improved food preparation methods as follows: *“Participants mentioned that they improved their cooking methods by using healthy cooking methods where they used fat and salt sparingly as they realised how unhealthy they were before”* (RF, 25 November 2015, line 23). In terms of guidelines for preferred cooking times, the participants in Group F said: *“When we cook food, it should not be over cooked since it destroys the nutrients”* (PRA-3, School B, Group F). Closely related, the participants in Group B summarised their application of food preparation guidelines as follows: *“We have learned to use fat sparingly. Now I know how to cook cabbage and it must be half cooked and to be green in colour. We have learned not to overcook food”* (FN, 25 November 2015, line 82-83, School B).

In addition to applying healthy food preparation guidelines, the participants allegedly also started applying their newly gained knowledge about healthy food storage measures. The participants in Group E, for example, indicated that they applied their

newly gained knowledge by “... storing our food in a clean place or to be put in a hygienic place” (PRA-3, School B, Group E), as captured in Photograph 5.9¹⁸.



Photograph 5.9: Storing food in a clean place (Group E)

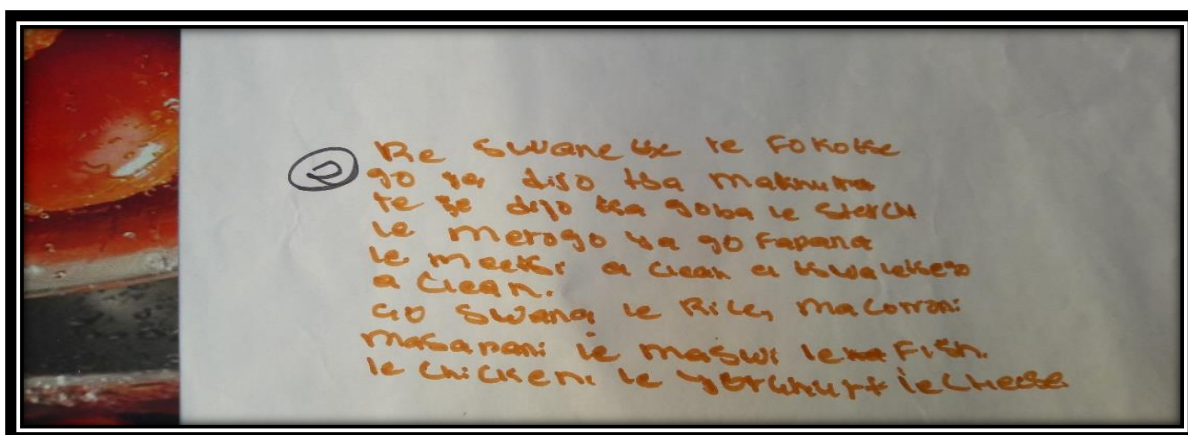
The participants in Group F specifically referred to the importance of storing fresh meat in a refrigerator. They said: “*Chicken should always be put in the refrigerator*” (PRA-3, School B, Group F). At a broader level, other participants indicated that they applied their newly gained knowledge in the following manner: “... ensuring that we keep our food in a clean place” (FN, 25 November 2015, line 76).

5.2.2.4 Sub-theme 2.4: Applying healthy eating guidelines

This sub-theme is concerned with the parents’ application of their newly gained knowledge on improved eating habits and balanced meals. The participants seemingly applied their gained knowledge in support of their own health. They explained: “*We know that when we eat a variety of nutritious food we will develop a healthy body since healthy food builds our bodies to be strong in fighting diseases*” (FN, 25 November 2015, line 80). A participant in Group C specifically referred to the eating habits of her children stating that: “*I ensured that the child eats well, also eats nutritious food*” (PRA-3, School B, Group C). In addition, the participants seemingly realised the importance of consuming a variety of foods, mentioning: “*Not to eat the same food every day*” (PRA-3, School B, Group A).

¹⁸ Translated to: “Putting and storing our food in a clean place to keep it clean/hygienic”.

The participants furthermore indicated how they applied their newly gained knowledge by eating different types of healthy food and drinking water and milk. To this end, the participants in Group B said: *“We need to reduce fatty food and to eat food such as starch different herbs and to drink purified water ... like rice, macaroni, potatoes, milk and fish, chicken, yoghurt and cheese”* (PRA-3, School B, Group B), as illustrated in Photograph 5.10¹⁹.



Photograph 5.10: Improved eating habits (Group B)

The participants in Group E referred to balanced meals and their intake of a variety of nutrients after the intervention. They said: *“We eat a balanced meal e.g. proteins, carbohydrates. We ensure that our children eat a fruit each day”* (PRA-3, School B, Group E). Closely related, other participants referred to the importance of fruits and vegetables intake. They said: *“Vegetables like tomatoes can be eaten raw. Spinach is important in the growth of the child”* (PRA-3, School, B, Group F). Another group supported this idea by saying that *“... we are encouraging our children to eat green vegetables such as spinach and herbs (morogo)”* (FN, 25 November 2015, line 81).

In terms of liquids, the participants in Group A mentioned that they had improved their eating habits by doing the following: *“We learned that after eating we need to drink juice or water and juice that is made out of fruits. ... I learned that I must eat fruits and drink milk”* (PRA-3, School B, Group A). Group D similarly said: *“... drink juice because the body needs sugar”* (PRA-3, School B, Group D).

¹⁹ Translated to: “We need to reduce eating fatty food and to eat food like starch, different herbs drinking clean water, milk as well as rice, macaroni, fish chicken and yoghurt”.

5.2.3 Theme 3: Requiring Additional Knowledge and Guidelines

Theme 3 captures the parents' need for additional knowledge, based on what they had learned from their children. Sub-themes include a need for more information about the types and functions of food that is beneficial to health, a need for more guidance on vegetable gardens, as well as a need to obtain and understand guidelines for healthy food preparation and storage. Table 5.3 provides a summary of the sub-themes and the relevant inclusion and exclusion criteria.

Table 5.3: Inclusion and exclusion criteria of Theme 3

SUB-THEME	INCLUSION CRITERIA	EXCLUSION CRITERIA
Sub-theme 3.1: Need for more information about types and functions of food that is beneficial to health	Data that relate to additional knowledge and guidelines that parents require, with specific reference to information about the various types and functions of food that is beneficial to human health.	Data that refer to additional knowledge and guidelines that parents require about vegetable gardens or healthy food preparation and storage guidelines.
Sub-theme 3.2: Need for additional guidance on vegetable gardens	Data related to additional knowledge and guidelines that parents require, with specific reference to the maintenance of vegetable gardens.	Data referring to additional knowledge that parents require about various types and functions of health promoting food or food preparation and storage guidelines.
Sub-theme 3.3: Need to obtain and understand guidelines for healthy food preparation and storage	Data referring to additional knowledge and guidelines that parents require, with specific reference to healthy food preparation and storage guidelines.	Data referring to additional knowledge and guidelines that parents require about different types and functions of health promoting food or the maintenance of vegetable gardens.

5.2.3.1 Sub-theme 3.1: Need for more information about types and functions of food that is beneficial to health

Even though the parent-participants indicated that they had benefitted from newly gained knowledge about healthy food choices, they also emphasised the need for

additional and more in-depth knowledge about food types, the benefits of different food products and the functions of food variations. They specifically indicated a need for guidance on indigenous food, as evident in the following contribution: *“We would like to learn about our own food (traditional food) if it is fresh and clean. Whether the food is healthy for our body”* (PRA-3, School B, Group A). I captured this contribution as follows in my reflective field notes: *“Participants seemed to be concerned about the health of their traditional food as they mentioned that they need more knowledge about how healthy they are for consumption”* (RF, 25 November, line 35).

As stated, several participant groups indicated the need for more detailed information about suitable food choices that can promote a healthy living, as well as the underlying reasons for such choices. The following contributions capture this reported need, indicating broad ideas, yet also examples of specific information that the participants seemingly required:

- *“To learn about different types of food and their function in our body”* (PRA-3, School B, Group E).
- *“... want to know about eating raw vegetables such as carrots and their function in the body”* (FN, 25 November 2015, line 89).
- *“I would like to learn further about different types of food and to have knowledge on food that is nutritious and have proteins”* (PRA-3, School B, Group B).
- *“... like to learn more about different types of food and the nutrients contained and the function of nutrients in the body”* (FN, 25 November 2015, line 88).
- *“To know the function of food in the body”* (PRA-3, School B, Group C).
- *“We would like to learn about every food we eat ... plays which role in our lives”* (PRA-3, School B, Group E).

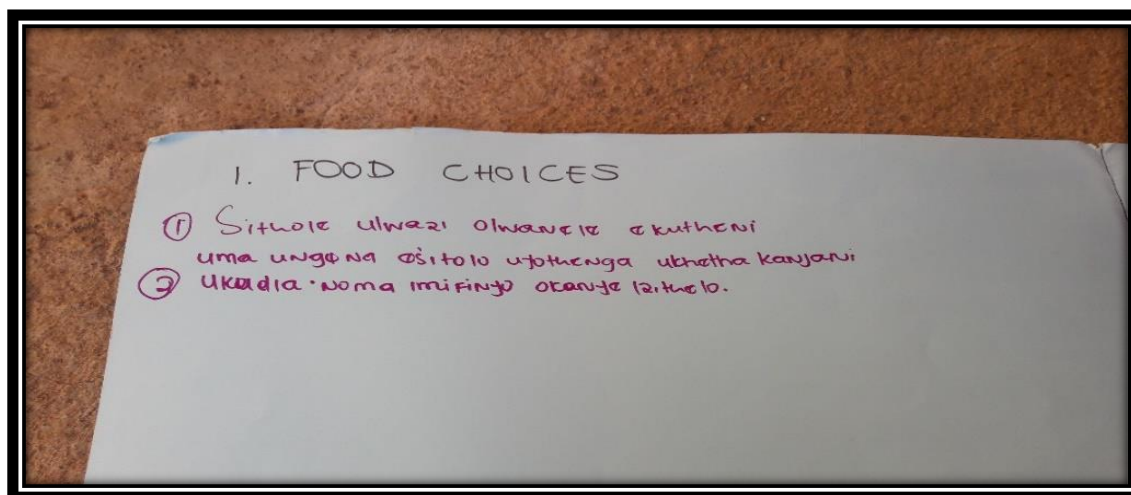
The parent-participants furthermore displayed the need to specifically learn more about the different types of vegetables, herbs and meat for them to make healthy food choices. In this regard, the participants in Group B reported as follows: *“... would like to learn about different types of fruits and the herbs”* (PRA-3, School B, Group B), with the participants in Group C similarly saying: *“We would like to learn*

more about different types of fruits and vegetables” (PRA-3, School B, Group C). The participants in Group F wanted to know more about the various types of meat, indicating the following: *“We would like to know about different types of meat”* (PRA-3, School B, Group F). I captured these needs in the following field notes: *“... would like to learn more about different types of vegetables, herbs and meat”* (FN, 25 November 2015, line 93).

The participants in Group F elaborated on their need for information about meat products, stating: *“To have more knowledge about meat. To know more about different types of meat. How much red meat we should eat”* (FN, 25 November 2015, line 91). Participants furthermore mentioned their need to understand: *“How to eat red meat because they say it is not healthy and people suffer from gout. To know the amount of red meat we should eat”* (PRA-3, School B, Group B). I captured this idea as follows: *“Moreover parents were concerned about eating red meat and then indicated that they would like to know how they should eat red meat so that they do not develop gout disease”* (RF, 25 November 2015, line 33).

Finally, the participants indicated that they *“... would like to learn to eat food that contained vitamin B, C, carbohydrates, proteins milk and to eat fruits daily like apples, banana, and herbs like cabbage, spinach or other herbs. To also eat food with starch such as rice, macaroni, samp, mealie rice as well as fish”* (PRA-3, School B, Group B). The participants in Group D similarly wanted to learn about food that contains important nutrients. They summarised the reason for this need as follows: *“To get enough information on how to choose food when shopping. Food, vegetables and fruits”* (PRA-3, School B, Group D), as captured in Photograph 5.11²⁰.

²⁰ Translated to: “To get more insight on how to buy food when shopping, to choose how to buy food like vegetables and fruit”.

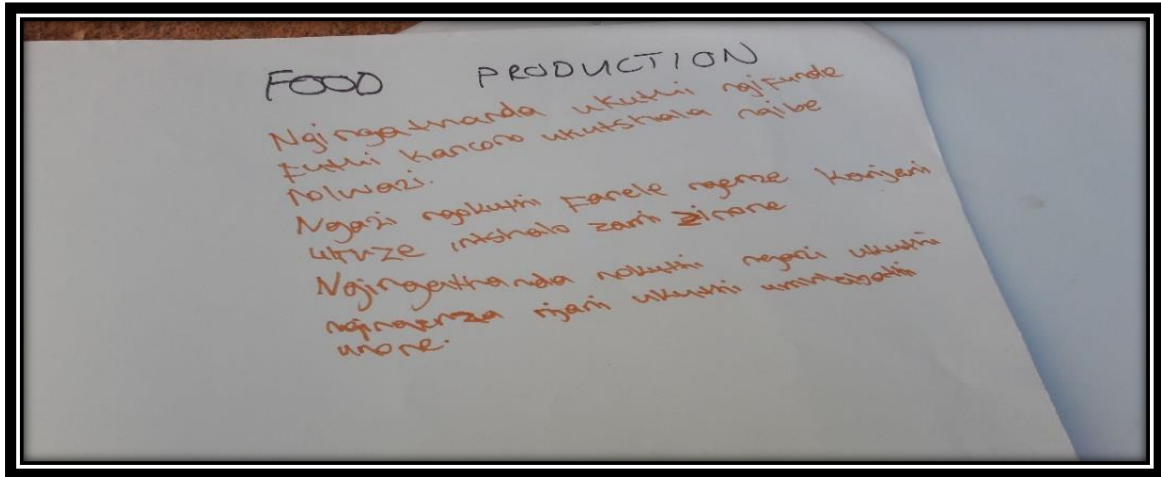


Photograph 5.11: Need for knowledge about food choices when shopping
(Group D)

5.2.3.2 Sub-theme 3.2: Need for additional guidance on vegetable gardens

This sub-theme reports on the parent-participants' ongoing need to gain knowledge about how to grow nourishing plants and vegetables, about different types of soil, about the identification of suitable soil for planting vegetables, as well as about making compost to fertilise soil. In this regard, the participants in Group A said: *"We want to learn about how to plant and to water the plants. And to know the importance of plants in our life"* (PRA-3, School B, Group A). They mentioned that they also wanted to learn *"how to plant different vegetables, like beetroot, spinach etc."* (FN, 25 November 2015, line 97). The participants in Group B similarly summarised the following need: *"I would like learn more. To have knowledge on planting. To know what to do in order for the plants to grow well. I would like to know how to make the soil fertile"* (PRA-3, School B, Group B), as captured in Photograph 5.12²¹.

²¹ Translated to: "Would like to learn more about planting so that I can have knowledge. To know how to nourish the plants. To know how to fertilise the soil".



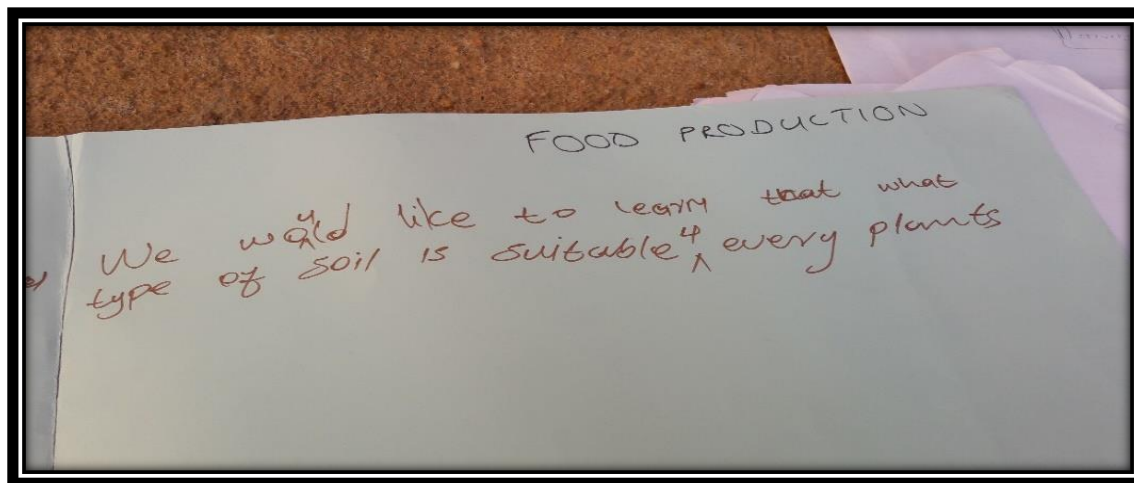
Photograph 5.12: More knowledge required about planting and fertilising soil
(Group B)

In support of the participants' needs, I captured the following contribution: *"Participants were seemingly eager to learn more about planting vegetables, how to prepare compost in order to fertilise the soil when planting so that they may grow healthy plants"* (RF, 25 November 2015, line 36). The participants furthermore indicated their need to learn about crop rotation when planting seeds and to gain knowledge about the seasons in which different vegetables should be planted. In this regard, I noted: *"Participants indicated that they want to learn more on planting and when to change vegetables and plant others (crop rotation). In which season to plant different vegetables"* (FN, 25 November 2015, line 99).

Finally, several participants indicated the need to gain more knowledge about the types of soil and knowing which type of soil is suitable for planting what. The participants in Group C summarised this need as follows: *"To learn more about different types of soil and how to identify fertile soil"* (PRA-3, School B, Group C). The participants furthermore referred to the need to learn *"... about how to identify good soil for planting and different types of soil"* (FN, 25 November 2015, line 94). In addition, the participants in Group E indicated the need to be knowledgeable about the different types of soil as well as which plants are suitable for which soil. This contribution is captured in Photograph 5.13²², which represents the related

²² Translated to: "We would like to learn about types of soil and are suitable for which plants".

PRA-poster. Finally, the participants seemingly required knowledge about making compost and fertilising soil. To this end, the participants in Group D said: *“To know how to make compost and to fertilise the soil”* (PRA-3, School B, Group D).



Photograph 5.13: Need to be informed of the types of soil and suitability for plants (Group D)

5.2.3.3 Sub-theme 3.3: Need to obtain and understand guidelines for healthy food preparation and storage

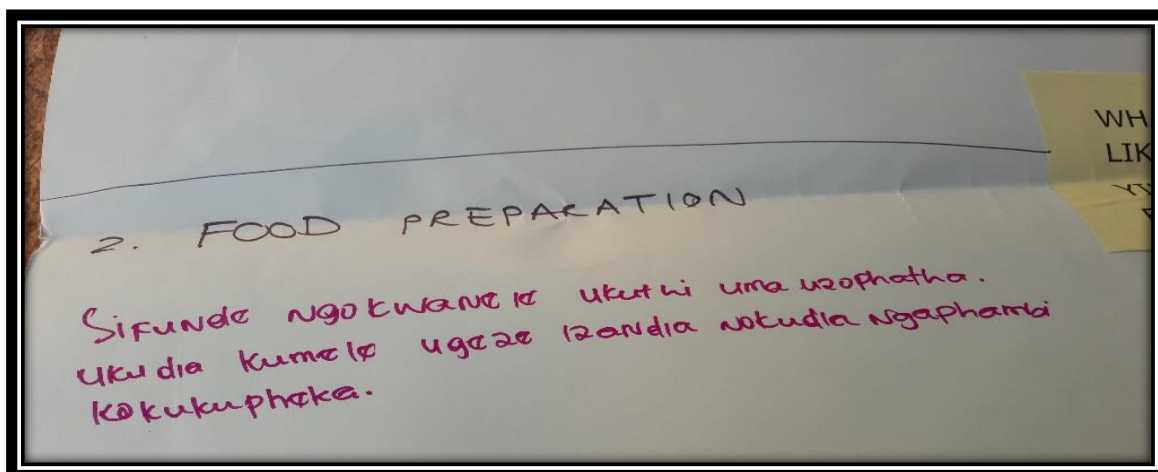
Despite the broad knowledge that parents apparently gained about food preparation, the participants also indicated the need for additional specific knowledge about and a deeper understanding of healthy cooking methods as well as measures for hygiene and cleanliness when handling food. The participants' need to learn how to cook healthy meals, included insight into balanced meals and what such meals entail. The participants in Group E, for example, said: *“We would like to know methods of cooking and how to balance the menu”* (PRA-3, School B, Group E). Participants specifically reported their need to learn how to cook different foods, saying: *“... procedure to follow when cooking. How to cook herbs so that they are nutritious? What to add to the herbs to be delicious”* (FN, 25 November 2015, line 105-107). Furthermore, they seemingly required guidance on cooking canned food, as captured in the following contribution: *“... want to learn how to prepare canned food”* (FN, 25 November 2015, line 104).

In addition to their need to understand balanced meals, the participants indicated their need for knowledge about when and how much to eat. In this regard, the participants in Group A said: *“To be knowledgeable about the times of eating ...”* (PRA-3, School B, Group A). The participants in Group F similarly indicated this need in the following way: *“To know at what time to have supper”* (PRA-3, School B, Group F). In further support, the participants requested: *“... to learn more about the appropriate time to eat and the suitable meal at those respective times”* (FN, 25 November 2015, line 108).

In terms of portion sizes, parent-participants apparently required guidance on how to measure food for their children. The participants in Group D, for example, said: *“We would like to know how to measure the child’s food and which time is suitable for supper?”* (PRA-3, School B, Group D). The participants elaborated as follows on their reason for this need: *“... the amount of food to be eaten so that they do not over eat”* (FN, 25 November 2015, line 109).

When referring to hygiene measures when handling and cooking food, the participants displayed the necessary understanding that they had to rinse their hands when working with food; however, they indicated the need to understand the reasons behind this guideline, more specifically during food preparation. In this regard, the participants in Group C stated: *“To know why we need to rinse our hands and food when cooking.* (PRA-3, School B, Group C), with the participants in Group E similarly asking: *“What is the importance of rinsing food?”* (PRA-3, School B, Group E). The participants in Group D furthermore said: *“To learn more that when handling food you need to rinse your hands and food before cooking”* (PRA-3, School B, Group D), as captured in Photograph 5.14²³.

²³ Translated to: “To learn more on the need to rinse hands when handling food before cooking”.



Photograph 5.14: Need for insight into washing hands before cooking (Group D)

Parent-participants finally indicated the need to learn about food hygiene in terms of storing food in a clean place. The participants said in this regard: “... *how to store food if one does not have a refrigerator*” (FN, 25 November 2015, line 101), and: “*We would like to learn more about the cleanliness of our food. How to store it in a clean place?*” (PRA-3, School B, Group A).

5.3 RESULTS ON LEARNER-PARTICIPANTS’ EXPERIENCES OF THE WIN-LIFE INTERVENTION

In this section, I summarise the results obtained regarding the learner-participants’ experiences following their involvement in the Win-LIFE intervention. For this purpose, I provide an overview of the results obtained by the two MEd students who focused on this (K. Bentley and M. de Vos). As these students were co-researchers in the project, I was involved as field worker and observer during their data-generation sessions, working alongside them.

5.3.1 Learners’ Experiences of the Enriched Life Skills Curriculum

During the re-implementation of the Win-LIFE intervention in the one primary school, co-researcher Bentley (2016) facilitated the enriched Life Skills curriculum with Grade 5 learners. Table 5.4 represents the themes and sub-themes she identified as a result of her study.

Table 5.4: Themes and sub-themes on learner-participants' experiences of the enriched Life Skills curriculum (Bentley, 2016)

THEMES	SUB-THEMES
THEME 1: Positive experiences of experiential and cooperative learning	Sub-theme 1.1: Element of fun Sub-theme 1.2: Interaction, group work and learning with peers Sub-theme 1.3: Alternative, creative learning activities
THEME 2: Role of a supportive facilitator	Sub-theme 2.1: Valuing learners' contexts, prior knowledge and contributions Sub-theme 2.2: Listening to learners and providing guidance Sub-theme 2.3: Rewards and incentives
THEME 3: Positive outcomes of learning process	Sub-theme 3.1: Increased knowledge and insight into nutrition education Sub-theme 3.2: Increased self-confidence, self-discipline and pride Sub-theme 3.3: Transfer of nutrition knowledge
THEME 4: Challenges experienced by learners	Sub-theme 4.1: Limited participation due to unfamiliar learning approach, difficult content and retention of knowledge Sub-theme 4.2: Challenges associated with peer group

In summary, Bentley (2016) found that the learners experienced experiential and cooperative learning, as employed during the enriched Life Skills curriculum, in a positive way. According to Bentley's (2016) results, the learners experienced learning as fun, interesting and enjoyable, which in turn enhanced their willingness to participate positively during their own learning process. This level of participation enhanced positive group work among the learners as they were actively involved in the learning activities. Bentley (2016) furthermore indicates that the value of a learner's context, prior knowledge and the contributions made during learning activities, can yield positive experiences among learners. Furthermore, according to the results that Bentley (2016) obtained, a facilitator's constant awareness of learners' diverse food habits and preferences can contribute to insight as learners gain new knowledge about healthy food practices.

Another positive effect of experiential learning, as Bentley's (2016) study indicates, relates to the alternative and creative learning activities that the learners enjoyed. The learners, for example, participated in drawing different types of food, cutting and pasting food-related information and writing reflections on what they had learned. Furthermore, the learners experienced alternative learning activities such as the designing of creative posters and drawing of plates of healthy food during nutrition education as supportive methods that enhanced their positive participation. These activities increased the learners' ability to retain or recall what they had learned during the Win-LIFE intervention.

Following a supportive facilitation approach during the intervention furthermore yielded positive results as learners appreciated the guidance and support they received from the facilitators. The learners experienced the way in which the facilitators listened to the learners and guided them during the lessons positively, resulting in increased knowledge and insight in terms of nutrition, as well as increased self-confidence, that in turn motivated them to learn. The learners experienced this type of treatment as supportive and conducive to learning, resulting in them not being afraid to make mistakes. The learners furthermore stated that the facilitators explained the work they did not understand in a suitable manner. It follows that the Win-LIFE intervention yielded positive outcomes whereby learners were able to transfer their newly gained food-related knowledge and skills to an extent to their parents and other family members, with the aim of promoting healthy food practices.

Even though the learners experienced the enriched Life Skills curriculum positively, they also experienced some challenges due to being unfamiliar with the learning approach and because of the learning content's difficulty level, which led to the learners' inability to participate meaningfully during their initial learning and to retain what they had learned. Bentley's (2016) study indicates that this challenge was, however, overcome by means of experiential and cooperative learning, as well as supportive guidance of the learners, which led to improved retention. Another challenge that the learner-participants experienced relates to group work; as certain learners displayed a lack of cooperation and poor discipline. As a result, selected learners indicated unhappiness stemming from their fellow learners' poor behaviour.

However, according to Bentley’s (2016) findings, during the learning process, interaction and group learning with peers were enhanced and group participation and cooperation among the learners improved.

5.3.2 Learners’ Experiences of the Enriched Natural Sciences and Technology curriculum

Co-researcher De Vos (2017) facilitated the enriched Natural Sciences and Technology curriculum with Grade 5 learners during the re-implementation of the Win-LIFE intervention. Table 5.4 provides a summary of the themes and sub-themes she identified as a result of her study.

Table 5.5: Themes and sub-themes on learner-participants’ experiences of the enriched Natural Sciences and Technology curriculum (De Vos, 2017)

THEMES	SUB-THEMES
THEME 1: Advantages related to the underlying experiential learning approach followed for the Win-LIFE intervention	Sub-theme 1.1: Creating and fostering a positive attitude and commitment towards learning Sub-theme 1.2: Increased self-confidence to make more comprehensive contributions in class Sub-theme 1.3: Value of supportive educator
THEME 2: Outcome of experiential learning experiences	Sub-theme 2.1: Increased knowledge Sub-theme 2.2: Skills acquisition Sub-theme 2.3: Retention of newly gained knowledge and skills
THEME 3: External application value of the enriched Natural Sciences and Technology curriculum	Sub-theme 3.1: Potential value of homework to support learning and learner participation Sub-theme 3.2: Transferring knowledge and skills to others Sub-theme 3.3: Positive attitudes and implementation of newly acquired knowledge and skills

Like the learners’ experiences of the enriched Life Skills curriculum, the results that De Vos (2017) obtained also indicate that experiential learning fostered positive attitudes among the learner-participants, as well as a commitment to learn during facilitation of the enriched Natural Sciences and Technology curriculum with the Grade 5 learners. The learner-participants’ commitment was displayed during

practical learning activities such as the planting of seeds and the activities related to the different types of soil and different parts of plants. Practical activities, such as experiencing different types of soil outside the classroom and feeling different textures of soil added to learners' positive experiences of the teaching approach that was followed during implementation of the Win-LIFE intervention.

De Vos' (2017) study once again emphasises the value of supportive facilitators when implementing a school-based intervention, as this can enhance the meaningful involvement and participation of learner-participants during learning activities. Furthermore, the learners displayed commitment by completing their homework activities and attending all sessions, even after hours and on Friday afternoons. In addition, experiential learning increased the learners' self-confidence, which is associated with the learners' improved writing skills when they reflected on what they had learned during such sessions. De Vos' (2017) study therefore indicates that learners' self-confidence can be fostered by comprehensive involvement and when making contributions.

The learners furthermore experienced the intervention as empowering. They gained knowledge about and skills on how to start vegetable gardens. The learners also gained knowledge about the different types of soil, compost and the value of fertile soil. De Vos' (2017) study furthermore indicates that the learner-participants acquired skills that they could practically apply, for example the steps to follow when planting seeds. The practical activities that formed part of the Win-LIFE intervention also enabled the learners to demonstrate the knowledge and skills they had acquired. In addition, group work activities encouraged the learners to interact with their peers during learning activities rather than to work individually and in isolation.

De Vos' (2017) study indicates that the use of different sensory experiences during the facilitation of environmental education can enhance learners' retention of new knowledge. In this regard, the learner-participants' retention was supported by video clips used during learning sessions, as well as by the hands-on learning and teaching approach followed for the Win-LIFE intervention. De Vos (2017) mentions that the learner-participants, as a result, demonstrated the ability to retain

information when recalling newly gained knowledge about content that had been discussed four weeks earlier.

Finally, the learners experienced that the enriched Natural Sciences and Technology curriculum enabled them to apply what they had learned when doing homework activities, which in turn improved their participation during learning activities in class. According to De Vos' (2017) study, the learners informed their parents of what they had learned as part of the intervention. Some of the parents apparently started vegetable gardens at home after this, as they realised the importance of healthy food production.

5.3.3 Synopsis of learners' experiences of the Win-LIFE intervention

The learner-participants seemingly experienced the Win-LIFE intervention in a positive way. Both Bentley (2016) and De Vos' (2017) studies indicate the learners' increased knowledge following the intervention. The intervention namely increased the learners' knowledge about nutrition in terms of healthy eating, nutrients, the food pyramid, as well as food safety and storage. The learners also demonstrated increased environmental knowledge in terms of different types of soil, planting seeds and nourishing plants.

Another positive outcome of the Win-LIFE intervention that both Bentley (2016) and De Vos (2017) indicate, relates to the learners' increased self-confidence in terms of their learning abilities. Their writing skills, for example, improved as the intervention progressed and they reflected on what they had learned. The intervention yielded positive outcomes in the sense that the learners also transferred some of their newly gained knowledge and skills to their parents and other family members in terms of, for example, healthy food practices and how to start a vegetable garden. In this regard, the homework activities allowed the learners to transfer their newly gained knowledge and skills to their parents and other community members by, for example, planting seeds and taking care of plants at home.

Finally, some challenges that were experienced during the facilitation of the Win-LIFE intervention were overcome because of implementing experiential and

cooperative learning and providing support to the learners, which, in turn, created a good learning environment for them and resulted in positive learning experiences. In addition, by following a supportive facilitation approach, healthy group relationships, commitment and meaningful contributions could be enhanced among the learners.

5.4 CONCLUSION

In this chapter, I reported on the results relating to the parent-participants and the learner-participants' experiences in terms of the Win-LIFE intervention. The results of the parent-participants' views focused on the knowledge that parents gained because of their children's participation in the intervention, as well as the way in which they applied this newly gained knowledge, more specifically regarding food-related behaviour. I also foregrounded the parents' need for additional knowledge about and guidance on food choices, food production, food preparation and food consumption behaviour.

The results of the Grade 5 learner-participants' experiences of the Win-LIFE intervention indicate that they enjoyed the processes and techniques that were used during the facilitation of the intervention and that it has led to positive results such as commitment to learning activities, participation during group activities and self-confidence based on newly acquired knowledge and skills regarding healthy food practices. However, the learners also experienced a few challenges during the early sessions of the intervention that could be resolved by the implemented teaching approach.

In the next chapter, I interpret the themes and sub-themes I discussed in Chapters 4 and 5 against the background of the literature I presented in Chapter 2. In my discussion of the findings of the current study, I highlight correlations, identify silences and indicate new insight based on this study. I come to final conclusions on the findings in Chapter 7.

CHAPTER 6

SYNTHESIS AND FINDINGS OF THE STUDY

6.1 INTRODUCTION

In Chapters 4 and 5, I presented the results of this study in terms of the teacher-participants' experiences (Chapter 4) and the parent- and learner-participants' experiences (Chapter 5) of the Win-LIFE intervention. I reported the results according to the themes and sub-themes I identified during inductive thematic analysis. Throughout these chapters, I elicited my discussions with excerpts from the raw data.

In this chapter, I discuss the findings of the study in relation to existing literature. I highlight correlations, and silences that I identified, which may require further research. I also indicate new insight stemming from the current study and its contribution to the existing body of knowledge about the importance of evaluating school-based interventions focusing on the promotion of healthy food practices.

6.2 FINDINGS ON TEACHERS' EXPERIENCES OF THE WIN-LIFE INTERVENTION

In this section, I discuss the findings I obtained regarding the experiences of the teachers who participated in the current study, being involved in the development and implementation of the Win-LIFE intervention. I highlight correlations between the findings of the current study and those captured in existing literature. I also indicate new insight that stem from this study. I furthermore identify silences in the data that may be explored further in follow-up studies. I did not, however, obtain any findings that contradict existing literature. As an introduction, Table 6.1 provides an overview of the findings on the teacher-participants' experiences.

Table 6.1: Overview of findings on teachers' experiences of the Win-LIFE intervention

THEME	MAIN FINDING	AUTHOR AND YEAR	RELATION WITH EXISTING LITERATURE
Theme 1: Value of PRA-based process and teachers being involved as research partners in developing and implementing the intervention	Sub-theme 1.1: Teacher involvement in the development and implementation of a school-based health-promotion intervention resulted in increased knowledge about healthy living in terms of a healthy lifestyle, eating habits and environment-related knowledge	Hawkes (2010) Perez-Rodrigo and Aracenta (2001) Wordell <i>et al.</i> (2012) Lytle <i>et al.</i> (2006) FAO (2014) Kataki and Babu (2002) Griggs <i>et al.</i> (2013)	Supporting existing literature
	Sub-theme 1.2: Teacher-participants' involvement in the development and implementation of the intervention improved their teaching practices	None found	Silence in the data
	Sub-theme 1.3: Teacher-participants' involvement in the development and implementation of the intervention enriched the curricula they presented	Faber <i>et al.</i> (2011) Hawkes (2013) Stephan <i>et al.</i> (2007) Steyn <i>et al.</i> (2009) Lytle <i>et al.</i> (2006) Bamji and Murthy (2006)	Supporting existing literature
Theme 2: Perceived value of the Win-LIFE intervention for others	Sub-theme 2.1: Teacher-participants experienced the Win-LIFE intervention as valuable due to the positive effect it had on learners' learning	None found	Silence in the data
	Sub-theme 2.2: Teacher-participants experienced the intervention as valuable in terms of the knowledge and skills that the learners gained	WHO/FAO (2003) Hawkes (2013) Steyn <i>et al.</i> (2009) Pinstrup-Andersen <i>et al.</i> (1995) Ottem (2010) Faber <i>et al.</i> (2011)	Supporting existing literature
	Sub-theme 2.3: Teacher-participants experienced the intervention as valuable, as it resulted in parents gaining knowledge and skills on healthy food practices and how to start vegetable gardens at home	Lytle <i>et al.</i> (2006) Hawkes (2013) Adato <i>et al.</i> (2006) Richter and Desmond (2008) Aliber (2009) Labadarios <i>et al.</i> (2011)	Supporting existing literature
Theme 3: Challenges experienced during	Sub-theme 3.1: Teacher-participants experienced the lack of ongoing training and	None found	Silence in the data

THEME	MAIN FINDING	AUTHOR AND YEAR	RELATION WITH EXISTING LITERATURE
implementation of the Win-LIFE intervention	support as a challenge during the development and implementation of the intervention		
	Sub-theme 3.2: Teacher-participants experienced the time of implementation of the intervention and limited periods allocated on the timetable as a challenge during the implementation of the intervention	None found	Silence in the data
	Sub-theme 3.3: Teacher-participants experienced the suitability of the Win-LIFE intervention content as a challenge during the implementation of the intervention	Ottem (2010) Pinstrup-Andersen <i>et al.</i> (1995) Bamji and Murthy (2006) Charlton and Rose (2002) WHO/FAO (2003) Ivers and Cullen (2011)	Supporting existing literature
Theme 4: Recommendations for future implementation	Sub-theme 4.1: Teacher-participants recommended regular training for future implementation of the intervention	None found	Silence in the data
	Sub-theme 4.2: Teacher-participants recommended thorough discussions of the implementation schedule prior to the implementation of the intervention	None found	Silence in the data
	Sub-theme 4.3: Teacher-participants recommended an extension of the Win-LIFE intervention to other subjects	None found	Silence in the data
	Sub-theme 4.4: Teacher-participants recommended that parents, community members and other stakeholders should be more involved in training on the Win-LIFE intervention	Bamji and Murthy (2006) Faber <i>et al.</i> (2011) Spaargaren <i>et al.</i> (2012)	Supporting existing literature

6.2.1 Benefits of following a PRA-approach and involving Teachers as Partners when developing and implementing a Health promoting School-based Intervention

The Win-LIFE intervention involved teachers as research partners during the development and implementation phases of the intervention. To this end, I identified certain benefits for the teacher-participants. Their involvement namely yielded increased awareness among the teachers of healthy eating practices and strengthened their environmental knowledge. It also improved their teaching methods and enriched both the Life Skills and Natural Sciences and Technology curricula.

6.2.1.1 Increased awareness of healthy eating practices and environmental knowledge due to teachers' involvement in the Win-LIFE intervention

The findings of the current study indicate that the teachers' involvement as research partners during the development and implementation of the Win-LIFE intervention was of value to them. Teachers namely experienced the intervention as educative and informative regarding healthy food practices. Hawkes (2013) as well as Perez-Rodrigo and Aracenta (2001) confirm this finding regarding the potential value of school-based interventions in educating teachers and learners on nutrition, as they similarly found that schools can be considered as primary institutions that may provide nutrition education.

In addition, the teacher-participants experienced the enriched Life Skills and Natural Sciences and Technology curricula as valuable due to the rich and important information they gained about healthy nutrition, which broadened their food-related knowledge. In this regard, the teacher-participants found the nutrition education that formed part of the intervention to be empowering, as they gained knowledge about the different food groups that can promote healthy living for themselves and their families. According to the findings I obtained, teachers gained insight and subsequently realised the importance of a healthy lifestyle for health and well-being. Wordell *et al.* (2012) as well as Lytle *et al.* (2006) confirm this finding when reporting positive food behaviour after interventions focusing on healthy eating and nutrition.

Because of their facilitation of the Win-LIFE intervention, I found that the teachers also gained knowledge about different types of soil and how the planting of

vegetables can promote food security. Morgante and Magini (2013), as well as Kataki and Babu (2002), similarly indicate this potential value of involvement in such interventions with their findings that agricultural practices such as the production of vegetables can improve healthy nutrition.

In addition to the knowledge gained because of the enriched Life Skills curriculum, the findings of the current study indicate that the Win-LIFE intervention also increased the participating teachers' awareness of the importance of the environment and how to keep it clean. This came about by means of their facilitation of the enriched Natural Sciences and Technology curriculum. Environmental education thus assisted the teachers who participated in the current study in realising the importance of a clean environment for healthy living and that it can ensure the health and survival of human beings. The SDGs (Griggs *et al.*, 2013) also indicate this, by advocating that human beings need to keep the environment safe, given that activities such as gas emission and acidification of oceans create dangers to human survival.

6.2.1.2 Improved teaching methods because of teachers' involvement in the Win-LIFE intervention

The Win-LIFE intervention was developed to be easily facilitated in the classroom situation. The findings of the current study indicate that the teachers benefited from the alternative teaching approaches and methods they followed during the implementation of the enriched curricula of the intervention. The findings namely indicate that the teachers learned to apply alternative teaching strategies because of their involvement and the workbooks they used during the implementation of the intervention. The teachers were furthermore better equipped to teach the Life Skills and Natural Sciences and Technology curricula than before becoming involved in this study.

The teacher-participants experienced both the learner and teacher Win-LIFE intervention workbooks as valuable. The findings indicate that the workbooks' content, layout and pictures supported lesson presentations, which, in turn, enhanced the learners' learning experience. As a result, the teachers believed that

the workbooks contributed to the learners' positive attitudes about learning and that it supported the learners' positive participation and enjoyment of the practical activities.

Finally, I found that the participating teachers experienced teaching certain aspects of the curriculum (such as the food pyramid) easier than before, with the learners' resulting positive experience. These findings add new insight to existing literature on the importance of supportive facilitation skills, group work, the use of colourful workbooks and creative practical activities that can keep learners engaged in and committed to learning during the implementation of an intervention.

6.2.1.3 Benefits of facilitating enriched curricula as part of the Win-LIFE intervention

The findings of the current study indicate how nutrition education promoted healthy food practices when offered as part of an enriched school curriculum. The teachers who participated in this study confirmed that they started eating healthier food and following a healthier lifestyle because of the enriched curriculum they taught the learners. This finding correlates with studies conducted by Stephan *et al.* (2007), Steyn *et al.* (2009), Hawkes (2013) and Lytle, *et al.* (2006), who similarly indicate the importance of school-based interventions in promoting nutrition education as part of the school curriculum. Bamji and Murthy (2006) further confirm this. They also implemented an enriched curriculum to facilitate learners' increased nutrition knowledge. For their study, Bamji and Murthy (2006) used model lessons to sensitise learners to hunger, malnutrition and food insecurity. Closely aligned, the current study used enriched curricula and related lesson presentations to teach learners about healthy food practices.

The Win-LIFE intervention was developed in accordance with the CAPS requirements stipulated by the national Department of Basic Education (DBE). The teachers opined that the enriched curricula for the Life Skills and Natural Sciences and Technology subjects, could be potentially relevant to more subjects and grades than initially intended. The findings of the current study namely indicate that the Win-LIFE intervention that was developed for Grade 6 learners was also successfully applied to Grade 7 learners (as environment activities). This finding confirms the

value that teachers placed on the intervention, more specifically on the content associated with environment-related knowledge and equipping learners with skills to support healthy food practices by, for example, starting vegetable gardens. Faber *et al.* (2011), who advocate the alignment of interventions with school curricula in strengthening food and nutrition security, support this finding. The findings of the current study furthermore indicate that the Win-LIFE intervention strongly correlates with the Natural Sciences and Technology (NSTECH) Grade 4 content themes and was, as a result, easy to facilitate in the classroom.

In summary, the findings of the current study indicate that the teachers experienced the enriched Win-LIFE curriculum as a valuable tool to promote nutrition and environmental education among learners as well as themselves, due to their involvement in the intervention. The nutrition knowledge that the learners gained through the enriched curricula, in turn supported the learners in gaining knowledge about healthy eating practices and how to implement these. This finding confirms Steyn *et al.*'s (2009) findings on the importance of equipping children with health promotion information during their formative years, by reason of the potential of such interventions to promote a culture of healthy food consumption in communities.

6.2.2 Perceived Value of the Win-LIFE Intervention for Learners and their Parents

According to the teachers, the Win-LIFE intervention was valuable to both learners and parents. The teachers emphasised the positive effect on the learners' learning and that the intervention increased their knowledge and skills. The intervention was furthermore perceived as valuable to parents, as they gained nutrition-related and environmental knowledge and acquired skills related to starting vegetable gardens, which can promote food security in vulnerable families.

6.2.2.1 Perceived value of the Win-LIFE intervention to learners

The current study indicates that the teachers perceived the Win-LIFE intervention to be valuable to learners, as it increased their knowledge about and skills in nutrition and environmental education. The intervention equipped the learners with knowledge about healthy food, the different food groups, healthy cooking methods and the importance of healthy living. This finding correlates with the value of

interventions promoting healthy food practices, as the WHO/FAO (2003) report indicates. In support, Hawkes (2013) as well as Steyn *et al.* (2009), emphasise the positive effect of nutrition education for learners, which once again confirms my findings that the learners gained knowledge about eating a balanced meal with sufficient nutrients to promote their health and well-being.

The findings of the current study furthermore indicate that the Win-LIFE intervention equipped the learners with knowledge and skills in terms of living in a healthy environment. Furthermore, the learners gained knowledge about starting vegetable gardens and were empowered with the necessary skills to plant seeds, to identify different types of soil, to prepare the soil for planting, and to plant vegetables. The learners also gained knowledge about seasonal planting and maintaining vegetable production throughout the year. According to the teachers, the learners thus realised the importance of starting vegetable gardens at home or at school to promote food security, with the result that several learners (and their families) applied this knowledge and acquired skills at home.

Several studies confirm that nutrition education is critical in promoting healthy food practices, more specifically when done by means of school-based and community-based interventions. According to Manoff (1987) in Pinstrup-Andersen *et al.* (1995), nutrition education alone may, however, not translate into healthy eating if it is not accompanied by food security attempts. In support, Ottem (2010) attests that knowledge and education are not sufficient to change people's eating behaviours if healthy food is not made available in places such as the home, the school and the community. As such, nutrition education has the potential to yield positive outcomes, yet only when coupled with food security, as Faber *et al.*'s (2011) study of the Ndunakazi project in the Eastern Cape also indicates (refer to Chapter 2).

The findings I obtained furthermore demonstrate how the Win-LIFE intervention promoted positive learning outcomes among the learners. The teachers confirmed that the learners demonstrated increased interest as the intervention progressed and that they became passionate and keen to acquire knowledge. The teachers ascribed these positive outcomes to the fact that the learners easily understood the content of the programme, as its language is straightforward, which allowed learners

to easily comprehend the content. The attractive layout of the workbooks further increased the learners' interest in the intervention programme, once again having a positive effect on their learning.

Finally, the findings of the current study indicate that the Win-LIFE intervention contributed to improved reading skills among the learners, better vocabulary as well as the ability to answer questions more easily during the learning activities. Closely related, the findings highlight that learners also gained knowledge about how to complete crossword puzzles and word searching activities, which resulted in the perceived improvement of their English language skills. The teachers attributed the learners' increased knowledge and skills to by-way-of-play learning strategy that was followed, pointing to the value of such an approach when teaching. As the learning activities included in the intervention promoted the learners' active participation in acquiring knowledge and skills, it also encouraged them to share information with their parents and family members. This positive outcome correlates with Pinstrup-Andersen *et al.*'s (1995) study on the importance of participants' active participation in the promotion of healthy food practices.

6.2.2.2 Perceived value of the Win-LIFE intervention for parents

The findings of the current study indicate the teachers' view that the Win-LIFE intervention was valuable to the participating learners' parents. The parents were positive about their children's involvement in the project and the fact that the intervention also involved them in their children's homework activities. In this way, parents were exposed to the nutrition and environmental information presented to their children, allowing them as parents to, for example, gain knowledge and skills regarding healthy living and nutrition, as well as acquire vegetable gardening skills. The findings also indicate that the parents specified the knowledge and skills they gained from their children. This finding correlates with Lytle *et al.*'s (2006) finding that students will transfer their newly gained food-related knowledge to their parents. I also found that the parents then shared this information with others, for example their friends and other community members, to further spread the knowledge they had gained about vegetable gardens.

The parents also gained knowledge about healthy cooking methods, the different food groups and a healthy lifestyle because of their children's participation in the Win-LIFE intervention. According to the findings I obtained, the parents started valuing the importance of having a vegetable garden at home because it can provide food for their families and subsequently support the SDG to eliminate poverty and/or hunger by means of education and the prevention of diseases due to healthy eating (Griggs *et al.*, 2013). In support of this finding, several studies indicate that healthy eating can contribute to good health and holds the potential to reduce risk factors for non-communicable diseases (NCDs), for example Hawkes (2013), Adato (2006), Richter and Desmond (2008), Aliber (2009) and Labadarios (2011).

Finally, the findings of the current study indicate that the teachers perceived the Win-LIFE intervention as having the potential to bring teachers, learners and parents together, thereby affecting the community in a positive way. This new insight contributes to the existing body of knowledge in terms of participants' active involvement in interventions. It also indicates that involvement may enhance participants' ownership by promoting their health. Further research is, however, required to explore this hypothesis in more depth.

6.2.3 Challenges and Recommendations for Future Implementation of the Win-LIFE Intervention

Despite the reported positive outcomes of the Win-LIFE intervention, certain challenges were also prevalent. These challenges include the limited time for training and the implementation of the intervention, the specific time of implementation in the academic year, as well as the suitability of the intervention content. Based on these challenges, teachers made certain recommendations for future implementation of the intervention.

6.2.3.1 Time-related challenges

The findings of the current study indicate that the teacher-participants experienced the training they received on implementing the intervention as limited. The training involved one session at the University of Pretoria, which in itself was experienced as a limitation, due to the venue considering that not all teachers were able to attend because of transport difficulties. In this regard, the teachers indicated that the

training should have comprised more sessions for them to gain more knowledge about the intervention programme before implementing it. Furthermore, the findings I obtained indicate that the time allocated to the training was also experienced as insufficient. To this end, the teachers mentioned that an additional workshop or training session could have benefitted them.

In addition to the challenge concerning limited training time, the findings of the current study indicate that the specific time of implementation of the intervention in the academic year did not align with the Department of Education's Annual Teaching Plan (ATP). The teachers indicated that the nutrition education content they discussed as part of the Win-LIFE intervention had for example, already been dealt with at the time of the intervention. In this regard, the teachers faced the challenge of curriculum officials monitoring curriculum delivery and finding them not aligning with the content indicated in the stipulated national curriculum.

The teachers, however, overcame this potential challenge by implementing the intervention after hours, especially in terms of the Life Skills subject. However, the teachers viewed the dual implementation of the national curriculum (CAPS) and the intervention content as intensive and time-consuming. Closely related, the teachers also experienced available time in a week for implementing the intervention, in addition to the national curriculum, to be insufficient.

6.2.3.2 Suitability of the content included in the Win-LIFE intervention

Despite the teachers' positive experiences of the layout and language used in the intervention workbooks, some learners still had trouble to understand the content or certain words used in the workbooks. However, the learners' vocabulary had improved towards the end of the intervention.

The findings of the current study furthermore indicate that the teachers were concerned about the suitability of the intervention's content for promoting learners' food consumption practices due to the resource-constrained community they come from. This finding correlates with Ottem's (2010) study, which indicates the importance of food availability when promoting healthy food consumption. Manoff (1987) in Pinstруп-Andersen *et al.* (1995), Bamji and Murphy (2006), as well as

Pinstrup-Andersen *et al.* (1990), further confirm this finding by indicating that nutrition education alone will not translate into healthy eating, as it needs to be coupled with food security.

In this regard, the teachers who participated in the current study indicated that the learners would not necessarily be able to afford the healthy food about which they learned, as they come from a poor community. The teachers as a result suggested more guidance on food that is healthy yet also affordable. In addition, the participating teachers indicated that many learners stayed with their grandparents, who may also not be in the position to provide learners with healthy food. This finding concurs with a study done by Charlton and Rose (2002), indicating that food insecurity is detrimental to healthy food consumption. The WHO/FAO (2003) report furthermore emphasises that the WHO and FAO view poverty as a root cause of unhealthy food practices. Ivers and Cullen (2011) also attest that low-income can present a challenge in sustaining healthy food choices and consumption behaviour.

Regarding parental involvement, the findings of the current study indicate that the teachers were not pleased with the level of parental involvement during the intervention. The findings furthermore point to a link between limited parental participation and parents' literacy levels. To this end, the teachers indicated that many parents could not access the content of the workbooks because these were written in English and most parents are not able to read in English or to answer the questions that were included. Follow-up research is required to further investigate this finding, also in terms of ways to enhance parental involvement when the parents' education levels are low.

Finally, the findings of the current study indicate that even though teachers were willing to assess the success of the Win-LIFE intervention, limited time prevented them from clearly establishing the extent to which the learners shared their knowledge and skills with their parents. Further research is therefore required to determine the extent of knowledge and skills transfer from learners to their parents and/or caregivers after the implementation of a school-based intervention such as the Win-LIFE intervention.

6.2.3.3 Recommendations for future implementation of the Win-LIFE intervention

The teachers recommended more extensive training and improved planning of implementation schedules when considering the future implementation of the Win-LIFE intervention. In terms of training, the teachers recommended that follow-up training should be conducted in addition to the initial training, before implementation, to ensure the teachers' understanding of the content of the intervention and to address any questions that might have arisen. The teachers furthermore recommended that district officials (facilitators or subject advisors) of the Department of Education be involved in the training sessions for them to also be informed. This may enable officials to assist in monitoring the progress of the implementation process of an intervention. To this end, the teachers viewed the district officials' involvement as an important step to address some of the challenges discussed in the previous section. All these recommendations add to the existing knowledge base and represent new insight stemming from the current study.

Next, the findings of the current study indicate the need for a clear planning and implementation schedule that can guide the process of an intervention before and during implementation. This recommendation once again indicates the importance of involving Department of Education district officials, who may ensure that an intervention's themes align with the Annual Teaching Plan (ATP) stipulated by the national curriculum, and who can support the smooth implementation of an intervention programme in schools. In this regard, the current study highlights the importance of introducing schools to an intervention (for example the Win-LIFE intervention) long before it is implemented, as well as the importance of discussing how the intervention's themes will align with curriculum topics prior to implementation. Furthermore, the findings of the current study also indicate that district officials, who know the school curriculum and its requirements, can inform the specific time of implementation in the academic year.

In terms of assessment following the Win-LIFE intervention, the findings of the current study indicate the teachers' view that learners should be assessed following the implementation of an intervention to evaluate the knowledge and skills they had gained. In addition, post-intervention assessment may enable teachers to determine

the outcomes of an intervention programme in the lives of the learners and, to an extent, in the lives of their parents and other relatives.

6.2.3.4 Recommendation to extend the intervention to other subjects

The Win-LIFE intervention was implemented among Grade 4 to 6 learners. Based on the finding that teachers found the content of the intervention insightful and educative about both nutrition-related and environmental education, the teachers recommended that the Win-LIFE intervention should be extended to other subjects and allow for more time spent on the implementation and content covered. More specifically, teachers recommended an extension of the Win-LIFE intervention to subjects such as Social Science and Economic and Management Sciences.

In addition, Geography was indicated as another subject to which the Win-LIFE intervention may be extended, considering that it can equip learners with knowledge about different types of soil, for example. These findings add new insight to existing literature on how school-based interventions can be infused in different subjects to promote healthy food practices. The teachers furthermore specifically recommended the inclusion of more practical activities that may foster positive attitudes and active learner participation in the classroom and during learning.

6.2.3.5 Recommendation to more actively involve parents, community members and stakeholders

The findings of the current study indicate that the teachers believed that any future implementation of the Win-LIFE intervention should more actively involve the parents, community members and other stakeholders. The teachers namely recommended that such involvement should start with training, to inform all stakeholders about the content of the intervention. To this end, it was recommended that all teachers involved in the intervention should receive training, regardless of whether, or not, they will be implementing the intervention. Bamji and Murthy (2006), who involved parents and other community members during their investigation of learners' knowledge about hunger and malnutrition, support this finding.

In addition to training all the teachers, the recommendation also involved that parents should be equipped with the necessary knowledge and skills to assist them

in supporting their children with intervention-related activities. Such training may enable the parents to do what is expected of them when assisting their children or when they become involved in their children's learning. The teachers furthermore indicated that parental involvement can potentially lessen the workload they carry.

According to the findings of the current study, another recommendation relates to principals and school governing body (SGB) members' involvement to support the implementation of a school-based intervention such as the Win-LIFE intervention. Furthermore, the teachers indicated the need to involve Gauteng Department of Education (GDE) officials in Natural Sciences and Technology (NSTECH), as well as Life Skills, in any training session to enable them to monitor the intervention and the implementation process.

In terms of the suitability of an intervention such as the Win-LIFE intervention when working with learners in such contexts, the findings of the current study indicate that community-based interventions can be effective and promote healthy food practices in resource-constrained communities. The work of Faber *et al.* (2011), as well as Spaargaren *et al.* (2012), which indicates the positive effect of community engagement initiatives focusing on healthy food practices and food production activities, supports this finding.

6.3 FINDINGS ON PARENTS' EXPERIENCES OF THE WIN-LIFE INTERVENTION

In this section, I discuss the findings I obtained on the parents' experiences of the Win-LIFE intervention. Table 6.2 provides an overview of these findings.

Table 6.2: Overview of findings on parents' experiences of the Win-LIFE intervention

THEME	MAIN FINDING	AUTHOR AND YEAR	RELATION WITH EXISTING LITERATURE
Theme 1: Gaining knowledge about healthy food practices because of the Win-LIFE intervention	Sub-theme 1.1: Parent-participants gained knowledge about healthy food choices in support of a healthy living as a result of their children's involvement in the Win-LIFE intervention	Wordell <i>et al.</i> (2012) Hawkes (2013) WHO/FAO (2003) Lytle <i>et al.</i> (2006) Griggs <i>et al.</i> (2013) James (2004) Charlton and Rose (2002) Ivers and Cullen (2011) Pinstrup-Andersen and Watson (2011) Falk <i>et al.</i> (1996). (2002)	Supporting existing literature
	Sub-theme 1.2: Parent-participants gained knowledge about food production and started vegetable gardens at home, as a result of the Win-LIFE intervention	Behnassi <i>et al.</i> (2011) Griggs <i>et al.</i> (2013) Hamm and Bellows (2003) Kataki and Babu (2002) Ottem (2010) Malik (2013) Oniang'o and Mukudi (2002) Baiphethi and Jacobs (2009) Faber <i>et al.</i> (2011) Harris <i>et al.</i> (2014) Spaargaren <i>et al.</i> (2012)	Supporting existing literature
	Sub-theme 1.3: Parent-participants gained knowledge about hygiene and cleanliness when handling food, as well as about healthy cooking methods, due to the Win-LIFE intervention	Rodriguez-Amaya (1997) Bernhardt and Schlich (2006) Raber (2016) Oldewage-Theron <i>et al.</i> (2011) Mello (2010)	Supporting existing literature
	Sub-theme 1.4: Parent-participants gained knowledge about healthy food consumption as a result of their children's involvement in the Win-LIFE intervention	Wrieden <i>et al.</i> (2006) Puri <i>et al.</i> (2008) Louwens <i>et al.</i> (2009) Faber <i>et al.</i> (2011) Bellisle (2004) Weinreb <i>et al.</i> (2002) Alderman <i>et al.</i> (2006)	Supporting existing literature
Theme 2:	Sub-theme 2.1: Parents applied their newly gained knowledge	Lytle <i>et al.</i> (2006) Wrieden <i>et al.</i> (2006)	Supporting existing literature

THEME	MAIN FINDING	AUTHOR AND YEAR	RELATION WITH EXISTING LITERATURE
Applying newly gained knowledge	from the Win-LIFE intervention by purchasing healthier food	Falk <i>et al.</i> (1996)	
	Sub-theme 2.2: Parent-participants applied their newly gained knowledge by starting vegetable gardens at home	Hamm and Bellows (2003) Faber <i>et al.</i> (2011) Ottem (2010) Behnassi, <i>et al.</i> (2011) Baiphethi and Jacobs (2009) Harris <i>et al.</i> (2014) Labadarios <i>et al.</i> (2011) Richter and Desmond (2008) Aliber (2009)	Supporting existing literature
	Sub-theme 2.3 Parent-participants adopted healthy food preparation and food storage guidelines as a result of the Win-LIFE intervention	Rodriguez-Amaya (1997) Raber (2016)	Supporting existing literature
	Sub-theme 2.4: Parent-participants applied their newly gained knowledge by following healthy food consumption guidelines	Weinreb <i>et al.</i> (2002) Bellisle (2004) Wrieden <i>et al.</i> (2006) Faber <i>et al.</i> (2011) Puri <i>et al.</i> (2008) Alderman <i>et al.</i> (2006) Spaargaren <i>et al.</i> (2012)	Supporting existing literature
	Theme 3: Requiring additional knowledge and guidelines	Sub-theme 3.1: Parent-participants required additional information about the types and functions of food sources that can promote health and well-being	Raschke and Cheema (2008) Pretorius and Sliwa (2011)
	Sub-theme 3.2: Parent-participants required additional guidance on starting and maintaining vegetable gardens	Oniang'o and Mukudi (2002) Spaargaren <i>et al.</i> (2012)	Supporting existing literature
	Sub-theme 3.3: Parent-participants indicated a need to obtain and understand more detailed guidelines on healthy food preparation and storage	Pinstrup-Andersen <i>et al.</i> (1995) Ahsan (2014)	Supporting existing literature

6.3.1 Increased Knowledge and Changed Food-related Practices because of the Win-LIFE Intervention

The findings of the current study indicate that the parents of learners who formed part of the Win-LIFE intervention gained knowledge and skills regarding food choice, food production, food preparation and food consumption due to their children's involvement in the intervention. As a result, they started applying their newly gained knowledge in support of their own and their children's health and well-being.

6.3.1.1 Increased knowledge about healthy living and making healthy food choices

According to the findings of the current study, the learner-participants' parents gained knowledge about healthy food choices through their children who participated in the health-promotion intervention. In this regard, Wordell *et al.* (2012) attest that health-promotion interventions can positively influence participants' food choices. The findings of the current study namely indicate that the parents gained knowledge about the value of buying fruits and vegetables by reason of the nutrients these contain, which can benefit general health.

Closely related, I found that parents gained knowledge about the function of various vegetables for the human body. This finding relates to Hawkes' (2013) findings on nutrition education, indicating that the insufficient consumption of fruits and vegetables can increase the risk of cardiovascular diseases and various forms of cancer. As such, the findings of the current study indicate that newly gained knowledge raised the participating parents' awareness of the importance of choosing healthy food that can build the immune system and promote healthy growth. These findings support the formulated MDGs that focus on reducing child mortality, as well as the SDG that aims to achieve better health for all. The report by WHO/FAO (2003) furthermore relates to this finding, indicating that more than 60% of child deaths under the age of five in developing countries are related to malnutrition.

Because of the knowledge they gained, the parents started adopting healthy food choice practices, reducing their purchases of unhealthy food and/or wasting money on unhealthy choices. This finding concurs with Lytle *et al.*'s (2006) study that

indicates that the parents of students who were involved in that intervention, similarly started to make healthier food choices when buying groceries following the intervention. Furthermore, James (2004) who regards well-being as embedded in the food that people choose to consume, supports this finding. The knowledge that the parents participating in the current study gained about healthy food choices, equipped them with the necessary skills to choose fresh vegetables and to examine the quality of the food they buy. The findings indicate that they, because of the intervention, started purchasing a greater variety of nutrient-rich food.

In summary, the findings of the current study indicate that the parents gained knowledge about the importance of the various nutrients in food and started to apply this knowledge because of the Win-LIFE intervention. Charlton and Rose (2002) support this finding by highlighting the importance of consuming nutrients that can address a marginal vitamin A status, iron-deficiency, anaemia and retarded growth. This finding furthermore correlates with SDG 1 that calls for thriving life and livelihood through healthy nutrition.

Even though the parents who participated in the current study were found to have acquired knowledge about healthy food choices because of the Win-LIFE intervention, Lytle *et al.* (2006) indicate that different factors such as personal taste and cultural preferences, shape food choices. Ivers and Cullen (2011) furthermore attest that low income and related economic factors may have a negative impact on families' ability to sustain healthy food choices. In support, Falk *et al.* (1996) highlight the relationship between healthy food choice and family income. Pinstруп-Andersen and Watson (2011) confirm this view by indicating that people who do not have sufficient income may suffer at different levels of their lives, including a lack of healthy nutrition. As I did not explore the sustainability of the participating parents' healthier food choices in my study, follow-up research is required into this area.

6.3.1.2 Increased knowledge about and application of healthy food production practices through vegetable gardens

The findings of the current study indicate that the parents gained knowledge about the value of producing their own food, more specifically through vegetable gardens, and what this entails. The parents namely gained knowledge about how to prepare

and fertilise soil when planting vegetables, as well as about the importance of fertilising the soil before planting seeds. In addition, the parents learned how to prepare compost to fertilise soil.

According to the findings I obtained, the participating parents furthermore gained knowledge and skills regarding planting specific seeds and spacing plants when planting to allow the plants enough air. Because of their newly gained knowledge, some parents reportedly started their own vegetable gardens at home. This finding concurs with a study done by Behnassi *et al.* (2011), indicating that vegetable farming can improve communities' food consumption patterns. Hamm and Bellows (2003) as well as Spaargaren *et al.* (2012), who define food security as a system that maximises self-reliance and social justice as far as food production is concerned, further support this finding. In this regard, Ottem (2010) confirms that food production can take different forms such as planting vegetables in home backyards, open spaces in the community, school yards, kitchen gardens and rooftop gardens. Such knowledge relates to the SGD aiming for sustainable food consumption through food production. To this end, Oniang'o and Mukudi (2002) attest that sustainable food production is the corner stone/first pillar of food security. Kataki and Babu (2002) confirm this finding by explaining how an increase in national income by means of agricultural products can positively impact on the national status of people in developing countries, following their research.

As such, the knowledge the parents gained because of the Win-LIFE intervention in this study empowered them to start planting vegetables and grow nutrient-rich food to provide for themselves and their families. Baiphethi and Jacob (2009), who maintain that food production will reduce poor people's dependence on purchasing food, who can often not keep up with high food prices due to inflation, support this finding. This finding is furthermore confirmed by Faber *et al.* (2011), who promote food gardening in resource-constrained settings, as well as by Harris *et al.* (2014), who found that migrants in Australia who were allocated plots to farm, managed to produce crops and traditional food. Spaargaren *et al.* (2012), who indicate that individual and community involvement in food production may contribute to food sustainability among people, also support this finding.

Closely related, the findings of the current study indicate that the Win-LIFE intervention equipped the parents of learners who formed part of the intervention programme with knowledge and skills on how to become food secure and self-reliant in providing their families with healthy food. Morgante and Magini (2013), who indicate the importance of nutrition education in addressing the cycle of poverty and malnutrition that people in resource-constrained communities face, further support this finding. Follow-up research is, however, required into the extent of such practices and the home-based vegetable gardens on which the participants reported.

6.3.1.3 Increased knowledge about and application of guidelines on hygiene and cleanliness during food preparation

The findings of the current study indicate that the parents of the learners who formed part of the Win-LIFE intervention gained knowledge about and skills in hygiene and the importance of cleanliness during food preparation and food storage. As a result, the parents started to implement related guidelines when preparing food such as rinsing their hands before touching food or cooking. The parents also indicated that they began to store food in clean places and that they attended to the guidelines on food storage they had acquired.

In addition, the findings of my study indicate that the parents gained insight into healthy cooking methods and how this can assist them in preparing balanced meals that may, in turn, promote their families' health and well-being. The parents namely gained insight in terms of how to prepare different types of food such as starch food, meat, vegetables and herbs. As a result, for example, they started cooking food for shorter times to preserve the nutrients that are beneficial to health. The parents, for example, indicated in this regard that they no longer cooked cabbage for a long time to ensure that it remained healthy and nutritious. Rodriguez-Amaya (1997), who indicates that the retention of vitamins will decrease because of incorrect cooking methods, support this finding. Bernhardt and Schlich (2006) also confirms this view.

The parents who participated in this study therefore gained knowledge about healthy food preparation practices following their children's participation in the intervention. They, for example, gained knowledge about the use of fat and salt when preparing

meals, as well as about unhealthy cooking methods such as deep frying. Oldewage *et al.* (2011), who indicate that South Africa's food consumption patterns have changed in terms of an increase in saturated fats and rich food with added sugar, support this finding. Mello *et al.* (2010), who attest that fat reduction practices such as avoiding frying, adding fats to food, removing the skin of the chicken, draining cooked hamburgers or making healthy choices in a restaurant are not cost-related, further support this finding. To this end, the parents who participated in the current study gained insight into cooking healthy food by not overcooking food to preserve the food nutrients that are essential for building a healthy body. A study that Raber (2016) did on healthy cooking, similarly confirm this finding.

6.3.1.4 Increased knowledge about and implementation of healthy food consumption practices

The findings of the current study indicate that the parents gained knowledge about healthy food consumption practices following their children's involvement in the Win-LIFE intervention. The parents namely gained knowledge about the value of eating a balanced meal that includes carbohydrates and protein in the form of meat and vegetables, with reduced starch intake. Wrieden *et al.* (2006), who maintain that a healthy diet or balanced meal can improve health and prevent diseases, support this finding.

Because of their newly gained knowledge, the parents thus started consuming a variety of food such as rice, macaroni, potatoes, fish, chicken, yoghurt and cheese instead of only a limited range of starch and vegetables. Puri *et al.* (2008), who state that a healthy diet that provides calcium, phosphorus and vitamins can build and maintain healthy bone weight throughout life, support the parents' indication that the consumption of healthy food can build the body and fight diseases. To this end, the parents who participated in the current study thus started consuming different food items that contain a variety of nutrients. The parents furthermore indicated that they started eating less fatty foods and no longer used excessive salt when preparing food.

In terms of fruit and vegetable consumption, the parents gained insight into the importance of eating raw vegetables such as carrots and tomatoes. This finding

confirms Louwens *et al.*'s (2009) findings, indicating that food products of plant origin such as fruits and vegetables, as well as grains, can provide a variety of antioxidants in the diet that may contribute to a decrease in diseases. The findings of the current study also indicate that the parents furthermore gained insight into the value of vitamins contained in fruits and the benefit of drinking water, fruit juice and milk for health purposes, resulting in the increased consumption of these drinks.

In addition to adapting their own food consumption practices, the parents also encouraged their children to eat more green vegetables such as spinach and traditional herbs (*morogo*). Thus, the parents attempted to support their children to consume nutritious food and eat at least one fruit each day. Faber *et al.*'s (2011) study, indicating the WHO stipulation of a daily consumption of more than 400g of vegetables and fruits by each person for health and well-being, confirms this finding. This finding furthermore concurs with Puri *et al.*'s findings (2008), which indicate that healthy nutrition plays a vital role in children's health, especially during their early developmental years. Bellisle (2004) supports this finding and maintains that poor nutrition may affect a person's functional ability and has relevance to school performance. Furthermore, Weinreb *et al.* (2002) affirm that children need to consume healthy food, considering that poor nutrition or hunger can affect their physiological and emotional well-being, as well as their ability to cope with stress. Alderman *et al.* (2006) also attest to this, stating that malnourished children tend to start school late and perform poorly in cognitive tests.

6.3.2 Need for Additional Knowledge about and Guidelines on Food-related Practices

Even though the parents participating in the current study gained knowledge about food choice, food production, food preparation and food consumption, I also found that their need for additional knowledge and skills in these fields remained prevalent. The parents firstly indicated a distinct need for additional knowledge about indigenous or traditional food. They specifically indicated their need to know whether, or not, traditional food is healthy for consumption and what functions and benefits traditional food hold for the human body. Raschke and Cheema (2008) support these voiced needs when they indicate that sub-Saharan indigenous knowledge about traditional food habits has deteriorated over the years, as is also

confirmed by Pretorius and Sliwa (2011), who indicate that traditional food has been abandoned in favour of a western diet over recent years.

In terms of much-needed nutrients and vitamins, the parents indicated that they required additional knowledge about the different types of food that contain different vitamins, carbohydrates and proteins. This finding indicates that the parents required more information about how to identify suitable food types as well as the nutrients that specific food items contain, for them to fully understand the health benefits of each. Furthermore, the findings of the current study indicate that the parents required more knowledge about different types of fruits and vegetables to make healthy food choices. The parents also displayed the need to learn more about the different types of meat, especially red meat, and the portions of red meat that is safe for daily consumption, as they were concerned that red meat could cause gout.

Next, the parent-participants indicated the need to gain more detailed information about the planting of vegetables to provide food for their families, as well as food production throughout the year. The parents specifically required guidance on the identification of suitable soil, types of vegetables, types of soil, making compost and ways of rotating vegetable plants for the soil to yield good crops. The parents also wanted to know how to attend to plants after planting to ensure the production of healthy crops. Oniang'o and Mukudi (2002) as well as Spaargaren *et al.* (2012), support these findings in terms of individual or community members' sustainable food production.

In addition to their need for more detailed guidance on food production, I found that the parents also required additional information about healthy cooking methods and the preparation of balanced meals. More specifically, parents required more knowledge about how to cook vegetables and herbs so that the food remain healthy yet also delicious, as children are often reluctant to eat vegetable dishes. The parents furthermore required to know more about the consumption of raw vegetables based on their realisation that these can promote health.

Even though the findings of the current study thus indicate that the Win-LIFE intervention empowered the parents with broad knowledge about and some skills in

food-related practices, the findings also show that the parents required more detailed information about this topic in terms of suitable eating times, portion sizes and how to determine or measure the required portion sizes to not eat excessively. Finally, in terms of food storage, the findings of the current study indicate that the parents needed more guidance on how to store food when not having access to a refrigerator. The parents specifically indicated the need for guidance on food preservation and safe storage for future use. This finding confirms Ahsan's (2014) contribution in the field of food preservation, referring to methods such as sun drying, air drying, oven drying, dehydrating and smoking. This finding, however, also indicates that the parents gained insight into the importance of hygiene and healthy food storage and that these can promote a healthy living, based on their children's participation in the Win-LIFE intervention.

6.4 FINDINGS ON LEARNERS' EXPERIENCES OF THE WIN-LIFE INTERVENTION

In this section, I briefly discuss the findings related to the learners' experiences of the Win-LIFE intervention regarding the enriched Life Skills and Natural Science and Technology curricula, as reported by Bentley (2016) and De Vos (2017). As I did not take the primary responsibility for data generation with the learner-participants, I do not include an overview of the main themes and findings as an introduction to this section. These may be obtained from Bentley (2016) and De Vos' (2017) mini-dissertations. I rather focus on a synthesis of the findings that these two co-researchers obtained.

6.4.1 Value of following an Experiential Learning Approach for the Win-LIFE Intervention

The findings of both Bentley (2016) and De Vos' (2017) studies indicate that the experiential learning approach followed during the Win-LIFE intervention yielded positive experiences for the participating learners. The learners enjoyed the practical activities included in the intervention, which assisted them in understanding the learning content presented to them more easily. The learners were subsequently able to construct their own meaning as part of the enquiry-based learning process that was followed. This approach was found to have motivated the learners to actively participate in processing the Life Skills learning content to which they were exposed (Bentley, 2016).

The researchers also observed a distinct determination to achieve among the participating learners, who displayed enjoyment when participating in the practical activities of identifying different types of soil, feeling soil texture and planting seeds, as part of the enriched Natural Science and Technology curriculum. According to De Vos (2017), the learners were afforded the opportunity to firstly explore the learning content in a concrete and practical way, as well as to reflect on the knowledge they had gained. At a broad level, the Win-LIFE intervention's engagement of learners in activity-based learning aimed at enabling them to become responsible citizens and to take responsibility and remain committed during all learning activities (De Vos, 2017).

Even though Bentley's (2016) study indicates that the learners gained insight into healthy food choices, the practice and sustainability of healthy food consumption practices among the participants require additional investigation. The learners still seemed to prefer high-energy food items at the end of the intervention, probably due to affordability or food insecurity (Bentley, 2016). In this regard, Pinstrup-Andersen *et al.* (1995) indicate that when a family's economic status is below average, nutrition education may not sufficiently improve their nutritional condition. The WHO/FAO (2003) report in this regard indicates that unhealthy dietary changes can lead to higher energy density diets that contain added fat and sugars, in further support of this finding. Therefore, the finding that some learners still preferred high-dense energy food after acquiring knowledge about healthy food practices, may highlight food insecurity as an underlying cause of unhealthy food consumption. Additional research is, however, required into this field before coming to conclusions.

6.4.2 Value of Skilled Facilitators during Implementation of the Intervention

Bentley's (2016) study indicates that participating learners experienced the supportive learning environment, which the skilled facilitators created, as important and encouraging to them to participate and make contributions without the fear of embarrassment. A supportive learning environment is vital in creating a conducive learning atmosphere that can, in turn, enhance meaningful learning among learners (Bentley, 2016). In addition, the facilitators' communication to the learners that they

believed in their ability to gain knowledge and skills, seemingly contributed to their improved achievement. As a result, the learners responded well to the facilitators of the Win-LIFE intervention and were keen to learn.

Due to their active participation and achievement, the learners' self-confidence also increased, based on the meaningful contributions they were able to make (De Vos, 2017). As already stated, learners were engaged, keen to learn and committed to participate in and reflect on what they had learned and gained throughout the Win-LIFE intervention, with these tendencies increasing as the intervention progressed.

6.4.3 Enriching the Life Skills and Natural Sciences and Technology Curricula through the Win-LIFE Intervention

For both the Life Skills and Natural Sciences and Technology subjects, the national CAPS curricula were enriched by including additional colourful, attractive worksheets that learners completed in class, as well as home activities targeted at the learners and their parents'/caregivers' joint efforts. The format and outline of the Win-LIFE intervention learner books also contributed to the success of the intervention in terms of the learners' interest in the content. Furthermore, the Win-LIFE intervention relied on experiential learning as teaching approach (refer to the previous section), which was once again accompanied by creative activities and a supportive learning environment created by the facilitators. In addition, the learners' efforts were acknowledged by, for example, providing them with stickers of appreciation and certificates of participation at the end of the intervention. These positive strategies therefore enhanced positive attitudes among the learners and motivated them to meaningfully engage, contribute to discussions and activities, and reflect on the knowledge and skills they had gained (Bentley, 2016; De Vos, 2017).

Both the Life Skills and Natural Sciences and Technology curricula were furthermore enriched with group work activities. These strategies engaged the learners in experiential and cooperative learning experiences, thereby instilling a sense of "ownership" in them to take responsibility for their own learning. As already stated, the learners displayed a sense of responsibility with their commitment, their constant

contributions and their active participation in the Win-LIFE intervention, as both Bentley (2016) and De Vos (2017) report. The findings furthermore indicate that both learners and parents' involvement during the Win-LIFE intervention yielded positive results; with the parents signing their children's homework books and acknowledging the activities that had been completed during the intervention sessions, in addition to participating in joint homework activities.

6.4.4 Knowledge and Skills Acquisition and Transferral following the Win-LIFE Intervention

Both Bentley (2016) and De Vos (2017) found the ability of the learner-participants to retain the knowledge and skills they had gained to be a positive outcome. These co-researchers ascribe this finding to the different approaches used such as group work, enquiry-based learning, reflections, inclusion of audio-visual material and using, for example, songs during intervention sessions. In addition to the learners demonstrating the knowledge and skills they had gained at the end of the intervention, they also displayed improved interpersonal relations in their peer groups.

Following the implementation of the intervention, the learners gained insight into the importance of healthy living and the advantages of making healthy food-related choices. The learners were able to share this with others and subsequently also retained what they had learned (Bentley, 2016; De Vos 2017). Stephan *et al.* (2007) support this finding and view children as the best resource of any nation to promote health by means of, for example, school-based interventions. The WHO/FAO (2003) report similarly confirms this finding and indicate that healthy food practices can indeed be promoted by equipping learners with knowledge about and skills in nutrition education, as well as by changing their attitude to choose healthy food.

According to the findings of the current study, the learners namely shared their gained knowledge and skills on, for example vegetable gardens, with their parents and other family members. The findings of the study furthermore indicate that many learners subsequently reported on vegetable gardens at their homes. Such home-based vegetable gardens initiatives support the aims of the MDGs (Garrity, 2004; Gibson, 2016) and SDGs (Griggs, *et al.* 2013) that are related to the eradication of

poverty, which is, in turn, directly influenced by food insecurity. As the current study could not confirm the extent to which learners transferred their newly gained knowledge to their parents and family members, or how many of them started sustainable vegetable gardens at home, further research is required into this area.

Therefore, the Win-LIFE intervention was structured in such a way that it allowed the facilitators to successfully transfer knowledge and skills to the learners (by way of their own participation and doing), while cultivating positive attitudes towards learning among the learners. Both Bentley (2016) and De Vos (2017) found that this approach can support interest, commitment and meaningful learning. To this end, the enriched Win-LIFE curriculum positively empowered the learners with knowledge about the importance of food security and how to follow healthy food practices to aim for such security.

6.4.5 Learner-centred Challenges experienced during Implementation of the Win-LIFE Intervention

Both Bentley (2016) and De Vos (2017) found that the learners were initially hesitant to meaningfully engage in group activities, yet they soon relaxed and started participating in an active way. The learners were unfamiliar with group work at the start of the project and seemed hesitant to provide potentially wrong answers that could result in their peers laughing at them. This trend, however, changed after a few sessions when learners realised that all contributions were taken as valuable.

The findings indicate that some of the learners experienced the noise during group work as a challenge; something which seemingly disturbed their focus on the activities at hand. Bentley (2016) and De Vos (2017), however, found that the learners overcame these challenges as they became familiar with the approach that was followed in the group work activities. The supportive learning environment that the skilled facilitators of the intervention created furthermore contributed to this end.

6.7 CONCLUSION

In this chapter, I interpreted the results I (and co-researchers Bentley and De Vos) obtained regarding the participating teachers', parents' and learners' experiences of the Win-LIFE intervention. To this end, I related the themes and sub-themes I

discussed in the preceding two chapters to the background literature I presented in Chapter 2. In my discussion, I highlighted correlations, identified silences in the data and indicated new insights based on the findings of the current study.

In the next and final chapter of this thesis, I come to conclusions in terms of the research questions I formulated in Chapter 1. I contemplate the contribution of my study, reflect on the challenges and limitations I identified and then formulate recommendations based on the findings and conclusions I obtained.

CHAPTER 7

CONCLUSIONS AND RECOMMENDATIONS

7.1 INTRODUCTION

In Chapter 6, I discussed the findings of the study in relation to the literature review I presented in Chapter 2. I highlighted new insights stemming from the study and foregrounded the correlations I identified. I also noted aspects of the findings that require further research.

In this chapter, I first provide an overview of the previous chapters. I then reflect on my role as researcher and reach conclusions in terms of the research questions I formulated in Chapter 1. Next, I present the contributions of the current study, discuss the challenges and limitations I identified, and conclude with recommendations for future training, practice and research.

7.2 OVERVIEW OF PREVIOUS CHAPTERS

In **Chapter 1**, I provided background information and an overview of my study. I indicated the purpose of the study and formulated the research questions. I introduced my conceptual framework and the paradigmatic choices I made. Next, I introduced evaluation research as my selected design, applying PRA principles. I also stipulated the methodological strategies I used for data generation, documentation and analysis. I briefly referred to the rigour of the study and indicated how I aimed to adhere to the relevant quality criteria and ethical considerations while conducting qualitative research.

In **Chapter 2**, I discussed the literature I reviewed as basis for this study. More specifically, I explored current literature on the challenges that resource-constrained communities in South Africa face, which may potentially negatively impact on the health and well-being of the people in such communities. I highlighted the importance of healthy nutrition and discussed school-based interventions that have been implemented locally and globally as possible ways to promote the health and well-being of people in vulnerable contexts. I furthermore highlighted how the MDGs and SDGs had been addressed in South Africa up to now and their relevance in the promotion of the health and well-being of people in resource-constrained

communities. Furthermore, I discussed cooperative learning strategy that teachers used during the Win-LIFE intervention. I concluded the chapter with a discussion of my conceptual framework, drawing on the theory of Bronfenbrenner (1979) and the social cognitive learning theory of Bandura (1986).

In **Chapter 3**, I explained the evaluation research design I used and how I applied PRA principles in the process. I justified my choices of an interpretivist paradigm and a qualitative methodological approach. I also described how I selected the cases and participants. I furthermore elaborated on the research methodology of the study by explaining the data-generation and documentation strategies of PRA-based activities, observation-as-context-of-interaction, an open-ended questionnaire, audio-visual techniques, field notes and research dairies. I discussed the thematic analysis I completed and stated how I attempted to adhere to quality criteria and ethical principles.

In **Chapters 4 and 5**, I reported the results of the study, following my evaluation of the school-based Win-LIFE intervention. In Chapter 4, I focused on the teacher-participants' experiences and views and in Chapter 5, on those of the parent- and learner-participants. In discussing the results, I presented the themes and sub-themes I identified during inductive thematic analysis and included excerpts from the data to support my discussions.

In **Chapter 6**, I synthesised the results I obtained. To this end, I interpreted the themes and sub-themes I identified against the background literature I presented in Chapter 2. In my discussion of the findings, I highlighted correlations, identified silences in the data and foregrounded new insights.

7.3 REFLECTING ON MY ROLE AS QUALITATIVE PARTICIPATORY RESEACHER

As a qualitative researcher, I fulfilled the role of primary instrument for data generation, documentation and analysis. To this end, I remained aware of my shortcomings and the possibility of subjective observations, as well as the risk of not generating accurate data. As a result, I supported my field notes and the data captured in the research dairies with audio-visual techniques and photographs as

additional data documentation strategies. Throughout, I fulfilled the role of participant-observer, always considering the participants' contexts. To this end, I used observation-as-context-of-interaction to better understand the participants' meaning making regarding their experiences and perceptions of the Win-LIFE intervention. I also employed member checking to ensure that the generated data had been accurately transcribed and analysed, thereby allowing the participants to verify my analysis and interpretation of the data and to add further contributions if they wished to do so (Creswell, 2012). I respected the participants as individuals having individual views, throughout the research process.

During data generation I fulfilled the role of facilitator and PRA practitioner who allowed participants to share their experiences and determine much of the agenda of the research (Chambers & Mukherjee, 2004). Furthermore, I became a scribe, analyst, co-researcher and interpreter of the participants' experiences of how they had made meaning of the promotion of healthy food practices that might benefit them.

In coming from a similar socio-economic background and culture as the participants, I consciously remained aware of my potential biases. In line with Hughes' (2012) view that an interpretivist researcher looks for culturally derived and historically situated interpretations of a social life-world, I challenged myself by way of reflexivity to guard against biases shaping my interpretations of the data or of what I observed. In this regard, I respected Crabtree's (2006) point of view that interpretivists assume that reality is constructed inter-subjectively through meanings and understandings that are developed socially and experientially. I aimed to obtain an insider's perspective to understand the experiences and perceptions of the participants and their meaning making, allowing me to represent these as authentic as possible (Creswell, 2012).

Throughout, I also remained aware of my role as practitioner in the field of Educational Psychology as well as district official of the schools where I conducted the research. I continually reflected on my various roles and aimed to ensure that

my status did not interfere with the study or any data-generation activities. Hence, I did not participate in data generation with the teacher-participants but instead requested a co-researcher to generate data on my behalf.

Finally, during the PRA-based discussions with the parent-participants, the fact that I could respond in their home language elicited rich information and established sound rapport with them (Fourie, 2010). As PRA principles advocate collaborative participation, the participants fulfilled the role of experts who possess knowledge about the phenomenon under investigation. Throughout the PRA-based workshops and discussions, I respected all participants' views and experiences and aimed to allow their voices to be heard (McMillan & Schumacher, 2014).

7.4 CONCLUSIONS

In this section, I come to final conclusions based on the findings I obtained. I first discuss my conclusions in terms of the secondary research questions I formulated in Chapter 1, and then address the primary research question.

7.4.1 Secondary Question 1: How was the Current Grade 4 to 6 Life Skills and Natural Sciences and Technology CAPS School Curricula enriched by the Win-LIFE Intervention?

The Win-LIFE intervention enriched the current South African national school curriculum (CAPS) on Life Skills by including discussions of nutrition, nutrients, types of food, the food pyramid, guidelines for healthy eating, food safety and food storage. The national Natural Sciences and Technology curriculum was enriched with content related to the equipment required to start a vegetable garden, different types of soil, germination, planting seeds, making compost, ensuring crop rotation, the different parts of plants as well as the parts that can be eaten. As such, the Win-LIFE intervention enriched both the Life Skills and Natural Sciences and Technology curricula by providing additional information and skills in terms of the mentioned content areas. The additional information was captured in the teachers' manuals and learners' workbooks that were developed and used when facilitating the intervention among Grade 4 to 6 learners.

The fact that the manuals and workbooks contain colourful and attractive layouts, enabled teachers to plan and present lessons that could enhance the participating

learners' positive attitudes about learning. Furthermore, the learning content was presented in a way that was easy for the teachers to teach and for the learners to understand. As such, the layout and presentations captured in the manuals and workbooks motivated learners to participate more actively and positively, and subsequently supported their learning by way of dedicated involvement as well as experiential activities.

To this end, the manuals and workbooks contain creative activities that enhanced the learners' involvement during the learning process. The learners worked in groups at school and were expected to complete some additional activities at home, for which parent involvement was encouraged. Based on the teachers' experiences of the intervention and related resources, the Grade 6 workbooks were subsequently used in Grade 7 classes in one of the schools. I can thus assert that the Win-LIFE intervention enriched the participating learners' experiences in class in terms of the content presented in the two selected subjects, the resources used and their participation in learning.

As stated, the Win-LIFE intervention encouraged alternative teaching strategies, thereby creating opportunities for learners to actively engage during the learning process rather than fulfilling a passive role. The facilitators created a supportive learning environment in which learners were able to learn more easily and to ask questions for clarification without the fear of being embarrassed or intimidated. In addition, the facilitators acknowledged the learners' efforts and commitment during all learning sessions. It follows that the learners, as a result, gained self-confidence about their ability to learn, which was critical in promoting their self-discipline in class and in ensuring that they remained focused on what they were learning.

Throughout, the Grade 4 to 6 curricula were also enriched by relying on experiential and cooperative learning activities, which yielded positive attitudes among the learners. Their positive attitudes could be observed in their commitment and the contributions they made during the learning activities. To this end, the findings of the current study demonstrates how group work can be incorporated when facilitating an enriched curriculum where learners meaningfully engage in their own learning processes, experience a sense of "ownership" and thus take responsibility

for their own learning. Following these findings, I can conclude that the enrichment of the two selected subjects enhanced the participating learners' active participation and promoted their use of all senses, which, in turn, enhanced their learning and retention of information and the skills they acquired.

7.4.2 Secondary Question 2: How did Teachers experience the Implementation of the Win-LIFE School-based Health promotion Intervention among Grade 4 to 6 Learners?

Based on the findings of the current study, I can conclude that the teacher-participants experienced their involvement in developing and implementing the Win-LIFE intervention as empowering. They namely gained knowledge about healthy eating and living a healthy lifestyle themselves. Their food-related knowledge was broadened as well because of the intervention. In addition, the teacher-participants gained knowledge and skills regarding different types of soil and the planting of vegetables in support of food security. The teacher-participants subsequently started eating healthier food and following a better lifestyle, thus applying their newly gained knowledge. Based on these findings, I posit that the teachers' involvement in the Win-LIFE intervention project equipped them with important knowledge and skills that, in turn, enabled them to improve their own health and well-being, and related practices.

In addition to empowering the teachers and supporting their health and well-being practices, the Win-LIFE intervention allowed the teacher-participants to adopt alternative teaching methods. To this end, the teachers were encouraged to apply creative teaching strategies and subsequently teach Life Skills and Natural Sciences and Technology in a practice-oriented manner, relying on experiential and cooperative learning. According to the teacher-participants, the learners enjoyed the practical and group activities included in these subjects. As such, I can conclude that the Win-LIFE intervention was of value to teachers in terms of their own teaching practices and their professional development.

The findings of the study nevertheless also reveal that the teacher-participants experienced some challenges when implementing the intervention due to, for example, limited time for implementation, as well as the alignment of the time of presenting certain of the Win-LIFE intervention themes with the time these themes

were presented as part of the national curriculum. The national curriculum is captured in the annual teaching plan (ATP) which South African teachers follow. Despite these challenges, the participants were, however, able to reach their goal by facilitating the intervention after school hours and achieving positive results in terms of the learners' learning. In conclusion, even though teachers faced certain challenges, they were able to find solutions and to contribute to the implementation of the Win-LIFE intervention in a way that benefitted them at both personal and professional levels, in addition to benefitting the other participant groups.

7.4.3 Secondary Question 3: Which Knowledge and Skills did Learners gain that may potentially have a Positive Effect on Well-being in their own and other Community Members' Lives?

The health and well-being of individuals are, among other factors, related to the food they consume. The findings of the current study indicate that learner-participants were equipped with knowledge about and skills in various aspects related to food consumption, such as food types, healthy cooking methods and the importance of healthy eating, because of their participation in the Win-LIFE intervention. Learners furthermore gained knowledge and skills regarding food production in terms of soil types, fertilisation of soil, germination of plants, crop rotation, how to prepare a vegetable garden and a compost heap as well as which vegetables to plant based on the nutrients that each contains. Based on these findings, I argue that this acquired knowledge and skills can positively influence the adoption of healthy food practices among the learners and their families. The learners and their family members' adoption of healthy food practices may, in turn, ultimately have a positive impact on the community's health and well-being.

In linking this argument to my conceptual framework, the Win-LIFE intervention used schools (microsystem) where there is proximal interaction between teachers and learners, to equip Grade 4 to 6 learners with knowledge and skills regarding healthy food practices by means of enriched Life Skills and Natural Sciences and Technology curricula. These learners then transferred some of the knowledge and skills they had gained to their parents and other family members (mesosystem) and potentially to the community (macrosystem). As a result, the findings of the current study indicate that families subsequently started vegetable gardens with the aim of producing food for themselves. To this end, I posit that the knowledge and skills that

the learner-participants gained at school, as well as because of the joint homework activities with their parents/caregivers about vegetable production, had a positive effect on the promotion of food security among families and potentially the specific community.

The finding that the learners were able to demonstrate insight when applying their newly acquired knowledge as part of the post-intervention group activities on healthy food practices, can be linked to social cognitive learning theory that also forms part of my conceptual framework. Accordingly, the fact that individuals are self-reflective beings who can reflect on experiences, explains the learners' ability to recall newly gained knowledge (cognition) from the classroom (environment) and to transfer this to their parents or family members (behaviour). Therefore, the Win-LIFE intervention equipped the learner-participants with knowledge and skills that can potentially promote the health and well-being of themselves, their family members and the broader community.

7.4.4 Secondary Question 4: Which Knowledge and Skills did Parents gain in terms of Food Choice, Food Preparation, Food Consumption and Food Production following the Win-LIFE Intervention?

The findings of the current study indicate that the learners transferred some of the knowledge and skills they had gained because of their participation in the Win-LIFE intervention to their parents. According to the findings I obtained, the parent-participants namely gained knowledge and skills regarding healthy food choice, food preparation, food consumption and food production due to their children's involvement in the Win-LIFE intervention. As a result, the parents started choosing healthier, more nutritious food products that can build a healthy body and promote a healthy living, such as vegetables.

The parent-participants furthermore indicated that they subsequently reduced the habit of buying unhealthy food such as fast foods meals. They also displayed insight into buying quality food (such as fresh vegetables). To this end, I can conclude that the Win-LIFE intervention equipped the parent-participants with knowledge and skills regarding healthy food-related behaviour. In linking this conclusion to my conceptual framework, the learners and their parents interacted at a proximal level

in learning about healthy eating practices. The relationships between the parents and their children possibly impacted on them in a two-way direction during the (joint) homework activities that formed part of the intervention.

The Win-LIFE intervention similarly equipped the participating parents with knowledge and skills regarding efficient food preparation, cleanliness and hygiene, healthy cooking methods and effective food storage. This highlighted the importance of healthy food preparation in promoting health and well-being for the parents, who subsequently applied their newly gained knowledge when preparing food. In this regard, the parents valued the information and skills they had gained through their children, learning to, for example, use less fat and salt when cooking, and not to over-cook food when preparing meals. As such, I can conclude that the insight and changed behaviour that the parent-participants displayed following the Win-LIFE intervention was based on the learners transferring their newly gained knowledge about healthy food practices, and more specifically about cooking methods and healthy food preparation practices.

In terms of food consumption behaviour, the findings of the current study indicate that the parents gained knowledge about the importance of eating balanced meals that contain nutrients such as carbohydrates, protein and vitamins, instead of eating, for example, only porridge. The parents learned that the consumption of healthy food will strengthen the immune system and can promote performance among, for example, children at school. To this end, the participants gained insight into the importance of eating vegetables and fruits daily to build their immune systems and to protect them from diseases. This points to the positive outcome of the Win-LIFE intervention in terms of the promotion of healthy food practices in this specific resource-constrained community, as the parent-participants also applied this knowledge in practice.

Finally, the findings of my study indicate that the parent-participants gained knowledge and skills regarding vegetable gardens and how to grow their own food (vegetables). Both the learners and the parents confirmed that some families started vegetable gardens at their respective homes following the Win-LIFE intervention. As data generation did not include home visits to observe the reported vegetable

gardens, more research is required into this field before coming to final conclusions. Even though I posit that parents gained knowledge about the planting and maintenance of vegetable gardens that may promote food security in this resource-constrained community, I can thus not reach a conclusion in terms of the extent to which they applied this knowledge and skills or the sustainability of these efforts.

7.4.5 Conclusions in terms of the Primary Research Question

My study was guided by the following primary research question: ***How can the Win-LIFE intervention be used (or not) to promote healthy food practices and the well-being of people in resource-constrained communities?***

The Win-LIFE intervention involved learners, teachers and parents as participants. One of the assumptions of the study was that if learners are empowered with knowledge and skills regarding healthy food practices, the possibility exists that they may influence their parents to also adopt healthy food practices, thereby improving their health and well-being. This assumption is captured in my conceptual framework by means of the social cognitive theory principle that people possess the ability to reflect on their experiences to exercise control over their thoughts and future behaviour. In the current study, the learners did indeed self-reflect on the (food-related) knowledge and skills they had gained because of their participation in the Win-LIFE intervention, and then took action by adopting healthier practices in their own lives. In addition, the parents as well as the teachers also adopted healthier food practices because of the Win-LIFE intervention, during which they too gained new knowledge and skills, reflected on these and started applying better options.

Because of these findings, I can conclude that the Win-LIFE intervention was used to promote healthier food practices among not only the learners, but also others. In addition to the learner-participants acquiring food-related knowledge and skills by means of the Win-LIFE intervention and then sharing this with their parents, the parents also participated in homework activities and signed the learners' homework books after monitoring the tasks they completed. I thus propose that both the

learners' transfer of knowledge and skills, and the parents' involvement in the learning process, resulted in them also adopting healthier food practices because of the Win-LIFE intervention.

Both the learners and their parents furthermore confirmed that some families started vegetable gardens at homes because of their gained knowledge and skills to provide food for their families. Therefore, I can further conclude that the Win-LIFE health promotion intervention can be used to promote food production by means of vegetable gardens (and potentially other strategies too) where learners and parents work together to implement the knowledge they gain. This may promote food security in especially resource-constrained communities by enabling people to access food and adopt healthy food practices that can improve their health and well-being. I can thus conclude that the Win-LIFE (or similar) intervention can be used to promote healthy food practices, more specifically when accompanied by food security through, for example, vegetable garden projects in resource-constrained communities. The sustainability of this outcome must, however, yet be determined.

Regarding the teacher-participants, the findings of the current study indicate that the intervention benefitted the teachers and that they also started consuming healthier food in support of living healthier based on the knowledge and skills they gained because of their involvement in the development and implementation of the Win-LIFE intervention. Based on these findings, I posit that the Win-LIFE intervention (or similar curriculum-enriching interventions) can benefit people who are involved in the development and facilitation process to promote, for example, healthy food practices and well-being.

My conclusions align with the underlying theories I integrated into my conceptual framework. Firstly, Bronfenbrenner's bio-ecological theory indicates that both home and school environments can be viewed as microsystems where learners, parents and teachers can have reciprocal effects on each other based on close interrelationships formed in the microsystems. In both the home and school microsystems, the Win-LIFE intervention promoted the knowledge and application

of newly acquired skills regarding a healthy lifestyle and learners, parents and teachers' healthy food-related practices. The findings I obtained also indicate the possibility of further transferral to other community members (macrosystem).

All three participant groups relied on cognition to acquire and retain new knowledge and skills, as indicated by Bandura's social cognitive learning theory. By relying on self-regulation and reflection, the participants were able to internalise new knowledge, contribute to their own learning and to then transfer their knowledge in practice (changed behaviour). This occurred by means of experiential learning and in collaboration with peers and parents during group work and joint homework activities. In addition, the participatory nature of PRA as applied methodology, acknowledged the participants as experts who possess knowledge about their life-worlds and who can share it with researchers and others whom they encounter in the systems in which they function. Furthermore, as PRA methodology implies a solution-oriented approach, the participants felt empowered due to the food-related knowledge and skills they had gained, which, in turn, enabled them to change their food-related behaviour in a positive way.

7.5 CONTRIBUTIONS OF THE STUDY

In this section, I contemplate the contributions of the study in terms of theory building, methodology and practical application value.

7.5.1 Contribution to Existing Theory

The current study contributes to existing knowledge about the promotion of healthy food practices in terms of food production, food choice, food preparation and food consumption through the avenue of school-based interventions. More specifically, knowledge about the benefits of healthy nutrition and the promotion of the learners' health and well-being is added by offering an enriched curriculum, in this case in a resource-constrained community. As poor nutrition is detrimental to learning and regarded as a barrier to learning for many learners in resource-constrained communities, knowledge about how to potentially address this barrier by means of school-based interventions can benefit both theorists and practitioners in the fields of Education, Educational Psychology and Health Sciences.

The findings on the importance of creating a supportive learning environment when facilitating learning, as well as the value of experiential and cooperative learning, provide insight into how meaningful learning can be enhanced and how learners who are shy or experience learning difficulties can be motivated to participate in learning activities. These findings add to existing theory about suitable teaching approaches and learning strategies for primary school learners. Thus, knowledge about the value of a supportive learning environment for addressing learning barriers, highlighting potential strategies to employ when teaching primary school learners to promote effective and positive learning outcomes, is added. In the same manner, this study adds to the existing body of knowledge about the importance of building sound relationships with learners and acknowledging their efforts during any learning process, which can also provide emotional support and allow learners to unleash their potential during the learning process.

7.5.2 Methodological Contribution

The findings of the current study highlight the value of involving teachers (and potentially education department officials) in developing and implementing school-based interventions, more specifically when wanting to enrich the existing school curriculum. The PRA-based approach that was followed empowered the teachers to apply the intervention and enriched their own knowledge about healthy living and related food practices. To this end, a PRA approach can contribute to improving the participants' challenges.

In addition to the personal benefits implied for participants who are involved in a PRA guided study, participants may benefit professionally as well. The findings of the current study namely indicate that the teachers were equipped with effective teaching strategies that enabled them to teach the enriched Win-LIFE curricula with ease by way of creative activities and the implementation of experiential learning that the learners enjoyed. These findings contribute to the existing body of knowledge about PRA methodology and the potential value of following such an approach for school-based health promotion interventions.

7.5.3 Practical Application Value

The findings of the current study add insight into the outcome of the Win-LIFE health promotion intervention regarding the potential value for learners, parents and teachers who participate. The findings specifically contribute to the way in which enriched Life Skills and Natural Sciences and Technology curricula for Grade 4 to 6 learners may promote healthy food practices in resource-constrained communities. Thus, other schools or practising teachers in similar school settings may benefit from the findings of this study, as it affords the possibility for them to also implement the Win-LIFE, or a similar, intervention. As the findings also highlight the challenges that the learners and teachers experienced, as well as recommendations for future application, other teachers and practitioners may be guided to address challenges when implementing such an intervention.

The findings furthermore have application value for effective teaching strategies for primary school learners, emphasising the value of experiential and cooperative learning. Teachers may use what was found in the current study to equip learners with knowledge and skills in a way that can promote meaningful learning in the classroom. Meaningful learning strategies include a “hands-on” approach that support the active engagement of both teachers and learners during the learning process. As the Win-LIFE intervention included the development of teacher manuals and learner workbooks, these may provide handy resources for teachers who would want to implement the intervention when presenting Life Skills or Natural Sciences and Tecnology to Grade 4 to 6 learners in the future. In addition, the potential application to other grades and in other subjects can be explored as an alternative, as indicated by the findings I obtained.

In addition, practising teachers may use the Win-LIFE manuals and worksheets to promote parents’ involvement in their children’s education, with the potential benefit of parents also practically applying what they learn about health-related practices including, for example, how to start and maintain a vegetable garden at home. In the community where the study was conducted, the parents applied their newly gained knowledge by choosing healthier food, implementing healthy food

preparation methods and consuming balanced meals. It follows that parents and community members in similar contexts may potentially benefit from being exposed to the Win-LIFE intervention.

7.6 REFLECTING ON CHALLENGES AND POTENTIAL LIMITATIONS OF THE STUDY

A potential limitation of the current study relates to the lack of generalisability, being a qualitative study that included a limited number of participants who were conveniently and purposefully selected in three primary schools in a specific resource-constrained community. My aim was not, however, to generalise the findings but rather to obtain an in-depth understanding of the participants' perceptions of the value of the Win-LIFE intervention in terms of food-related practices. To increase the possibility of presenting transferable findings, I provided detailed background on the Win-LIFE intervention's implementation and the broader project in this thesis, as well as the way in which I conducted this study. I included thick descriptions throughout the discussions, which are in line with interpretivist research, to ensure that the participants' voices can be heard. As I purposefully selected the participants, I was able to obtain rich information from the learners, teachers and the learners' parents who participated in the second-round implementation of the Win-LIFE intervention.

Another limitation I identified is that the research findings on the establishment of vegetable gardens are limited to vegetable gardens only and do not include other options to improve food security in resource-constrained communities. As this study only focused on the Win-LIFE intervention, this central activity can, however, be understood. Thus, the findings may potentially be transferred or applied to similar settings. Follow-up studies in this area can potentially extend this focus.

As a female black literate researcher, conducting a study with participants coming from a context like my own, yet with distinct differences in terms of my current level of literacy and socio-economic status, I faced the challenge of my biases affecting the data-generation process as well as my interpretation of the data. To this end, I constantly reflected on my position and background and attempted to avoid any biases obscuring the participants' meaning making or my data analysis and

interpretation. I aimed to allow the participants' voices to be heard as authentically as possible. I also relied on regular debriefing sessions with my supervisors to challenge my biases and prevent these from influencing the findings of the study.

Furthermore, as a qualified educational psychologist and former district official at the national Department of Education (my occupation at the time of data generation), I had to remain cautious and aware of the potential influence of power relations. During data generation, I thus had to ensure that my position did not influence any processes or data that I obtained. To this end, I did not generate data among the teacher-participants but instead requested a co-researcher to generate data on my behalf. I also regularly reflected on this potential challenge and guarded against power differences influencing the study.

A final specific challenge I experienced relates to the fact that I only conducted member checking a year after data generation, which negatively affected the number of participants who attended the session. I, however, relied on the participants who were able to attend and share additional contributions, to give feedback and to confirm the accuracy of the data that had been generated. In this regard, I view the participants who partook in this phase of my study as sufficiently representative of the broader participant group's voices.

7.7 RECOMMENDATIONS

In this section, I make recommendations for training, practice and future research, based on the findings and conclusions of the current study.

7.7.1 Recommendations for Training

Based on the findings and conclusions of the current study, I believe that practising teachers and student-teachers in training can benefit from courses in alternative teaching strategies such as those used as part of the Win-LIFE intervention, focusing on experiential and cooperative learning methods, supported by creative teaching aids and assignments. Practising teachers can furthermore benefit from refresher courses in the creation of supportive learning environments that is critical to support learners to optimally benefit from the learning experience.

In addition, if people in helping professions, such as educational psychologists, are trained in the development and implementation of curriculum enrichment initiatives, barriers to learning may potentially be addressed more effectively and intervention approaches improved. Parents may, as a result, be involved more actively and collaboration with other stakeholders, such as social workers, special school teachers and people in other helping professions, can be enhanced. Educational psychologists can be trained to take the lead in such participatory projects, where teachers and other stakeholders are involved, in support of the health and well-being of people, more specifically in contexts or communities with limited resources. Therefore, I recommend that teachers and people in helping professions receive training in the value of school-based curriculum-enriching curricula.

7.7.2 Recommendations for Practice

Based on the findings I obtained, I recommend that teachers, school governing bodies, the Gauteng Department of Education (GDE) officials responsible for Life Skills and Natural Sciences and Technology, as well as community-based stakeholders, adapt (if needed) and implement the Win-LIFE intervention in additional schools to promote healthy food practices. I specifically recommend that intermediate-phase teachers use the enriched Life Skills and Natural Sciences and Technology Win-LIFE workbooks to support positive and effective learning experiences in the classroom. I furthermore recommend workshops for practising teachers on experiential and cooperative learning methods to promote positive participation and to build learners' self-confidence.

Next, I recommend that educational psychologists who do research and/or interventions in schools or vulnerable communities consider a participatory approach to promote collaboration with, for example, teachers and parents. Such participation can create supportive learning environments that is critical for successful learning to take place. In addition, it can empower participants to take action and to address the challenges they face. Closely related, a workshop on, for example healthy food practices and the value of home-based vegetable gardens, presented by teachers or external service providers for unemployed parents, social workers, NGOs and Department of Health members working in vulnerable

communities, can potentially promote the health and well-being of people at ground level in resource-constrained communities. Educational psychologists can potentially fulfil a leading role in such supportive initiatives.

Finally, I recommend that GDE officials who are responsible for Learning and Teaching Support Material (LTSM) should be involved in planning the implementation of the Win-LIFE intervention. Furthermore, these officials can provide input in revising the workbooks for the Life Skills and Natural Science and Technology enriched curricula, as these may provide helpful resources for intermediate-phase teachers. In addition, more teachers may enrich their curricula in class by implementing the intervention among Grade 4 to 6 learners. To this end, workshops on the Win-LIFE intervention and the use of the manuals and workbooks in support of effective learning can be of value.

7.7.3 Recommendations for Future Research

Based on the findings of this study, I suggest follow-up research into the areas listed below.

- The extent and sustainability of learners' knowledge and skills transfer to parents and family members, for example in terms of establishing vegetable gardens at home.
- Food production through vegetable gardens, yet also by means of additional strategies to promote sustainable healthy food practices in resource-constrained communities.
- Longitudinal research into the sustainable effect of the Win-LIFE health promotion intervention regarding improved healthy food practices in the specific resource-constrained community where the study was conducted.
- Interventions focusing on traditional food and its related health implications.
- The consumption of red meat and its health implications, specifically for people in resource-constrained communities.
- Additional community-based interventions in support of food production, food choice, food preparation and food consumption, with the aim of improving healthy food practices among people in resource-constrained communities.

- Parents' needs for guidance in terms of healthy food practices and a healthy lifestyle.

7.8 CONCLUDING COMMENTS

The findings of this study highlight the importance of evaluating interventions that aim to promote health and well-being in terms of the potential value and positive outcomes, yet also the challenges that may be encountered during implementation, and how these can be addressed in future related efforts. The findings of the current study indicate that the Win-LIFE intervention (as one example of a school-based intervention) can promote healthy food practices in resource-constrained communities; even more so when applied in a dedicated manner and considering the recommendations I made. Not only did the learners, parents and teachers who participated in this study gain new knowledge and skills, they were also able to apply these (even to a limited extent) to their personal lives, which foregrounds the potential value and positive outcome of the intervention.

In conclusion, the findings of the current study demonstrate how school-based interventions in resource-constrained communities can empower people with knowledge and skills, which may, in turn, result in positive change. In South Africa, poverty and food insecurity are common denominators that negatively impact on the food practices of many people in resource-constrained communities. Following the findings of this study, I can, however, conclude that interventions such as the Win-LIFE initiative can successfully be applied to promote healthy food practices in resource-constrained communities.

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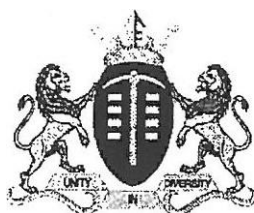
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APPENDICES

APPENDICES INDEX

APPENDIX	DESCRIPTION
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APPENDIX C	INFORMED CONSENT (TEACHERS AND PARENTS) Request to participate in the research project Informed consent (teacher-participant) Informed consent (parent participant)
APPENDIX D	EXCERPTS FROM FIELD NOTES AND RESEARCH DIARIES Field notes (Teachers 24 November 2015) Field notes (Parents 25 November 2015) Reflective field notes (Parents 25 November 2015)
APPENDIX E	OPEN-ENDED QUALITATIVE QUESTIONNAIRE Teachers open-ended questionnaire) Prompts for PRA-based session (teachers) Prompts for PRA-based session (parents)
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APPENDIX A: PERMISSION TO CONDUCT RESEARCH FROM GAUTENG DEPARTMENT OF EDUCATION



GAUTENG PROVINCE

Department: Education
REPUBLIC OF SOUTH AFRICA

For administrative use:

Reference no. D2013f223

GDE RESEARCH APPROVAL LETTER

Date:	29 October 2012
Validity of Research Approval:	4 February 2013 to 27 September 2013
Name of Researcher:	Botha C.J.
Address of Researcher:	526 Suider Street
	Pretoria North
	0182
Telephone Number:	082 074 9611
Fax Number:	012 420 5511
Email address:	karien.botha@up.ac.za
Research Topic:	Schools as sites for social change: Facilitating adjusted behaviour in resource-constrained communities by empowering children
Number and type of schools:	THREE Primary Schools
District/Us/HO	Gauteng North

Re: Approval in Respect of Request to Conduct Research

This letter serves to indicate that approval is hereby granted to the above-mentioned researcher to proceed with research in respect of the study indicated above. The onus rests with the researcher to negotiate appropriate and relevant time schedules with the school/s and/or offices involved to conduct the research. A separate copy of this letter must be presented to both the School (both Principal and SGB) and the District/Head Office Senior Manager confirming that permission has been granted for the research to be conducted.

The following conditions apply to GDE research. The researcher may proceed with the above study subject to the conditions listed below being met. Approval may be withdrawn should any of the conditions listed below be flouted:

Making education a societal priority

Office of the Director: Knowledge Management and Research

9th Floor, III Commissioner Street, Johannesburg, 2C01

P.o. Box 7710, Johannesburg, 2000 Tel: (011) 355 0506

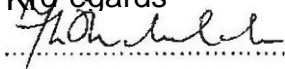
Email: David.Makhado@gauteng.gov.za

Website: www.education.gpg.gov.za

1. The District/Head Office Senior Manager/s concerned must be presented with a copy of this letter that would indicate that the said researcher/s has/have been granted permission from the Gauteng Department of Education to conduct the research study,
2. The District/Head Office Senior Manager/s must be approached separately, and in writing, for permission to involve District/Head Office Officials in the project.
3. A copy of this letter must be forwarded to the school principal and the chairperson of the School Governing Body (SGB) that would indicate that the researcher/s have been granted permission from the Gauteng Department of Education to conduct the research study.
4. A letter / document that outlines the purpose of the research and the anticipated outcomes of such research must be made available to the principals, SGBs and District/Head Office Senior Managers of the schools and districts/offices concerned, respectively.
5. The Researcher must make every effort to obtain the goodwill and co-operation of all the GDE officials, principals, and chairpersons of the SGBs, teachers and learners involved. Persons who offer their co-operation will not receive additional remuneration from the Department while those that opt not to participate will not be penalised in any way.
6. Research may only be conducted after school hours so that the normal school programme is not interrupted. The Principal (if at a school) and/or Director (if at a district/head office) must be consulted about an appropriate time when the researcher/s may carry out their research at the sites that they manage.
7. Research may only commence from the second week of February and must be concluded before the beginning of the first quarter of the academic year. If incomplete, an amended Research Approval letter may be requested to conduct research in the following year.
8. Items 6 and 7 will not apply to any research effort being undertaken on behalf of the GDE. Such research will have been commissioned and be paid for by the Gauteng Department of Education.
9. It is the researcher's responsibility to obtain written parental consent of all learners that are expected to participate in the study.
10. The researcher is responsible for supplying and utilising his/her own research resources, such as stationery, photocopies, transport, faxes and telephones and should not depend on the goodwill of the institutions and/or the offices visited for supplying such resources.
11. The names of the GDE officials, schools, principals, parents, teachers and learners that participate in the study may not appear in the research report without the written consent of each of these individuals and/or organisations.
12. On completion of the study the researcher/s must supply the Director: Knowledge Management & Research with one Hard Cover bound and an electronic copy of the research.
13. The researcher may be expected to provide short presentations on the purpose, findings and recommendations of his/her research to both GDE officials and the schools concerned.
14. Should the researcher have been involved with research at a school and/or a district/head office level, the Director concerned must also be supplied with a brief summary of the purpose, findings and recommendations of the research study.

The Gauteng Department of Education wishes you well in this important undertaking and looks forward to examining the findings of your research study.

Kind regards


.....

Mrs Faith Lindiwe Tshabalala

(Acting) Director: Knowledge Management and Research

DATE: 29/10/2012
.....

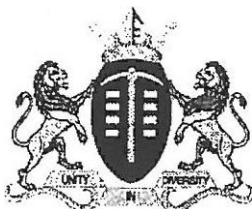
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Email: David.Makhado@gauteng.gov.za

APPENDIX B: PERMISSION TO CONDUCT RESEARCH FROM GAUTENG NORTH DISTRICT



GAUTENG PROVINCE

Department: Education
REPUBLIC OF SOUTH AFRICA

For administrative use:

Reference no. D2013f223

GDE RESEARCH APPROVAL LETTER

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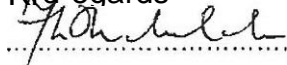
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Kind regards



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(Acting) Director: Knowledge Management and Research

DATE: 29/10/2012

Making education a societal priority

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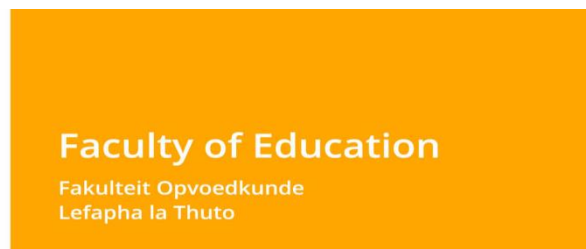
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APPENDIX C: INFORMED CONSENT (TEACHERS AND PARENTS)

Request to participate in the research project



19 November 2015

Dear Participant

I am a PhD student at the University of Pretoria and invite you to participate in my research project. My study focuses on the evaluation of the Food, Nutrition and Well-being intervention programme that was implemented at the school that your child attends.

For the purpose of this study, I will require your voluntary participation in the focus group discussion that will be visually and audio recorded. The group discussion will focus on the nutrition knowledge you gained from your child and the experiences as well as the perceptions you have of and about a healthy eating lifestyle. All the information that you provide will be treated confidentially and anonymously, which means that your name or identity will not be used. All the information provided during the group discussions will be treated with strict confidentiality and anonymity. Information that will be collected during the research project will be stored safely even after the task has been completed. You are free to withdraw from the research process should you deem this necessary.

If you are willing to participate in the feedback group discussions, please complete the return slip and submit it at the same time to me.

Yours sincerely

Dinah Ngwenya

Prof. R Ferreira (Supervisor)

I _____ the parent
of _____ in Grade _____ hereby agree to

participate in the in the above research project.

Signature of Parent

Date

Informed consent (teacher-participants)



Faculty of Education

Fakulteit Opvoedkunde
Lefapha la Thuto

19 November
2015

Dear educator

Thank you once again for agreeing to take part in the University of Pretoria project on Food, Nutrition and Well-being, for which purpose you implemented an enriched curriculum in Life Skills (Nutrition Education) and Natural Science (Environmental Education). We request your feedback on your experiences of the project and the challenges experienced in implementing the programme. The session will take place as follows:

Date : Tuesday 24 November 2015
Time : 13:30 - 15:30 (Lunch will be served)
Place : Mshuluzane Mayisela Primary

Please complete the section below and send it back to the school. We look forward to seeing you there.

Warm wishes

Ms Dinah Ngwenya, Karien Botha, Ronél Ferreira and William Fraser
University of Pretoria
083 258 7747

I _____ educator at _____

will attend the feedback session on the 24 November 2015.

YES

NO

Informed consent (parent-participants)



Faculty of Education

Fakulteit Opvoedkunde
Lefapha la Thuto

19 November 2015

Dear parent

Thank you once again for agreeing that your child _____ could take part in the Food, Nutrition and Well-being project offered by the University of Pretoria at school, where we have been focusing on healthy eating and a healthy lifestyle. We have now completed all sessions for this year and would like to give you some feedback, and also find out how you and your child have experienced the programme. Please join us for a session on:

Date : Wednesday 25 November 2015
Time : 16:30 - 18:30 (Dinner will be served)
Place : Vezulwazi Full Service School

Please complete the section below and send it back to the school. We look forward to seeing you there.

Warm wishes

Ronél Ferreira _____ Dinah Ngwenya

University of Pretoria _____ Department of Education

083 258 7747 _____ 082 419 3304 _____

I _____, parent of _____

in Grade _____ and will attend the feedback session on 25 November 2015.

YES

NO

My telephone number: _____

APPENDIX D: EXCERPTS FROM FIELD NOTES AND RESEARCH DIARIES

Date	24 November 2015
Facilitator	Karien Botha
Observer	Prof William Fraser
Length of session	13:30 - 16:00
Participants	13 teachers
Place	Staff room at School A

Field notes (Teachers 24 November 2015)

1. Session started at 13:30 where we welcome participants with some lunch and an informal discussion.
2. One participant was very upset that we came during exam time and said: "How can you do this to us?"
3. The school grouped themselves together.
4. Participants completed the questions and some of them volunteered or indicated that they wanted to share some of their experiences.
5. This actually changed into a discussion where most of the teachers contributed or shared some of their experiences.
6. Most teachers indicated that they indeed implemented the Win-LIFE programme in their classrooms.
7. "I did implement the programme in my class" (School C teacher).
8. Another teacher added that she tried to fit it into her classes.
9. At School A, a teacher said that she moved to another grade, "but the person who took over from me used the books and the programme".
10. "I often implemented Win-LIFE in my class with Grade 5 learners."
11. A male teacher said: "Did not implement the whole programme, but some of the themes correlated with the content I was busy with and I then made use of that" (School B teacher).

12. A male teacher furthermore indicated that, “In a sense I did some parts of it, but not from the beginning until the end ... some parts go hand in hand with life and living I was doing at the time, so I incorporated those parts”.
13. A School A teacher added that she also implemented some of it, but not much.
14. Teachers indicated that they implemented Win-LIFE in various ways.
15. Here participants agreed that they did not use the schedule UP provided but incorporated the programme where they thought it fitted best or according to the available time they had.
16. Some indicated: “Two days a week during Life Skills” (School B teacher).
17. Another teacher from School B mentioned that although the programme was developed for Grade 4 to 6 learners, she requested her colleagues to provide her with books, because she used them once a week with her Grade 7 learners in Natural Sciences and Technology ... “I practically integrated it into my lesson ...I did this a least once a week”.
18. School C teachers, when requested to speak, said that some did it once a week for two months; another teacher said she implemented it during Life Skills ... “almost every day”.
19. School A teachers: “We did implement some of it, but not everything; time was limited and it was a lot of work”.
20. Another teacher from School A added that “not much of the programme was done in my classes, as we were told that we need to finish the curriculum first and then the programme was something extra”.
21. Schools B and C seemingly disagreed. They emphasised that they implemented the largest part of the intervention at their schools.
22. One said: “Learners did complete the workbooks, both of them very well” (T12) “with the Grade 5s I did most of the programme ...” (School B).
23. “I was giving the learners some of the work to be done at home with the help of their parents” (School B T 3).
24. Hereafter teachers started talking about the support they experienced during the implementation of the programme.
25. Four out of five teachers from School A indicated that the principal or deputy supported them.
26. One said: “The principal supported me from the start of the programme ... He was monitoring the implementation ...” (School A, T 7).

27. Another said that they (principal and deputy) were great and did follow-ups (T 11).
28. One female teacher felt that she was not supported at all. She was a bit upset and looked at others while saying: "She did not support us at all" (Teacher 8).
29. Two of the four teachers from school B felt supported: "We were encouraged to implement the programme. Our HOD was the most inspirational and always motivated us to use /implement the programme" (T10).
30. Another teacher added that management showed interest in the programme and gave educators moral support (T 2).
31. Two out of four teachers from School B disagreed: "We were not supported by the principal ... you just have to work hard" (T3 and T9).
32. Three of the four teachers from School C indicated that they were supported... "we were supported and encouraged to fit the programme into our time slots" (T5).
33. One Teacher from School C also added that the school management team supported them and checked on them (T13).
34. One male teacher from School C said: "There was no support from the principal; we were doing this programme on our own" (T1).
35. The majority of teachers from School A felt that their colleagues supported them and that they were also interested in the programme (T2).
36. One teacher said: "Teachers worked as a team to implement and introduced the programme to the learners" (T11).
37. They also mentioned teamwork. One teacher said when she was absent from school, her colleagues would give some of the work in the workbooks to the learners for homework.
38. One teacher (T6) from School A mentioned that she and many other teachers were not supported.
39. She indicated that most teachers actually complained that the programme takes all their periods (T6).
40. School B: They experienced their colleagues' mutual support and assistance: "It was a joint venture ... we helped each other with ideas etc." (T9).
41. A teacher from school C confirmed this by saying: "Most teachers were supportive" (T13) ... "as well as other teachers were supportive" (T4).

42. "We also discussed the positive attitude the learners had when using the booklets."
43. Some teachers also explained that "UP visited regularly, but some of the teachers said that they would prefer more workshops and training-this would serve as a form of support to them". (More support required).
44. Others indicated time as a challenge and suggested that the programme should actually start at the beginning of the school year.
45. The programme also needs to be incorporated in other learning areas. (Intervention extended to other subjects)
46. Teachers also mentioned that they found the programme to be useful; they mentioned that the programme was informative and educational. Learners learned a lot from it, because of all the information included is based on CAPS., (Intervention educative). Learners also found it enjoyable ... especially the activities and all the pictures and colour induced ... "it made it appropriate and interesting to the learners" (School A, T6).
47. Some teachers also mentioned that the programme was educational to parents: (Educational). "They acquired knowledge and information through their involvement in their children's homework" (Value of parental involvement) (School C, T4).
48. Teachers elaborated on the inclusion of parents.
49. They found it very useful. Many teachers emphasised the value of parental inclusion.
50. The intervention teaches both learners and family members about healthy living ... different food groups, the importance of having a vegetable garden.
51. "If all parents can learn one thing from this programme and implement it at their homes ... imagine the effect we will see here at school and the effect on this poor community." (Positive effect of the intervention).
52. A male teacher from school C said: "If this programme was implemented successfully at all the included primary schools ... it would have brought parents and learners together ... this would have taught parents to rely on themselves and would actually affected our community in a positive way." (Own food production).
53. Teachers indicated that Win-LIFE was engaging and pleasurable ... "the kids loved it".

54. "Learners enjoyed the books, the practical activities and the books were attractive ... full of colour" (Positive effect) (School B, T3).
55. "Learners enjoyed it while they learned" (Positive attitudes) (School C T7).
56. Learners were very impressed: "They were interested in the books and keen to know and acquire more knowledge ... they liked it." (Learners' involvement)
57. Connection with CAPS ... integration of some aspects of the CAPS; teachers were divided about this, but the majority felt that Win-LIFE integrated the CAPS successfully.

Informal conversation with teachers from School B during break/refreshments

58. A teacher talked about a conversation she had with a parent at church ... the parent asked about the programme and the two workbooks.
59. The parent said that she reads through some of the information in the Environment Education (EE) books and now knows more about vegetable gardens. The parent asked a copy for herself because she wanted to share the information with some of her friends. The teacher gave her the book and the parent was very grateful. (Information transferred to other community members).
60. "The parent asked a copy of her own because she wanted to go and share with some of friends and the teacher gave the parent her books ... the parent was grateful."
61. "The information is easy to understand ... language is simple and content is easy to understand ... for both learners and parents." (Perceived value of the intervention)
62. "Win-LIFE made me realise again that it is very important to eat healthy ... I told the learners in my class on a daily basis how important it is to eat healthy, you think better ... can also do more physically (Importance of a healthy lifestyle).... If parents and I can start to eat healthier ... the community will become healthier" (Healthy living) (School B).
63. After the break we requested the teachers to start with their posters ... explained the activity etc.
64. We requested the teachers to give feedback after they have completed their posters.

65. The teachers read from the posters as they were pressed for time. Refer to Appendix G for the teachers' posters (visual data).
66. After the teachers have read/given feedback, I had ad hoc conversations with two teachers
67. One teacher said: "Although your programme 'includes' parents, my experience was that there was no cooperation between our school and the parents ... the parents did not cooperate and I worked through the parts meant for them ..." (Lack of parental involvement).
68. "Yes, we also could not meet the parents as our time was limited ... we also could not do home visits ..." (Limited time).

Field notes (teachers member checking 1 March 2017)

Date	1 March 2017
Facilitator	Dinah Ngwenya
Length of session	13:00 - 15:00
Participants	13 teachers
Place	School A School B School C

Experiences and perceptions of teachers on Win-LIFE intervention

School A

1. The project was good.
2. Learners liked it and enjoyed the workbooks.
3. The project content is part of life and living in the curriculum.
4. The project should have been implemented during the first term for alignment with the curriculum content.

School B

5. "It was much helpful, especially with regard to food" (Educative).
6. One teacher said: "I personally enjoyed it."
7. Life and living content is taught/fall during the first term. Officials wanted to see ATP taught/ followed (Life skills themes suitable during first term).
8. "The community is poor so they need food that they can afford" (Effect).
9. "We don't know whether the learners informed their parents or not, since there was no time to visit their homes" (Time limit to visit homes).
10. Worksheets should be offered that will enhance extra activities.
11. Learners concentrated too much on the project activities and did not do curriculum homework.
12. To be introduced to other grades. The project to be extended to EMS subject. In EMS they will learn about profit and loss as they buy seeds and sell vegetables. It can align well with Geography on the types of soil (Intervention to be extended to other subjects).

13. The project was good, but it would have been better if it was a community-based project.
14. "The community is poor, so they need food that they can afford. If it was a community project or imbizo and not school-based, it would have benefitted the parents in the following ways: The community would have learned about healthy nutrition. They would learn to use the resources that they have such as tyres in which to plant vegetables. They would be enabled to plant their own vegetable garden and putting food on the table" (Community-based intervention proposed).

School C

15. It was a good project and both learners and parents benefitted.
16. Parents were not as supportive as expected.
17. Refresher workshops will assist us to check whether we have left out/omitted certain things during the training (Support on training).
18. We will be able to review what we were trained on.
19. Grandparents are keen to help their grandchildren; hence workshops should be presented for the parents (Workshop for parents).
20. They will be able to help their children with homework/support their children.
21. We need follow-up feedback on the study to know if the project was a success.
22. To know whether the study can be implemented in other places.
23. We participate in the study and from there on forward we never see the researchers again.

Field notes (parents 25 November 2015)

Date	25 November 2015
Facilitator	Dinah Ngwenya
Observer	Prof Ronél Ferreira
Length of session	16:30 - 19:30
Participants	26 parents
Place	Classroom at School B

PRA-based workshop with parents

1. On the 25 November 2015, a PRA-based workshop was conducted with parent-participants.
2. The PRA-based workshop with the parents was scheduled to start late in the afternoon to allow working parents to attend.
3. The parents of Grade 5 learners who participated in the Win-LIFE intervention, participated in the workshop.
4. Twenty-six (26) parent-participants attended the PRA-based workshop.
5. Participants were given a warm welcome and were thanked for honouring the invitation.
6. They were informed that they were invited to get feedback on the project and to share their experiences of the UP Nutrition project (Win-LIFE intervention) in which their children participated.
7. A letter of consent was issued that explained the aim of the workshop, as well as the process they will be involved in during the PRA-based workshops, to them.
8. Participants were informed about the activities and that their contributions would be recorded and pictures taken. After that they were informed that they had a right to agree to participate or not to participate before they signed.
9. The above was explained in both isiZulu and Sepedi.
10. As far as taking pictures was concerned, some of the participants indicated that they do not want to be photographed; it was noted, accepted and respected.

11. The process of the PRA-based workshop was explained; there were three activities in which they were going to participate.
12. The participants were informed that at the end of the workshop, they would be served a light supper.
13. The participants showed interest and enthusiasm in taking part in the PRA-based workshop.
14. An informal discussion was held to hear about the participants' experiences of the Win Life intervention.
15. The participants indicated that the Win-Life intervention is a good project. They indicated that they were happy about the programme.
16. The parents came with their children who were involved in the Win-LIFE intervention as well as the little ones.
17. I requested the parents to allow their bigger children to play outside. The babies remained with their mothers.
18. The children were requested to play outside while the session was in process.
19. One teacher was acted as an interpreter for Sepedi-speaking parents when I spoke in isiZulu.
20. The participants were divided into six groups.
21. Posters of Activity 1 were distributed to each of the six groups.
22. In this activity, the participants shared how involved they were in the two workbooks (*Nutrition Education and Environment Education*) in assisting their children. The participants were informed to write in their home language or in English if they preferred to do so.
23. The participants were urged to be fully engaged in participating and to give as much information as possible.
24. The participants had their discussions in their groups, and I was moving around listening to each group and taking down field notes.
25. The recorder was also on to capture the discussion process.
26. During the discussions, participants were encouraged to be honest in their responses. If they were not involved, they were free to indicate as much and give the reason for why they were not.
27. Two participants indicated that they were not involved because they work late.

28. Whenever participants did not understand, the matter was explained in isiZulu or Sepedi. The participants were encouraged to take turns when answering to give one another a chance to respond in the group.
29. The participants mentioned that they did support their children and indicated the activities with which they assisted their children.
30. The participants indicated that ... *“we signed the homework books”*.
31. The parents also shared about how they helped their children to water and grow the seeds that were planted as part of learning about food production.
32. Most participants indicated that they assisted their children in watering the seedlings and monitoring that they grow well.
33. Participants said: *“We know what to buy when going to the store because there are a lot of things that we buy”* and also: *“We learned to buy healthy food, vegetables and fruits.”* ([Food choice](#))
34. The participants indicated that they also learned about healthy eating, different food types, how to plant a vegetable garden, preparing food and hygiene as well as healthy cooking methods.
35. The participants shared their views and contributions with the bigger group in class. This was done for all the activities.
36. The participants shared their experiences of what they learned from their children.
37. In this activity, the participants shared what they have learned with regard to *food choice, food production, food preparation and food consumption*.
38. The participants said that they learned about making healthy choices when buying food, especially vegetables and their quality.
39. The participants said that they were accustomed to buying *vegetables like cabbage, green peppers, onions and tomatoes, but they learned to buy vegetables like lettuce and beans*.
40. They indicated that they learned to buy nutritious food that builds the immune system in order to fight diseases and to help the learners to learn at school.
41. The participants said that they learned *about herbs and fruits that have vitamins*.
42. Again, they said that *“we learned to buy healthy food, vegetables and fruits”*.
43. They also learned that *vegetables are important and healthy*.

44. The participants mentioned that they have learned about *nutrients such as carbohydrates, protein and vitamins*.
45. "We have learned that we should give children healthy food that help them to grow."
46. "We have learned about nutrients that we get from food like proteins."
47. They also learned about vegetable gardens, compost, fertilising the soil, planting in different seasons as well as crop-rotation.
48. They learned that *to fertilise the soil by making compost is important when growing plants (Fertilising soil)*.
49. The participants said that they gained information about watering the plants. They now do not use too much water but use rain water.
50. The participants learned that *"before planting, the soil must be right-(fertile). Plants should be space in between so that they can get enough air. How to plant different vegetables, like beetroot, spinach etc" (Knowledge gained on planting)*.
51. They indicated that they learned about food preparation such as *food storage and cleansing of food before cooking*.
52. The participants mentioned that they learned to always clean their hands before handling food and when they cook. *"We learned that the rinsing of hands is vitally important in preventing germs" (Benefit of cleanliness)*
53. Most of the groups shared the *knowledge they have gained concerning hygiene and cleanliness of hands during handling of food and cooking (Knowledge on cleanliness)*.
54. The participants mentioned that they learned about healthy cooking.
55. One participant said: "I used to bake eggs and onions in too much oil."
56. When cooking the cabbage I let it to go brown in colour."
57. The participants indicated that they learned "... not to use too much fat of salt when cooking or to overcook food in order to preserve food nutrients."
58. "To fertilise the soil by making compost is important in the growing of plants."
59. The participants said that they gained information about healthy eating.
60. They mentioned that *"... we learned to eat more vegetables, fruits and to drink water, juice and milk no longer to eat a lot of pap (stiff porridge) ... the plate must be colourful with carbohydrates, protein and vitamins such as vegetables (Balanced meal)*."

61. The participants indicated that "... the plate of food must be colourful with carbohydrates, protein and with vitamins such as vegetables."
62. In this activity, the participants shared how they have used the gained information in their homes with regard to food choice, food preparation and food consumption.
63. The participants said that they are now choosing healthier food for their families "... we know what to buy when going to the store because there are a lot of things that we buy."
64. "We have learned that we should not give children junk food like a quarter (bread and achar). We have learned that we should give children healthy food that help them to grow. We have learned about nutrients that we get from food like proteins (Provision of healthy meals)."
65. The participants reported that when they go to the store, "... we choose correctly not like before".
66. They also mentioned that ... "we choose healthier food than junk food such as bread and achar".
67. They indicated that the challenge in buying healthy food is a lack of money due to unemployment.
68. The participants also indicated that "we are now buying vegetables like lettuce and beans".
69. The participants indicated that the following: "Spinach is important in the growth of children."
70. The participants indicated that "we started the vegetable garden though we have a problem of space (Started vegetable garden)".
71. The participants mentioned that they gained knowledge that "... before planting the soil must be right (fertile). Plants should be space in between so that they can get enough air" (Planting methods).
72. They water their plants in the morning and afternoon.
73. Before planting, the soil must be right (fertile).
74. Plants should be spaced in between so that they can get enough air.
75. They also indicted that they ensure that their children rinse their hands before they touch any food. "We ensure that they rinse hands before touching food or cooking."
76. We also "...ensure that we keep our food in a clean place" (Food storage).

77. The participants mentioned that they used salt and fat sparingly. “We learned not to use too much fat or salt when cooking or to overcook food in order to preserve food nutrients ([Healthy cooking](#)).”
78. The participants reported that: “we have learned to use fat sparingly. Now I know how to cook cabbage and it must be half cooked and to be green in colour. We have learned not to overcook food.”
79. Some of the participants mentioned that they have started to prepare healthy meals with different types of food, especially including vegetables.
80. Participants reported that “we know that when they eat a variety of nutritious food will develop healthy body since healthy food help our bodies to be strong in fighting diseases ([Benefits of healthy eating](#)).”
81. They said “we are encouraging their children to eat green vegetables like spinach and herbs (morogo)” ([Consumption of leafy vegetables](#)).
82. The participants mentioned that they no longer pour raw salt when eating. “We have learned to use fat sparingly ([Reducing fat](#)).”
83. “Now I know how to cook cabbage and it must be half cooked and to be green in colour. We have learned not to overcook food ([Improved cooking](#)).”
84. They also indicated that they ensure that their children eat one fruit each day. They drink more water and juice after eating.
85. They applied their new knowledge by choosing healthy food and said: “We choose healthier food than junk food such as bread and achar ([Improved food choice](#)).”
86. In this activity, the participants shared about extra knowledge they would like to gain with regard to food choice, food production, food preparation and food consumption.
87. The participants indicated that they would like to learn more about different types of food and the nutrients found in them.
88. They also want to know the function of nutrients in their bodies and said: “... like to learn more about different types of food and the nutrients found and the function of nutrients in the body ([Food nutrients](#)).”
89. The participants said: “... want to know about eating raw vegetables such as carrots and their function in the body ([Benefits of raw vegetables](#)).”
90. The participants said: “... like to learn more about different types of food and the nutrients found and the function of nutrients in the body.”

91. They also want to have more knowledge about meat; the different types of meat and how much red meat they should eat.
92. The participants mentioned that they would like to learn more about their traditional food. They want to know its quality, cleanliness and whether it is healthy.
93. The participants pointed out that they “would like to learn more about different types of vegetables, herbs and meat (Variety of food items)”.
94. The participants said that they want to know more about how to identify good soil for planting and the different types of soil (Identification of soil).
95. They want know how to fertilise the soil and how to prepare a compost.
96. They indicated that they want to know more about the types of crops that need to be planted and in which season they can be planted.
97. The wanted to know “how to plant different vegetables like beetroot, spinach etc” (Planting).
98. The participants mentioned that they would like to know about food production, but their challenge is that their yards are too small.
99. The participants indicated that they want to learn more about planting and when to change vegetables and plant others (crop rotation). In which season to plant different vegetables (Crop rotation).
100. The participants said that they want to learn about food hygiene so that they can prepare healthy meals.
101. Some of the participants said that they want to know how to store food if one does not have a refrigerator (Food storage).
102. Other participants indicated that they want to learn more about why it is important to rinse one’s hands and food before cooking or when preparing food.
103. They also want to learn about healthy cooking methods that they could use in their homes.
104. They mentioned that they want to learn to prepare canned food (Canning).
105. They wanted to learn a procedure to follow when cooking (Cooking procedure).
106. They wanted to know how to cook herbs so that they are nutritious (Healthy cooking of herbs).
107. They wanted to know what to add to the herbs for it to taste delicious (Healthy seasoning of herbs).

108. The participants indicated that they still want to learn more about the appropriate time to eat and the suitable meals at those respective times (Eating time).
109. They said that they want to learn how to measure food or the amount of food to be eaten so that they do not over eat (Suitable amount of food).
110. The participants also wanted to know if it is healthy to go to sleep with a full stomach or whether one needs to eat early and do some exercise before going to sleep.
111. They want to learn about meat and the types of meat that are healthy so that they would not develop a disease like gout.
112. They wanted to learn how to eat red meat, because they say it is not healthy and people suffer from gout. They wanted to know how much red meat one should eat.
113. They wanted to learn about eating raw vegetables such as carrots and their function in the body.
114. "... to start vegetable garden at school due to lack of space at home" (Vegetable garden at school).

Reflective field notes (parents 25 November 2015)

Date	25 November 2015
Facilitator	Dinah Ngwenya
Observer	Prof Ronél Ferreira
Length of session	16:30 - 19:30
Participants	26 parents
Place	Classroom at School B

1. PRA-based workshop with the parents was scheduled to start at 16:30 to allow working parents to attend.
2. As a result of working parents, the session only started at 18:00.
3. The parent-participants brought along their children who participated in the intervention as well as their babies.
4. At first, I was concerned about the parents bringing children, but I then realised that they could not leave them at home alone.
5. Attending with their children showed their eagerness to give feedback on their children's participation in the Win-LIFE intervention.
6. I requested the bigger children to play outside as we began the feedback discussion session with the parents.
7. I requested the parents who could write to be the scribes as ideas were shared.
8. I also informed them that they could write in English or isiZulu or Sepedi.
9. Some of the participants were keen to write their responses in English, even though they were informed to use their mother tongue.
10. During Activity 1, the parents shared a lot of information on their involvement in assisting their children with the Win-LIFE activities.
11. I was amazed at the amount of information the parents shared with regard to their involvement in the two booklets on nutrition and environmental education. (See the information in Appendix G.)
12. I was pleasantly surprised at the men's attendance. Men generally show reluctance and little involvement in their children's learning.

13. The men who attended the session showed that they supported their children with their homework activities given during the Win-LIFE intervention.
14. I was encouraged to see the participants' meaningful engagement in all the activities. Even though some of the parents could not write, they still contributed.
15. The participants gave much information about the PRA-posters with regard to their involvement in the two booklets on nutrition and environmental education. This information can be viewed in Appendix G.
16. They also shared the knowledge they have gained from their children about food, choice, food production, food preparation and food consumption.
17. With regard to food choice, the participants indicated that they have learned to choose healthier food and vegetables after realising the value of healthy food for their well-being ([Improved food choice](#)).
18. With regard to food production, the participants realised after learning about food gardening, that it is important for them to start their own vegetable garden that would assist them in producing healthy food rather than buying from the store ([Starting own vegetable garden](#)).
19. The participants indicated their increased knowledge about planting in fertile soil, as they mentioned how to space plants to ensure that they grow well, namely vegetables" ([Knowledge gained on planting](#)).
20. The Participants seemed to view the intervention as an eye opener, as they gained insight into the importance of hygiene during food preparation. Washing and rinsing one's hands was seen as important during food preparation and when eating.
21. The participants seemed to value the nutrition knowledge they have gained from their children and realised the importance of applying it to improve their food practices.
22. The participants seemed to have gained insight that different types food contains nutrients such as proteins, carbohydrates and vitamins ([Food nutrients](#)).
23. The participants mentioned that they improved their cooking methods by using fat and salt sparingly, as they realised how unhealthy their methods were before ([Improved cooking methods](#)).

24. The participants also reflected on their previous cooking methods, mentioning how they overcooked their food in order to make it tasty.
25. One participant mentioned that she used to cook cabbage until it was brown in order to be palatable.
26. One participant laughed at her previous cooking method, saying that she used to fry eggs in deep oil with onions; she even waved her hands to show the amount of oil she used before.
27. The participants seemed actually embarrassed as they reflected on their previous cooking methods but still shared their experiences with enthusiasm.
28. With regard to food consumption, "... the participants indicated that they learned about eating different types of food. They furthermore mentioned that the plate must be colourful with foods like starch, meat and vegetables. They should not to eat the same type of food daily" (Consumption of healthy food).
29. The participants indicated the importance of eating healthy food, as they realised that healthy food strengthens their immune systems and is also beneficial the learners' brains (Benefit of healthy food).
30. They also indicated that it is important to eat raw carrots since they are healthy for the eyes.
31. The participants from different groups seemingly valued the importance of consuming fruits, knowing that they contain vitamin C (Value of eating fruits).
32. The participants realised that, over and above the knowledge and skills they learned from their children, they still need more guidance on healthy food practices such as food choice, food production, food preparation and food consumption.
33. Moreover, the parents were concerned about eating red meat and indicated that they would like to know how they should eat red meat so that they do not develop gout (Knowledge needed on red meat).
34. The participants indicated that they still needed to know about the best times to eat.
35. The participants seemed to be concerned about the health value of their traditional food, indicating that they need more knowledge about how healthy they are for consumption (Value of traditional food).

36. The participants were seemingly eager to know more about planting vegetables and how to prepare compost to fertilise the soil when planting so that they may grow healthy plants ([Planting and making compost](#)).
37. The participants shared their group inputs with the whole group. Others gained more knowledge through this sharing of their experiences of the knowledge gained from their children.
38. By so doing, they were able to gain from each group's contributions.
39. The PRA-based workshop session was lively and the participants participated in a positive way.
40. The participants were rewarded with gifts for their participation and attendance.
41. A light supper was served at the end of the session, while having informal discussions with the participants about their overall experiences of the Win-LIFE intervention.
42. The session ended at about 20:00.

3. What did you like about the programme?

4. To what extent did the principal/deputy principal support you to implement the programme, or did he/she not?

5. To what extent did other educators support you to implement the programme, or did they not?

6. What could we have done differently to support you in implementing the programme?

Thank you for your time!

Karien, William and Ronél (University of Pretoria)

24 November 2015

Prompts for PRA-based session (teachers)

TRAINING IN APRIL 2014

- What did you like about this?
- What was challenging?
- What could we have done differently?

IMPLEMENTATION IN AUGUST 2014

Nutrition Education

- What did you like about this?
- What was challenging?
- What could we have done differently?

WHAT WAS OF VALUE?

- For educators?
- For learners?
- For the community?

WHAT WAS A CHALLENGE?

- For educators?
- For learners
- For the community?

Environmental Education

- What did you like about this?
- What was challenging?
- What could we have done differently?

WHAT WAS OF VALUE?

- For educators?
- For learners?
- For the community?

WHAT WAS A CHALLENGE?

- For educators?
- For learners
- For the community?

Prompts for PRA-based session (parents)

ACTIVITY 1

Nutrition Education and Environmental Education

- How were you involved in this booklet?

ACTIVITY 2

Food choices

- What did you learn?
- How did you use this information?

Food production

- What did you learn?
- How did you use this information?

Food preparation

- What did you learn?
- How did you use this information?

Food consumption

- What did you learn?
- How did you use this information?

ACTIVITY 3

Food choices

- What more would you like to learn?

Food production

- What more would you like to learn?

Food preparation

- What more would you like to learn?

Food consumption

- What more would you like to learn?

APPENDIX F: TRANSCRIPTS OF DATA AND ANALYSIS

Transcripts of teachers' data

Themes and related sub-themes colour coded

1: Value of PRA-based process and teachers being involved as research partners in developing and implementing the intervention
1.1: Increased awareness of a healthy lifestyle, eating habits and environment-related knowledge
1.2: Improved teaching practices
1.3: Enriched curricula that were taught
2: Perceived value of the Win-LIFE intervention for others
2.1: Positive effect on learners' learning
2.2: Teachers' perceptions of Knowledge and skills gained
2.3: Perceived value for learners' parents
3: Challenges experienced during implementation of the Win-LIFE intervention
3.1: Lack of ongoing training and support
3.2: Time-related challenges
3.3: Suitability of the content of the Win-LIFE intervention
4: Recommendations for future implementation
4.1: Recommendations for training
4.2: Planning for implementation schedule
4.3: Extending the Win-LIFE intervention to other subjects
4.4: Involving parents, community members and other stakeholders

TEACHERS' INDIVIDUAL REPONSES ON THE QUESTIONNAIRE

RESPONSE	ANALYSIS
<p>How did you implement WIN-LIFE programme in your class? How much of it? Or did you really implement it? In not why?</p>	
<p>SCHOOL A</p>	
<p>Participant: Q-P1A</p> <p><i>I did implement the Win-Life programme in my class. The kids loved it. They enjoyed reading and} answering the questions. The problem was that time devoted to the programme consumed the time for the content of Life Skills subject.} Parents did not do the part meant for them so there were some gabs. We could not actualise the practical because we could not visit learners' home to see if planting of seeds are really happening. The school officials of course wanted to see Life Skills content being taught.</i></p> <p>Participant: Q-P2A</p> <p><i>I was implementing this programme during the Life Skills periods. It was almost every day.</i></p> <p>Participant: Q-P3A</p> <p><i>I often implemented the Win-LIFE programme in my class 1.e. grade 5</i></p> <p>Participant: Q-P4A</p> <p><i>I tried to fit Win-LIFE to the curriculum. I have three periods of PSW per week so I used one period for Win-Life, so I did it once a week for two months.</i></p>	<p>Positive effect on learners' learning.</p> <p>Limited time to implement the intervention</p> <p>Lack of parental involvement in supporting their children. Teachers could not visit learners' homes due to time limit.</p>
<p>SCHOOL B</p>	
<p>Participant: Q-P1B</p> <p><i>The programme was implemented three times a week. Learners were impressed by the time I introduced it to them. They were interested about it and keen to know and acquire knowledge from it. They really liked it. They also enjoyed part of word puzzles to complete the blocks and part of word searching. They were playing and learning at the same time.</i></p> <p>Participant: Q-P2B</p>	<p>Positive effect on learners' learning</p> <p>Improved learners' reading skills. Able to complete crossword puzzles.</p>

RESPONSE	ANALYSIS
<p><i>Most of the work has been done. I was giving learners some of the work to be done at home with the help of some of their parents or guardians. Learners enjoyed the books because most of the things were practical and the book was also attractive.</i></p> <p>Participant: Q-P3B</p> <p><i>During the teaching of Biodiversity in Grade 7's I asked the Grade 6 educators to lend me workbooks for Win-LIFE to practically integrate it to my lesson. At least it was done once a week.</i></p> <p>Participant: Q-P4B</p> <p><i>I did not implement the Win-Life programme in my class always but there were instances where it was fused into. Win-LIFE programme is an interesting programme because it goes hand in hand with my learning area especially in life and living.</i></p>	<p>Enriched the teaching of Biodiversity curriculum of Grade 7 learners</p>
SCHOOL C	
<p>Participant: Q-P1C</p> <p><i>We did but not much as the time was limited and it had lot of work.</i></p> <p>Participant: Q-P2C</p> <p><i>Presentation of Win-LIFE programme by educators to learners. Explain what the programme is all about. Giving learners workbooks to learners. Explain the activities involving learners. Some activities were class activities and some were homework. Class activities were marked in class with learners so that they can be able to identify some activities that were difficult to them. Homework educator give correction to learners.</i></p> <p>Participant: Q-P3C</p> <p><i>During the Life Skill period. 2 days per week. I told them to drink a lot of water because water is healthy and so that they</i></p>	<p>Limited time</p>

RESPONSE	ANALYSIS
<p><i>shouldn't be dehydrated. I also told them about different kinds of healthy food.</i></p> <p>Participant: Q-P4C</p> <p><i>After attending the workshop from Pretoria University. I was changed from teaching Life Skills Grade 4. I'm teaching Life Skills Grade 7. But the person who took over from me was using the Win-LIFE programme books. The homework activities were taken from the book most of the time.</i></p> <p>Participant: Q-P5C</p> <p><i>With Grade 4's. I did implement or used it for the short period of time (1 Term) as I was busy with teaching it. Learners found it very interesting and all enjoyed it especially the different types of soil. Also when they were doing living organism, it was very helpful in assisting learners to complete their NS and TECH activities. Learners will complete Environmental and Nutrition workbook very well.</i></p>	<p>Positive effect on learners' learning</p>
<p>What was hard about implementing the programme in your class?</p>	
SCHOOL A	
<p>Participant: Q-P1A</p> <p><i>The content of the programme did not align with the Life Skills content. We could not meet parents as time is limited. Officials wanted Life Skills content being implemented.</i></p> <p>Participant: Q-P2A</p> <p><i>Sometimes the programme was so difficult to implement it because I was supposed to stop my teaching programme (lesson plan) and accommodate the programme.</i></p> <p>Participant: Q-P3A</p> <p><i>The hard part of implementing the programme, was that I needed to cover the topics in the ATP then the programme must</i></p>	<p>Suitability of the intervention content</p> <p>Limited time</p>

RESPONSE	ANALYSIS
<p><i>also be implemented. The parents also did not support their children especially when they were supposed to help them with the questionnaire at home.</i></p> <p>Participant: Q-P4A</p> <p><i>The problem was time because it had a lot of information important to learners and parents. Time was not enough to share with learners and parents.</i></p>	<p>Lack of parental support</p>
SCHOOL B	
<p>Participant: Q-P1B</p> <p><i>It was not hard work to do because it was slotted in the timetable as part of the curriculum.</i></p> <p>Participant: Q-P2B</p> <p><i>Workload, if you concentrate a lot on Win-LIFE books, you are left behind on the curriculum work and you encounter a problem in submission of mark sheets by not complying.</i></p> <p>Participant: Q-P3B</p> <p><i>No, it was very simple because the language is simple and easy to understand by learners.</i></p> <p>Participant: Q-P4B</p> <p><i>It was hands on to implement it because of the duration of the periods, hence each period is thirty minutes. It was easy when it correlated with the theme of the lesson.</i></p>	<p>Limited time for the intervention</p> <p>Enriched the curriculum presented</p>
SCHOOL C	
<p>Participant: Q-P1C</p> <p><i>Integrating the programme into our daily activities in the classroom was at times challenging as the themes were in different term but we managed.</i></p> <p>Participant: Q-P2C</p> <p><i>The difficult part of the programme was time. Since LO has limited number of periods it was not easy to implement the programme. Mostly we used afternoon to implement because is not integrated in LO</i></p>	<p>Limited time</p> <p>Limited time</p>

RESPONSE	ANALYSIS
<p>Participant: Q-P3C <i>Teaching the learners about healthy lifestyle because most of them are staying with their grandparents.</i></p> <p>Participant: Q-P4C <i>These books were very helpful to learners although the time was limited.</i></p> <p>Participant: Q-P5C <i>Learners were finding it difficult to do planting of seeds using cotton wool but they enjoyed it too. They also asked their parents to assist them but there was no co-operation between school and parents.</i></p>	<p>Suitability of the intervention for this community</p> <p>Suitability of the intervention</p>
<p>What did you like about the programme?</p>	
<p>SCHOOL A</p>	
<p>Participant: Q-P1A <i>If successful, it could have brought parents, teachers and learners together. This would have taught parents to rely on themselves.</i></p> <p>Participant: Q-P2A <i>The programme teaches the learners how to eat balance meal with nutrients at all time.</i></p> <p>Participant: Q-P3A <i>What I liked about the programme, some of the parents were involved in acquiring knowledge on how to eat balanced, healthy food at their different homes.</i></p> <p>Participant: Q-P4A <i>What I liked about the programme is that the learners enjoyed it while they were learning. Some of them worked together with their parents who gave me good feedback.</i></p>	<p>Perceived value for parents</p> <p>Knowledge on healthy eating</p> <p>Value for parents</p> <p>Positive effect on learners' learning</p>
<p>SCHOOL B</p>	
<p>Participant: Q-P1B <i>The programme is educative and very informative to everyone.</i></p> <p>Participant: Q-P2B <i>It teaches learners and family members about healthy living and different food groups and the importance of having a vegetable garden.</i></p> <p>Participant: Q-P3B <i>Planting seeds on cotton was the most interesting experience</i></p> <p>Participant: Q-P4B <i>I liked the programme because there are certain aspects that enlightened me.</i></p>	<p>Increased knowledge</p> <p>Perceived value for parents</p>

RESPONSE	ANALYSIS
SCHOOL C	
<p>Participant: Q-P1C</p> <p><i>Informative, the activities and the colour of the pages made it appropriate and interesting to learners.</i></p> <p>Participant: Q-P2C</p> <p><i>It educates learners and parents about healthy lifestyle. It educates parents how to eliminate poverty through education by helping them and give them the correct way of playing (planting) in the yard.</i></p> <p>Participant: Q-P3C</p> <p><i>It has made me realise that it's important to eat healthy.</i></p> <p>Participant: Q-P4C</p> <p><i>Learners enjoyed to use the books. They were doing the activities given to them.</i></p> <p>Participant: Q-P5C</p> <p><i>It integrated a lot with our NSTECH Grade 4 syllabus or content. That made it so easy for me as an educator to teach them.</i></p>	<p>Improved teaching strategies</p> <p>Perceived value for parents</p> <p>Increased awareness on healthy eating</p> <p>Improved learning</p> <p>Enriched the curriculum taught</p>
<p>To what extent did the principal/deputy support you to implement the programme, or did he/she not?</p>	
SCHOOL A	
<p>Participant: Q-P1A</p> <p><i>There was no support from the principal We were doing this on our own.</i></p> <p>Participant: Q-P2A</p> <p><i>The principal was supportive.</i></p> <p>Participant: Q-P3A</p> <p><i>We were supported by the principal and encouraged us to use the booklets given in our time-table.</i></p> <p>Participant: Q-P4A</p> <p><i>The SMT was very supportive because sometimes they come and check the implementation of the programme.</i></p>	

RESPONSE	ANALYSIS
SCHOOL B	
<p>Participant: Q-P1B</p> <p><i>Management was also interested in it and gave educators moral support.</i></p> <p>Participant: Q-P2B</p> <p><i>Most of the time we were not supported, you just have to work hard.</i></p> <p>Participant: Q-P3B</p> <p><i>No, Life Skills and NSTECH educators in grade 4-6 were helpful where I found challenges.</i></p> <p>Participant: Q-P4B</p> <p><i>The principal encouraged us to implement the programme. The HOD of natural was the only one who was inspirational.</i></p>	
SCHOOL C	
<p>Participant: Q-P1C</p> <p><i>They made sure that once a week the booklets were used and they monitored the use.</i></p> <p>Participant: Q-P2C</p> <p><i>The deputy principal supported me from the start of the programme. He was monitoring the implementation of the programme.</i></p> <p>Participant: Q-P3C</p> <p><i>She didn't.</i></p> <p>Participant: Q-P4C</p> <p><i>The principal and the deputy did support the programme.</i></p> <p>Participant: Q-P5C</p> <p>Principal and deputy were so great, especially the deputy was doing the follow-ups to check how we were.</p>	
To what extent did other educators support you to implement the programme?	
SCHOOL A	
<p>Participant: Q-P1A</p> <p><i>We were helping ourselves as a group.</i></p>	

RESPONSE	ANALYSIS
<p>Participant: Q-P2A <i>They were also supportive.</i></p> <p>Participant: Q-P3A <i>We usually discussed about the positive attitude the learners had when using the booklets.</i></p> <p>Participant: Q-P4A <i>The teachers were very supportive, they also liked the programme, even though some were not.</i></p>	<p>Value of learners' workbooks</p>
SCHOOL B	
<p>Participant: Q-P1B <i>Other educators were also interested and encouraged learners to take part and participate.</i></p> <p>Participant: Q-P2B <i>I was getting support from my colleagues because sometimes they also monitored the books.</i></p> <p>Participant: Q-P3B <i>It was a joint venture. Educators who teach Life Skills and NSTECH were helping with ideas and practical examples.</i></p> <p>Participant: Q-P4B <i>The other educators encouraged us to implement the programme and supported us.</i></p>	
SCHOOL C	
<p>Participant: Q-P1C <i>There was not much support from the educators as they complained that it took their periods.</i></p> <p>Participant: Q-P2C <i>Some educators supported they were able to give learners work on a workbook as homework activity when I was absent from school.</i></p>	

RESPONSE	ANALYSIS
<p>Participant: Q-P3C <i>They didn't.</i></p> <p>Participant: Q-P4C <i>Teachers worked as a team to introduce the programme to learners.</i></p> <p>Participant: Q-P5C <i>Team work only to NSTECH Grade 4 and Life Skills was so incredible.</i></p>	
<p>What could we have done differently to support you to implement the programme?</p>	
SCHOOL A	
<p>Participant: Q-P1A <i>Start the programme at the beginning of the year. Align the programme so that it fits correctly in Life Skills.</i></p> <p>Participant: Q-P2A <i>No response.</i></p> <p>Participant: Q-P3A <i>Maybe at the end to give out test, assessment to the learners.</i></p> <p>Participant: Q-P4A <i>You did enough, supplied us with all what we needed. The only challenge was time.</i></p>	<p>Need for the implementation schedule</p> <p>Need for assessment</p>
SCHOOL B	
<p>Participant: Q-P1B <i>We could have engage it on weekly basis to other grade at school.</i></p> <p>Participant: Q-P2B <i>By having workshops</i></p> <p>Participant: Q-P3B <i>If time allowed you could have come to the classroom to do it practically with my learners especially Grade 7.</i></p> <p>Participant: Q-P4B</p>	<p>Need for practical demonstration</p>

RESPONSE	ANALYSIS
<i>I should think the programme should have started long ago since it is inspirational.</i>	Positive effect of the intervention
SCHOOL C	
Participant: Q-P1C <i>Start the programme in January and properly integrate it according to the themes.</i>	Planning for the implementation schedule
Participant: Q-P2C <i>Let the programme integrate in some learning areas like SS, EMS so that it can get enough time.</i>	Extending the intervention to other subjects.
Participant: Q-P3C <i>To workshop all educators</i>	Involvement of all stakeholder
Participant: Q-P4C <i>If this programme can have the support or workshop to help educators to teach it.</i>	Need for more support
Participant: Q-P5C <i>More workshops or training and also do follow-ups.</i>	Need for more support

PRA-BASED WORKSHOP AND DISCUSSIONS

RESPONSE	ANALYSIS
What did you like about this? (Nutrition and environmental education)	
SCHOOL A	
Nutrition Education <ul style="list-style-type: none"> Learners shared their information with the parents. Parents were happy about the programme. <i>As teachers, it was easy for us to teach about food pyramid.</i> Environmental education <ul style="list-style-type: none"> No response 	Improved teaching
SCHOOL B	
Nutrition Education <ul style="list-style-type: none"> By reading the books with the help of teachers and parents, <i>learners' vocabulary improved and they even learnt how to complete a cross word puzzle.</i> Environmental Education	Gained knowledge and skills

RESPONSE	ANALYSIS
<ul style="list-style-type: none"> Some of the topics in the programme correlated with the themes in our learning areas. It allowed us to do practical investigation successfully. 	
SCHOOL C	
Nutrition Education <ul style="list-style-type: none"> New methods of teaching our learners about environmental issues and nutrition. Using more pictures was exciting. Environmental Education <ul style="list-style-type: none"> No response 	Improved teaching practices
What was challenging?	
SCHOOL A	
<ul style="list-style-type: none"> Most parents are not educated, they are not able to help their children. Parents also needed a workshop. As educators it was difficult to cover the curriculum and implement the programme. 	Reason for lack of parental involvement Need for parental involvement
SCHOOL B	
<ul style="list-style-type: none"> Most of the learners were concentrating on Win-LIFE books forgetting about the curriculum. Win-LIFE books are only in English and some of the parents were unable to help their kids at home. 	Positive effect on learning Reason for lack of parental involvement
SCHOOL C	
<ul style="list-style-type: none"> None because we enjoyed ourselves and learnt new things. 	
What we could have done differently?	
SCHOOL A	
<ul style="list-style-type: none"> Parents could have also been workshopped 	Parental involvement
SCHOOL B	
<ul style="list-style-type: none"> Come up with something that caters (accommodate) both and learners' needs. 	

RESPONSE	ANALYSIS
SCHOOL C	
<ul style="list-style-type: none"> • Introduce/invite us at the beginning of the year (Term 1). • Involve GDE NSTECH and Life Skills facilitators. 	<p>Planning schedule</p> <p>Involment of other stakeholders</p>
What was of value?	
SCHOOL A	
<p>Educators</p> <ul style="list-style-type: none"> • It makes teaching Life Skills and NS easy. • We have learned about healthy living. 	Improved teaching
<p>Learners</p> <ul style="list-style-type: none"> • They know the importance of healthy eating. • They have learned how to cook healthy food. • They know how to live in a healthy environment. • They know about different types of soil. 	Knowledge and skills gained
<p>Community</p> <ul style="list-style-type: none"> • Parents were taught by their children how to cook healthy food. • How to make vegetable garden? 	Perceived value for parents
SCHOOL B	
<p>Educators:</p> <ul style="list-style-type: none"> • It was informative and helped us to be broad-minded. • It helped us to infuse some of the topics in the programme into our learning areas. <p>What was challenging?</p> <ul style="list-style-type: none"> • Time consuming. <i>It took (ate)our time in our time framework (marking time).</i> 	<p>Increased knowledge gained</p> <p>Enriched the curriculum taught</p>
<p>Learners:</p> <ul style="list-style-type: none"> • They were happy that they were chosen for the programme. <p>What was challenging?</p> <ul style="list-style-type: none"> • Some learners were not happy because they were not part of the programme. 	

RESPONSE	ANALYSIS
Community: <ul style="list-style-type: none"> The community was happy to be part of the programme 	
SCHOOL C	
Educators: <ul style="list-style-type: none"> Team work and learnt new things/information 	
Learners: <ul style="list-style-type: none"> Very passionate and enjoyed learning about environment and nutrition issues. 	Positive effect on learners' learning
Community: <ul style="list-style-type: none"> To eliminate poverty through education. To avoid different types of diseases. 	Perceived value for parents

Transcripts parents' data

Themes and related sub-themes colour coded

1. Gaining knowledge about healthy food practices because of the Win-LIFE intervention
1.1 Food choice
1.2 Food production
1.3 Food preparation
1.4 Food consumption
2. Applying newly gained knowledge
2.1 Purchasing different types of food
2.2 Starting vegetable gardens to produce fruits and vegetables
2.3 Preparing and storing food in a hygienic and healthy way
2.4 Applying healthy eating guidelines
3. Requiring additional knowledge and guidelines
3.1 Need for more information about types and functions of food that is beneficial to health
3.2 Need for additional guidance on vegetable gardens
3.3 Need to obtain and understand guidelines for healthy food preparation and storage

PARENTS' PRA-BASED WORKSHOP AND DISCUSSIONS

Group A	Analysis
<p>How were you involved in this booklet?</p> <ul style="list-style-type: none"> <li>• <i>Umtwana bengimkhuthaza ngokuthi azi ukuthi lokudla kwakha amasotsha omzimba.</i> <li>• <i>I encouraged my child to know that food builds our immune system.</i> <li>• <i>Besiphinde sikhulume gokuthi sitholani kuma vegetables naku ma fruit kanye nase nyameni.</i> <li>• <i>We also talked about what we get from vegetables, fruits and meat.</i> <li>• <i>Ukudla imifino kwenza ubenamandla emzimbeni.</i> <li>• <i>Eating vegetables makes you to have strength.</i> <li>• <i>Ivikela nokugula okuningi.</i> <li>• <i>Prevents a lot of diseases</i> 	
<p>Group B</p> <ul style="list-style-type: none"> <li>• <i>Nna neke mo thusa kagomongwaela dijo tsa mefuta yago fapana yadienywa le merogo yagofapana fapana.</i> <li>• <i>I helped by writing different types of food, fruit and different leafy vegetables.</i> <li>• <i>Ke ne ke mothusu ka mmereko wa kagae ke thusa ka hhopa dienywa le merogo.</i> <li>• <i>I helped her with her chores and about fruits and leafy vegetables.</i> <li>• <i>Ngifunde kokudla okuhlukahlukene okunempilo.</i> <li>• <i>I have learned about different types of healthy food.</i> <li>• <i>Benimceda ngamahomework.</i> <li>• <i>I helped him with homework.</i> 	

<p>Group C</p>	
<ul style="list-style-type: none"> • How to eat healthy food. • <i>Wash the fruit before eating and also wash the hands.</i> • To rinse the fruits and hands before eating. • <i>I also check he work he/she done all the time.</i> • All the time I also checked the work done. • <i>I also help to follow the food pyramid.</i> • I also helped the child to follow the food pyramid 	
<p>Group D</p>	
<ul style="list-style-type: none"> • <i>Besifunda ukuvasa izandla kuqala phambi kokudla.</i> • We learned about rinsing the hands before eating. • <i>Besibancedisa ngokudla okwakha umzimba amavege, fruit, meat & water.</i> • We assisted them on food that builds the body, such as vegetables, fruits, meat and water. • <i>Besibafundisa ngokudla ekuseni nasemini nantambama.</i> • We taught them about eating in the morning, during the day and the evening. • <i>Ekuseni besibanika imilk, porish with sugar.</i> • In the morning we gave them porridge with milk and sugar. • <i>Emini nakabuya esikoleni besithi bavase izandla zabo bese sibanika isinkwa esigcobisiwe nejuice nebaname.</i> • When they come back from school during the day we ask them to rinse their hands and gave them bread with a spread and juice. • <i>Ebusuku besibanika I Rice & vege, meet and water. Bese yisikhathi sokulala.</i> • In the evening we served rice, vegetables, meat and water then it will be time to sleep. 	

Group E	
<ul style="list-style-type: none"> • <i>Sisize ngokuphendula imibuzo.</i> • <i>We assisted by answering the questions.</i> • <i>Nokubeka kahle imibuzo beyibuzwa.</i> • <i>Arranging the questions asked.</i> • <i>Nokubeka kahle ukudla ekugade kufanele ukuba nempilo.</i> • <i>Arranging types of healthy food.</i> • <i>Nokubasiza ngomsebenzi walelibhuku.</i> • <i>We assisted them with activities in this booklet.</i> • <i>Siphinde sisghn nezincwadi zabo.</i> • <i>We also signed their books.</i> 	
Group F	
<ul style="list-style-type: none"> • <i>Imifino ibalulekile kakhulu ekukhuleni kwabantwana ngoba kunemisoco imifino efana nesipinach, cabbage, lettuce.</i> • <i>Vegetables are important in the growth of children because they have nutrients, vegetables like spinach, cabbage, lettuce.</i> • <i>Nezithelo zibalulekile kakhulu ebantwaneni, baphuze namanzi amaning emzimbeni.</i> • <i>Fruits are also important for the children and to drink more water.</i> • <i>Bangadli ukudla okunamafutha amaningi.</i> • <i>Not to eat too much fatty food.</i> • <i>Mele umtwana ageze izandla ngathi kokuphatha ukudla</i> • <i>Children need to rinse their hands before touching food.</i> 	<p>Benefits of fruits and</p> <p>Consuming healthy food</p>

FOOD CHOICE

Group A	Analysis
What did you learn?	
<ul style="list-style-type: none"> • <i>Sifunde ukuthi ukudla esikudlayo kufanele kube nemifino eminingi kuno kudla ipapa eliningi.</i> • We learned that the food we eat should include more vegetables rather than eating a lot of porridge (pap). 	Consumption of vegetables
How did you use this information?	
<ul style="list-style-type: none"> • <i>Ukungadli ukudla okukodwa ngamalanga</i> • Not to eat the same food every day. 	Improved food consumption
Group B	
What did you learn?	
<ul style="list-style-type: none"> • <i>Re ithutile go ja dijo tse di na le phepo. Ke ithutile go la merogo le dienywa ke ithutile le go ja dijo tseo di na le vitamin le carbohydrate leprotein.</i> • We learned about nutritious food. I have learned about herbs and fruits that have vitamins, carbohydrates and proteins. 	Knowledge gained on healthy food choice
How did you use this information?	
<ul style="list-style-type: none"> • <i>Ke ithutile go apeya dijo tsa go fapafapana go swana le dijo tseo di na le starch go apeya merogo legonwa maswi letsatsi le lengwe lenwe meesti a clean a mansti re je le dienywa.</i> • I have learned to cook different types of food like starchy food, herbs and to drink milk daily, clean water and fruits. • Ke ithutile go reka dienywa ledi veji. Ke ithutile go reka di veji tsagotshwana le conliflower. • I have learned to buy different types of fruits and vegetables. I have learned to buy vegetables like conliflower. 	Improved cooking Buying new variety of vegetables
Group C	
What did you learn?	
<ul style="list-style-type: none"> • <i>Ukuthi kubalulekile ukuthi sikhethe ukudla wakha umzimba okuokwenza ukuthi amasotha omzimba akwazi ukulwa nokugula nokuthi akwazi ukufunda esikoleni.</i> • That it is important to choose nutritious food that builds the body in order to fight diseases and to learn at school. 	Choosing nutritious food
How did you use this information?	
<ul style="list-style-type: none"> • <i>Bengenza isiqiniseko sokuthi ingane idla kahle, idla ukudla okunomsoco.</i> 	

<ul style="list-style-type: none"> • I ensured that the child eats well, also eats nutritious food. 	Healthy food consumption
Group D	
What did you learn?	
<ul style="list-style-type: none"> • <i>Besikhetha amavege-cabbage, green peper & onion, tomatoes.</i> • We were choosing vegetables; cabbage, green pepper, onion and tomatoes. • <i>Nokuthi mawungena esitolo kose uthenge ntoni ngoba ziningi izinto esizithengayo.</i> • To know what to buy when going to the store because there are a lot of things that we buy. 	<p>Choosing a variety of vegetables</p> <p>Insight into healthy buying</p>
How did you use this information?	
<ul style="list-style-type: none"> • <i>Asisathengi njengasekuqaleni.</i> • We are no longer buying like before. • <i>Sesithenga mhlawumbe lettuce nabotamatisi</i> • We are now buying lettuce and beans. • <i>Asisachthi imali ekudleni okungenampilo</i> • We no longer waste money on food that is unhealthy. • <i>Uma siya esitolo sesikhetha kahle hayi njengakuqala</i> • When we go to the store we choose correctly not like before. 	Improved healthy food choice
Group E	
What did you learn?	
<ul style="list-style-type: none"> • <i>amavegi nama fruits.</i> • We learned to buy healthy food, vegetables and fruits. 	Choosing vegetables and fruits
How did you use this information?	
<ul style="list-style-type: none"> • <i>Ngokuthi sidle ukudla okubalance e.g. protein, carbohydrates.</i> • To eat a balanced meal e.g. proteins, carbohydrates. 	
Group F	
What did you learn?	
<ul style="list-style-type: none"> • <i>Sifunde ukuthi amavegie abalulekile anempilo.</i> • We have learned that vegetables are important and are healthy. 	Importance of vegetables

<p>How did you use that information?</p> <ul style="list-style-type: none"> • <i>Ukuthi ngaphambi kokuthi ukupheke kemele ukugeze ngamanzi ahlanzekile.</i> • To be clean before one start cooking. • <i>Spinach. Sibalulekile ekukhuleni komntwana.</i> • Spinach. Is important in the growth of the child. • <i>Sesithenga imifino ehlukeno hahi icabbagei yodwa.</i> • We are buying different vegetables not only cabbage • <i>Cabbage. Kumele kube icabbage efresh.</i> • Cabbage: It should be a fresh cabbage. • <i>Chicken ihlala kufiliji ngasosonke isikhathi.</i> • Chicken should always be put in the refrigerator. 	<p>Cleanliness</p> <p>Healthy food</p> <p>Improved food choice</p> <p>Food storage</p>
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FOOD PRODUCTION

Group A	
<p>What did you learn?</p> <ul style="list-style-type: none"> • <i>Ukuzenzela ingadi ekhaya.</i> • To prepare my own garden at home. 	Starting vegetable garden
<p>How did you use this information?</p> <ul style="list-style-type: none"> • <i>Sibenezithelo ekhaya ukuze sidle khona singayi esitolo nsukuzonke.</i> • To provide fruits to eat at home rather than buying at the stores every day. 	To be food secure
Group B	
<p>What did you learn?</p> <ul style="list-style-type: none"> • <i>Sifunde ukuthi singatshala kanjani nokuthi unelisa kayingaki ngelanga.</i> • We learned on how to plant and how many times to water. 	Knowledge gained on planting
<p>How did you use this information?</p> <ul style="list-style-type: none"> • <i>Ngiye ngaqala ukwenza ingadi ngatshal imifino Kanye namaveg.</i> • I started to prepare a garden and planted vegetables. 	

Group C	
<p>What did you learn?</p> <ul style="list-style-type: none"> • <i>Ukuthi mangithelela izitshalo zami ngingatheli amanzi amaningi ngoba ngibulala izitshalo futhi ngithelele ngamanzi aphezulu.</i> • Not to use too much water when watering and to use rain water. 	
<p>How did you use this information?</p> <ul style="list-style-type: none"> • <i>Ngenze ingadi ekhaya.</i> • I prepared a garden at home. 	Started a garden
Group D	
<p>What did you learn?</p> <ul style="list-style-type: none"> • <i>Ngifunde ukutshala amavege.</i> • I have learned to plant vegetables, potatoes and onions.. 	Planting vegetables
<p>How did you use this information?</p> <ul style="list-style-type: none"> • <i>Amazambane nama onion.</i> • (Planted) Potatoes and onions. 	Production of vegetables
Group E	
<p>What did you learn?</p> <ul style="list-style-type: none"> • <i>Sifunde ukuthi zifuna ilanga namanzi.</i> • We have learned that plants need the sun and water 	
<p>How did you use this information?</p> <ul style="list-style-type: none"> • <i>Ngokuthi sizenzele eyethu ingadi emakhaya.</i> • We prepared our own garden at home. 	Started a garden
Group F	
<p>What did you learn?</p> <ul style="list-style-type: none"> • <i>Sifunde ukuthi izitshalo zidinga ukunakekelwa kakhulu zihlale ziniselwa njalo ekuseni nantambama.</i> • We have learned that plants need to be cared for and watered in the morning and afternoon. • Kumele izithalo ziniselwe ekuseni ngoma umaziniselwa ilanga lishisa zizofa. • Plants should be watered in the morning, because when the sun is too hot they will die. • <i>Imifino efana nombila zidinga imvula eningi.</i> • Crops like mealies need a lot of rain water. 	Knowledge gained on caring for plants

<ul style="list-style-type: none"> • <i>Ngaphambi kokuthi uthale umlabathi kufanele ube onothile.</i> • Before planting the soil must be right-(fertile). • Before planting the soil must be right-(fertile). • Plants should be space in between so that they can get enough air. • Plants should be watered in the morning and afternoon not during the day. • How to plant different vegetables, like beetroot, spinach etc. • Other plants grow up and others grow under the soil. 	
<p>How did you use this information?</p> <ul style="list-style-type: none"> • <i>Uma utshala kufanele utshale emhlabathini onothile ukuthi izitshalo zizokhula kahle.</i> • To plant on a fertile soil so that plants can grow well. • <i>Ilanga libalulekile, ekukhuleni kwezitshalo, amanzi kanye ne mvula.</i> • The sun, water and rain are important in the growth of the plants. • We started the vegetable garden though we have a problem with space. 	Plants' necessities for growth

FOOD PREPARATION

Group A	Analysis
<p>What did you learn?</p> <ul style="list-style-type: none"> • <i>Ukudla konke okumele kuphekwe kufanele uqale ngokukugeza.</i> • All cooked food needs to be rinsed first. 	Importance of hygiene during food preparation
<p>How did you use this information?</p> <ul style="list-style-type: none"> • <i>Uphinde ugeze izandla zakho ngaphambi kokuthi ukubambe.</i> • By rinsing the hands before touching food 	Cleanliness on food handling

Group B	
<p>What did you learn?</p> <ul style="list-style-type: none"> • <i>Pele reapea dijo re hlapa matsoho rehlatswe le dijo pele re di apeya reswanetse re fokotse dijo tsa makhura. Re thutile le go fokotsa letswai dijong tseo le di apeya.</i> • Before we cook we rinse our hands and food and to reduce fat. We also learned to reduce salt when cooking food. 	Knowledge gained on healthy cooking
<p>How did you use this information?</p> <ul style="list-style-type: none"> • <i>Reswanetse refokotse go ja dijo tsa makhura re je dijo tsa gobale starch lemerogo ya go fapana le meetsi a clean a tswalegilego. Go swana le Rice, macaroni: masampani lemaswi le fish le chicken le yorghurt le cheese.</i> • We need to reduce fatty food and to eat food such as starch different herbs and to drink purified water. Like rice, macaroni, potatoes, milk and fish, chicken, yoghurt and cheese 	Healthy food consumption
Group C	
<p>What did you learn?</p> <ul style="list-style-type: none"> • <i>Ngifunde ukuthi kumele ngiwashe izandla futhi ngiwashe nokudla before ngikupheka.</i> • We have learned about rinse the hands and food before cooking. 	Cleanliness
<p>How did you use this information?</p> <ul style="list-style-type: none"> • <i>Ngokulisebenzisa ekhaya.</i> • By using it at home (information). 	
Group D	
<p>What did you learn?</p> <ul style="list-style-type: none"> • <i>Besiqala ukuwasha ukudla kwethu nokuthi usolt simthela kanjani namafutha.</i> • We started to rinse the food and how to use salt and fat. • <i>Nokuthi siphekanjani kuqala besiphekisisa juthi sifake namafutha kakhulu.</i> • We checked how we cooked, before we over cooked food and used more fat. 	<p>Healthy food preparation</p> <p>Insight gained on cooking</p>
<p>How did you use this information?</p> <ul style="list-style-type: none"> • <i>Manje sipheka u ½ done nesolt ukuthi siyayipheka asiyitheli ekudleni.</i> • Now we cook half done food and salt is cooked no longer poured raw on food when eating. 	Improved cooking method

Group E	
<p>What did you learn?</p> <ul style="list-style-type: none"> • <i>Sicala ngoku washa izandla kucala.</i> • We begin by rinsing hands. • <i>Siwasha nokudla esizokupheka.</i> • We also rinse the food that we are going to cook. 	Healthy food preparation
<p>How did you use this information?</p> <ul style="list-style-type: none"> • <i>Ukubeka kahle ukudla kwethu kuhlale endaweni e clean or kuhlale kuhlanzekile.</i> • To store our food in a clean place or to be put in a hygienic place. 	Healthy food storage
Group F	
<p>What did you learn?</p> <ul style="list-style-type: none"> • <i>Kumele sigeze ukudla nezandla ngaphambi kokupheka nokuphatha ukudla ngasosonke isikhathi.</i> • We should clean our hands when handling food before we cook. • <i>Uma upheka kumele upheke ukudla okuhlukile.</i> • We need to cook different types of food. 	Cleanliness on food handling
<p>How did you use this information?</p> <ul style="list-style-type: none"> • <i>Uma upheka ukudla ungapheki ngokwedlulele kuze kuphele umsoco.</i> • Food should not be over cooked since it destroys the nutrients. • <i>Imifino efana notamati ungakudla kungaphekwanaga.</i> • Vegetables like tomatoes can be eaten raw. 	Healthy cooking Healthy eating
<p>How did you use this information?</p>	
<ul style="list-style-type: none"> • We make sure that we rinse our hands before cooking and eating. • We ensure that children rinse their hands before eating. • We have learned to use fat sparingly. • Now I know how to cook cabbage and it must be half cooked and to be green in colour. • We have learned not to overcook food. 	

FOOD CONSUMPTION

Group A	Analysis
What did you learn? <ul style="list-style-type: none"> • <i>Sifunde ukuthi okunye ukudla, kukudla kungakaphekwa.</i> • We learned that other types of food can be eaten raw. 	Consumption of different food types
How did you use this information?	
<ul style="list-style-type: none"> • <i>Sifunde ukuthi uma uqeda ukudla ehlise ngejuice noma ngamanzi kanye nokuthi u juice wenziwe ngezithelo.</i> • We learned that after eating we need to drink juice or water and juice that is made out of fruits. 	Improved eating habits
Group B	
What did you learn? <ul style="list-style-type: none"> • <i>Kumele sidle amafruits siphuze amanzi amaningi kanye ne juice. Siwashe namafruit ngaphambi kokuthi siwadle.</i> • We need to eat fruits, to drink more water and juice. To rinse the fruits before eating them. 	Intake of liquids and fruits
How did you use this information?	
<ul style="list-style-type: none"> • <i>Yebo zinama protein.Ngifunde nokudla amafruit kufanele siphuze nebisi.</i> • Yes they have proteins. I learned that I must eat the fruits and to drink milk. 	
Group C	
What did you learn? <ul style="list-style-type: none"> • <i>Ikherothi linceda amehlo ngoba liyawageza.</i> • Carrots are good in cleansing the eyes. • <i>Iwolintshi linamavitamin C futhi ngingaynza ngalo ijuicy.</i> • An orange has vitamin C and we can also use it to make juice. • <i>Nokuthi amanzi abalulekile emzimbeni ngelanga siphuza amagilasi ayi 8.</i> • Water is very important for the body and we drink eight glasses of water a day. 	Health benefits of food items and liquids
How did you use this information?	
<ul style="list-style-type: none"> • <i>Ngithenga amafruits namavegi sengithenga anjani and anjani.</i> • I buy different types of fruits and vegetables. 	Improved food choice

Group D	
<p>What did you learn?</p> <ul style="list-style-type: none"> • Carrots siyayidla yodla uyiwashe ngoba isiza amehlo ahlale adlanzekile. • We eat raw carrots after rising it and is good in cleansing the eyes. 	Health benefits of carrots
<p>How did you use this information?</p> <ul style="list-style-type: none"> • Nejuice uyisela kahle ngoba ushukela uyafuneka emizinjeni yethu. • Also to drink juice because the body needs sugar 	Healthy drink
Group E	
<p>What did you learn?</p> <ul style="list-style-type: none"> • Sifunde ngokuthi ibalance kanjani emizimbeni yethu. • We eat a balanced meal e.g proteins and carboydrates 	Healthy eating
<p>How did you use this information?</p> <ul style="list-style-type: none"> • Ngokuthi abantwana bethu badle a fruits each an everyday, akhlukahlukene. • Children to eat different fruit each a day. 	Improving fruit consumption
Group F	
<p>What did you learn?</p> <ul style="list-style-type: none"> • Ukudla okunjengama Apula kubalulekile ngoba kunamavitamini ancedayo emzimbeni njengo vitamin C esiwutho kuma oranges. • Apples are healthy for the body because they have vitamin C like the oranges. • Amacarrot ayanceda ngamehlo futhi siyakhona ukwenza I juice ngezithelo. • Carrots are healthy for the eyes and we can also make juice with them and fruits. • Kumele singadli ukudla okune starch kahkhulu. • We are not supposed to eat too much starchy food. 	<p>Value of fruits</p> <p>Value of various food items</p> <p>Consumption of a variety of food</p>
<p>How did you use this information?</p> <ul style="list-style-type: none"> • Uma sipheka singafaki amafutha amaningi. Kungcono uma usebenzisa amafutha anjenge vegetable oil noma imagarine enamafutha amancane • When we cook we don't need to use a lot of fat. Again to use fat like vegetable fat or margarine that has little fat. 	Reduction of fat during cooking

<p>How did you use this information?</p> <ul style="list-style-type: none"> • We ensure that children eat a fruit every day. • We can now eat a raw carrot. • Children drink water or juice after eating. 	
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REQUIRING ADDITIONAL INFORMATION AND GUIDELINES

FOOD CHOICE

Group A	Analysis
<p>What more would you like to learn?</p> <ul style="list-style-type: none"> • <i>Sithanda ukufunda ngokudla kwethu ukuthi kufresh nokuthi kuhlangezile na?</i> • We would like to learn about traditional food if it is fresh and clean. • <i>Nokuthi kufanele imizimba yethu na?</i> • And also whether the food is healthy for our body. 	<p>Traditional food</p> <p>Health benefit</p>
<p>Group B</p> <p>What more would you like to learn?</p> <ul style="list-style-type: none"> • <i>Nna karat go ithuta ka mechuta ye mingwe yadienywa ka go fapafapana ga yona le merogo.</i> • I would like to learn about different types of fruits and the herbs. 	<p>Fruits and herbs</p>
<p>Group C</p> <p>What more would you like to learn?</p> <ul style="list-style-type: none"> • <i>Sifuna ukufunda kabanzi ngezithelo nemifino ehlukehlukene.</i> • We would like to learn more about different types of fruits and vegetables. 	
<p>Group D</p> <p>What more would you like to learn?</p> <ul style="list-style-type: none"> • <i>Sithole ulwazi olwanele ekutheni uma ungena esitolo uyothenga ukhetha kanjani.</i> • To get enough information on how to choose food when shopping. • <i>Ukudla noma imifino okanye izithelo.</i> • Food, vegetables and fruits. 	<p>Food choice</p>

Group E	
What more would you like to learn? <ul style="list-style-type: none"> • <i>Sifuna ukwazi ukuthi ukudla yindlela yiphi uma upheka noma kuhambelana nakuphi.</i> • <i>We would like to know methods of cooking and how to balance the menu.</i> 	
Group F	
What more would you like to learn? <ul style="list-style-type: none"> • <i>Sifuna ukwazi ngezihlobo zenyama.</i> • <i>We would like to know about different types of meat.</i> • <i>To now about nutrients and how they build the body.</i> • <i>To have more knowledge about meat.</i> • <i>How much red meat we should eat.</i> 	Different types of meat

FOOD PRODUCTION

Group A	Analysis
What more would you like to learn? <ul style="list-style-type: none"> • <i>Sithanda ukufunda ukuthi silima kanjani, nokunisela izityalo zakho.</i> • <i>We want to learn about how to plant and to water the plants.</i> • <i>Nokuthi zibalulekhe khanjani ezityalo empilweni yethu.</i> • <i>And to know the importance of plants in our life.</i> 	Planting Health benefits
Group B	
What more would you like to learn? <ul style="list-style-type: none"> • <i>Ngithanda ukuthi ngifunde futhi kancono.</i> • <i>I would like to learn more and better.</i> • <i>ukutshala ngibe nolwazi.</i> • <i>To have knowledge on planting.</i> • <i>Ngazi ngokuthi fanele ngenze kanjani ukuze intshalo zami zinone.</i> • <i>To know what to do in order for the plants to grow well.</i> • <i>Ngithanda nokuthi ngazi ukuthi ngingenza njani...</i> • <i>I would like to know how to do it...</i> 	Planting and taking care of plants

Group C	
What more would you like to learn? <ul style="list-style-type: none"> • <i>Ukuthi sifunde kakhulu ngokuhlukahlukana komhlabathi onothile futhi ukuthi ngingawubona kanjani.</i> • To learn more about different types of soil and how to identify fertile soil. 	Types of soil
Group D	
What more would you like to learn? <ul style="list-style-type: none"> • <i>Sifuna ukwazi ukuthi umhlabathi ungawu yenza kanjani ukuthi unone, ungazenzela kanjani umquba/compost.</i> • To know how to make compost and to fertilise the soil. 	Make compost
Group E	
What more would you like to learn? <ul style="list-style-type: none"> • <i>We would like to learn that what type of soil is suitable 4 every plants.</i> • To learn the types of soil and which plants are suitable for that soil. 	Soil suitable for planting
Group F	
What more would you like to learn? <ul style="list-style-type: none"> • No response 	

FOOD PREPARATION

Group A	Analysis
What more would you like to learn? <ul style="list-style-type: none"> • <i>Sithanda ukufunda kakhulu ngokuhlanjeka kokudla kwethu.</i> • We would like to learn more about the cleanliness of our food. • <i>Nokuthi sikubeka kahle endaweni ehlanzekile.</i> • And how to store it in a clean place. 	Food safety Food storage
Group B	
What more would you like to learn? <ul style="list-style-type: none"> • <i>Nna nkabatlal goithuta go ya pele ka mefuta ya go fapana gore ke erego e refang Nutrition le di protein go re be lestibo.</i> • I would like to learn further about different types of food and to have knowledge on food that is nutritious and have proteins. 	Variety of nutritious food
Group C	

<p>What more would you like to learn?</p> <ul style="list-style-type: none"> • <i>Ukuthi kungani uma sizopheka ukudla ukuthi kungani sihlanze izandla zethu nalokudla.</i> • And to know why we need to rinse our hand and food when cooking. 	Need for rinsing hands
Group D	
<p>What more would you like to learn?</p> <ul style="list-style-type: none"> • <i>Sifunde ngokwanele ukuthi uma uzophatha ukudla kumele ugeze izandla ngaphambi kokuphatha ukudla.</i> • To learn more about the importance of rinsing hands before handling the food. 	
Group E	
<p>What more would you like to learn?</p> <ul style="list-style-type: none"> • <i>Kubaluleke ngani ukuthi yini ukudla kwamele kuwashwe.</i> • What is the importance of rinsing food? • To know methods of cooking and how to balance the menu 	<p>Necessity for hygiene</p> <p>Method of cooking</p>
Group F	
<p>What more would you like to learn?</p> <ul style="list-style-type: none"> • No response 	

FOOD CONSUPTION

Group A	Analysis
<p>What more would you like to learn?</p> <ul style="list-style-type: none"> • <i>Ukuba nolwazi lokuthi kudliwa gasiphi isikhathi.</i> • To be knowledgeable about the times of eating. • To know at what time to have supper. • <i>Ngokufunda ngokudla okunempilo okufanele imizimba yethu.</i> • To learn about healthy food that is suitable for our bodies. 	Meal times
Group B	
<p>What more would you like to learn?</p> <ul style="list-style-type: none"> • <i>Nna ka rata go ithuta go ja dijo tseo dinale vitamin b le vitamin C le carbohydrate le di protein go ja maswi tsatsi le lengwe go ja dienywa le tsatsi le lengwe go swana le go ja le apple le banana le merogo e mengwe ga ke i sa ke je le dijo tsa starch go swana le rice, macarroni le stamp le mealierice le fish le yona.</i> • I would like to learn to eat food that is consists of vitamin B, C, carbohydrates, proteins milk and to eat fruits each 	Food and nutrients

day like apples, banana, herbs. To also eat food with starch such as rice, macaroni, samp, mealie rice and fish.	
Group C	
What more would you like to learn? <ul style="list-style-type: none"> • <i>Ukuthi ukudla kwenzani uma kufika emzimbeni yethu.</i> • To know what is the function of food in the body. 	Benefit of food
Group D	
What more would you like to learn? <ul style="list-style-type: none"> • <i>Sifuna ukukwazi ukuthi umntwana ukulinganisa kanjani ukudla kwakhe nokuthi yisiphi isikhathi esilungile sokudla ukudla komntwana.</i> • We would like to know how to measure the child's food and which time is suitable for the child to eat? 	Amount of food consumption
Group E	
What more would you like to learn? <ul style="list-style-type: none"> • <i>We would like to learn about every food we eat plays which role in our lives.</i> • To learn about different types of food and their function in our body. 	
Group F	
What more would you like to learn? <ul style="list-style-type: none"> • To know at what time to have supper. 	Supper time

APPENDIX G: VISUAL DATA and ANALYSIS OF PRA-BASED ACTIVITIES

Visual data of teachers and analysis

Examples of teacher-participants' PRA-based activities



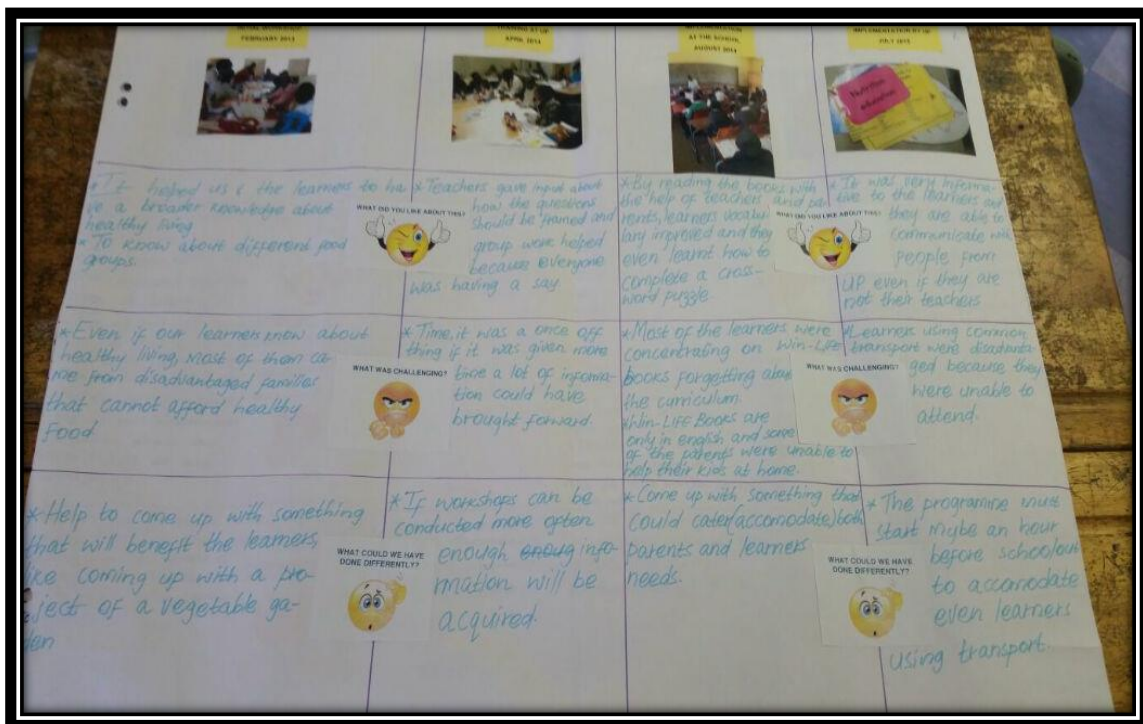
Photograph G 1: Teacher-participants during PRA-based discussions



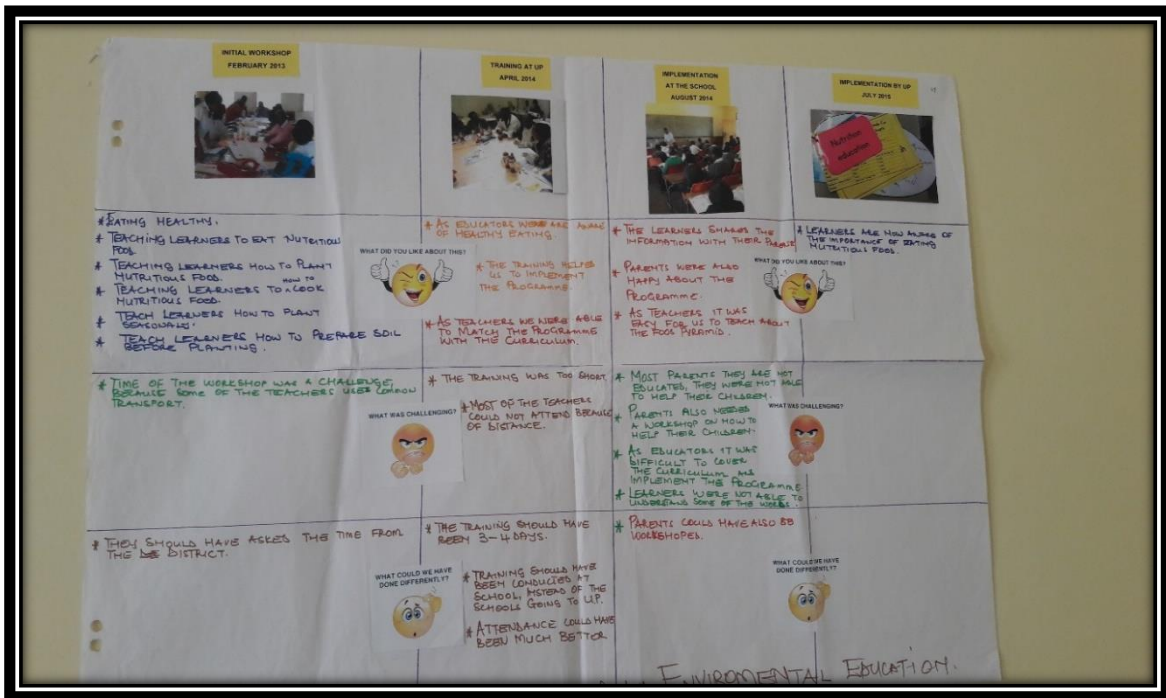
Photograph G. 2: Teacher-participants' engagement during PRA-based discussions



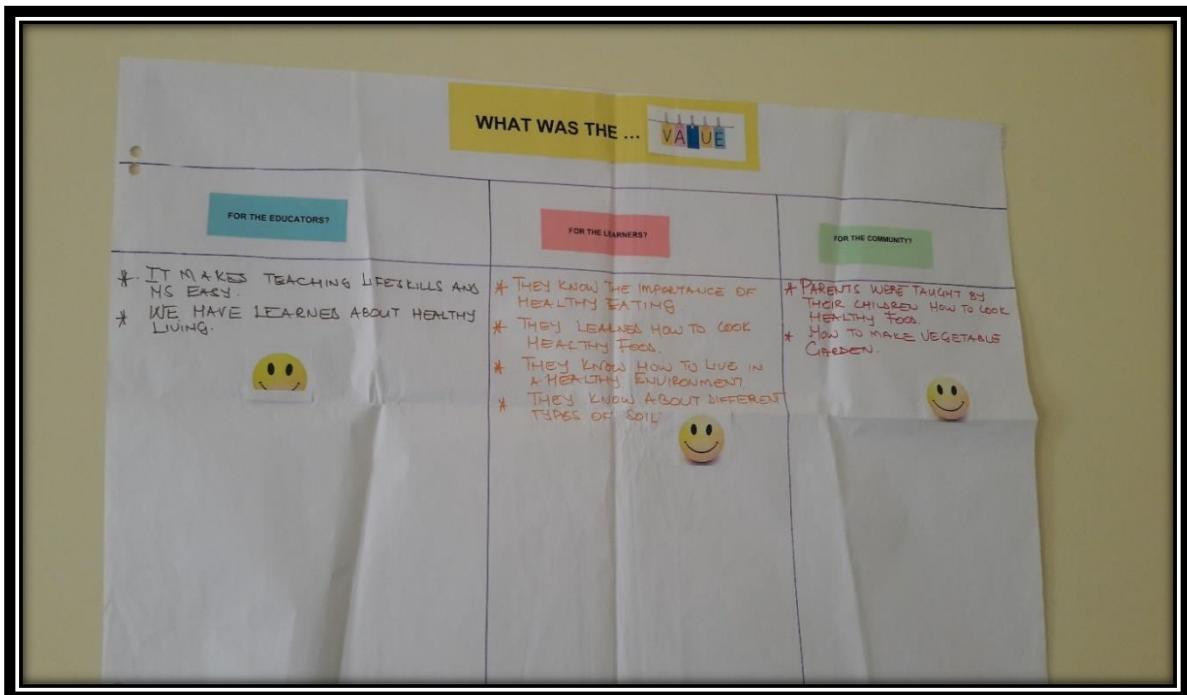
Photograph G. 3: Teacher-participants engaged in a PRA-poster



Photograph G. 4: PRA-poster compiled by teacher-participants



Photograph G. 5: Teachers' PRA-poster



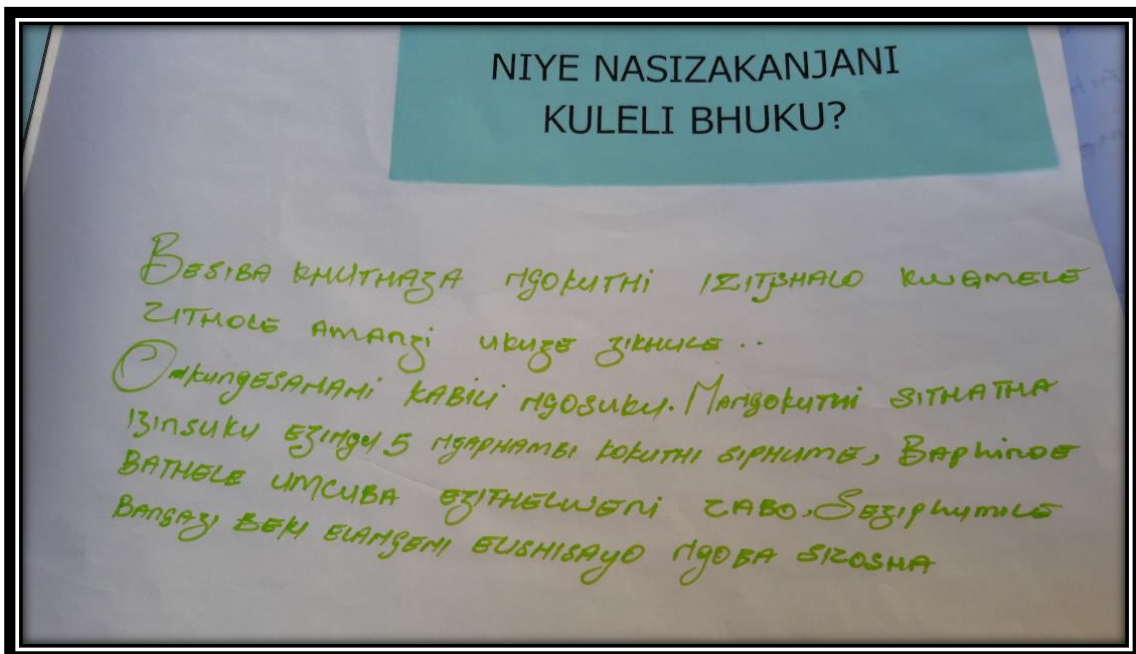
Photograph G. 6: PRA-poster on the value of the intervention

Visual data of parents and analysis

Examples of parent-participants' PRA-based activities



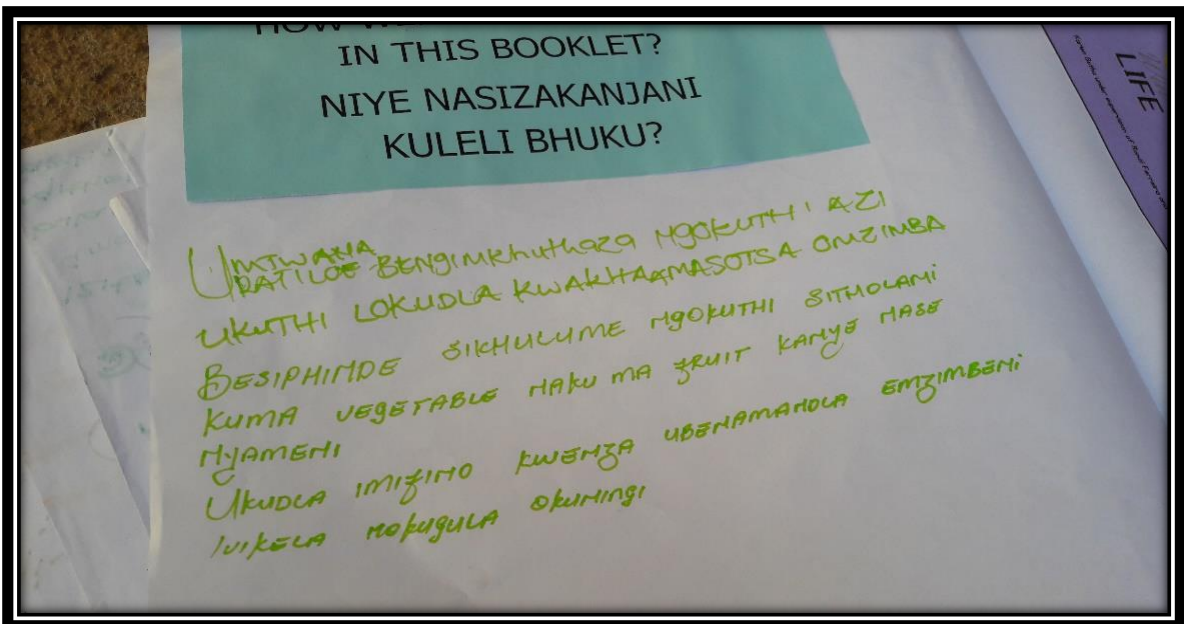
Photograph G. 7: Parent-participants engaged on knowledge gained on food choice



Photograph G. 8: We assisted by encouraging our children that plants need water to grow and to water them at least twice a day. Plants take five days to germinate and seedlings should not be put in the sun. Children need to put manure in their plants. (Parental support on planting)



Photograph G. 9: Parent-participants' contribution on knowledge gained on food production

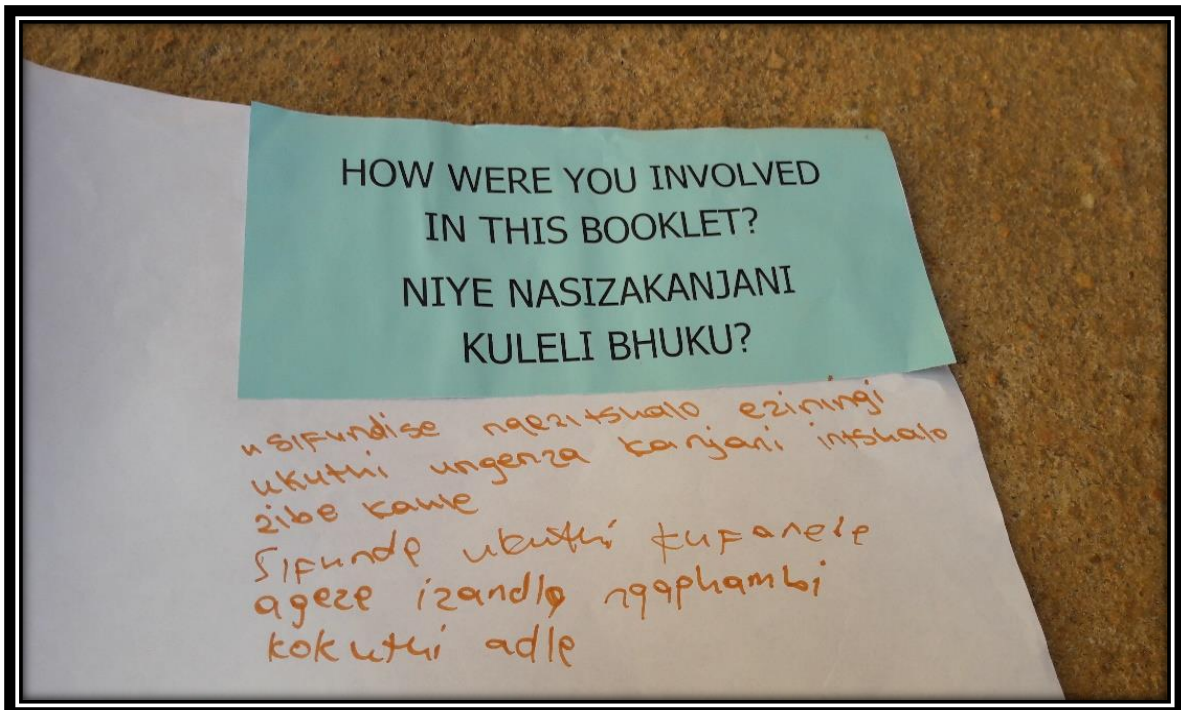


Photograph G. 10: I encouraged my child to know that food builds the immune system. We also discussed the nutrients we get in vegetables, fruits and meat. Eating vegetables enables you to be strong and to fight diseases in the body.

(Parental involvement on nutrition education)



Photograph G. 11: Parent-participants' contributions on knowledge gained on food preparation

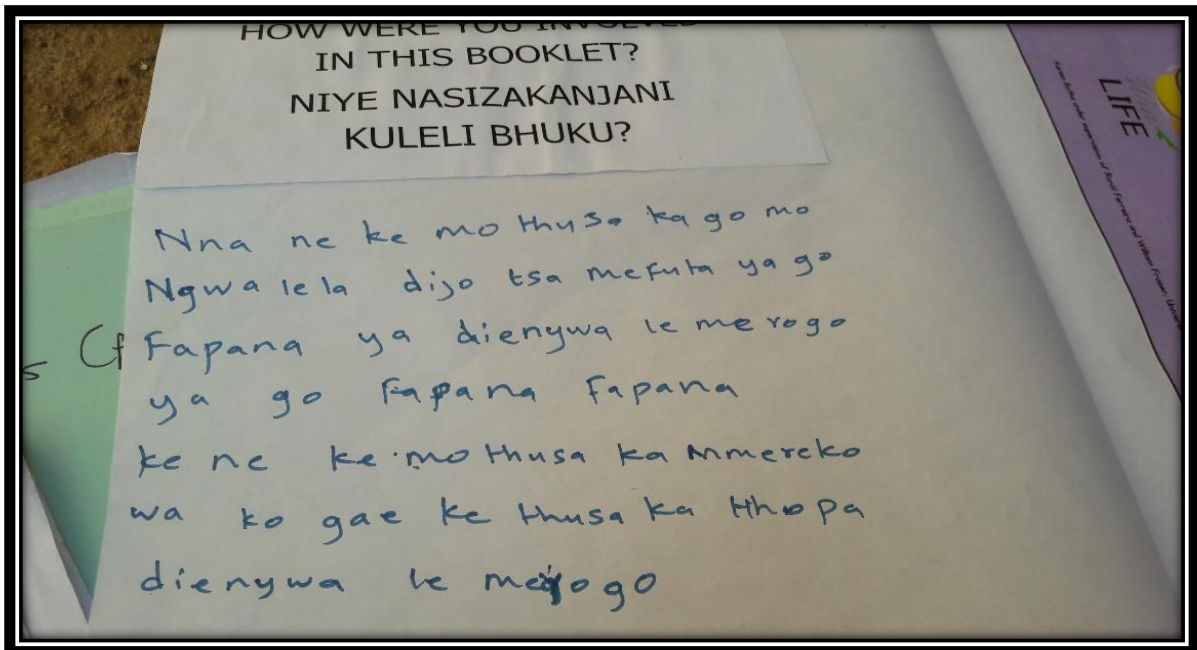


Photograph G. 12: Our child taught us about different types of plants and how to nourish them. We also learned that she must rinse her hands before eating.

(Knowledge gained from children)



Photograph G. 13: Parent-participants sharing information on knowledge gained on food consumption



Photograph G. 14: I assisted my child by naming different types of food such as fruits and leafy vegetables. I assisted her with household chores and how to choose different types of fruits and leafy vegetables. (Parental support to the learner)