Implementation of an Integrated ICT and BAE course for young mothers using CBPAR in Limpopo

by

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ABSTRACT

DECLARATION

I, Rowan Mark Thompson declare that **"Implementation of an Integrated ICT and BAE course for young mothers using CBPAR in Limpopo"** is my own work and that all the sources I have used or quoted have been indicated and acknowledged by means of complete references

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Dedication

This thesis is dedicated to my mother Alison Thompson

and my patient and loving children Gabrielle, M’hloti and Frank

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ABBREVIATIONS

The following abbreviations were used in this dissertation extensively:

Theoretical Framework and Methodology:

CBPAR	Community based participatory action research
CoP	Community of practice
AI	Appreciative inquiry

Course

ICT	Information and communications technology
BAE	Basic Adult Education (including post-school education)

Participants and Research Location:

YMs	Young mothers
YM-F	Young mothers' facilitator/chaperone
YM-T	Young mothers' trainer
YM-ICTF	Young mothers' ICT facilitator
MECP	Mulamula Education Centre Project
MECPD	Mulamula Education Centre Project - Director
MECPS	Mulamula Education Centre Project - Secretary

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Note: Items cited as 'available via Google Drive' are accessible at:
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CHAPTER 1

INTRODUCTION

This study was undertaken in the village of Mulamula, Vhembe District, Limpopo Province in South Africa. It used a CBPAR approach to implement an ICT and Nutrition course for young mothers in this resource limited rural setting. Its purpose was to explore the effectiveness of the CBPAR approach as an instrument for building a community of practice in Mulamula rural community that would be both purposeful and beneficial to the participants.

This introductory chapter describes the local situation that gave rise to the study and justified the intervention.

The research questions, aims and objectives, are laid out and explained within a CBPAR structure that sought to develop a community of practice to implement the study. The rationale and motivation for the study are presented to indicate why the study was attempted, and how it was expected to benefit the Mulamula community.

The location of the study is explained and justified as the study forms part of a larger community-based charitable venture: Mulamula Education Centre Project.

The key stages of the research study are outlined and explain how the study grew out of a previously established community of practice into one that worked specifically to achieve the goals of the research.

The significance of the study is discussed and some of its anticipated outcomes in order to compare these with the actual outcomes of the intervention later in the study.

Key terms used in the study are defined in order to clarify the stance adopted in the intervention and the elements which help to define the course itself.

1.1 CONTEXTUALIZING THE STUDY

The need to address the educational needs of single young mothers in rural areas is not in question but why this need arises in South African rural communities should be seen in the context of South Africa's current education system. It is a country which is still struggling to overcome the inequities of the separate education system for its rural communities that were created during the apartheid era. (Desmond, 1970; Sikakane, 1977)

Following the transition from the Apartheid Regime to the first freely elected African National Congress (ANC) government in 1994, various educational policy initiatives have included reference to and legal concessions for access to adult education provision for all citizens: *The White Paper on Education (1995) clarifies that "the right to basic education ... applies to all persons, that is to all children, youth and adults". The Bill of Rights in the Constitution of the Republic of South Africa (1996) enshrines the right of all citizens "to a basic education, including adult basic education, and to further education, which the state, through reasonable measures, must make progressively available and accessible"*[1].

Direct policy addressing adult education began with *A National Adult Basic Education and Training Framework: Interim Guidelines,* 1995. Types of adult education were redefined for the purposes of establishing education systems for people that had missed out on schooling (adult basic education - ABE) and those who were seeking further education and training (FET). These two systems were combined under one umbrella term: adult basic education and training (ABET) by the Department of Education in 1996 with pilot ABET programmes such as the Ithuteng (Ready to Learn) campaign.

A review of ABET in South African context (V. McKay, 2007) listed the following policies as having relevance to adult education provision in South Africa: *National Multi-Year Implementation Plan for adult education and training in the Department of Education* (1997); the *Skills Development Act* (1998) and the *Skills Development Levy Act* (1999).

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[1] Policy document on Adult Basic Education and Training, 2003 (Source: http://www.education.gov.za/DocumentsLibrary/Policies/)

ABET responsibilities were moved from the Department of Basic Education (DBE) to the Department of Higher Education and Training (DHET) department in 2009. The adult education policy has been acknowledged as being inclusive and comprehensive (V. McKay, 2007) but only 10% of the total education budget goes to higher education programmes and less than 1% goes to ABET programmes. Lack of funding is therefore the main issue that has to be confronted.

Developments in the education system in the last 20 years (post-apartheid) have tried to address apartheid inequities but have still to impact significantly on some of the poorest communities in the country. This is indicated in recent reports by the World Economic Forum[2] and South African Statistics Office.

The World Economic Forum (WEF) reported in 2015 that South Africa has the third highest youth unemployment rate in the world - after Greece and Spain - at an alarming 24.3%. This was presented in comparison to Switzerland's low unemployment rate of a 3.2%. The WEF statistics presented for South Africa showed that the largest proportion of the unemployed people in SA were under 30:

- *More than 60% of unemployed people in South Africa are between the ages of 15 and 29.*
- *The unemployment rate among youth aged 15 to 34 increased from 32.7% to 36.1% between 2008 and 2014.*
- *While young adults make up between 52% and 64% of the working population; they account for only 42% to 49% of the employed.*
- *In 2014, close to two-thirds of young people were unemployed for a year or longer, while young people accounted for 90% of those who are unemployed and have never worked before.*

[2] Qama Qukula, A lesson in post-school education systems, from Switzerland for South Africa, Cape Talk, 12/05/2015, (Source:http://www.capetalk.co.za/articles/1667/a-lesson-in-post-school-education-systems-from-switzerland-for-south-africa)

This was reinforced by recent educational statistics from South African National Statistics Office[3] which indicated that:

- *As many as 55.0% of young people who are actively looking for jobs have education levels below matric while an additional 36.4% only have a matric qualification.*
- *Relatively few employed youth (21.2%) had any tertiary education.*
- *Large differences in the education profile by population group resulted in only 13.1% of black African youth and 10.5% of coloured youth having skilled occupations while one in every three Indian/Asian youth (36.2%) and 53.4% of white youth had such occupations.*
- *The proportion of working-age young women that is discouraged from seeking employment is higher among young women compared to their male counterparts. Not only is it higher among black African youth than among youth in the other population groups but over the period 2008–2015, the proportion among black African youth increased by the largest amount.*

These statistics reinforce the need for interventions which provide learning opportunities for young mothers under the age of 30 as they are: financially vulnerable, often living and supporting children on their own and in some cases losing the will to seek employment or further education.

The above statistics on their own are significant in reinforcing the need for the intervention but if one considers the consequences of an unemployed youth population nationally there is an increased sense of need to do something urgently:

> *The poor quality of education that learners receive helps drive an intergenerational cycle of poverty where children inherit the social standing of their parents or caregivers, irrespective of their own abilities or effort (Spaull, 2015, p. 34)*

Young mothers in rural areas are vulnerable to getting trapped in the cycle of poverty mentioned above. Single young mothers are also more vulnerable to becoming victims of the consequences of male youth unemployment — which is recognised as

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[3] *Statistical release: P0211.4.2, National and Provincial Labour Market – Youth*, Statistics South Africa, 2015 (Source: http://www.statssa.gov.za/publications/P02114.2/P02114.22014.pdf)

leading to delinquency, drug abuse, alcoholism, sexual crimes against women and social conflict which can lead to violence and even war (Bhutta & Black, 2013). Interventions such as this cannot solve all of society's ills but can go some way to empowering women to be more in control of their lives and their children's health and welfare.

1.2 PROBLEM STATEMENT

Global and national studies show that adult education is not only necessary for personal progression it is also vital for those living in poverty to develop basic 'survival skills' in childcare, nutrition and home economics (Albino & Berry, 2013; Bhutta & Black, 2013; Britto, Engle, & Super, 2013) Young mothers are a particularly vulnerable social group in South Africa's rural areas. (Chopra, 2003) The studies have shown that they are part of a large population of out of school youth that are poor, unemployed and lacking in basic education.

Young mothers form a significant number of the 60% school-going population that fails to complete their secondary education and matriculate at grade 12 (Spaull, 2015), there is an obvious gap to be filled in providing them with the necessary skills to lead fulfilling and healthy lives. There is also a need to address community attitudes to teenage pregnancy to enable young mothers to continue their education as evidence shows many are motivated to do so (Spaull, 2015).

Young mothers in rural settings in South Africa (SA) often suffer from discrimination in the communities in which they live, due to the circumstances that lead them to become 'young mothers' in the first place (Spaull, 2015, p. 37) and explains why they are part of the school population that generally fails to complete their formal education, or have to defer, due to social prejudice[4]. Their limited formal education, and the lack of local employment opportunities, lead to a downward spiral of poverty which often has a direct effect on their ability to raise children effectively and feed them a nutritious diet.

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[4] Although South Africa's constitution prohibits discrimination against young mothers returning to school, or attending school during pregnancy, individual schools have continued to exclude pregnant mothers. (Spaull, 2015, p. 37)

Studies (Albino & Berry, 2013; Chopra, 2003; Modisaotsile, 2012; Spaull, 2015) have highlighted the same variety of factors that combine to compound this problem.

> "*maternal and socio-economic factors which present an array of constraints in the social environment shaping the infant feeding and caring practices employed by women. For the full potential of nutrition promotion activities to be realised, there is a need to address some of these 'deeper' constraints*."(Chopra, 2003, p. 645)

These constraints lead to measurable problems in the development of children in rural areas: wasting, stunted growth, under-nutrition, malnutrition, and increased risk of infant mortality due to poor diet. Many factors – social, technological and environmental - contribute to the multitude of symptoms presented but studies continue to show that maternal education is a key factor which needs to be addressed to help reduce the problems that infants face growing up in rural areas of SA.

> "*Improving the quality of health care to women and children remains an important task but this needs to be complemented by broader, multi-sector community-based programmes*" (Chopra, 2003, p. 651)

The rural village identified for this study in Vhembe District, Limpopo Province, SA was chosen as a location for this study as it is the site of a fledgling community education and community engagement project (Mulamula Education Centre Project, MECP). The project has an existing crèche, run by local mothers, and a women's craft group who operate on the site among other voluntary women's groups involved in the development of the site. Previous voluntary advocacy work in the village identified that the young mothers in the area are a 'vulnerable group' and therefore might benefit from an intervention which aims to empower participants through a community of practice (Wenger, 2011) approach to ICT training. It also suggested basic adult education as a research study — using MECP as a venue for participatory development of the course.

There are three unique objectives of the study:

- To empower young mothers in the development of their own post-school education priorities.

- To combine ICT/ICT skills training with relevant information regarding nutrition and childcare.
- To develop provision of community-based education programmes in a purpose built adult education setting, rather than a school classroom.

This study used an integrated CBPR approach to deliver our basic adult education course that combined ICT skills training and nutrition for young mothers as out-of-school learners. It attempted to do this in a way that was effective and flexible - by engaging with the local community using a participatory action research approach. By doing so it was intended to build a sustainable course of study that was relevant to the needs of the young mothers as young adults and carers.

1.3 RATIONALE AND MOTIVATION

Mulamula village is a small rural village located in Eastern Limpopo Province. The village has limited public amenities including: a very poorly resourced pre-school/crèche; two poorly resourced primary schools (Chanyela PS and Mahlefunye PS) and one high school (Photani HS); one general store; one butcher shop and a bottle store. The village is administered by the Traditional Council's tribal office, located at the western edge of the village. There are very limited recreational opportunities for young people. There is a dusty football field in the centre of town and the tribal office has a hall, used as a venue for meetings, and by women's groups to do local crafts, during office hours. Young mothers, and other unemployed groups in the area, have little or no opportunity for any form of community based education, or recreational learning, beyond traditional dancing, basic needlecrafts and beadwork. This study aimed to utilise the facilities and equipment provided by a broader charitable project, Mulamula Education Centre Project, to facilitate the development of the participatory activities to meet the objectives using the approach detailed in the methodology.

The most common form of technology used by young mothers was mobile telephones. These are well dispersed in urban and rural settings of South Africa. Individuals understand the potential value of computing and keyboard skills to increase their vocational opportunities but lack access to laptops and personal computers other

than those available in schools or in the wider national context. As telephones, in the form of ‘smart phones’ impact more in the community, groups are unconsciously acquiring technological skills and are exposed to the systems that are commonly used in larger static devices. If these larger devices become locally available (as they have done in Mulamula through the MECP), this presented an ideal opportunity to learn the skills.

Numerous studies have shown that people learn in different ways, with different brain configurations, different motivations and different cultural backgrounds (Harwell, 2003; Hodkinson & Hodkinson, 2004; Lave, 1991; O'Donnell & Tobbell, 2007; Pain, Whitman, & Milledge, 2012; Union, 2006). However, developments in computer and mobile telephone technology have provided new approaches for disaffected youth to acquire knowledge in interesting and motivating ways (Gray, 2004). Government publications on basic education acknowledge the value of ICT/ICT for learners in the formal school environment and in post school learning:

> *Learners can expect e-Education to deliver the following:*
>
> - *Exposure to the latest ICTs and how they operate. At the most basic level, the technologies themselves must be made available to learners and demystified. Every learner, no matter what subjects he or she gets to take in the FET band, should become conversant in the essential technologies, such as word processing, spreadsheets, e-mail and the internet.*
> - *Access to a wide range of information through the internet. Beyond the curriculum, the internet can provide learners with key information they would otherwise not have, on issues such as health, sport and post-school opportunities in FET colleges, universities and the labour market.*
>
> *(ACTION PLAN TO 2014 - Towards the Realisation of Schooling 2025. Department of Education, SA)*

The above statements relate to an ideal situation in SA schools where ICT/ICT teaching is well resourced, teachers are well trained and students are able to attend school to learn these skills in well-equipped computer laboratories. Progress is being made to get ICT into the mainstream school curriculum but it is slow. Progress in addressing those that have slipped through the net of formal education is slower.

This study was designed to enable researchers, trainers and students to work together in a community of practice to establish a relevant course of study, through

active participation in the development process that focused on the teaching of ICT/ICT skills and nutritional knowledge to young mothers in a community education setting. In doing so, it was hoped that all participants would learn and benefit from the shared experience.

The motivation to follow this path came from an established research interest in the chosen location – Mulamula Education Centre Project – which has potential to sustain a number of similar interventions. The opportunity to offer ICT/ICT training to young mothers in the rural village setting arose due to a generous donation of laptop and desktop computers from a private donor who organised donations of computers from a technical college and a private business in Germany.

1.4 RESEARCH QUESTIONS

The over-riding research question is:
How do we use CBPAR, as part of a BAE programme to provide out-of-school young mothers with effective ICT and nutrition training in a rural area in Limpopo?
In other words:

1. How do we implement community-based ICT and nutrition training courses for young mothers in rural resource limited settings so that they are sustainable?

2. What structures and systems need to be in place to create an effective CBPAR study that can render an intervention relevant and purposeful for the group it is designed to benefit?

1.5 AIMS & OBJECTIVES

1.5.1 Aims

The aim of this study is to explore the implementation of an ICT and basic adult education (BAE) training course, (which includes valuable nutritional education, for young mothers - as part of a participatory community-based monitoring and tracking

initiative in a resource limited rural setting) in order to understand ways to focus ICT training to improve nutritional education provision for vulnerable groups in future. This is summarized as:

To track the implementation of an ICT and basic adult education (BAE) training course in order to understand ways we can improve nutritional and vocational skills education for young mothers.

1.5.2 Objectives

In order to understand how the implementation of ICT training, using a CBPAR approach, could enhance nutritional knowledge for young mothers, the following objectives, were set to research the process:

1. **To explore how to use CBPAR, as part of a BAE programme in the provision of effective ICT training in a rural area in Limpopo.**

a) To establish a community of practice (Lave, 1991) to design and implement an ICT training course which includes BAE nutrition education.
b) To plan, monitor and review the combined ICT training and basic adult education course, as it unfolds.
c) To stimulate further constructive interaction as a means to establish a process of continuous improvement, through direct engagement (Pain et al., 2012).

1.6 ORGANISING THE STUDY TO ADDRESS THE RESEARCH QUESTIONS AND MEET THE AIMS AND OBJECTIVES WITHIN A CBPAR FRAMEWORK

In order to address the objectives in a manner which related to a recognised CBPAR methodology (Dong, Chang, Simon, & Wong, 2011), the process was divided into 5 CBPAR phases:

1. Getting stakeholders to agree a long-term vision for the process
2. Creating infrastructure for the process to foster participation and engagement.

3. Developing community links to sustain commitment from all members.
4. Orientating systems to enable long term functioning of the process
5. Pursuing goals that are of value to all stakeholders – following outcome-based advocacy.

This framework enabled data collected over the course of the study to be analysed in a manner which met the aims and objectives of the study. As there was a large amount of data collected over the course of the implementation, careful thought had to be given as to where data was significant and relevant. The table 1.1 below indicates how the 5 CBPAR phases were linked to the research questions:

Table 1.1 Relating intervention stages, research questions and CBPAR phases to the study

Intervention stages	**RQ that runs throughout the 3 intervention stages**	**Research Questions**	**5 stages of CBPAR**
Pre-Intervention	**What structures and systems need to be in place to create an effective CBPAR study that can render an intervention relevant and purposeful for the group it is designed to benefit?**	**RQ 1** How to establish a community of practice (Lave, 1991) to design and implement an ICT training course which includes BAE nutrition education**?**	**1. Getting stakeholders to agree a long-term vision for the process** **2. Creating infrastructure for the process that fosters participation and engagement.** **3. Developing community links that sustain commitment from all members.**
During implementation		**RQ 2** How do we implement community-based ICT and nutrition training courses for young mothers in resource limited rural settings such that they are sustainable?	**4. Orientating systems to enable long term function of the process**

After intervention		**RQ 3** How do we stimulate further constructive interaction as part of establishing a process of continuous improvement, through direct engagement (Pain et al., 2012)	**5. Pursuing goals that are of value to all stakeholders – following outcome-based advocacy.**

1.7 LOCATION OF STUDY

Mulamula village, Vhembe District, Limpopo Province - Participatory Study and Data Collection

The participatory action research and data collection for this study was done on location in the village of Mulamula, Vhembe District, Limpopo Province, using UKZN researchers and locally recruited assistants. It was intended to follow a participatory research methodology in which the ICT course trainers, ICT course students (young mothers) and stakeholder members of the local community were directly involved in the research process. The ICT and BAE course is one course developed as part of a larger programme of courses being planned for Mulamula Education Centre Project site by the MECP management committee.

Figure 1.1 Map showing location of Mulamula village in Limpopo Province, South Africa[5].

Mulamula village is located due east of Louis Trichardt (Makado) in the north eastern edge of Limpopo Province, see figure 1. It can be reached by dirt road from Machele (shown on the map) or Gumbani villages on the Elim-Malumulele tar road that

[5] Source: Google Maps (https://www.google.com/maps/search/mulamula+village+limpopo+province/)

terminates at Malamulele town. Global positioning system (GPS) coordinates for Mulamula are listed as 23°6'16" South by 30°33'6" East.[6]

1.8 THE SIGNIFICANCE OF THE STUDY

1.8.1 The value of the study to the participants and the wider community

A significant aspect of community based participatory action research (CBPAR) is inherent in its name. The active involvement of the community and the participative nature of the study should contribute to more awareness of the opportunities available through adult learning in the village. The study should also enable better understanding of the problems and opportunities that exist for young mothers in such a setting.

1.8.2 Anticipated significant outcomes from the study

As the process was designed to be a participative study that unfurled as it proceeded, the final outcomes were expected to differ from those of any other similar recorded intervention. As the environment for the study was a new one, there are a number of variables that possibly affected the envisaged outcomes. These are discussed at greater length in the theoretical framework and methodology. However, certain significant outcomes were predicted:

1. Young mothers should emerge from the course with more skills to enable their future learning and greater awareness of theirs and their children's fundamental needs.
2. Increased participation in locally delivered projects will bring greater dialogue about education in the village as a whole.
3. Certain individuals may emerge as 'champions' of the study and other may emerge as 'detractors' as human nature tends to throw up positive and negative viewpoints in any endeavour.

[6] GPS coordinates from register of Limpopo voting stations – Chanyela Primary School, Mulamula village. (Source: http://plak.co.za/moreinfo/40917/chanyela-primary-school)

4. Researchers, participants and trainers should have a better practical understanding of the pros and cons of implementing a combined ICT/ICT and basic adult education course in rural resource limited settings.
5. Researchers, participants and trainers should have a greater awareness of each other's viewpoints regarding: community participation, basic adult education and ICT/ICT.
6. Researchers, participants and trainers should have a greater empathy for the needs of each other and for the needs of the wider rural community.

The anticipated outcomes listed above may be considered ambitious but were based on previous experience working with the community in Mulamula. The potential significance of achieving these outcomes was that the course could become a model for similar interventions in other rural areas of Sub-Saharan Africa where English is used as a medium for teaching technological subjects.

1.9 OUTLINE OF THE STUDY

Chapter one provides the contextual background to the phenomena explored in this study, viz: The implementation of an ICT and Nutrition combined course for out-of-school young mothers, in a resource-limited rural setting in Limpopo, South Africa, incorporating a community based participatory action research approach (CBPAR).

Chapter two provides a review of research literature relating to: the CBPAR methodological approach; establishing communities of practice; adult education in South Africa; basic adult education for young mothers; ICT implementation in rural settings; and, basic adult education nutrition. It produces reference material that helps to structure the study methodology and design the combined ICT and Nutrition course.

Chapter three presents the theoretical framework, which elaborates the different perspectives underpinning the study, namely: community based participatory action research (CBPAR); community of practice (Lave & Wenger); and, appreciative forms of critical enquiry.

Chapter four presents the methodological approach used to address the research questions that guide the study. The CBPAR approach is justified within an established community of practice (CoP). The participants are introduced and their roles within the study are clarified in relation to the stages of the process.

Chapters 5, 6 and 7 summarise the results of the data analysis used in the 3 stages: pre-intervention, implementation and post-intervention. The results show a successful implementation that has produced rich data and generated many points for discussion. Results are presented which relate to adult education and the roles that individuals and communities can play in helping provide better education for vulnerable groups. Although the results are treated in an 'appreciative' way, they also seek to demonstrate where barriers to community based participatory action research may exist and how these may be overcome.

Chapter 8 discusses the results and reflects on the effectiveness of the CBPAR approach in relation to other studies. Results are compared with other studies and justified with regards to the published literature.

Chapter 9 concludes the study with reflections on the implementation of the young mothers' ICT and Nutrition course including recommendations on how future goals can be agreed and future courses sustained.

1.10 OPERATIONAL DEFINITIONS

It was necessary to define key words — 'young mothers', 'adult education', 'rural', ICT' and 'Nutrition' — in relation to this study in Mulamula village, in order to frame the study in a way that made it relevant to wider debates on adult education in South Africa. Definitions of 'information and communications technology (ICT)' and 'nutrition' were necessary too as they were the main subjects of the course and were central to the intervention. 'Life skills' emerged as a key issue, from teaching the

course. This is also defined below. The operational definitions used in this study are shown in the sections below.

1.10.1 Young mothers

For the purposes of the study: 'young mothers' will be defined as:

> '*young women between the ages of 18 and 25 with children under the age of 5*.'

This age limit was set to stimulate inclusion of young mothers that were outside the school support environment and raising children who are in the greatest need of good nutrition and parenting (See Literature Review section 2.2 (Bhutta & Black, 2013; Britto et al., 2013)).

1.10.2 Adult education

For the purposes of this study: 'adult education' will be defined as:

> *'activities intentionally designed for the purposes of bringing about learning among those whose age, social roles or self- perception define them as adults*' (S. Merriam & Brockett, 1997, p. 8)

This definition recognises that post-school learning is different from school learning in many ways and has to be adapted to fit the needs of the participants.

1.10.3 Rural

In order to define 'rural', recent literature was addressed (see: Literature Review Sections 2.5 and 2.8). The working definition that was developed which aimed to unify these terms was:

> *a location where participants have limited resources for post-school progression due to their geographical isolation from formal centres of adult learning and their limited access to remote learning technologies due to unemployment and lack of significant funding for self-initiated learning activities.*

As pointed out in the literature, definitions of rurality vary greatly with geography, social setting and the activity that is being studied (Hart, Larson, & Lishner, 2005). Consequently it was seen as necessary to create a hybrid definition for use in this study that was located in a remote village in North Eastern Limpopo Province populated mostly by XiTsonga speaking people.

1.10.4 ICT (Information and Communications Technology)

To define ICT it was necessary to use an established global definition:

> '*information and communication technology: a school subject in which students learn to use computers and other electronic equipment to store and send information'*[7]

Current terminology also uses ICTS (information technology and communications systems) interchangeably with ICT. Information Technology (IT) is another term used to describe systems which involve the use of computers.

1.10.5 Nutrition

As young mothers were to be learning about nutrition, an operational definition for the purposes of the course was necessary:

> *'Food and drink which humans need to consume to remain healthy and active'*

Wider definitions also helped to explain some of the issues relating with what 'good nutrition' is (Gross, Schoeneberger, Pfeifer, & Preuss, 2000) in the context of current attitudes to food and nutrition globally[8]. These were used in the production of resources for the course.

1.10.6 Life Skills

'Life skills' is defined because it emerged as a key topic from the study. The insight gained from the course was that life skills should be developed further as a significant part of the young mothers' course (See: Analysis Section 5.5.5)

For the purposes of the study 'life skills' is defined using an established global definition:

> '*A skill that is necessary or desirable for full participation in everyday life'*[9]

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[7] Definition of ICT from the Cambridge Advanced Learner's Dictionary & Thesaurus, Cambridge University Press. (*Source: http://dictionary.cambridge.org/dictionary/english/ict)*

[8] Global goals for sustainable development – 2. Zero Hunger (Source: http://www.globalgoals.org/global-goals/no-hunger/)

[9] Oxford English dictionary definition of life skills. (Source: http://www.oxforddictionaries.com/definition/english/life-skill)

This definition was further elaborated in the framework of life skills education at a World Health Organisation (WHO) conference:

> '*Life skills education is designed to facilitate the practice and reinforcement of psychosocial skills in a culturally and developmentally appropriate way; it contributes to the promotion of personal and social development, the prevention of health and social problems, and the protection of human rights'*(Li, 1999, Abstract)

The above definitions helped to inform the research, guide the development of the course content and refine and interpret data in the analysis stages.

The need for life skills is driven by many factors which are impacting on South Africa: *demands of modern life, poor parenting, changing family structure, dysfunctional relationships, new understanding of young people's needs, decline of religion, rapid sociocultural change* (Li, 1999, p. 4). These factors added impetus to the study to address the needs of rural young mothers to prevent further marginalisation.

CHAPTER 2

LITERATURE REVIEW

2.1 LITERATURE REVIEW

In order to establish a foundation for developing a well-structured methodology to use in the action research: implementing an ICT training programme for out of school young mothers in a resource limited setting in Limpopo Province, a literature review was undertaken. The purpose of this chapter was to review literature related to CBPAR, CoP, rurality, ICT training, nutritional education and other areas related to the study. This included: a review of articles in Gateways: International Journal of Community Research and Engagement; general literature searches using 'Google Scholar' searching under key words and phrases a number of relevant publications were identified for reading and review.

Keywords:

- 'Communities of practice'
- 'appreciative enquiry'
- 'participatory research' and 'participatory action research'
- 'community based participatory research' (CBPAR)
- 'community-university partnerships'
- 'rural community'
- 'Nutritional education, out of school, young mothers, South Africa'
- 'IT/ICT Training in rural areas of Sub-Saharan Africa'
- 'Computer training in rural areas of Sub-Saharan Africa'

Literature reviewed to date has identified some gaps in research in: context – driven ICT skills training for vulnerable groups; effectiveness of nutritional education for out of school young mothers and CBPAR approaches being applied to community based BAE

and ICT training. There are also parallel areas of study which have emerged from initial literature research which will help to further develop the study as it unfolds:
The definition and understanding of 'rurality' and how this may affect the implementation of the study.
Gender-related issues in the South African context and how these may impact on the success and sustainability of the study.

Research on young mothers undertaking nutritional education as part of ICT training does not appear to have been undertaken specifically but related studies have revealed interesting parallels in thinking and understanding of the processes involved in developing technological interventions in isolated and resource limited settings in South Africa. The need for targeted studies which support and nurture education of young mothers and their children is validated in numerous health studies.

'Young children around the globe bear the greatest burden of poverty, disease, war…and limitations in health nutrition and education services' (Britto et al., 2013, p. 1)

The concept of community based participatory action research (CBPAR) emerges as a common theme in studies relating to specific groups following courses of further education together with participants in their communities. (Naudé, 2007; Van Niekerk, 2006)

Studies on the positive value of community based participatory action research (CBPAR) show that increasingly research specialists are seeing the need to engage with the communities that they are studying and 'rejecting the idea scientific objectivity demands creating a distance between themselves and their research subjects' (Horowitz, Robinson, & Seifer, 2009, p. 2633) Participatory research (PR) was studied as a wider theme as the methods used in PR have been transferred to CBPAR.

In order to frame the study and justify the use of a CBPAR approach for out-of-school young mothers, literature was reviewed in three main areas:

1. Provision of out of school nutritional education to out of school youth/young mothers.
2. ICT training provision for vulnerable groups – foregrounding young mothers.
3. Literature relating to community based participatory action research approach

Ultimately, the study covered a wide amount of ground with global health, nutrition and sustainable research converging on the need to support and nurture young mothers and young children as the backbone of humanity.

To further understand the role of women and gender issues in the development of South African research and studies involving participatory engagement with women and women's groups, further reading was undertaken. The historical effect of Apartheid on women and their role in both urban and rural communities still has resonance today and continues to influence attitudes and define gender theories.

> '*A survey in the Medical Journal in 1965 found 'at least 80% of school-going children from African households in Pretoria suffer from malnutrition''* (Sikakane, 1977).

From the same publication:

> '*African women by law and convention are not allowed to do skilled jobs like reporting and typing*'(Sikakane, 1977).

The lack of opportunities for career progression, in areas such as rural Limpopo, may not be due to law now but may still be as a result of the 'Scheduled Areas Acts'(Desmond, 1970) which displaced thousands of people from previously fertile lands and forced them to return to subsistence living in areas without schools, clinics or reliable water or power supplies.

1. In defining the study as a post-school adult education course, it was necessary to consult literature relating to 'adult education'.
2. Additional information and communications technology literature was consulted in the development of the ICT course structure. CAT high school ICT courses taught in South Africa and ICT Microsoft Office (Withee & Reed, 2012) courses

taught in Europe and via online sources were consulted. The final course was a hybrid simplified version of a course based on the ICDL modules available in South Africa, MS Office tutorials and E-Learning resources available online (Wempen, 2014). (See Appendix 13 for ICT course outline)

3. Additional nutrition education literature was consulted in the development of the ICT and BAE Nutrition course content used in the study to give young mothers, attending the course, up to date information relating to nutrition. Much of this data was sourced from WHO/UNICEF publications which are cited in the resources (See Appendix 14: Nutrition Course Resources). Wider media-related references relating to global nutrition were gained from recent publications linked to the United Nations 'Global Goals' campaign (http://www.globalgoals.org/)

2.2 PROVISION OF OUT OF SCHOOL NUTRITIONAL EDUCATION TO OUT OF SCHOOL YOUNG MOTHERS.

Global studies on the relationship between early childhood development (ECD) and nutritional education are highlighting the value of community based interventions:

> *'ECDs have the potential to build social capital as early interventions can enhance academic performance and strengthen community networks, social infrastructure and service delivery through community participation'* (Albino & Berry, 2013, p. 78)

Such studies are highlighting the benefits to South Africa, where an estimated 58% of children live in poverty, of investing in ECD programmes that '*lessen the drain on national resources by reducing school grade repetition and social welfare expenditure*' (Albino & Berry, 2013) In relation to nutritional education, such studies stress the importance of nutritional programmes for young mothers and children under the age of 5 years which:

> *'Prioritise delivery of key interventions (breastfeeding, complementary feeding, micronutrient supplementation, hygiene and maternal health and nutrition).*

> *Link the key interventions to existing services and use home visits, community-based services and health facilities to reach young children'* (Albino & Berry, 2013, p. 80)

The correlation between poverty and nutrition is well documented in studies relating to infant mortality:

> *'The close link between poverty and under-nutrition is also well recognized. It has been estimated that 45% of all deaths among children younger than 5 years of age may be associated with under-nutrition, as manifested by fetal growth restriction, stunting, wasting, deficiencies of vitamin A and zinc, and suboptimal breast-feeding'* (Bhutta & Black, 2013, p. 2229)

The same studies point once again to community-based approaches to addressing nutrition as important aspects of reducing infant mortality:

> *'The effect of community-based approaches to addressing childhood diarrhoea and pneumonia and under-nutrition among the poorest populations has been well recognized and could be an important foundation for reducing morbidity and mortality*.'(Bhutta & Black, 2013, p. 2231)

A recent study of global concerns relating to food security and food scarcity compares various viewpoints on the interpretation of research on food production and food availability globally. Although it is careful to provide a balanced appreciation of publications on the matter, one underlying message is the need for more equitable availability of nutritious food for the weakest and most vulnerable in the world (Scoones, Smalley, Hall, & Tsikata, 2014). Various leading authorities are quoted:

> *Today, there are an estimated 925 million people who suffer from hunger and perhaps an additional billion who, while having access to sufficient macronutrients, suffer from the 'hidden hunger' of not having enough vitamins and minerals. (Foresight, 2011: 24)*

Areas of South Africa such as Limpopo Province are blessed with fantastically productive soil and are capable of producing the most nutritious fruit and vegetable

crops, however, the poorer rural populations living adjacent to these lush farming areas do not always benefit from this variety in their daily diet.

> *Many developing regions ... have large gaps relative to their potential. In sub-Saharan Africa, for example, crop yields reached only about 27 percent of their economic potential in 2005. (FAO, 2012a: 105)*

> *Most experts agree that if we continue to use today's techniques and approaches to grow food, the math in the global agriculture equation won't add up to a sustainable future. But by working together, the public and private sectors can help deliver abundant, affordable, and nutritious food for all. (Vegarra and Moses, 2012: 6)*

In the last quote, the use of 'working together' is poignant as it reflects the participatory nature of this study's objectives. By creating a common purpose to improve nutritional information through taught contexts in an IT education programme, it may be possible to help to address some of the concerns raised regarding food poverty in Sub-Saharan Africa. The World Bank, quoted in the same review (Scoones et al., 2014) puts forward a positive view:

> *Areas [in sub-Saharan Africa] of low population density with good agricultural potential represent untapped reserves for continued expansion of area. (World Bank, 2007: 231)*

Sub-Saharan Africa is described on one hand as having great untapped resources for food production in terms of fertile land and unutilised water resources and on the other hand suffering from huge problems of undernutrition and infant mortality. However, balanced reading of research into the current situation reminds one that the situation is highly complex and resources are not so easily accessible for the poor and uneducated:

> *Scarcities must be seen in relation to long-term, historically-constituted structural inequalities, rooted in colonialism and carried on in unequal trade, aid and development relationships* (Scoones et al., 2014, p. 21)

Redressing the historical imbalances in Sub-Saharan Africa requires many interventions which are not the focus of this study. The role of community based education of deprived groups to empower and motivate themselves out of cycles of poverty is a key aspect of the study. In terms of community education programmes, medical nutritional studies are increasingly looking to community initiatives to support the over-loaded clinics and hospitals in providing early childhood development support for young mothers outside these venues:

- *'Conduct community needs assessments to determine the priorities for localised parenting programmes.*
- *Identify and implement parenting interventions likely to be effective, and consider ways of linking these with other ECD services.*
- *Establish the effectiveness and cost-effectiveness of parenting programmes'* (Albino & Berry, 2013, p. 80) .

The above recommendations add fuel to the objectives of this study and also point the way to using community based programmes to help implement the young mothers' course. By including ECD knowledge such as nutrition in a young mothers' course the study will be helping to meet basic needs. By providing ICT skills, the course will be providing much needed vocational skills which enable YMs to manage their own lives and potential develop their own careers.

Besides providing young mothers with an opportunity to develop their own personal education for the purposes of raising children, courses providing basic nutrition education also have a higher value for those keen to enter the medical professions. Recent studies have stressed the innovative learning opportunities available for medical students in studying nutrition at greater depth which include:

> '*bridging personal health and nutrition to community, public, and global health concerns; integrating nutrition into lifestyle medicine training; and using nutrition as a model for teaching the continuum of care and promoting inter-professional team-based care'* (Kushner et al., 2014, p. 1167)

It is unlikely that all the young mothers attending a BAE course, such as the one in this study, will be aspiring to study medicine. There is potential, for those that opt to extend their learning beyond high school level, to enter the medical professions (nursing, midwifery, physiotherapy etc.) and climb to higher professional levels through continuing professional development.

Looking at the study as part of an attempt to introduce sustainable development into a rural area of Limpopo, the study's focus on education of young mothers with young children (under the age of 5) links to global health and well-being studies which impact on global policy and '*place early childhood development (ECD) at the centre of emerging decisions on sustainable development*' (Britto et al., 2013, p. 8) Courses which provide basic practical adult education on topics which relate to adults and children alike are part of the essential mix which is required to empower young mothers and enable them to build their lives meaningfully and support their growing children.

2.3 ICT TRAINING PROVISION FOR VULNERABLE GROUPS – FOREGROUNDING YOUNG MOTHERS.

Recent studies on educational performance have indicated a disturbing pattern of failure in students as they move from primary to secondary school and more disturbingly the drop-out rate in schools. Recent DoBE statistics show that drop-out rates climb as students move up the years from primary to secondary school.

The concept of 'reconstructive' (second chance) education was proposed as a response to the state of education in South Africa presented in the 2nd National Qualifications Framework Research Conference 2013:

"South Africa's educational situation:

- *±60% of learners do not complete their education.*
- *South Africa's education does not make provision for the needs of learners who cannot cope in mainstream education.*
- *South Africa does not provide alternative education for learners who drop out of school.*
- *Poor proficiency of learners in literacy and numeracy.*
- *South Africa's education is ranked 133rdout of 142 countries.*

- *In Maths and Science South Africa is ranked 138th.*" [10]

The need to address issues of post-school education options for the youth of South African and Africa as a continent has been discussed regularly at the highest level. (African Union - 2nd Decade of Education for Africa 2006-2015) (Union, 2006):

> *'In the knowledge society of the 21st Century, dominated by information and communication technology and where labour market demands are constantly changing, providing relevant TVET (technical and vocational education and training) programmes to both boys and girls is deemed central to the effort to foster sustainable development and attain MDG-1 (Millenium Development Goal 1)– eradicating extreme poverty and hunger – in Africa'* (Union, 2006, p. 9).

A significant number of female students drop out of high school as a result of pregnancy. Teenage pregnancy has a *'negative impact on young mothers and their children by placing limits on the mother's educational achievement and economic stability, and predisposing her to single parenthood and marital failure in the future'*(Modisaotsile, 2012, p. 5). South African education policy does not allow discrimination against young mothers of school age and means that they should be able to return to school during or after pregnancy. The reality is that very few manage to return to complete their Matric studies. Studies have revealed that less than a third of pregnant students manage to return to complete their studies. (Modisaotsile, 2012)

If 'failed' school learners, as young adults, are able to find alternative forms of education within their communities it will undoubtedly increase their chances of progress to full employment. How this should be achieved has also been discussed at the high level (Union, 2006):

> *'A sound programme of TVET should be based on a foundation of*
> *(i) a sound general education,*
> *(ii) a sound general/introductory technical education,*
> *(iii) specialised technical training and,*

[10] *Sourced from statistics produced by Department of Basic Education, 2012: Klinck, 2012; World Economic Forum, 2012; Van den Berg et al, 2011*

(iv) the possibility of credit transfer to further education and training.'

It is acknowledged nationally and internationally that further education and training opportunities outside schooling are vital for societies' most vulnerable groups too (Union, 2006, p. 10):

> *'Given that vast numbers of young people are outside the formal school system, integrated non-formal learning consisting of literacy and TVET programmes, especially for girls and women, have the potential to enhance the well-being of communities throughout Africa'*

If students are still failing towards the end of this period of education policy making and development in education, it may be assumed that many of the targets put forward above are not being met. As the emphasis for most poor and developing nations is providing basic education for all. It can be assumed that the secondary objective - to provide alternatives for those failing in the system – is not being met.

In a recent 2015 publication which appears to give a balanced view on education results in South Africa, the inequalities in high school education achievement are still evident:

> *"The General Household Survey of 2011 showed that there are large racial inequalities in matric attainment: only 44% of Black and Coloured youth aged 23 – 24 had attained matric compared to 83% of Indian youth and 88% of White youth.* " (Spaull, 2015, p. 35)

Taking a positive view of negative statistics: a 56% drop-out rate meaning a 44% Matric completion rate, there is a huge untapped market for post-school learners wishing to complete their formal education or simply acquire skills and knowledge to help them find gainful employment. This is effectively the niche that the young mothers in this study occupy. The majority did not complete Matric but they have the will to improve their lives through further education.

Information communications technology (ICT) is one tool which is recognised as a way of helping learners gain competence in many disciplines. ICT education and ICT practitioner development, online CoP has been identified as a valuable way to support informal learning (Gray, 2004) By taking part in virtual learning programmes and online discussions, new practitioners were able to develop new skills and connect with experienced professionals. The professionals were able to gain feedback on the

value of their work and develop a greater sense of being valued in the outside world. Although Gray's study was based on a study of an online community, it highlighted a few 'human' issues: participants were not completely free and the use of personal stories was seen as a valuable part of the process. The study required the services of a 'moderator', or manager, to ensure that the interactions remained focussed on the study's learning objectives. The CoP model, it seems, may require some hierarchical structure, or 'remote leadership' to enable the participants to work productively. The use of 'personal stories' is interesting because it demonstrates that humans still require to reinforce the own identity in online interactions.

A recent audit of the use of technologies on 8 different rural development sites (HSRC in South Africa) revealed some of the challenges faced by those seeking to implement technological innovations in rural areas of SA:

- *There was little community consultation in most activities - leading to community conflict.*
- *Models were inappropriate - poverty reduction activities trying to function as commercial enterprises and failing to do so- officials having very little idea and no plans of linking potential producers/manufacturers to markets.*
- *Poor conceptualisation of development interventions - emphasis on service delivery rather than facilitating development and encouraging people to solve their own problems.*
- *Sustainability of many activities is questionable, as they seem to need continual financial support despite being expected to function as enterprises.*
- *No project level monitoring and evaluation, therefore, no understanding of how to make changes and address challenges that arise - M and E largely based on numbers, costs and items delivered - showing how money has been spent, but adding nothing of value to the development process.*

(HSRC Research Website: Audit of technological initiatives for rural development http://curation.hsrc.ac.za/Datasets-MJAFAA.phtml)

Showing awareness of the above pitfalls and barriers to progress and implementation is obviously a necessary part of any realistic study process which involves the general public. In the case of the rural intervention, it is vital to be realistic

and at the same time present in the situation to fully appreciate what is happening and what can happen.

Taking a more focussed view on how ICT training could engage and empower young mothers in an out of school education setting: A study of adult learners in a specialist ICT training environment (Potosky, 2002) indicated that learners given the opportunity to explore ICT through playful or context-driven avenues performed better in practical assessment. Research results showed significant relationship between computer playfulness and performance during training. More playful individuals who performed best during training made the best judgments when it came to higher level activities after training. *(Potosky, 2002)* The above study promotes the idea of context-based ICT training which is a key aspect of the young mothers' course.

The literature reviewed in this study reflects different approaches to addressing action research interventions and brings together current material relating to the perceived needs of out-of-school young mothers in rural areas of South Africa (SA). The need for ICT education to enable women to enter the modern workplace is a common theme of discussions relating to women's education and women's empowerment in Sub-Saharan Africa. The use of context-based learning which is relevant to the practical needs of the students emerges as a valuable approach both from high level policy papers and smaller scale research findings.

2.4 LITERATURE RELATING TO COMMUNITY BASED PARTICIPATORY ACTION RESEARCH APPROACH

Studies of community interventions and community education initiatives have indicated the value of participatory research methods in: developing dialogues with community members; improving community buy in and ensuring greater success in sustaining these initiatives (Horowitz et al., 2009). The study of communities of practice, and the theories surrounding these, has a valuable place in this study as it encompasses a theory of understanding how practitioners, stakeholders and beneficiaries may work together in development projects in a "*shared domain of interest*" (Wenger, 2011, p. 1). As the research involves a 'hands on' approach, the theories relating to communities of

practice (CoP), participatory action research (PAR) and community based participatory research (CBPAR) are considered appropriate and relevant for helping frame the study.

By participating in a specific small project, as part of the ongoing process of establishing, running and sustaining a programme of community-based further education courses, it is intended to provide assistance to the project managers and educators to help maintain and improve their future programme outcomes. Producing structured and clearly recorded qualitative results as part of a 'live' narrative of the implementation process will help programme managers, educators, students and other community stakeholders to reflect on the process as it develops and develop their own distinct record of the development process which has evolved through group planning, constructive discussion and mutual consent. (Wenger, 2011)

By understanding the various roles that people play in communities of practice and realising the importance of 'buy in' from those that should ultimately benefit from the intervention, it is possible to make more informed judgements about the intervention (Wenger, 2011) .

> "*Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly*" (Wenger, 2011, p. 1)

The community of practice (CoP) model defines a kind of ideal mode of interaction between various stakeholders in human activities such as business, education and international development. The CoP concept of peer-to-peer learning in less formal settings suits the model of community education that the MECP programme is attempting to implement but it does not completely describe the system that is required in a rural resource-limited setting in order to achieve success. Wenger acknowledges that CoP characteristics may conflict with established hierarchical systems (Wenger, 2011)

In attempting to 'create' a community of practice for the implementation study, the researcher/s have to be aware that the empowering nature of the CoP is to create dynamic learning opportunities across organizational and geographical boundaries (Wenger, 1998).

In doing so the CoP may acquire characteristics which are seen as a challenge to traditional hierarchical organizations in the community.

In a village such as Mulamula which has strong cultural roots and active traditional the CoP has to allow this rich influence to enhance the study.

The literature reviewed in this study reflects different approaches to addressing action research interventions and brings together current material relating to the perceived needs of out-of-school young mothers in rural areas of South Africa (SA). By focussing on CoP and more specifically on CBPAR and PAR research methodologies it has identified the value of these approaches to working in isolated communities with isolated groups of people such as young mothers.

The concept of community based participatory research (CBPAR) was developed in a study of elderly Chinese learners (Dong et al., 2011). By emphasizing the involvement of the stakeholders from the research's inception, it was seen that the quality of research outcomes would be improved as they would take ownership of the research and 'co-own' the solution/s it brought to the community. It was seen that this would have relevance at all levels of the process: initiation of research, implementation of research and dissemination of results. In order to achieve this it was proposed that collaborative partnerships needed to be established between the community and researchers which were sensitive to the needs of the community and which engaged the community in the decision-making process.

A structure that emerges from the study of CBPAR follows 5 stages:

1. Getting stakeholders to agree a long-term vision for the process.
2. Creating infrastructure for the process that fosters participation and engagement.
3. Developing community links that sustain commitment from all members.
4. Orientating systems to enable long term function of the process.
5. Pursuing goals which are of value to all stakeholders – following outcome-based advocacy.

A quote which is of wide value from the study is:
"*Partnership building is a cultural exchange in process*" (Dong et al., 2011, p. 34)
The quote arises from a community based participatory study involving elderly Chinese learners but equally applies to the Mulamula young mothers' study where people of different educational and cultural backgrounds are coming together in a situation of

mutual participation. The partnership building approach could apply widely to include: educational projects, health interventions, management of professional football teams and inter-racial marriages. In the case of community education projects, such as MECP, it is necessary to take a slightly detached 'business-like' viewpoint to complement this and remember that "*lack of funding is one of the most common causes of difficulty when it comes to maintaining group morale, momentum and energy*' which can '*threaten the long-term viability of the partnership*" (Dong et al., 2011, p. 34) . More importantly, it is observed that, in the case of voluntary collaborations, the leadership of the project is vital to success. The leader in this case may not be dictating the process but helping share the vision and reminding people why they are doing it. In many cases this is done successfully be the use of newsletters and other forms of publicity which celebrate the achievements of the process and highlight individual achievements through anecdotes and reports.

As part of the literature review for this study an 'appreciative inquiry' (AI) approach to rural wellbeing research was investigated to complement the CBPAR approach (Kevany & MacMichael, 2014). The research detailed AI's positive attributes as form of modern participatory research where communities actively participate in the research process from its inception and community members are empowered to articulate and share their opinions and experiences to add depth and local knowledge to the research activity. AI is identified as an extension of participatory research in which community members are "*the experts about their lives and aware of what is working and what is not*" (Kevany & MacMichael, 2014, p. 34). Community members are perceived as having expertise in the field of local knowledge. This is a common thread in the article as it discusses community members as "*research designers, collaborators … participants and analysers*" (Kevany & MacMichael, 2014, p. 36). The AI approach is seen as a valuable tool for participatory research in rural communities. It is argued that community members are ideal for this type of process as they are - by nature - living and growing up in an active cooperative environment where there is a form of "*collective existence"*(Kevany & MacMichael, 2014, p. 36). This viewpoint seems to build on Lave and Wenger's earlier community of practice model where participants build their practice together on a base of shared collective interest.

It could be argued that there is a slightly 'rose tinted' perception of the cooperative nature of rural communities presented in these academic studies as many

rural communities complain of social isolation and a lack of inclusion in the decision making processes that have a direct impact on their lives. This is evident in the Malumulele municipality disturbances which affected the Mulamula directly in early 2015.[11]

Personal experience in Mulamula in the development of the Mulamula Education Centre has also foregrounded another logical barrier to university studies: the high levels of adult unemployment tend to make the community suspicious of 'outsiders' motives for doing community work in the village and create an expectation that 'voluntary service' should be paid work. In this study, the participants that made the most contribution to its progress did seem to have altruistic motives. If they had any greater personal expectations from the participation these tended to emerge as the opportunities created by the intervention emerged.

The AI approach to participatory research, like other processes which seek to empower the community as part of the research process, raises some interesting questions:

- Can the active participating community receive recognition as contributors to the research publication by developing their own tools as the study progresses (e.g. modifying logbooks or keeping personal diaries)?
- How much preparation can be done in advance for the research if the design of the process is fully participatory? (Could this lead to conflicts when it comes to seeking ethical approval?)
- Does the contribution of the community have to be fully voluntary for it to be classified as PAR? (If community members receive compensation for part of their contribution – as a researcher may – is the process still valid?)

The participatory action research process (PAR) – also sometimes presented as community based participatory action research (CBPAR) and participatory learning and action (PLA) (Pain et al., 2012) – is an approach to research which can be employed to help communities to engage actively with the research process in a way which enables realistic outcomes to be achieved (Pain et al., 2012)

[11] Limpopo Mirror article on Malamulele Municipality conflict (See: http://limpopomirror.co.za/articles/news/32016/2015-07-13/-mixed-feelings-over-own-municipality-for-malamulele)

Pain, Whitman et al. are keen to point out that PAR is not a method.(Pain et al., 2012, p. 2) It enables many methods to be put into practice. This is desirable in any community-based endeavour as it enables researchers to draw on the skills and experience of the researchers, participants and other stakeholders in the study.

Visualising PAR (participatory action research) is fairly straightforward if one considers it as a process of "*Planning, Action and Reflection"*(Pain et al., 2012, p. 2). In the case of a practical intervention such as this PAR works to empower the stakeholders in the process and create constructive dialogues which bring together different cultural experiences and draw on the experience of people in the community in a productive way. Placing the action research decisively in the community, as a community based participation, (or CBPAR), is seen as a way of strengthening this PAR approach. In some studies, it is seen as adding "*rigour, reach and relevance"*to research (Balazs & Morello-Frosch, 2013, p. 10) which could be seen as a way of improving the research's value globally.

Studies of literature relating to community-based PAR studies in rural South African and Sub-Saharan settings (Van Niekerk, 2006) reveal some commonly recurring themes. The CBPAR approach is seen as an appropriate way to engage with rural communities and the issues which commonly confront them such as the need for: income generating initiatives; practical skills training; small business and financial management training as well as basic literacy and numeracy improvement. (Van Niekerk, 2006) These themes permeate through the YMs' ICT and BAE Nutrition study. The PAR approach is considered valid as it empowers participants to be take an active role in their own post-school education. It also acts as a route for establishing the key sustainability issues which are relevant to the community.

Using CBPAR as an approach for this study allows the process of developing the course for young mothers to happen organically within the community. Obviously, a structure is required to give the study form and to fit it to a realistic timescale. The CBPAR structure, suggested in the study methodology, attempts to use such an approach to encourage participation from stakeholders throughout the study by following a cycle of reflective activity. This cyclical approach to research is discussed in a wide range of PAR/CPBAR studies but is refined in the study presented by Balazs et al (Balazs & Morello-Frosch, 2013, p. 10). The models presented in literature search

are refined for this study to include the idea of outcomes, or decisions, spiraling out from the cycle to instigate future cycles. (See section 3.1.1: figure 3.1).

To give the research a structure to develop a methodology, gather data and analyse it over time the literature referred to on CBPAR produced a number of approaches. I chose to follow five distinct phases in this study. This approach was initially identified in the literature search in the research by Dong et al (Dong et al., 2011) However, their model was taken from an earlier community study (Alexander et al., 2003). In the study by Alexander et al the authors hypothesize that there are five activities in community based partnerships leading to sustainable outcomes. They include: outcomes-based advocacy, vision-focus balance, systems orientation, infrastructure development, and community linkages. In this study the outcomes are re-ordered to acknowledge that developing community linkages is the first vital stage in the process before any other meaningful activity can take place.

2.5 ADULT EDUCATION

In the process of studying the implementation of the ICT and BAE course for young mothers it was necessary to look at adult education and how it is defined in the modern context. Studies have sought to define what adult learning is over the years. One which seems to fit the study:

> Adult education is: "*activities intentionally designed for the purposes of bringing about learning among those whose age, social roles or self- perception define them as adults*"(S. B. Merriam & Brockett, 2011)

An amusing thing about this definition is that it also clearly included established 'adult' groups in the village being studied such as the 'over 60s ladies football team' which is coached by a local teacher. The definition does not restrict adult education to classroom learning.

In the case of this study, all of the participants are 'adults' in a legal sense: the young mothers are adult learners older than 18 years. Their perception of learning is defined by their own personal needs and desires. How they do their learning may be defined in the modern context in recent literature relating to adult learning theory and practice (S. B. Merriam & Bierema, 2013) which includes andragogy (the art and

science of helping adults learn); self-directed learning; transformative learning, and the different dimensions that adults learn in through: employing their past experience, embodied or somatic learning or even spiritual learning. The overall message that is contained in these modern adult learning theories is that adults bring their own expectations-theories-skills etc., acquired through life experience, to their adult learning classes. Therefore, dictating a particular learning style is risky.

Recent studies of how the brain develops – cognitive development - also pervade in adult education literature as they do in school education. The slight difference in adult education is that – as well as including insights into cognitive function, memory and intelligence – they also refer to the role of wisdom (S. B. Merriam & Bierema, 2013) or intelligence acquired through lived experience.

The same studies also recognise the vitality of computers in adult learning environments as a catalyst for learning and as a "pervasive" (S. B. Merriam & Bierema, 2013) element of modern life and work. Technology is not just seen as changing the context in which adults learn but the learning itself. This in some ways goes to justify the need to develop adult education courses that include ICT – as this one does – but it also indicates that many researched adult education programmes grow more rapidly in well-resourced societies.

In developing a purposeful course for the participants in this study, it was necessary to remember that the young mothers, by nature of their motherhood, bring a wealth of experience to any learning environment. By bringing a child into the world, a young mother has effectively gained a massive practical experience of what motherhood means. They might not necessarily understand all of the medical and nutritional needs of their child, but their own life experience exposes them to such a wealth of social, practical and physical challenges that their experience is bound to change their attitude to learning compared to when they were at school.

As mothers, the participants bring a kind of natural "critical thinking" perspective to the class through their heightened need to feed, clothe, shelter and protect their child. By creating a course with young mothers that are likely to have opinions and be openly 'critical', it was hoped that the participative nature of the implementation would throw up many hidden issues and help the course grow into something which has value beyond the confines of a single intervention.

2.6 ICT COURSE LITERATURE

Additional information and communications technology literature was consulted in the development of the ICT course structure. CAT high school ICT courses taught in South Africa and ICT Microsoft Office (Withee & Reed, 2012) courses taught in Europe and via online sources were consulted. The final course was a hybrid simplified version of a course based on the ICDL modules available in South Africa, MS Office tutorials and E-Learning resources available online (Wempen, 2014). (See Appendix 13. Course Outline)

The need for people in the marginalised areas of the world to have access to resources for the teaching of ICT is well recognised. As estimates show that only 12% of the world's population have access to computers (http://www.minature-earth.com) and only 8% are connected to the internet, it is understandable that the course would have a benefit to a group which previously had not used computers. What the course also needed to indicate was that it should enable the young mothers participate in a larger learning community – the "*digitalized, globalized, knowledge society*" (S. B. Merriam & Bierema, 2013) – where they could access information that was relevant and purposeful.

The limited length of the YMs' proposed course, and the limitations of the donated hardware available to teach the course, meant that it was never going to be feasible to expose the YMs to all of the features of a modern computer with all of the latest software installed The course had to be a 'taster' using donated laptop machines which were running Microsoft (MS) Windows and MS Office software. Consideration of what would be most valid for a 'taster' required a survey of what was available globally (http://www.ecdl.org/programmes/ecdl_icdl) and the basic beginners courses which are offered as accredited courses: (http://www.ecdl.org/programmes/index.jsp?p=2927&n=2938). It was necessary to then compare with what was available in South Africa: (http://www.icdl.org.za/). The overview of these courses indicated that at the basic learner level, they were very similar and content did not include context-related exercises.

Having completed this background review, the decision was to develop a course for YMs which incorporated key skills elements of the 'computer basics' courses available online in SA. I proceeded, with the help of YM-ICTF, to develop firstly a

generic computer basics course and then refine it down to something which could act as a framework to build in valuable nutrition education content.

One of the limitations of the study, which emerged from the researcher's point of view, was the lack of resources available for the teaching of ICT and BAE nutrition in the local language (XiTsonga). This could be seen as an opportunity for future XiTsonga-speaking researchers to do complementary studies to compare a fully XiTsonga course with one which combines English and XiTsonga.

2.7 BAE NUTRITION LITERATURE

In the context of this study, it was necessary to consider definitions of 'nutrition' and 'good nutrition' as a means of structuring the combined ICT and BAE nutrition course. Nutrition being food and drink which humans consume:

> *"Food is here defined as any substance that people eat and drink to maintain life and growth. As a result, safe and clean water is an essential part of food commodities"(Gross et al., 2000)*

Taking the above definition as a starting point it is possible to give it a greater relevance in a rural context to make it 'good food' by including terms such as: 'fresh', 'locally produced', 'home grown', 'home reared' etc. as it is feasible to produce fresh, healthy, locally produced food in areas such as that chosen for the study.

These definitions obviously have to take into account regional and cultural variations as well as socio-economic factors. A good diet is often considered a luxury as poor families have to make do with whatever is affordable and available locally.

The location of the study is not an area of great food scarcity, however, there are still malnourished children in the area. This can be linked to a loss of connection to the land amongst the youth and a decline in market gardening practices in the area. There is also a practical obstacle to gardening in Mulamula which is due to the unreliable water supply caused by installation of large water pipelines between Elim and Malamulele.

Additional global education literature was consulted in the development of the ICT and BAE Nutrition course content used in the study to give young mothers, attending the course, up to date information relating to nutrition. Much of this data was

sourced from WHO and UNICEF publications which are cited in the resources themselves (See Appendix 14. Course resources).

Interestingly, global media nutrition-based campaigns are designed to highlight the risks of over-consumption of certain food-types. For example: the recent WHO announcements regarding the cancer risks associated with processed meats[12] guides an increasingly food conscious developed world to reduce consumption of processed meats. There are not so many global campaigns about what we should eat and what is affordable.

The common misconception about diet in developing countries is that there is not enough food, but increasingly it is emerging that it is quite possible to feed the world's population.(Scoones et al., 2014). Studies show that what is needed is greater understanding of what it is best to eat and how best to grow and distribute food equitably (Albino & Berry, 2013; Bhutta & Black, 2013). The recent international 'Global Goals'[13] campaign, launched in September 2015, unfortunately still requires a goal which calls for an end to hunger:

> *"Goal 2: Zero Hunger - End hunger, achieve food security and improved nutrition and promote sustainable agriculture."*

Interestingly, the 3rd goal is also relevant to this study:

> "*Goal 3. Good Health & Well-Being: Ensure healthy lives and promote well-being for all at all ages"*

And goals 4 and 5:

> "*Goal 4. Quality Education: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all";*
>
> *"Goal 5. Gender Equality: Achieve gender equality and empower all women and girls"*

All of the fundamental global goals cited above have relevance to the implementation of the YMs' ICT and BAE study in Mulamula. They also highlight the range of problems faced by young mothers is such remote villages.

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[12] WHO, October 26th 2015 (Source: http://www.bbc.com/news/health-34615621)

[13] Global Goals 2015, *Source: http://www.globalgoals.org/global-goals/no-hunger/)*

Studies of interventions relating to nutrition and nutrition education were also consulted (Van Niekerk, 2006) (Naudé, 2007). These studies identified many common themes such as: lack of resources for post-school education, limited access to post-school education, perceived and actual isolation from centres of learning, issues of motivation and entitlement (including young mothers) in rural areas.

At a practical level, studies in South Africa have also reinforced the need for better nutritional education relating to food types and the benefits of eating fruit and vegetables.

> "*Fruit and vegetable intake has been recognized as a key contributor to micronutrient deficiencies in developing countries"* (Naudé, 2007)

The lack of fruit and vegetables in the diets of young adults, and subsequently in their offspring, are not confined to developing countries but are seen as a global problem. The lack of reliable quantitative data on the intake of such nutrients is also identified as a research gap.

Studies of different rural communities in South Africa and Sub-Saharan Africa (Naudé, 2007; Phometsi, 2004) (Gross et al., 2000; Van Niekerk, 2006) have shown that nutritional knowledge amongst those living in rural areas, such as Mulamula, is weak amongst the youth and young mothers in particular.

The poor child health and nutrition in many of the rural areas of South Africa cannot simply be put down to lack of food (and the energy derived from this food) it also has to do with lack of micronutrients such as: iron, vitamin A, vitamin C, zinc and iodine (Gross et al., 2000). This may be attributed to an overall weakness in their basic school education but may also be related to changing attitudes to food and diet in young mothers which are influenced by the mass media (TV, mobile phones, internet etc.) and the rising dominance/popularity of franchised fast food outlets in rural towns.

The increase in availability of fast food has led to a kind of aspirational diet where youth congregate around franchise outlets to socialise and fast food is seen as a great treat. This study indicates that some of the young mothers living half an hour's drive from the nearest source of fast food still claim this to be their favourite food. Even the trainer (YM-T), who was brought up in the village, cited 'pizza' as his favourite food. (See: YMs' workshop results Chapter 6, Table 6.4)

Studies relating to food-related diseases such as kwashiorkor (Dolgin, 2015) were also reviewed in order to gain a wider interpretation of the needs of the course.

Young mothers in poor areas such as Mulamula feed their children a limited diet (See Chapter 6. Workshop survey results) which can lead to complications relating to deficiencies in protein, vitamins, calcium etc. or over-dependence on one staple foodstuff (e.g. white maize meal porridge or 'pap') With the complication of HIV infection, diseases such as kwasiorkor can be compounded with additional infections relating to low gut flora/microbial and the increased risk of infection through secondary sources such as fungal infections from maize.

The gaps in knowledge relating to nutrition and food security are addressed in studies of rural farm workers in South Africa (Phometsi, 2004). The need for education programmes which are supported by the communities they are supposed to benefit comes through repeatedly as a necessity for sustaining such courses:

> *"The gaps in knowledge…can be improved if nutrition theory and other health recommendations are accompanied by action through a learner participatory process"* (Phometsi, 2004)

A recent study also identified that rural malnutrition and urban malnutrition both need to be addressed in order to address the complex needs of post-apartheid South Africa (Fotso, 2007) and to meet global goals. The increased mobility of rural communities, with improved access to road transport infrastructure, has meant that over-crowded urban poor communities have developed similar profiles of malnutrition and dietary disease.

PAR studies have proven to be effective in the past for identifying the needs of those living in South Africa's rural communities in terms of general education, entrepreneurship and nutritional education (Van Niekerk, 2006). By engaging communities in developing tailored education and training programmes, better understanding of the needs of the rural poor have emerged.

The need for more reliable quantitative and qualitative data relating to nutritional consumption is identified in a number of studies (Naudé, 2007) and this gives further weight to the inclusion of nutritional education in the ICT and BAE course - not only to inform the young mothers - but also to act as a route for gathering meaningful data for future studies. The generation of viable data has great relevance to the policy makers who can influence supply of healthy foods nationally and globally:

> *"Effective nutrition education aimed at improving fruit and vegetable intake should be continued and developed within the national, provincial and local health structures"* (Naudé, 2007)

The issues discusses above enabled better structuring of a scheme of work, student resources and administrative tools (application forms, evaluation forms, model logbook, shared resources etc.) for the teaching of basic nutritional content in the ICT and BAE nutrition course. The resources produced for the trainer and facilitator to deliver the course also enabled them to improve their nutritional knowledge through the teaching of the content to the young mothers (See Appendices 13 & 14 – Course resources).

2.8 DEFINITIONS OF RURALITY AND HOW RURALITY INFLUENCES THE STUDY

As the study is located in what is commonly described as rural Limpopo, South Africa, it was necessary to consider definitions of rurality which would fit the needs of the study. The rural nature of the village affects the type of population that will be involved in the study and their potential needs from any adult education course that may be offered.

> "*Defining rurality can be elusive and frequently relies on stereotypes and personal experiences. The term suggests pastoral landscapes, unique demographic structures and settlement patterns, isolation, low population density, extractive economic activities, and distinct sociocultural milieus"* (Hart et al., 2005)

Rural areas of South Africa have an additional dimension as many were redefined, or modified during the apartheid era (cite) when black communities were removed to 'homeland' areas of land to allow for expansion of white farming, mining and other commercial interests' or to 'clear' white areas, or to make the management of black communities more convenient for the white minority (Desmond, 1970). The major political acts put in place by successive minority white governments which precipitated this, were the: Group Areas Acts 1950 & 1957; Native Resettlement Act 1954; Native

Trust and Land Amendments Act 1954. Subsequent amended acts from 1952 to 1971, such as the Bantu Homelands Constitution Act 1971, ensured that black communities living in some of the most productive agricultural areas of Limpopo were moved to areas with few resources, poor water supplies and land which was less fertile (Baldwin, 1975)

In the case of the village of Mulamula, its 'rurality' under apartheid could be described by looking at resettlement records which would show forced movement of XiTsonga speaking communities away from the Levubu river area east of Louis Trichardt to higher drier, more arid areas on the ridges close to Malamulele (Desmond, 1970) where the village is located.

Under the global indicators for rurality, villages such as Mulamula would easily qualify with regards to:

- Distance from urban centres – *Mulamula is about 3 hour's drive from Polokwane (the nearest city).*
- Lack of access to healthcare facilities – *The nearest clinic is in the next village Mudabula, 2-3 kilometers by dirt road.*
- Scarcity of resources (available in urban centres) – *Mulamula has one butchery, one general store, 1 bottle store, and a few informal roadside shops selling sweets, chips and cigarettes.*
- High unemployment – *Mulamula has high youth and adult unemployment levels.*

Rural areas in South Africa, which are occupied by black communities, have indicators which match those in other countries: "*more elderly people and children, higher unemployment and underemployment rates, and lower population density with higher percentages of poor, uninsured, and underinsured residents"* (Hart et al., 2005) One of the many unfortunate results of apartheid was that there are rural areas adjacent to these black rural areas in South Africa which do not match these indicators because they were manufactured as separate rural idylls for white farmers and game ranch managers. Twenty years after the return to majority rule in South Africa, the debate about land is still raging.

The young mothers (YMs) identified in this study could be seen as a product of the post-apartheid era, as they have grown up in an area with low agricultural productivity potential, poor schooling and a legacy of displacement where young fathers

often have to leave the area to seek employment. The modern situation now includes evidence of increased migration of women away from rural areas to seek employment and better education opportunities.

The issue of adult migration is a complex one in Sub-Saharan Africa and is not the focus of this study. However, the perceived need to acquire skills to escape from areas of poverty (Kok & Collinson, 2006) is likely to one of the driving motivations for YMs to want to attend adult education courses which provide some vocational training. Studies have shown that migration out of rural areas does not necessarily have a detrimental effect on rural communities but instead brings private investment back to these communities as those that receive income in urban jobs often bring money back to their rural communities to build homes and develop their communities or wider family circles. The issue with very poor rural areas is that they may lack the resources and education to even begin to consider looking outside their local area for a better life:

> *"Rural households trapped in impoverished areas do not have access to social networks that would have assisted them in escaping from their current circumstances"* (Kok & Collinson, 2006, p. 2)

A working definition of 'rural' for this study which would sum up the various contributing factors affecting the YMs as participants may be best summarised as:

> *A location where participants have limited resources for post-school progression due to their geographical isolation from formal centres of adult learning and their limited access to remote learning technologies due to unemployment and lack of significant funding for self-initiated learning activities.*

The above definition was deemed as a necessary entry point for the study as it goes to explain why there is a need for such an intervention in the village of Mulamula and it also helps to give definition to the intervention to fit it into the wider national debate on provision of post-school learning opportunities for adults in South Africa.

2.9 SUMMARY CONCLUSION OF LITERATURE REVIEW

In summarising the literature reviewed for this study, it is necessary to return to the research questions which seek to: establish how CBPAR can help with the implementation of an ICT and BAE Nutrition course for young mothers in a rural village in Limpopo and what systems need to be in place to ensure this implementation is beneficial and sustainable for the community. In the process of addressing the questions it was necessary to review literature relating to: the nature of PAR/CBPAR as methods of action research; other initiatives which have used PAR/CBPAR approaches; ICT course implementations and course content; definitions of adult education; definitions of rurality and issues relating to nutrition both in developing countries and globally. The sampling of literature from what might appear to be diverse themes relates in part to the CBPAR approach which encourages contributions from a variety of stakeholders to make a successful study. In this case, the running theme in the literature reviewed could be identified as: 'How does the community engage with…'

The literature reviewed indicates that there is a gap in research in the study of implementations of ICT training initiatives for YMs and that there is a gap in knowledge in rural communities relating to basic nutrition and associated topics relating to food production, consumption and security.

By opting to follow a CBPAR approach to implement an adult education course in rural Limpopo, the study follows many other worthy studies which have produced valuable results by engaging with the communities in which they are implemented. As a study implemented with YMs, the course aims to fill part of the educational vacuum that exists in rural communities when students drop out of the state education system to raise children. The uniqueness of this study lies in the combination of practical computer skills training and basic post-school adult education to provide purposeful post-school education for YMs by engaging with them in the development of their own course.

Much of the literature reviewed praises this type of approach but in most cases the practical methods used are as diverse as the projects that are implemented. If there is any commonality in the literature, it returns to the cyclical nature of community-based participatory action research approaches whereby there is a process of reflection happening which often returns to fundamental questions or needs in the community.

Reading more globally, there is also a cyclical element to the needs/goals which are commonly debated. At the centre of many of these global needs is the need for women and children to be prioritised or placed at the centre of global human sustainability plans. The fact that the needs of women and children continue to recur throughout global models of development relates to the fact that their needs are still neglected globally. This study attempts to address some of these global needs at a micro level, however, the implementation could easily be scaled up to national or global scale if the social and political will was on the side of rural women.

CHAPTER 3

THEORETICAL FRAMEWORK

In order to construct a theoretical framework for this study it was necessary to consider what theoretical framework would be appropriate (Labaree, 2014) for such a qualitative study, and how best to combine the various relevant approaches, or frameworks, that would help to guide the study. 'Theoretical frameworks' often take an idealised form whereas "*there are multiple constructions and interpretations of reality that are in flux and that change over time*" (S. B. Merriam, 2002, p. 4). This chapter seeks to explain how a community of practice is understood theoretically and how this approach was considered a necessary basis for applying the community based participatory action research (CBPAR) method used in the study. Further it explains how 'an appreciative approach' applied to the study facilitated a more constructive understanding of data and interpretation of results.

As the theory surrounding community based interventions has had to be adapted to deal with different social and political patterns in the world of development, so, the adaptive participatory research process enabled our study to adapt to the ebb and flow of daily life in a rural village without restricting the study to a rigid and cold linear process. Our approach in this study mirrored the ideal community of practice (CoP) which is presented by Lave and Wenger (Lave, 1991; Wenger, 1998) — where the community work together with researchers to create something of value.

As the study was building on interactions that had been previously established between the researcher and the village community through the Mulamula Education Centre Project, there was a kind of "appreciative enquiry" (Kevany & MacMichael, 2014) already involved in the process. The study could not have proceeded smoothly without some positive reflection on what had gone before — where some of the stakeholders were involved in establishing the project. This facilitated a constructive attitude to developing the intervention in partnership with participants. It also served to acknowledge what had gone before, in terms of community engagement.

3.1 COMMUNITY BASED PARTICIPATORY ACTION RESEARCH (CBPAR) APPROACH

As discussed in Chapter 1, the purpose of the study was to examine and reflect on the implementation of the CBPAR approach in order to further explore ways we can use the CBPAR to build a community of practice in rural communities in future, so that they can be purposeful and beneficial to the participants. The description given of the stages of the implementation of the intervention illustrates how the methodology was influenced by happenings on the ground and by the different ways the community participants engaged (Balazs & Morello-Frosch, 2013, p. 11; Lave, 1991).

The methodology section spells out the processes that were used to put the study in place in the village of Mulamula, with the active participation of members of the community.

However, in this chapter, we seek:

- To provide a detailed explanation what CBPAR is:
- To justify why it is the most suitable method for this study:
- To explain how CBPAR is linked to Lave and Wenger's 'Community of Practice' (Lave, 1991; Wenger, 1998, 2011).

3.1.1 What is CBPAR?

Community based participatory action research (CBPAR) is a process of "*sequential action and reflection carried out with and by local people"* (Cornwall & Jewkes, 1995, p. 1667) in established social groups. By working with and establishing the research in the community that ultimately benefits from the intervention, it is intended that the community not only commit themselves to support or 'buy in' into the project, but ultimately take over managing the intervention. The CBPAR approach has been defined in many ways, for example:

> *"A collaborative approach to research that equitably involves all partners in the research process and recognizes the unique strengths that each brings. CBPAR*

begins with a research topic of importance to the community and has the aim of combining knowledge with action and achieving social change..."[14]

This definition is significant because it embraces the idea of involving all partners in action research activity and recognises the unique strengths they bring to the project. As this study was based in an established village community, with pre-established relationships between the researcher and different stakeholders in the establishment of an adult education centre, the use of a research approach such as CBPAR, which builds on pre-existing community relationships, appeared to be the most logical pathway to adopt.

"*CBPAR framework explicitly focuses on community-based organizations that bring together community members to visualize and actualize research and its outcomes."* [15]

Breaking down CBPAR into its constituent parts makes it possible to clarify why it was considered particularly suitable for this research project:

COMMUNITY BASED— Building a study which is grounded in the needs, issues, concerns, and ideas of communities and the community-based structures that serve them.
PARTICIPATORY— Engaging with individuals from communities and incorporating community knowledge in the research process and its outcomes.
ACTION BASED — Supporting and/or enhancing the strategic action that leads to community transformation and social change.
(Adapted from: *A Short Guide to Community Based Participatory Action Research)*

The above terms are key to community based participatory approach. In the section below I highlight the key aspects of CBPAR and how they relate to this study and link them to supporting theoretical elements utilised in the study.

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[14] Source*:* Community Health Scholars Program, a WK Kellogg Foundation-funded post-doctoral fellowship program in CBPR. Source: https://depts.washington.edu/)

[15] A short guide to CBPAR (Source: *http://www.labor.ucla.edu/wp-content/uploads/2015/03/A-Short-Guide-to-Community-Based-Participatory-Action-Research.pdf)*

CBPAR is commonly represented as a cyclical process, as illustrated in Figure. 3.1. It is a method which complements the practical intervention that was applied, and used as the research instrument in this study. The cycling of the various stages implies that there is a constant process of action and reflection, or reflection and action, taking place (Cornwall & Jewkes, 1995). This approach also reflects the natural development of human interventions which respond to the general ebb and flow of daily life in a village such as Mulamula.

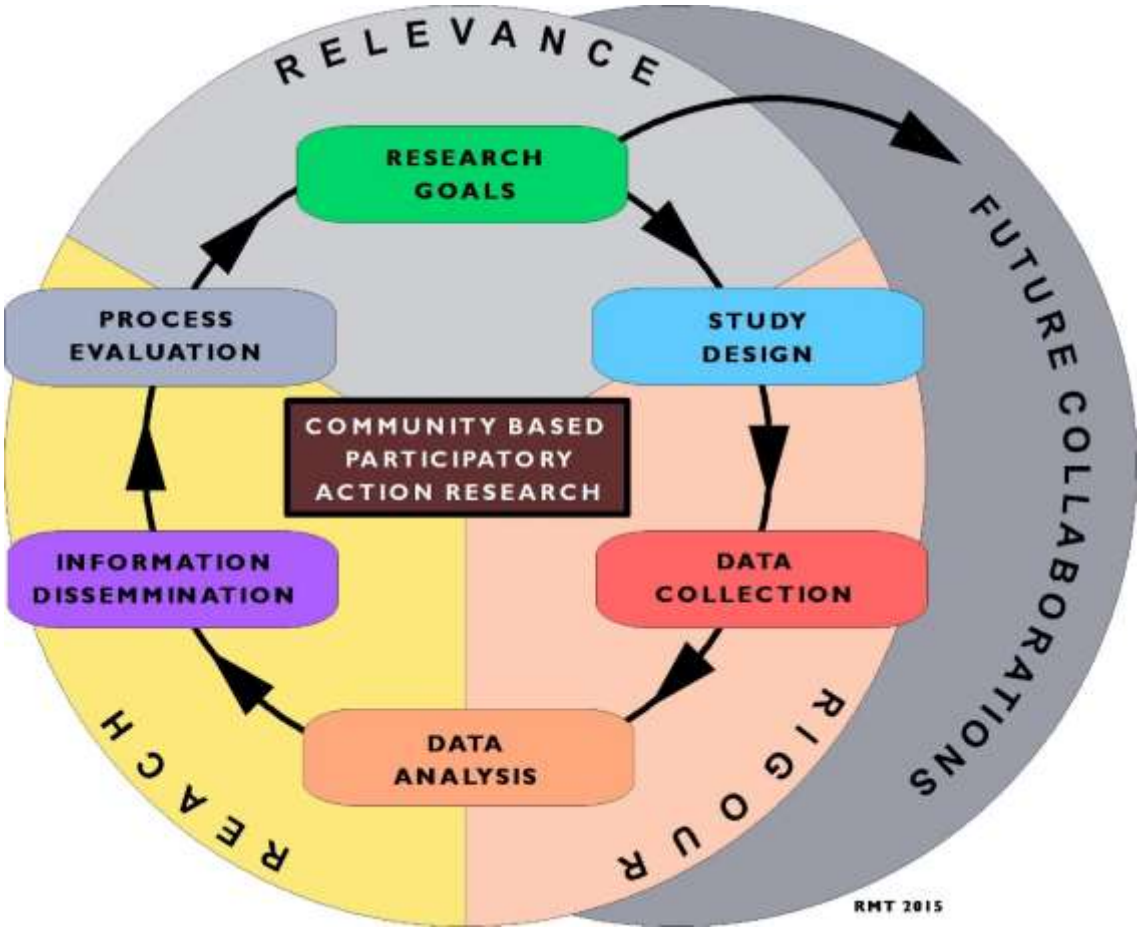

Figure 3.1 Diagram showing the cyclical nature of CBPAR process (refined from the '3 Rs of CBPAR' (Balazs & Morello-Frosch, 2013))

Figure 3.1 builds on the CBPAR model used in previous studies "*where traditional researchers and community members are jointly involved at each step"*(Balazs & Morello-Frosch, 2013, p. 11) It places the community at the heart of the research and indicates that the 'relevance, rigour and reach' (the 3Rs) of the study are acting at key stages in the cycle.

Understanding of ‘relevance’ is necessary when setting out goals and designing the study as there is little value in the study if there is no perceived benefit to the participants. However, the idea of relevance also permeates the handling and processing of data as it acts as a filter to focus the study on what is of direct relevance to the research questions.

‘Rigour’ is vital in helping the study maintain a recognized standard and quality as a piece of social knowledge. It should also ensure that the study proceeds within an ethical framework by attempting to achieve recognized and acceptable academic standards.

‘Reach’ relates to the value of the research to the community involved in the research, who should benefit in some way from the research, and to the wider community who ought also to benefit from the research. Communication of the results of research which is action-orientated, that achieves such standards has been considered as having a “*more solid basis than conventional social science results because of the long term engagements and shared understandings developed with insiders*”(Greenwood & Levin, 2006, p. 122). If research is based on real life experience in the community is both rigorous and ethical, its academic reach, in terms of publication and dissemination of its findings can have much greater impact and value.

‘Relevance’ is necessary when choosing a study design but is also important to demonstrate this in the final stages of discussion and dissemination of results from any study. In the CBPAR cycle, it also relates to the evaluation of outcomes and sharing the results with participants in ways which help to establish future improvements or modifications to the system. If study design and results are relevant and comprehensible to the community then there is more chance that their contributions will be supportive in the first instance and constructive in the latter stages of the process, and planning continuing improvement.

Some of the key practical elements of the CBPAR process, over and above the 3 constituent parts discussed, require: acknowledging local knowledge and perspectives in the research process, and in the planning of interventions, thus shifting power in the research process away from traditional hierarchies by involving the community at all the key stages of the process. (Cornwall & Jewkes, 1995) In this study, it was not possible for the lone researcher to locate permanently to the village for the duration of the study. This necessitated delegation of some of the research activities to participants. Open

dialogues with the wider community participants were necessary first in establishing goals and agreeing timescales. Then more focused dialogues were conducted, with those responsible for helping deliver the course, in the design and data collection phases — as some crucial data was to be collected as the course progressed. These initial dialogues were then built upon to establish a rapport that helped in analysing results, disseminating them and evaluating the study. It is evident therefore that community participation proved to be desirable at all stages of the cycle.

The CBPAR approach helped to develop community-engaged research capacity (Dong et al., 2011). It facilitated contributions from a number of members of the community who ultimately shared in the development of solutions that were valuable and relevant to the community. This sharing of the burden of a project, to justify sharing in its benefits is an important motivation for the community to participate. The reasons why individuals are motivated to get involved in such a study are important to take into account when recruiting participants and retaining their involvement in future actions.

The sharing of the action, and the potential benefits that it produces, are related to the idea of 'reciprocity' which is a theme which has grown out of CBPAR studies (Maiter, Simich, Jacobson, & Wise, 2008) In the case of this study, the groundwork put in place with the establishment of the community management committee for the Mulamula Education Centre Project (MECP) had already raised community consciousness about the possible benefits of adult education. MECP members' willingness to help with the study voluntarily also reflected that the benefits may not always have to be financial but benefit people in more subtle ways.

3.1.2 Why CBPAR was deemed suitable for this study

This study was undertaken because a request for adult education interventions had been identified through dialogues with the study community as part of a larger community education project in the village (Mulamula Education Centre Project - MECP). The CBPAR approach was adopted as studies of its implementation in other projects (Kevany & MacMichael, 2014) appeared to offer the most organic method of ensuring that the community participated in the development of courses which suited the needs of the community.

Studies of community interventions and community education initiatives have indicated the value of participatory research methods in: developing dialogues with community members; improving community buy in and ensuring greater success in sustaining these initiatives. (Horowitz et al., 2009). In the case of this study, the community had already accepted the idea of building an adult education centre in the village (MECP) (See Appendix 7: MECP Newsletter). This willingness to engage effectively helped to build a pre-existing '*community of knowledge'* (Kevany & MacMichael, 2014, p. p34).

Communities of knowledge, like CoPs, are groups of like-minded people who are interested in sharing relevant knowledge and experience. Communities of knowledge may get together remotely (via modern communication networks), or face-to-face, for a specified time, with a clear intention to gain and exchange knowledge. This sharing of knowledge is considered 'pivotal', or vital, to fostering participation in action research (Gray, 2004; Kevany & MacMichael, 2014).

What the study attempts to do is: build on the community of knowledge and improve "*knowledge of the community*" (Kevany & MacMichael, 2014, p. 34) by developing specific 'tailor-made' courses for members of the community. This involves building on pre-existing relationships with people who are "*informed about or curious about discovering and sharing relevant knowledge"* (Kevany & MacMichael, 2014, p. 34)

Past CBPAR studies (Dong et al., 2011; Gray, 2004; Herrington, Herrington, Kervin, & Ferry, 2006; Hodkinson & Hodkinson, 2004; Le Ferrand-Radjef, 2006; Maiter et al., 2008), were used to model this study, taking into account factors such as:

- Varying literacy levels of educators, students and local project stakeholders
- Varying social backgrounds and education levels of ALL participants
- Strong cultural and other local influences
- Tribal hierarchy and established state school and village management systems.

Awareness and acknowledgment of the above issues was necessarily part of the plan, as previous experience of working in the village (See Appendix 7: MECP Newsletters) had shown that these factors could not be ignored. As a CBPAR approach was being used, it was also necessary to consider the wider issues affecting the participation of individuals and local organisations. It was part of our understanding the

"*relational dynamics*" necessary to construct "*relations, realities and outcomes"* in the village (Kevany & MacMichael, 2014, p. 38).

Literature relating to CBPAR (Cornwall & Jewkes, 1995; Horowitz et al., 2009; Kevany & MacMichael, 2014; Pain et al., 2012) suggests a structure that allowed a flexible yet logical framework with which to approach the implementation of the community-based course, and a way to engage with the stakeholders in a meaningful way.

The structure that emerges, from a CBPAR study, more commonly employed in medical studies , follows 5 stages (Dong et al., 2011; Pain et al., 2012). I followed a similar structure in this study. These five stages are expanded below:

1. **Getting stakeholders to agree a long-term vision for the process.**

Involvement of communities in the design of the intervention and in the setting of goals was seen as a crucial part of the CBPAR process — ensuring that they 'buy in' to it (the common terminology). At a more basic level, it ensures that participants are aware of what is happening in their community and it is also crucial that they agree to it, if they are going to participate and commit to a long term vision (Dong et al., 2011).

2. **Creating infrastructure for the process that fosters participation and engagement.**

Creating a scaffolding of community participation was a pre-requisite for this study. To access the village and have constructive dialogue to establish the intervention was not only necessary from a practical point of view, it was critical to manage and conduct the research (Cornwall & Jewkes, 1995). The infrastructure not only involved developing tools to record and track the participation, it also involved the establishment of a wide range of communication systems and networks in a kind of "*relational dynamic"* which encouraged participants to engage in "*constructing relationships and influencing outcomes"* (Kevany & MacMichael, 2014, p. 38). In order to maintain participation and monitor the intervention as it unfolded, communication systems became a necessary part of the infrastructure. The following

means were used: mobile telecommunications, internet-based video conferencing, digital recorders and computers to record and store data. In addition, the MECP Facebook page was also used to promote the course and seek general feedback from the wider community at different stages. (See Appendix 36: Facebook page)

3. Developing community links that sustain commitment from all members.

By developing a dialogue with the community in advance, it was possible to build on links already established through the MECP project. Sustaining commitment from all members at all times was not seen as a viable goal. Sustaining commitment at 'necessary times' was seen as more realistic (as all participants were volunteers, some were working, some were unemployed and there was no budget for 'incentives').

The main approach was to establish a course of study which potentially provided visible benefit to the community through post-school adult education opportunities and developing practical skills. Designing activities within the intervention which intentionally focussed on aspects of learning relevant to the group and their social roles (S. B. Merriam & Brockett, 2011) was seen as important to attract and maintain interest in the participants.

It was necessary to improve on existing communication systems and adapt to using new systems to ensure consistent participation. To encourage sharing of ideas, methods of quickly communicating information had to be developed. After initially setting out to communicate regularly with the trainer (YM-T), the ICT facilitator (YM-ICTF), and the Head of Mahlefunye/MECP Secretary (MECPS), and traditional council using email, the free mobile messaging service (WhatsAPP) turned out to be the most effective method of communicating quickly with active participants.

4. Orientating systems to enable long term functioning of the process.

Creating a course, with the help of participants, which was real and relevant to them, necessitated the sharing of ideas about what was sustainable with long-term value to the community. Using CBPAR enabled the contribution of stakeholders

from the community who helped make the design of the research study more relevant and left space for constructive feedback. The above mentioned procedures sought to maintain relevance, rigour and reach — key tenets of CBPAR (Balazs & Morello-Frosch, 2013).

As the intervention unfolded, the intention was to find ways to adapt it to suit the participants, or to 'customise the course' to fit their needs more closely. The modification within the intervention links the CBPAR approach to the CoP model — by seeking to put in place a community of practitioners who not only contribute but assume ownership of the intervention (Wenger, 1998). This also relates to the idea of 'masters' making way for 'apprentices' (Lave, 1991), or 'future champions', as the apprentices develop expertise through shared learning and take on the roles of their mentors.

5. **Pursuing goals which are of value to all stakeholders – following outcome-based advocacy.**

As the process starts with the setting, or agreement of goals, it makes sense that a cyclical process ends with pursuit of new 'improved' goals (Pain et al., 2012). As the process unwinds, the goal posts may shift but what is recognized as a goal remains. In the case of this study, it was agreed with the community that the implementation of an ICT course for young mothers, which included BAE nutrition content, might be beneficial in the village. The achievement of that main goal required the development of sub-goals, or objectives, which helped keep stakeholders engaged and built a momentum towards delivering the course successfully. Following a CBPAR/PAR cycle of planning-action-reflection- when facing these goals (Cornwall & Jewkes, 1995; Pain et al., 2012), evaluation enabled greater clarity, productive discussion of these goals and better delivery of the final goal.

The actual implementation of this study is outlined with the research questions and uses five CBPAR phases, discussed above, to indicate what was actually done. The next section discusses how Lave and Wenger's community of practice (CoP) was incorporated into the theoretical framework to help structure the study further and to direct the community involvement that was necessary to implement the study.

3.1.3 Incorporating a community of practice (CoP) as part of the scaffolding with the CBPAR approach

The CBPAR approach, employed in this study, required the establishment of something akin to a "community of practice" (Lave, 1991), with stakeholders in the village of Mulamula, in order to ensure that the course was implemented and in such a way that it was effective and ultimately sustainable for the participants.

> "*Learning, thinking, and knowing are relations among people engaged in activity in, with, and arising from the socially and culturally structured world."* (Lave, 1991, p. 67)

By establishing 'community' involvement in a process where participants became 'members' of a group who interacted and learned together, the elements of CoP[16] were put into practice to ensure that the intervention was dynamic and involved learning by all parties (Lave, 1991). Formally the elements of CoP are described as:

- The domain – or shared domain of interest in which members are committed to activities and share, or pursue common competences.
- The community – where members meet and share information and help each other progress.
- The practice – the activity in which the group are practitioners who share a common interest, share resources, ideas, experiences and ways of addressing recurring problems.

Although not all members of the community, who "*participated*" (Wenger, 1999, p. 55) in the process, benefited directly from the training provided on the course, they participated because they were informed by 'core members' that the same training could be beneficial to them in the future.

> *"Participation is not just tacit informal or unconscious but involves actions like having a conversation, teaching a curriculum or reflecting on our motives."*(Wenger, 1999, p. 69)

[16] Elements of CoP (Source:http://wenger-trayner.com/introduction-to-communities-of-practice/)

By participating in the process of recruitment for the course, designing the course, or implementing the course, some participants were consciously involving themselves with a view to increasing their chances of greater participation in future (For example: the older mothers who acted as chaperones to the young mothers). Their common interest was in adult education and the course was an element of the CoP to grow adult education opportunities in the village.

Incorporating a community of practice (CoP) approach, as part of the scaffolding with the CBPAR intervention, enabled the traditional hierarchies (such as tribal institutions) to be merged into the dialogue as peripheral contributors (Lave, 1991) without the implementation being seen as a challenge to traditional structures.

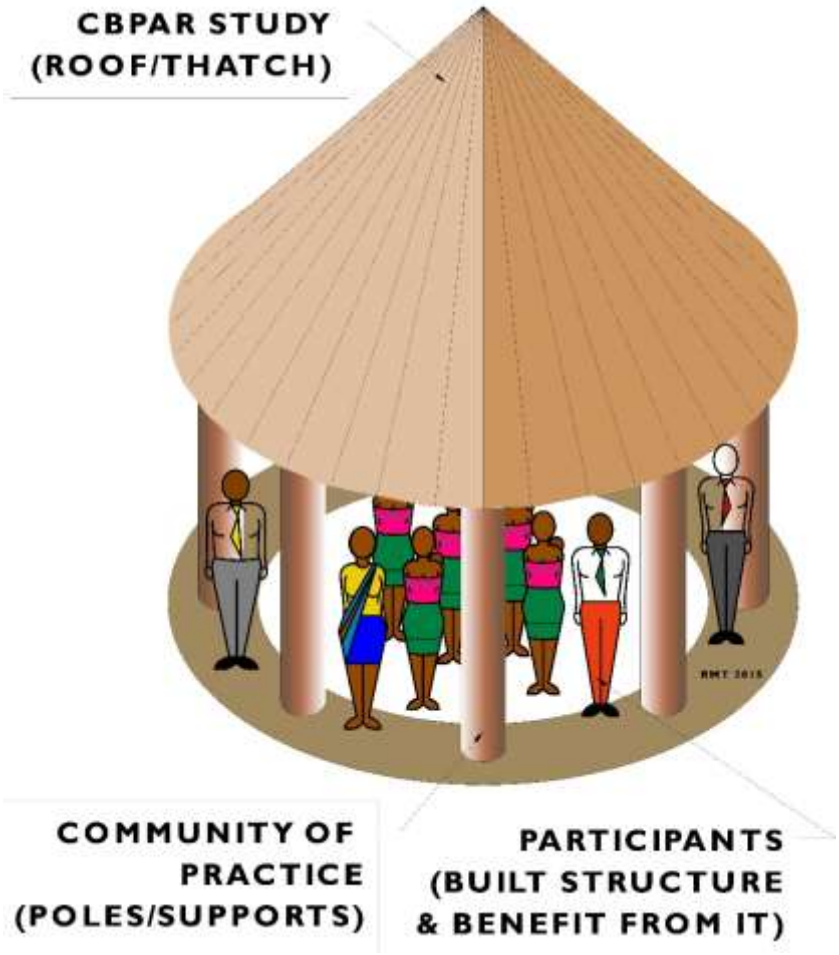

Figure 3.2. Relationship between CBPAR, Participants and Community of Practice in the study

One way to illustrate this relationship is to use the analogy of a traditional pole and thatch meeting hut (see figure 3.2 above). The poles, or columns, are significant village structures and stakeholders supporting the roof structure which holds the thatch. The roof represents the community working together under the shelter of established cultural codes. If the poles are the various key village structures and stakeholders and the occupants are the beneficiaries of the study (YMs), the overall result, if the relationship is well designed, is that the study includes contributions from all the participants. The poles support the roof and the participants decide on the scale of the building. In return, the building, or community, provides positive benefit for the built elements (poles and roof) by including them usefully in the structure, and the building benefits the occupants – who build it together in the community - by providing shelter and a place to learn, share and develop together.

The model used above attempts to draw together the various elements of the study in a way which reflects the importance of the community involvement in making participatory action research possible.

The construction of a CoP is seen as an important stage in establishing the right conditions for participatory community based action research. In order to assess the value of such an approach, it is necessary to use a critical viewpoint which incorporates an element of empathy for the participants. The following section explains how 'an appreciative inquiry' (AI) mode was proposed to support critical observation of the process.

3.1.4 An appreciative inquiry (AI) approach to support CBPAR

Having had previous involvement with establishing Mulamula Education Centre Project as a venue for adult education, I gained a history of positive experiences in the village. This has generated networks of friends and contacts who have helped us pursue shared goals and achieve something of value. This encouraging experience brought a natural appreciation for the village which informed my approach to the village which was open-minded and more culturally aware than if as a researcher I had simply been assigned this location to study.

The academic approach to appreciative inquiry (AI) was presented by David Cooperrider and Suresh Srivastva (Srivastva & Cooperrider, 1998) as a model for analysis of companies and other organizations. The AI approach was intended to improve analysis of situations, decision-making and the stimulation of strategic change within organisations by looking at situations in a more positive and opportunistic manner. It was developed in response to an over-emphasis on critical problem solving as a model for organisational research.

In the same way that the CoP approach involves community sharing in the development of a study, AI brings participants together in a process of mutual appreciation which enables "*people to share in envisioning projects in coordinated ways to assess resources, opportunities and skills."* (Srivastva & Cooperrider, 1998, p. 149)

This approach grew out of the initial AI studies and is presented in the AI Handbook – for Leaders of Change (Cooperrider, Whitney, & Stavros, 2008). It presents a '4-D' cycle (perhaps implying that it is more than a three-dimensional approach) in 4 phases:

1. Discovery – Appreciating the situation or organisation
2. Dream – Envisioning the future with participants
3. Design – Co-constructing or designing futures with participants
4. Destiny – Sustaining the 'positive' core through constructive action

The approach described above did not become a driving force for the study but rather underpinned an approach which was used in constructing tools to implement and evaluate the study. The approach was to accentuate the positive elements of the study while remaining sensitive and vigilant to any negative undertones — these being seen as possible opportunities for future action.

The underlying premise is that organisations can sustain and improve themselves if they appreciate the positive or core strengths of the organisation:

> "*the future is consciously constructed on the positive core strengths of the organisation"* (Cooperrider et al., 2008, p. 34)

As someone with a background in product design, I have been brought up to try and view problems as opportunities and this is perhaps an additional reason for

including an AI aspect to the approach by focussing on the ‘positive core’ (Cooperrider et al., 2008) of the various stages of the study.

The reality of the implementation in a rural and deprived area of South Africa could easily lead the research into a dark and dangerous hole like a poorly maintained school pit latrine (common in the schools in the village). However, to start with, a positive approach was adopted as a conscious decision, as a means to filter data which would inevitably draw both positive and negative responses. The positive approach was adopted as a way to encourage positive social realities (Van der Haar & Hosking, 2004). For example: This was consciously employed in the setting of questions for course evaluation purposes: ‘What did you most enjoy?’ rather than: ‘What did you least enjoy?’

More significantly in interviews AI was been maintained as a rule to try and draw out constructive feedback to help establish what can make the implementation sustainable and generate ideas for future goals.

This positive approach adds an “appreciative inquiry” (Kevany & MacMichael, 2014) element to the CBPAR. The idea that positive attitudes and feelings create more productive relationships and generativity as a necessary part of transformational change (Kevany & MacMichael, 2014) (Bushe, 2012) Many of the young mothers in the study live in relative poverty as single mothers relying on welfare grants to feed, house and clothe their children. By creating a positive atmosphere in the course, and in the study, it was intended to bring some light into their lives, or better still, to enable them to generate their own light! By helping people to appreciate that they are part of the reality that is created around them, they may see that by participating they can “construct a new and better future” (Bushe, 2012)

Taking a positive approach does not mean ignoring the negative. In this case, heightened the awareness and responses of the researcher — brought up on traditional critical approaches to research: problem identification and problem solving rather than opportunity spotting and opportunity exploitation. The shadows cannot be ignored as this would divorce the study from reality (Kevany & MacMichael, 2014) (Doig & Muller, 2001), Consequently, this study did not focus only on the participation of the YMs – the beneficiaries of the study – it also listened to the views of the others directly involved (trainer/s, facilitator/s, traditional administration and MECP stakeholders). These wider participants – acting as volunteers – had less to gain in the short term from

the implementation and had more reason to be negative. However, by discussing what worked and what did not, and what was needed to achieve success, the aim was achieved to catalyse discussions to help change all participants' viewpoints to one of positivity (Michael, 2005)

The three theoretical components which are incorporated in the above chapter were chosen as they seemed the 'best fit; for a study which benefitted from previous community based involvement and set out to involve the rural community by participating in creating something new. The three approaches complement each other — sharing a common thread of collective humanity where participants learn and grow together by utilising their experience and skills to create positive outcomes.

3.2 CONCLUSION

This chapter explored how related approaches: community of practice (CoP), community based participatory action research (CBPAR) and appreciative enquiry (AI) were combined as key elements of the theoretical framework and used to explain and justify the study at key stages.

The establishment of a CoP to implement the study seemed a logical approach in a situation where I had prior experience of working with the community to implement an education-orientated programme. Whether the CoP established for implementing the study was a completely new entity or an extension of the existing "domain" (Wenger, 2011) is something which is examined in future chapters.

Focusing the study around the CBPAR approach was attractive as it supported a method which follows a recognisable route linking the actual stages of the study (pre-intervention, implementation and post intervention) with clearly delineated phases of action expressed in theory. The theoretical elements of participatory action research in the community follow the same similar three stages: planning, action and reflection (PAR) (Pain et al., 2012). The stages of the study itself show where the CBPAR approach relates to the reality on the ground and where it effectively hangs separately as an ideal version of the study.

The adoption of an appreciative (AI) approach to the enquiry drew on the experience prior to the study's inception together with the events that unfolded as the study progressed. By constructively acknowledging the role of the past, the reality of

events happening in real time can be more widely understood. As the study proceeded to its desired conclusion, the appreciation of the implementation itself took over as a tool for finding what the “positive core” (Cooperrider et al., 2008) of the study was and what room there is for improvement.

CHAPTER 4

METHODOLOGY

'*Without participation with others, there may be no basis for lived identity'*
(Lave, 1991, p. 74)

Introduction

This chapter sets out to describe how a community based participatory action research (CBPAR) approach was used to track the implementation of an effective information communications technology (ICT) and basic adult education (BAE) nutrition course for young mothers in rural Limpopo. The purpose of the methodology chapter is to build on the theoretical justification for CBPAR presented in Chapter 3 - Theoretical Framework and relate this to the methods adopted to deliver the study.

The chapter begins by summarizing how the methodology was applied through the three stages of the 5 phase CBPAR process. It explains how the research instrument – or intervention – was applied to address the research questions. It introduces the main participants who took part in the study, how they were recruited and how they interacted in the course of the research. It describes how the participants were engaged in the social process of the study, and their different interactions, as means to enhance their knowledge and skills (Lave, 1991) in ICT and BAE nutrition.

The purpose of the study was to explore the way a CBPAR approach can be used to build a community of practice in rural communities — that is both practically relevant and beneficial to these communities — by the following methodological aims:

- Accurate description of the stages of the implementation of the intervention in order to illustrate how flexible application of CBPAR might be required to be to address happenings on the ground and the '*levels of engagement'* of community participants. (Balazs & Morello-Frosch, 2013, p. 10).
- To give a clear account of the actual structures and systems that were used to put the study into place with the community — in order to identify which of

these structures and systems were most effective in helping to render the intervention relevant and purposeful for the participants.

- To make clear how the choice of the CBPAR approach ultimately seeks to establish the course undertaken in Limpopo as part of the larger MECP adult education programme there by building community ownership of the course, contribute to the longevity and sustainability of the course and encourage future interventions in the community.

4.1 SUMMARY OF STUDY METHODOLOGY

The ICT and Nutrition course took place over the course of 6 weeks during July – August 2015 with young mothers attending two classes per week of approximately 2 hours per class. The establishment of the course itself started officially with the permission of the traditional council office in April 2015, however, the establishment of the right conditions in which to locate the course in the village started in August 2014 (See Appendix: Photo-diary and Section 5. Results) with community meetings in which the intervention was proposed and agreed upon by participants.

As the process required engagement with the local community in a CBPAR process, a 5 phase approach was used (See Chapter 3. Theoretical framework). The 5 phases were organised to address the research questions but also related to the activities which were planned to make the implementation effective and sustainable.

The study was initially divided into 3 stages: pre-intervention, implementation and post-intervention. These stages reflect the 3 general stages of participatory action research: planning, action and reflection (Pain et al., 2012). Breaking the study down further to address the research questions involved the following key practical phases:

Building a community of practice by developing on previously established relationships established through involvement with the Mulamula Education Centre Project (MECP). This stage included the seeking of permission to locate the study in the village from the village Chieftaincy through the traditional council office. It also included recruitment and mobilisation an ICT course trainer, and ICT facilitator

Recruiting participants for the course through a workshop for young mothers (YMs) held in the traditional council office with the help of the traditional council administration, local women and members of the MECP.

Designing and implementing the course with the help of the ICT course trainer and facilitator. This involved trialling ICT content of the course in ICT Basics courses for local high school students and teachers in the two months prior to the YMs' course. Setting up systems to deliver the course with the help of a locally recruited bilingual ICT trainer, a German volunteer ICT facilitator and the Head of a local primary school. This was monitored through the use of mobile telecommunications and email communications; video recording of students at work and logging of work produced electronically on student laptops.

Monitoring and evaluating the effect of the implementation of the study on the participants was achieved through reviews of the classwork undertaken by YMs, evaluation forms and structured interviews with participants. Feedback on the implementation was also sought through informal dialogues with the course trainer and facilitator.

The 5 phases listed above relate to the 5 theoretical CBPAR phases (Dong et al., 2011; Pain et al., 2012) outlined in the theoretical framework:

1. Getting stakeholders to agree a long-term vision for the process.
2. Creating infrastructure for the process that fosters participation and engagement.
3. Developing community links that sustain commitment from all members.
4. Orientating systems to enable long term function of the process.
5. Pursuing goals which are of value to all stakeholders – following outcome-based advocacy.

The phases above generated significant sources of data which have been addressed in the analysis chapters of the study (Chapters 5, 6 and 7). Additional peripheral data was collected in the course of the study which could be addressed in a separate analysis in future. This data is located in appendices at the end of the study.

4.2 GETTING STARTED – SETTING THE STAGE

In order to set the stage for the YMs ICT and BAE nutrition study it was necessary to develop on old relations established in the village community through my involvement as a fundraiser and project manager for Mulamula Education Centre Project (MECP). From the inception of MECP in August 2012, the dialogue with the community had taken the form of an extended needs analysis through: formal committee meetings (see Appendices 10 & 11: MECP Minutes), telephone conversations and text messages. As the development of the MECP building and subsequent adult education courses was largely driven by overseas donations, the direction that the project took was also influenced by significant events:

- Expansion of the original MECP plan to include ICT teaching space at the request of the village through the original vision of ICT literate MECP Secretary (sadly deceased) Sonny-boy Mathebula. (See Appendix 7: MECP Newsletters)
- Pledge of donations of 14 laptop computers and 40 desktop computers by Dr Jutta Lenz, German donor, (May 2014)
- Volunteering of Sascha Lenz (See Section 4. Participants) to help establish ICT systems and training using the computers donated by his mother and her German sponsors (intended to volunteer from January to August 2015).

At this stage, the MECP building project committee, consisting mostly of volunteer teachers, came to an end and the committee re-arranged to take on the role of establishing an education programme at the site. Following a meeting in August 2014, (See Appendix 10: MECP Meeting August 24th) it was proposed to begin preparations to run trial adult education training courses in 2015.

With the pledge of computers from Dr Jutta Lenz coming in May 2014 and the computer training facility at MECP incomplete (See Appendix 7: MECP Newsletters), discussions between MECP village committee, sponsors and the traditional council turned to what was going to be done with the donated computers when they arrived.

A smaller committee, organised by Robert Vukeya MECP Secretary, met in September 2014 (See Appendix 11. MECP Meeting-September 2014) and the group

was informed that the first of the donated laptop computers would be delivered in November 2014. At this meeting the YMs were first mentioned as a group which may benefit from computer training.

Discussions relating to the most needy members of the community who would benefit from adult education programmes (over the 2 years leading up to the intervention) were a persistent theme in meetings, informal discussions and in promotion of the project in the UK to attract sponsors (See: MECP Newsletters and MECP Facebook page) The groups which emerged consistently were:

- Unemployed post-school youth (both male and female)
- Young mothers (often single mothers)
- Disabled members of the community
- Retired pensioners

The decision to develop a course specifically for YMS was partly driven by the MECP Director being a woman of vision, with connections in the village and wider community. It was also driven by the suggestions made by the traditional council in conversations relating to the future usage of the MECP building and who might be willing to volunteer to maintain the building and run adult education programmes during the day time. Evidence of the promotion of YMs as a needy group is presented from the MECP Meeting-September 2014 mentioned previously.

The above points indicate the way that the community participated generally in the establishment of the study before it was even formalised as a study. It also indicates how the village community's contributions modified to the circumstances that were created by an even wider community involvement – that of the sponsors.

In terms of establishing goals and needs (see Section 4.4) as part of engaging stakeholders in the first phase of the study, the road map was partly established by a series of events which 'snowballed' out of the events that followed the completion of main MECP building work and subsequent donations of computer hardware to established the course. Without the willing participation of various players from various backgrounds and cultures, the course would not have been possible in 2015 as the MECP still awaits funding to be fully wired and furnished as an education centre.

The involvement of the MECP committee members, specifically Robert Vukeya (MECP Secretary) and Jonas Maluleke (MECP Treasurer) (see section 4.3), in discussions with my wife Tivani (MECP Director) about the running courses in 2015 precipitated the offer of Mahlefunye Primary school[17] as a temporary venue for ICT training to be done prior to completion of the MECP ICT training centre. This was probably the most significant contribution to establishing the course location in time and space but it should be fairly clear that it took a kind of '*mutual engagement*'(Wenger, 1999, p. 73) where the various conversations and decisions culminated in a decision to support the study for the benefit of the village.

4.3 RESEARCH PARTICIPANTS

The study adopted a CBPAR to implement a study over a period of 3 months. It involved: young out-of-school mothers (YMs) who were one of the groups identified by the community as requiring significant support. The study also included an ICT course trainer (YM-T), an ICT facilitator (YM-ICTF), MECP community adult education project committee members and older local mothers working together in a 'community of practice'(Wenger, 2011, p. 2), at various stages, to help implement, monitor and track the progress of a combined ICT and basic adult education course for YMs in a rural setting. (See: figure 4.1 below). The figure places the YMs inside a triangle of shared experience with the trainer and ICT facilitator (the actual classroom) supported by the immediate external personalities (MECP members and village facilitators) contained within the wider community and its structures. My role varied at different stages of the study:

- Contributing to setting the stage and doing background research.
- Designing and developing the contextualized course (Harwell, 2003) in collaboration with the trainer (YM-T) and ICT facilitator (YM-ICTF).
- Acting as a facilitator creating bridges between the various stakeholders.
- Guiding the process at various key stages with managerial input and data collection.

[17] Mahlefunye Primary has an ICT room with everything except computers: burglar-proof gate, burglar bars, window blinds, plug sockets, storage cupboard and classroom furniture.

- Maintaining productive dialogue with participants in order to make the study effective and beneficial to all.

Effectively, my role as researcher fluctuated throughout the process and is most conveniently illustrated in figure 4.1 as circling the CBPAR process to maintain a 'birds eye' view of the process and participate at various stages. I had to adopt a flexible attitude of mind to dealing with the day to day issues but maintain focused on the research questions. In the final stages, I was in the village observing the last two lessons with the young mothers and interviewing participants. At this stage I was effectively in the centre of the model with YMs, trainer and facilitator.

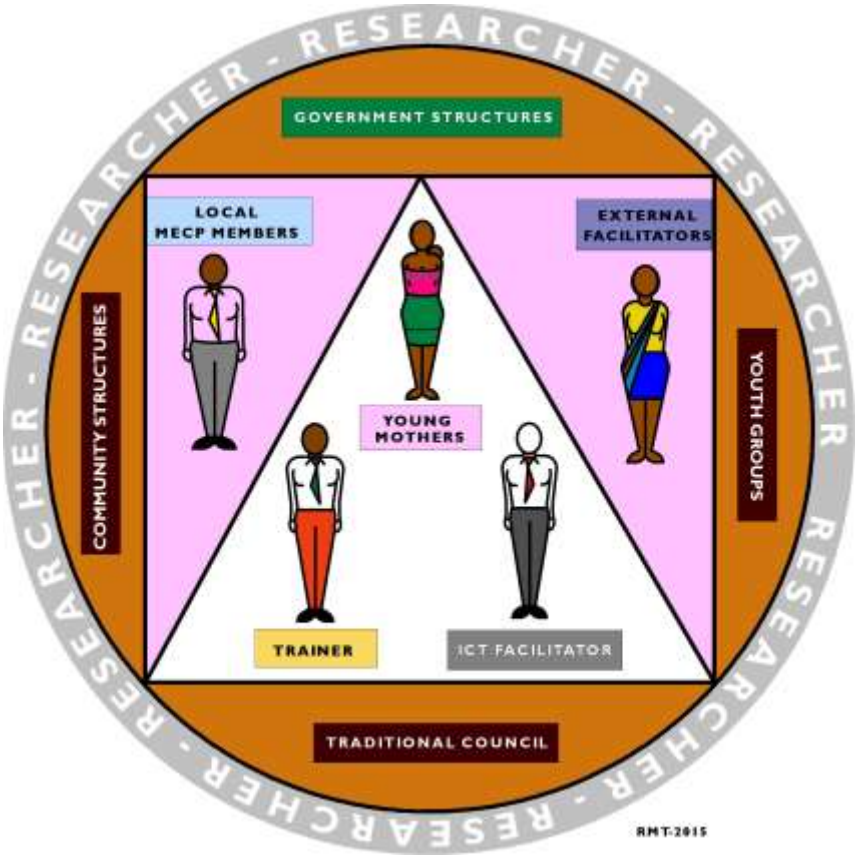

Figure 4.1. Model showing participants in CBPAR study in Mulamula

4.3.1 Description of the participants

1. Young mothers (‘YMs’ - attending the course)

The YMs all came from Mulamula village. Of the 20 that completed the course, 6 were from the original workshop group and 14 joined the course following the workshop as a result of local recruitment instigated by YMs, YM-F and YM-T. All of the 20 were mothers but some were slightly older than 25 with children that were older than 5. Most of the YMs were single mothers and most were unemployed (See Chapter 5. Table 5.2. Biometric Data and Appendix 26: Application Form Results.)

Prior to the study, the individual background histories and personalities of the YMs were unknown. These emerged during the workshop, ICT and BAE Nutrition course and interviews. Their significant contributions are evident in the results and analysis.

2. Trainer and ICT-Facilitator (‘YM-T’ and ‘YM-ICTF’ - people providing the training for the course)

The trainer, Boikie Maluleke (YM-T), was born in 1993. He matriculated from Shingwedzi High school in Malamulele in 2011. He graduated from an ICT course in Polokwane at the beginning of 2015 and is currently seeking full time employment or opportunities for further training in computer networking. He is the son of the MECP Treasurer and a cousin of the MECP Director and has been involved with MECP events as a volunteer since the first UK school exchange in August 2013. He speaks English and XiTsonga fluently and shows natural talent as a guide and trainer. During the study, YM-T shared a house with Sascha Lenz (YM-ICTF) in the village to help orientate him and so that they could work together establishing the best way to deliver the courses with the donated German laptops.

In the study, YM-T originally started out as a course facilitator helping YM-ICTF. Following their trial courses in May and June, and reflecting on their prospective skills and language abilities, they swapped roles. During the study, YM-T also helped give feedback on: venue issues, course content, attendance, motivation and comments

from YMs by phone, email and WhatsApp messaging. He also took part in the evaluation and interviews at the end of the course.

The ICT Facilitator, Sascha Lenz, (YM-ICTF) is a 27 year old German volunteer who started teaching ICT courses with the help of YM-T in May 2015 as part of a 'social volunteering' (the term he uses) sabbatical. YM-ICTF is degree qualified in engineering design and computer technology. He left his health systems computer programming job in Germany to volunteer in Mulamula and help establish the MECP ICT facility following an invitation by the MECP Director.

YM-ICTF started out teaching an ICT basics course at Mahlefunye to high school students. (The HS students came from Photani HS which is about 500 meters down the road from Mahlefunye PS.) His technical ability with managing the computers and setting up reliable software systems emerged as his greatest asset and he swapped roles with YM-T to become technical and learning support in all of the YMs' lessons. He also filmed the YMs' ICT and BAE nutrition lessons using his own digital camera and saved these on 'DropBox' online cloud storage for sharing with the researcher. YM-ICTF was able to give 'fly on the wall' feedback about the progress in lessons occasionally via email, text and WhatsApp message. He also took part in the evaluation and interviews at the end of the course.

3. Facilitators ('YM-F1 and YM-F2' including: those providing extra background support or translation support for trainer/s and researcher)

Mavis Shivumbu and Esther Matidze were the young mothers facilitators.(YM-F1 and YM-F2) Both Mavis and Esther are 42. Their main involvement with the study was in the early stages of recruiting young mothers and helping facilitate the first YMs' workshop. They were both born locally and have raised children as young mothers in the village.

YM-F1 is a single mother of 3. She lives on the south side of the village with her two younger children and has a son who is a student at University of Venda

(UNIVEN).[18] Before the study, she had been recruited to do domestic work at YM-ICTF's temporary house. YM-F1 put herself forward to help after attending an informal planning meeting at the house at Easter. She then organised to bring 6 mothers to the house to meet the team in the days before the YMs'workshop.

YM-F2 is a mother of 4 and lives on the north side of the village. She lives with the father of her children but is unmarried. She has volunteered at the MECP site as a gardener planting trees and edible crops and motivating women to help at the project site. She is keen to develop her own skills as a businesswoman. She has completed training in Johannesburg as a basic nurse but currently makes a living growing, baking and selling fresh food at the local schools or by selling Tupperware ®.

I am aware of YM-F2's background as she has been involved with the project since its inception.

These two local mothers showed commitment to the project early on and expressed interest in helping with establishing the YMs' course. They contributed to the workshops and played a background role in motivating and informing YMs in their communities on the north and south sides of the village. Both YM-F1 and YM-F2 contributed to the YMs' workshop and completed evaluation forms.

4. <u>MECP Members/stakeholders (e.g. 'YM-MECPS' including: MECP management committee members and volunteers)</u>

The planning of the intervention was largely undertaken with active members of the MECP committee. Those involved in ICT course dialogues, included: Tivani Mashamba-Thompson – Director (my wife); Jonas Maluleke – Treasurer; Robert Vukeya – Secretary; Elias Maluleke – Vice secretary; Hudson Maluleke – Security; Matimba Vukeya and Boikie Maluleke – Student sub-committee representatives. All of the above members are residents of the village apart from Tivani, my wife, who now resides with me in Pinetown.

Meetings and dialogues between the MECP members, YMs and facilitators took place at various stages prior to and during the initial YMs' workshop to: establish

[18] Her son Mercury was one of the key student volunteers on the MECP project during his matric years 2013-2014

the ideal venue for the intervention, arrange the workshop and promote the potential YMs' course to the community. Dialogues with some dedicated participants were continued in the workshop and during the course to monitor the intervention and the developments at the MECP site.

After establishing that the course could take place in the primary school, recruiting the YMs, facilitating the workshop and securing appropriate permissions, some MECP members played little further role in the study. MECP members: Boikie Maluleke (YM-T) and MECP secretary Robert Vukeya (YM-MECPS were active throughout the intervention. YM-T played a vital role as the course trainer. YM-MECPS played an additional supervisory role as the head of Mahlefunye Primary school where the course was located.

5. Wider Local Community (including: Traditional Council, Local Womens' Groups, Local teachers and Village Councillors)

In order to facilitate the initial YMs' workshop and subsequent activities relating to the intervention, permissions had to be sought from the Chief via the traditional council (TC) administration. The traditional council office (waiting room, courtyard and hall) also acts a village hub for people of all ages and backgrounds to meet and interact.

The TC administrator, Nobela Magezi, is a village resident who acts as the first port of call in seeking permissions from the traditional council. He is a confident orator/public speaker and acts as a translator for Chief Mulamula. He organised permission for the study and maintained intermittent contact via email as the connection at the TC is not very reliable. He can be contacted by phone but does not text/WhatsApp regularly. This slightly erratic communication makes Robert a second choice when it comes to communications with MECP (although he is the secretary).

The Chief's daughter, Kate, acts as the Chief's secretary, attends some MECP meetings and has acted as guardian for the 3000+ books donated for MECP's library from the UK. The traditional council deputy and head of village security Hudson Maluleke is related to the chief and has also attended MECP meetings as he is responsible for land allocation management and general security issues in the village.

The TC is also the location for a temporary police office during the day which is manned by Lieutenant Sambo. This makes the venue seem like a secure place to meet.

The traditional council hall in Mulamula, which was used for the initial YMs' workshop, also acts as a venue for local women's groups to meet. The known groups are the Drug and Alcohol Awareness group and Tiantswisene Craft Group (which makes beadwork and traditional Shangani 'shivulani' costumes). Women from both of these groups have attended some MECP meetings and events. Members from the traditional council office and some from the abovementioned groups took part in the initial YMs' workshop (See Appendix 30: YMs' Workshop register).

One local councillor, half a dozen local teachers from the three village schools and a village pastor were also involved with early MECP meetings (from August 2012 - August 2014) which established the need for better adult education facilities in the village and set the stage for the development of the ICT training facility (See Appendix 10: MECP Minutes August 2014).

4.4 SAMPLING OF ACTIVE PARTICIPANTS WITHIN THE STUDY

Although the ideal plan was to recruit all the young mothers at one event and run the course a few weeks later, the nature of village communications meant that I had to adopt a flexible attitude and modify plans to fit the conditions on the ground.

The location was purposively selected because of ties with the community established through the MECP. Initially, the intention was to 'purposively' (Fraenkel & Wallen, 1993, p. 11) recruit participants prior to the YMs' workshop. The use of a sign-up form (Appendix 20: Course Flyer/Sign-Up forms) circulated to the TC office was the method suggested by TC Administrator as YMs on welfare attend the TC on a monthly basis to collect welfare money. The numbers recruited by this method were inconclusive as TC did not retain sign up forms although they reassured me that there were 10 YMs interested (see Table 4.1. Sampling below)

During the workshop visit, the recruitment strategy was modified in the week prior to incorporate 'snowballing'(Fraenkel & Wallen, 1993, p. 15). With the help of the MECP Director and YM-Fs, described earlier, the YM-Fs recruited young mothers by word of mouth and via cell phone texting to attend the workshop. After the workshop,

this process continued as further YMs were recruited after the first ICT and BAE nutrition class.

The precise young mothers sample group is identified below in Table 4.1. (For details of class attendance see: Appendix 30: Class Register) The number of mothers attending the course exceeded the predicted number but the number who were fully eligible was less than the predicted number. (See: Appendix. Young Mothers recruitment process). Involvement of the wider community was intermittent and difficult to record as participation was often temporary or took place at milestone events. Table 4.1, below, gives predicted and actual participants in the initial cohort:

Table 4.1. Predicted and actual participants in the study

Study sample numbers – Mulamula Education Centre Young Mothers' BAE and ICT course

Category	Predicted	In May 2015	Actual – August 2015
1. Young mothers (attending the course)	15	10 expressed interest at TA office meeting or through 3rd party reps.	20 young mothers attended the course 6 were 'fully eligible' (i.e. less than 25 years old with a child under the age of 5)
2. Trainer /Providers (providing the course)	3	2	2
3. Facilitators (providing IT support or translation support for trainer/s)	2	1	1
4. MECP Members/stakeholders	10	8	2 were able to give meaningful feedback during visit 2
5. Wider Local community	6	3	2

In visualizing the study, I expected a higher participation from MECP committee members. Their involvement was affected by the timing of the course (during term time) as many MECP members are school teachers. The active participants

that eventually made this study happen over the course of 6 weeks were a combination of volunteers and unemployed young mothers (See Chapter 5: table 5.2 Biometric data).

4.4.1 Hidden support by the wider community

The wider community seemed to act in a passive way. However, I discovered from informal dialogues with young mothers during the last two days of their course, that mothers and grandmothers looked after YMs' children while they attended the course regularly. Interview questions (See: Appendix 31. YMs' Course Interview Schedule) had sought out YMs' opinions on childcare in the village but did not ask who looked after the children during the course.

4.5 THE RESEARCH INSTRUMENTS

In order to address the research questions, the main study instrument employed was the ICT Basics and BAE nutrition course for young mothers. To establish the course and monitor it over the course of time required the use of the additional instruments and tools which are listed in table 4.2 below.

The instruments and tools shown in table 4.2 describe and justify the process used in the study. To link these instruments clearly to the theoretical phases identified in CBPAR and rationalise them in the methodology it is was necessary to organise these in relation to the main over-riding research question, subordinate research questions and CBPAR phases in order to organise a structured way to analyse the data in relation to the research questions. This is elaborated in sections 4.6 and 4.7 and summarised in section 4.9.

Table 4.2. Table of instruments and tools used in the study

Instruments	Tools	Reason
Meeting traditional council, MECP members, school representatives, trainers, facilitators and young mothers at different locations in the village.	• MECP Newsletters • Minutes • Reports • Personal journal • Initial literature searches regarding: CoP and CBPAR; Online/published ICT Basics courses; Nutrition for YMs • Permission letter/s • Sign-up forms	*Reason*: To discuss the study formally and informally in the village, establish goals and develop a roadmap for the study. From a community point of view, to '*build relationships enabling them to learn from each other'*(Wenger, 2011, p. 2) as part of a community of practice. As a CBPAR approach, this stage helped enable the setting the stage and attempting to engage the community as a *'full, equitable partner throughout the research initiation, implementation and dissemination processes*'.(Dong et al., 2011)
Running a morning workshop with young mothers and other participants.	• Workshop plan • Workshop flip-chart sheets • Course application form • Course evaluation form from YMs, and YM-Fs	*Reason*: To discuss the purpose and content of the course and establish the backgrounds, aspirations and practical needs of young mothers, trainer and facilitators. Effectively, establishing a '*domain*' in which it is demonstrated that we learn from each other outside observers of the group may not value or recognize our expertise.(Wenger, 2011)

Designing an ICT Basics and BAE nutrition course in consultation with participants.	• Literature search: ICT Basics refined; Nutrition for YMs, local nutrition sources • Drafting of course content and course plan. • Email and Skype discussions with YM-T and YM-ICTF to refine course.	*Reason:* No 'off the shelf' ICT Basics and BAE Nutrition course existed prior to this course therefore it was necessary to produce original material. Development of contextualised teaching approaches are recognised as valuable ways to enhance learning by '*presenting information in familiar contexts, contexts in which the information is useful*' (Harwell, 2003, p. 5).

Delivering and monitoring the course on ICT Basics and BAE nutrition over the course of 6 weeks using donated laptop computers and MSOffice software.	• Class register • Course lesson worksheets (electronic) • Student work folders (electronic) • Email and Skype discussions with YM-T and YM-ICTF to feedback on course. • Course evaluation forms • Interviews with YMs, YM-T and YM-ICTF and YM-MECPS	*Reason:* By delivering the course, the research was making a positive contribution to community development through adult education. The 'action' was necessary to ensure that systems were orientated so that there was potential for the course to function beyond the time limit ascribed to the research activity. (Dong et al., 2011)
Analysing and discussing the results of interviews, anecdotal feedback and evaluation forms in order to improve the course but also to seek ways to develop the relationship with the community.	• Analysis of quantitative and qualitative data from evaluation forms • Transcriptions of interviews with YM-T, YM-ICTF and YM-MECPS • Translations of interviews with YMs • Summarising and reporting on findings in a way that is suitable for participants to engage with.	*Reason:* Practically, it is a desirable objective to sustain the course in order to maintain the development of the committed students and other participants. As a complete community activity, it '*requires the participation of people who are fully engaged in the process of creating, refining, communicating, **and using** knowledge*' (Wenger, 1998, p. 1)

Note on Translation: Interviews with young mothers were carried out with a translator. Questions were read in English, translated verbally in XiTsonga and young mothers answered in English or XiTsonga. Answers were then translated verbally back into English.

4.5.1 The rationale behind the young mothers' ICT Basics and BAE Nutrition course as the main instrument of the study

The main research instrument, or intervention, employed was the establishment of a short introductory information and communication technology basics course (ICT Basics), which included contextualised examples relating to basic nutrition knowledge, for the cohort of young mothers attending the course. In order to action the main instrument, additional instruments were necessary, as presented in Table 4.2 (above), these helped to make the course described below fit with the reality on the ground and provide data at key stages in the process.

To establish the course it was necessary to build on previous relationships with the community of Mulamula traditional council, the Mulamula Education Centre Project committee and external sponsors (Sevenoaks School – main sponsor – and Dr Jutta Lenz – sponsors of the laptop computers). They all played a role in helping to set the scene for the intervention by providing permissions, helping source a venue or helping provide some of the computer resources used for the course.

The establishment of the course required participation of the traditional council offices in Mulamula to gain approval for the study. It also required participation of the Head of Mahlefunye primary school and representatives of the Mulamula Education Centre Project in order to establish the venue for the course and relevant permissions from education structures in the village. Most significantly, the YMs' ICT and BAE Nutrition course was established after agreement with the Chief through the traditional council office in April 2015. (See Appendix: Permission Letter from Chief)

The course itself was designed following consultation with the YMs, and other women from the village, in a workshop a month prior to the course's implementation. The course was written in consultation with the local ICT course trainer and ICT facilitator in order to pitch it at the appropriate level for the cohort. The ICT content of the course was agreed following two months teaching of two basic ICT courses: one for G11 and G12 high school students and one for local primary school and high school teachers which were undertaken at the same venue using the same equipment.

The nutrition content was included to make the basic ICT course more relevant to the needs of the YMs and to combine the practical skills training on computers with an opportunity to learn about basic nutrition in a new way.

The implementation took place in July - August 2015 over the course of 6 weeks. The YMs attended two classes per week on Mondays and Tuesdays at the Mahlefunye Primary school in Mulamula village. Their classes took place after normal school hours to avoid clashing with school lessons. The classroom used was an ICT laboratory which had been built for the school which did not have computers in place.

The computers used were 14 donated laptop computers which were supplied by MECP donors. Classes were taught using a digital data projector which was purchased for the study by the researcher. The ICT facilitator set up the computers with numbered folder systems so that YMs could save their work on the laptops for review and to reduce the need for expensive printing.

Resource worksheets and nutrition resource datasheets were shared with and discussed with the trainer and ICT facilitator prior to the commencement of the course. These were preloaded onto the laptops so that they could be accessed during lessons by the YMs. This reduced the need for an expensive network connection of the laptops.

(*Note: Classes were recorded using a video camera as it was initially intended to teach the whole course in English. As the classes unfolded, it became apparent that the YMs were more comfortable when taught in XiTsonga with English terms included where necessary. Recording was continued and video data stored electronically. In order to process this data will require translation of approximately 24 hours of XiTsonga dialogue which is not funded in this study)*

Progress of the course and incidental feedback from YMs was gathered using recorded Skype dialogues with the trainer and ICT facilitator at the inception of the course and via SMS dialogues as the course progressed.

During the final week of the course the researcher attended the penultimate and final classes to observe the classes and speak informally with the group. A sample of the YMs were interviewed outside the lesson times along with the trainer, the ICT facilitator and the Head of the school to reflect on the intervention. All YMs attending the course were asked to complete an anonymous evaluation form and the ICT trainer and ICT facilitator were likewise asked to reflect on their experience using a form.

To complete the course, the YMs were presented with certificates of participation. To complete the physical intervention, the data collected from evaluation forms, interviews and recorded dialogues were collected for sorting, coding and analysis. These are discussed in sections outlined below:

4.6 RELATING THE METHOD TO RESEARCH QUESTIONS AND ACTIVITIES ON THE GROUND

Linking the study phases to the research questions involved recognising that some of the research questions could be answered through chronological stages (RQ1, RQ2 and RQ3) but the over-riding research question effectively addressed all activities relating to the implementation.

The activities that took place during the study followed the 3 stages with 5 phases described above in section 4.1. The key questions addressed in the actual study drew on the structures outlined above (and summarised in table 4.2) Activities were organised to match the order that unfolded and participants' contributions moved the study forward (See table 4.3. below).

The following phases are described to link the activities undertaken (see table 4.2) with the research questions as part of a five-phase CBPAR approach:

4.6.1 Stage 1- Pre-Intervention

*RQ1: How to establish a community of practice (Lave, 1991) to design and implement an ICT training course which includes BAE nutrition education**?***

Phase 1. Getting stakeholders to agree a long-term vision for the process.

Building a community of practice to deliver the study by establishing the needs of YMs through direct engagement with the community and by agreeing a roadmap for the delivery of the course with stakeholders, or, 'Setting the stage' for the participation.

Phase 2. Creating infrastructure for the process that fosters participation and engagement.

Designing a combined ICT and basic nutrition course using a participatory process which fitted the needs and aspirations of the participants – particularly the learners as young mothers in the village environment.

Phase 3. Developing community links that sustain commitment from all members.

Recruiting young mothers for the course using different tools. Enlisting the help of volunteers in the local community.
Developing a network of support between the trainer, facilitator, Mahlefunye Primary school and other volunteers to establish the course practically and trial elements of the young mothers' course in advance.

4.6.2 Stage 2. Implementation

RQ2: How do we implement community-based ICT and nutrition training courses for young mothers in rural resource limited settings such that they are sustainable?

Phase 4. Orientating systems to enable long term function of the process.

Recruiting young mothers for the course using a community based workshop.
Delivering the course with volunteer trainers and facilitators over a 6 week period, monitoring participants' progress and gathering data through a variety of tools to monitor its effectiveness and establish how it could be improved.

4.6.3 Stage 3. Post-Intervention

RQ3: How do we stimulate further constructive interaction as part of establishing a process of continuous improvement, through direct engagement (Pain et al., 2012)?

Phase 5. Pursuing goals which are of value to all stakeholders – following outcome-based advocacy.

Evaluating the course with the participants in order to reflect on the process and its effect on them.
Construct practical goals to share with the community to help sustain the course in future.
Construct a productive narrative of the process based on its strengths and weaknesses to reflect on the CBPAR process with participants and improve the course through dialogue with stakeholders.

The above phases are matched with the research questions, theoretical phases, specific instruments, tools and data sources in the sub-sections (4.7.1 – 4.7.5) described below.

Following a participatory action research approach enabled the study to have necessary structure but also allowed for the necessary flexibility that was required for an 'adult education' intervention in a rural region of South Africa which is remote and poor relative to populated areas of the country.

4.7 ORGANISING THE STUDY TO FIT WITH THE 5 PHASE CBPAR FRAMEWORK

To deliver the study and address the research questions within a CBPAR/PAR framework involved re-organizing the elements in the stages described above into the following practical stages:

4.7.1 Phase 1. Getting stakeholders to agree a long-term vision for the process.

Building a community of practice to deliver the study by establishing the needs of young mothers through direct engagement with the community and by agreeing a roadmap for the delivery of the course with stakeholders, or, 'setting the stage' for the participation.

In order to track CBPAR in the implementation of the YMs' ICT and BAE course, it was necessary to build a community of practice to deliver the study through direct engagement with stakeholders in the village of Mulamula. This required the 'setting of the stage' mentioned in section 4.2 above.

To track CBPAR, for the purposes of the YMs ICT and BAE course, it was necessary to:

- Build on existing relationships which had been established, with the traditional council office, MECP members and members of the wider community, during the period when MECP was established as an adult education centre.
- Meet stakeholders (YMs, YM-T, YM-ICTF, MECP members, Traditional council) in the village in formal and informal settings to share the ideas for the YMs' ICT and BAE Nutrition course and establish the needs of the group.
- Follow-up meetings with stakeholders using telephone calls, emails, Skype conversations, WhatsApp dialogues in order to agree goals and maintain forward momentum.
- Share ideas and goals using appropriate media: emails, letters, newsletters, social media postings. (See: Appendices 6 and 10: Traditional Council Consent Letter, MECP Newsletters and Facebook page: https://www.facebook.com/MulamulaEducationCentreProject)

In order formalize the tracking of the CBPAR activity it was necessary to follow a 'multi-media' approach:

- Gathering information shared through conversations (recording and journaling)
- Observing meetings and activities (recording, photographing and journaling)
- Reflecting on information and facilitating actions that enabled the process to move forward to produce the desired outcome (note-taking, summarising, emails)

As expanded in section 4.2 'Setting the Scene', this first phase started in advance of the actual study. As I already had a relationship with the community with the development of the MECP, it was advantageous to the establishment of cooperative

structures and systems to implement the study to focus discussions specifically on establishment of the ICT courses.

4.7.2 Phase 2. Creating infrastructure for the process that fosters participation and engagement.

Designing a combined ICT and basics nutrition course using a participatory process which fitted the needs and aspirations of the participants – particularly the learners as young mothers in the village environment.

Creating the infrastructure for the process of establishment of the actual course required direct engagement with the trainer, ICT facilitator and participants from Mulamula Education centre Project and the traditional council that helped in opening the way for the course. Most significantly, the trialling of an ICT Basics course with two different groups: a group of Grade 12 students from Photani High School and a group of local teachers helped in the refinement of the course for the YMs.

In order to develop appropriate content for the course, parallel activities were conducted to develop the basic ICT course structure and nutrition content for the course in such a way that it was relevant to the needs of the YMs and made an interesting foundation course to facilitate/encourage future adult learning in the village. While they are parallel activities it is not possible to discuss them in parallel. For practical reasons they will be discussed separately:

- An initial literature review was undertaken to locate sources that were relevant for the development of the ICT course including: ICDL/ECDL (International computer literacy qualifications); MS Office resources and computer basics books/manuals (See: ICT References)
- Sascha developed an initial ICT Basics course and I edited it. The YM-ICTF (Sascha) volunteer was engaged to develop an ‘ICT Basics’ course to trial with various groups at the village location. He was also encouraged to expand the course to include specific software training in the use of: MSWord, MS Excel and MS PowerPoint. This work was done in discussion with the volunteer YM-T in

order to gain a consensus as to what was achievable with the YMs' course. (*Note: The courses were trialed first with G12 high school students from the local high school (Photane HS) then with adult teachers wishing to learn ICT skills before being combined with nutrition content to create the YM's course*) (RMT-Editor)

- While Sascha was writing his initial ICT Basics course, I was researching nutrition content for the refined ICT Basics and BAE nutrition course. A literature review was undertaken to locate sources that were relevant for the development of the nutrition content of the course: WHO, UNICEF, World Food Programme sources. These sources gave most of the key themes and facts that were to be included as exercises for the YMs (See Appendix: Nutrition Course Resources).
- Having discussed first drafts of ICT course, with YM-T and YM-ICTF, and implemented them in the trial courses, further discussion regarding the ICT and Nutrition combination course were necessary. I then went on to refine and simplify the ICT Basics course down to and 12 lesson ICT and Nutrition course. Additional online nutrition reference material was located which was incorporated into a course reference resource (See Appendix: ICT Course Reference Resource)
- During the above processes, dialogues were maintained, with YM-T, YM-ICTF and YM-MECPS, using email, text messaging and WhatsApp in order to ensure activities moved forward progressively towards the July start date and access to the venue was ensured.

The conscious development of the ICT course combined with '*information in familiar contexts* '(Harwell, 2003) was developed in discussion with various stakeholders and with staff of UKZN:

- MECP Executive Committee – raised the need for relevant skills training, nutrition and childcare as part of the MECP programme during meetings held in August 2014.
- Reflection on the successful combined ICT and Visual Communication (Graphic Communication) course recently employed in my previous secondary school teaching work at Sevenoaks School in Kent, UK and discussion about the development of sustainable MECP courses with Graeme Lawrie – Director of

Innovation - to maintain the relationship between Sevenoaks School Technology Department and MECP as the project develops beyond the construction phase.

- Dialogues with senior lecturing staff at UKZN, in developing the proposal for this study, raised the importance of courses aimed at South African young mothers which included basic nutrition and childcare.

The development and refinement of the course in collaboration with the participants was necessary and complied with the key ideas relating to CoP and CBPAR in the management of the study (Cornwall & Jewkes, 1995; Dong et al., 2011; Lave, 1991; Pain et al., 2012; Wenger, 1998). Designing a course in collaboration with participants who would be delivering it to the young mothers seemed the most sustainable approach but this was also derived from: personal experience in the design and delivery of new curricula (e.g. Sevenoaks School Certificate Technology course 2013-14) Wider reference was also made to adult education initiatives in South Africa developed through the National Training Strategy Initiative from the post-apartheid National Training Board which stressed competency based adult education courses (Jansen & Christie, 1999) where the emphasis was on students/trainees 'demonstrating competencies' rather than learning simply to pass theoretical examinations.

4.7.3 Phase 3. Developing community links that sustain commitment from all members.

Recruiting young mothers for the course using different tools. Enlisting the help of volunteers in the local community.
Developing a network of support between the trainer, facilitator, Mahlefunye Primary school and other volunteers to establish the course practically and trial elements of the young mothers' course in advance.

In order to facilitate the stages required to implement the course, the following process was followed:

- Invitation letters/Expression of interest letters were sent to the Mulamula traditional council office to circulate with YMs collecting month-end welfare at the tribal office.
- Older mothers (>25 years old) in the village were contacted by phone through the MECP Director to establish a communication network with YMs via older 'matriarch' figures.
- Workshop Course posters/fliers were sent to the traditional council offices and YM-T and YM-ICTF to distribute to the community advertising the workshop.
- An informal evening briefing was held in the day prior to the workshop at our village home to brief YMs and YM-Fs about the content of the workshop and to promote the event verbally.

At the same time as the recruitment of YMs at the community workshop was being organized, the development of the team who were to deliver the course was happening. Prior to the discussion of the course with participants at the workshop, it was necessary to recruit a team which could deliver the course. This involved:

- Securing donations of laptop computers and other software and hardware from German sponsors (precipitated by a chance meeting of Dr J. Lenz with the MECP Director at a Women's Entrepreneurship conference in Cape Town in February 2014)
- Recruiting a young volunteer facilitator/trainer – Boikie Maluleke (YM-T) - through the MECP youth group (via email, Facebook and WhatsApp dialogues)
- Establishing a volunteer ICT systems expert – Sascha Lenz - (YM-ICTF) in the village (via Facebook, email and WhatsApp dialogues with the volunteer and his sponsor mother in Germany/Cape Town)
- Developing a trial ICT Basics course and running it in the village to test systems and gauge interest from the community.
- Discussing the best venue location with traditional council and MECP members via telephone/SMS. (The Head of Mahlefunye and MECP Secretary volunteered the use of his empty computer rooms and sorted out necessary permissions with the local DoE/Circuit managers)

Table 4.3 Phase 3 Instruments, tools and sources

Instruments	Tools	Data Sources
• Recruitment process for young mothers • Trial ICT course design	• Workshop sign-up form • Workshop flier • Field notes • WhatsApp dialogues and email communications	• Young mothers (YM) • Young mother facilitators (YM-F) • Trainer (YM-T) • ICT Facilitator (YM-ICTF)

4.7.4 Phase 4. Orientating systems to enable long term function of the process.

Inviting young mothers to participate using a community based workshop. Delivering the course with volunteer trainers and facilitators over a 6 week period, monitoring participants' progress and gathering data through a variety of tools to monitor its effectiveness and establish how it could be improved.

In order to address the main research question: *how do we **implement** community-based ICT and nutrition training courses for young mothers in rural resource limited settings in such that they are sustainable?*, it was necessary to meet the stakeholders in a structured meeting/workshop to discuss the course and develop a dialogue with young mothers and trainer/facilitators to ensure buy in to the project and establish what the needs and aspirations of the group were **in terms of the actual course.** It was also deemed necessary as part of the informed consent process to physically meet participants to explain the purpose of the research and reassure them of the purpose of the study.

Table 4.4 Phase 4 Instruments, tools and sources

Instruments	Tools	Data Sources
• Workshop for young mothers • Course design	• Workshop plan • Workshop flip-chart sheets • Workshop evaluation form from YMs, and YM-Fs • Course application form • Reflective field notes • MECP Facebook site updates	• Young mothers (YM) • Young mother facilitators (YM-F) • Trainer (YM-T) • ICT Facilitator (YM-ICTF) • Literature searches on ICT Basics and Nutrition content

At the same time as this recruitment process was proceeding the ICT and Nutrition course was being refined with contributions from participants in the workshop and on-going dialogue with the trainer (YM-T) and facilitator (YM-ICTF).

In order to address RQ2: *What structures and systems need to be in place to create an effective CBPAR study which can render an intervention relevant and purposeful for the group it is designed to benefit?* - it was necessary to use the initial YMs'workshop, discussions and feedback from lessons produced by the YMs, YM-T and YM-ICTF to monitor the course as it was rolled out to develop the course itself for future reference and establish how to sustain community commitment as part of the CBPAR cycle (see Fig 1). The process of delivering and monitoring this is set out in table 4.5 below:

During and after the workshop, application and evaluation forms were collected to gauge the feedback from YMs, YM-Fs, YM-T, YM-ICTF and representatives from MECP and traditional council office.

The monitoring was conducted in different ways in order to get an overview of the course's impact on: the YMs, the volunteer trainer (YM-T), the volunteer ICT facilitator (YM-ICTF) and the school head helped provide the venue for the course (YM-MECPS). These sources provided useful feedback on the relevance of the course and its potential value as a regular class:

- Recorded informal interviews were done with YM-F and YM-ICTF via Skype to monitor implementation of the course (following initial dialogues via WhatsApp SMS mobile phone messaging)
- Logging of student classwork by saving to student desktop folders on numbered laptops (students used the same laptops each lesson) to avoid having to buy an expensive cable network server for the laptops.
- Video recording of lessons.
- Informal discussion of the course in the classroom with YM-T and YM-ICTF present.

By following these various approaches it was intended to bring together contributions from the various direct participants in the course in a kind of 'patchwork' lattice, or net, of participation. Some of the contributions were repetitive but the intention of returning to these recurring questions was to gauge participants' responses over time – as the course progressed. By returning to the same questions at different stages it was also intended to observe any change in viewpoint that the course might have produced in participants.

4.7.5 Phase 5. Pursuing goals which are of value to all stakeholders – following outcome-based advocacy.

Evaluating the course with the participants in order to reflect on the process and its effect on them.
Construct practical goals to share with the community to help sustain the course in future.

Addressing the final question in the study: *How do we stimulate further constructive interaction as part of establishing a process of continuous improvement, through direct engagement (Pain et al., 2012)?* – required a thematic analysis of the data to see whether the course structures and systems were indeed implemented and how effective these were in meeting the initial aims and objectives of the study.

To reach this stage the previous four phases were necessary to: set the stage, refine/fine-tune, implement and then monitor the study. Following on from these, it was

possible to reflect on the best structures and systems to refine the study and engage with participants to suggest future goals and discuss how to improve the course further.

The tables below (table 4.5 and 4.6) show how the instruments were organized to answer the final research question but also identify instruments that have value for the course beyond the academic study.

Table 4.5 Phase 5. Implementation instruments and tools

Delivery Instruments	Tools	Data Sources
• Workshop for young mothers • Course activities over 12 lessons	Application forms Class register Course outline Worksheets ICT Basics Course	Young mothers (YM) - forms and biometric data Trainer (YM-T) - dialogues ICT Facilitator (YM-ICTF) - dialogues

Table 4.6. Phase 5. Monitoring and Evaluation Instruments and tools

Monitoring and Evaluation Instruments	Tools	Data Sources
• Feedback from trainer and facilitator • Course Evidence • Feedback from trainer, facilitator, young mothers and school head	Student logbooks (electronic) Course evaluation Interviews WhatsApp dialogues Video recordings *	Trainer ICT Facilitator Young mothers Mahlefunye School head

The key tools used in the gathering of feedback on the actual course which was delivered were:

- Completion of course evaluation forms by YMs.
- Recorded face-to-face interviews with YMs, YM-T, YM-ICTF and YM-MECPS using an interview schedule.

These structured tools on their own were valuable but with the addition of informal dialogues gained from WhatsApp and Skype dialogues with the trainer and ICT facilitator a deeper understanding was gained.

The way some of the study data was gathered followed some familiar 'administrative' stages (e.g. sign-up form – application form – progress report - evaluation form - exit interview) to make the study realistic and authentic as a course of study (similar to the stages followed in some formal tertiary institutions) This 'thematic' approach was chosen to make students feel comfortable and reassured that they were part of a real course of study. This generated quantitative data to complement the qualitative data without being too intrusive or interrupting the delivery of the course.

The quantitative data collected in the earlier phases served two purposes:

1. To reinforce qualitative data arguments in creating analysis tools.
2. To provide data to justify future courses as part of the MECP system (a potentially viable way of sustaining the course for future YMs)

The recorded dialogues with the trainer (YM-T) and facilitator (YM-ICTF) regarding the implementation of the course and the progress of students effectively served to gauge effectiveness of the structures and systems of the course as it was rolled out.

One-on-one interviews were conducted with: YMs, YM-F, YM-ICTF and YM-MECPS to conclude the course and gain insights into course content, delivery and possible ideas for sustaining the course. In addition, the course evaluations used by the YMs, YM-T and YM-ICTF were intended as the source for developing a future dialogue with participants to improve the course and establish ideas for sustaining future courses (See Phase 5) . Themes included:

1. Perceived relevance and value of course content in terms of ICT and nutrition content.
2. Effectiveness of combined ICT and BAE course – taught together.
3. Ability and effectiveness of the trainer/facilitator – to understand the impact of teaching style on the students.
4. Future application of knowledge gained for vocational purposes – recognising the long-term value of the study.

5. Motivation to attend the course and future courses.
6. Willingness to participate in future courses/MECP activities – to gauge sustainability.

By returning to these themes in workshop evaluations, course evaluations and interviews, the intention was to get participants to reflect on whether the study had changed their views or reinforced them. The repetition of questions in different tools was deliberately planned to ensure that participants reflected on their own contributions consistently. It was also intended to get participants to reflect on their learning as part of the course feedback process.

> *"Competence is the ultimate goal of education ─ application of integrated declarative and procedural knowledge" (*Klink, *Building Articulation and Integration,* SAQA - NQF Research Conference, March 2013*)*

A comparison can be made with predicted planning of the instruments and tools in order to see how the application of these instruments was intended to pan out over the course of three visits to the village. The implementation of an ICT course combined with a BAE course had practical repercussions in the village setting as it had not been done before. It was therefore necessary to remain flexible to the feedback that came from participants.

4.8 PRESENTING THE DATA ANALYSIS RESULTS TO STAKEHOLDERS TO MAINTAIN AND SUSTAIN THE CBPAR DIALOGUE AND DEVELOP FUTURE GOALS.

It is proposed that by presenting study findings to the participants, supervisors and the wider academic audience - to gain expert appraisal – it is possible to extend the dialogue with the community beyond the confines to the classroom where the course unfolded and into the wider realms of discussion and national debate on adult education.

In order to do this, it is intended to extend the study through a dialogue with the wider community – "*A community of practice's life cycle is determined by the value it provides to its members, not by an institutional schedule"*(Wenger, 1998, p. 4):

- Produce a narrative which explains to participants what was done and how it addressed the research questions and impacted on the YMs and other direct participants in the study.
- Discussing and refining of the ICT and Nutrition course using engaged stakeholders in a recorded follow-up workshop/dialogue.
- Investigate procedures for verification of the ICT and BAE Nutrition course in order to provide certification for adult learners (e.g. the young mothers) through university procedures.

The cycling of 'planning', 'action' and 'reflection' (Pain et al., 2012) through the various phases of the research process allowed the research to follow a natural logical cycle. It also enabled me to return to earlier phases to reflect and modify the process as it developed. As CBPAR is not considered to be 'one method' and is acknowledged as a process which allows for methods to develop, the CBPAR method which was eventually implemented was subject to change as the process unfolded. Following a process of "cooperative enquiry", as part of the CBPAR approach, it was possible to observe the creative action that participants demonstrated to address matters that they considered important in the study. (Reason & Bradbury, 2001, p. 144) These actions also helped to evaluate the structures and systems

Through the phases of reflection, or evaluation, which appear to be in the final phases but which really permeate through the whole study a process of 'continuous improvement' is encouraged. [i] This process is theorized more in Chapter 6: Conclusions and Recommendations

4.9 DATA ANALYSIS

The analysis of data produced in the study was simplified by following the 3 chronological stages and 5 CBPAR phases described in the sections above.

Both qualitative and quantitative data were analysed in this study as explained in sections 4.7 and 4.8 below. The organization and analysis of this data is explained in the sections below and in Table 4 (Primary Data Analysis Activities in relation to RQs):

Qualitative data was subjected to content analysis using a thematic grounded approach (Fraenkel & Wallen, 1993; Glaser & Strauss, 2009), with the aid of MS Excel, to organise data under relevant codes and Nvivo v10 Qualitative analysis software, to establish patterns of responses and highlight key features and themes. As most of the data from interview results and evaluation forms came from structured questions, thematic analysis firstly provided the structure for general organisation of data. As the study progressed and more spontaneous, or extended, discussions took place, then the analysis takes on a more grounded approach. These are unpacked in table 4.7 below.

Table 4.7. Analysis Instruments and Definitions

Analysis Instruments and *Definitions*
Thematic analysis Thematic analysis is a complementary approach which can be used with grounded theory and case studies to sort and categorize data to make it more focused on the topic or research questions (Fraenkel & Wallen, 1993, p. 17). In the case of the study, themes were inherent in the process as it sought to answer the predetermined RQs but also grew out of the administrative structure (evident in Phase 2 & 3) that were put in place to manage the implementation. ***Definition:*** *Thematic analysis in its simplest form is a categorizing strategy for qualitative data. Researchers review their data, make notes and begin to sort it into categories (Source: http://isites.harvard.edu/icb/)*
Grounded analysis Qualitative research approach presented by Glaser & Strauss in 1968 which aims to extract meaning from data by an iterative process of reviewing, coding, re-reviewing, conceptualizing and theorizing (Glaser & Strauss, 2009). By following this approach it is intended to thresh out common opinions, conclusions and themes to guide the research towards conclusions that address the research questions. ***Definition:*** *As researchers **review the data collected**, repeated ideas, **concepts or elements become apparent**, and are **tagged with codes**, which have been extracted from the data. As more data are collected, and as data are re-reviewed, **codes can be grouped into concepts, and then into categories**. These **categories may become the basis for new theory**.*[19]

[19] Notes on Grounded Theory: http://www.groundedtheory.com/what-is-gt.aspx

4.9.1 Initial organization and sorting of data

To organize the data for the purposes of analysis, the data collected through the different instruments was laid out using the matrix tables (See table 4.8 below). These tables set out in detail how the various data sources were organised in relation to the research questions and CBPAR phases detailed in earlier sections of this chapter. The sources were then categorized in NVivo v10 to enable contributions from the various participants to be organised under relevant themes which addressed the research questions. (See Chapters 5, 6 and 7)

In order to analyse data collected for the study using the appropriate methods, the data was categorized into the following sub groups. These categories were coded for the sake of anonymity although some participants chose to retain their identity in the study (See section 4.7 Ethical Considerations):

1. **Young mothers** (‘**YMs**’ - attending the course)
2. **Trainer/Providers** (‘**YM-T’** and **‘YM-ICTF’ -** those people providing the training for the course)
3. **Facilitators** (‘**YM-F**’ including: those providing extra administrative support or translation support for trainer/s)
4. **MECP Members/stakeholders** (‘**YM-MECPS**’ including: MECP management committee members and volunteers)
5. **Wider Local Community** (‘**WLC**’ including: Traditional Council, Local Womens’ Groups, Village Councillors)

Collected data was categorized further into ‘Valid data for study’ and ‘Anecdotal data’ - which may have value in understanding the dynamics of the group and their personal journeys for the refinement and design of future studies. This was deemed necessary as the data that was collected needed filtering to rationalize a process that will involve listening to, valuing and appreciating the comments and contributions of all participants as the process unfolds – researching “*with people rather than on people*.” (Reason & Bradbury, 2001, p. 144).

Table 4.8 Matching intervention stages, research questions and theoretical phases with data collected and analysis methods

RQ that runs throughout the 3 intervention stages	**What structures and systems need to be in place to create an effective CBPAR study which can render an intervention relevant and purposeful for the group it is designed to benefit?**			
Intervention stages	**Research Questions**	**5 phases of CBPAR**	**Data collected**	**How was each data set analysed**
Pre-Intervention	**RQ 1** How to establish a community of practice (Lave, 1991) to design and implement an ICT training course which includes BAE nutrition education**?**	**Getting stakeholders to agree a long-term vision for the process**	• Formal committee meetings minutes of meetings August 20th 2014, 23rd September • Journal notes of informal meeting of July 7th 2015. • Transcripts of WhatsApp conversations with YM – trainer and YM ICT Facilitator were written up to provide additional triangulation of data.	• Minutes were copied, read and transcribed by extracting sections relating to 'computer course' and 'young mothers' course' and looking for emergent themes in the remaining sections. • Notes relating to the informal meeting were copied, read and transcribed and themes identified which related to RQ1and emergent themes. • Significant contributions relating to themes were highlighted and coded. In some cases, sub-codes were created under these themes. • Sources were transcribed in Word, tabulated in Excel (if necessary) and uploaded to NVivo v10. • NVivo v10 was used to classify sources, identify common themes and categories from different sources, create summary memos and group relevant statements using thematic codes.
		Creating infrastructure for the process that fosters participation and engagement.	• WhatsApp conversations Significant strings of conversations undertaken over a period of 5 months: YM-Trainer, YM-ICT Facilitator and MECP treasurer	• Notes relating to significant early calls were journaled and tabulated in order to identify common themes. • Significant strings of conversations relating to previously coded themes were highlighted • Transferred to Word, tabulated in Excel and transferred to NVivo v10 • Significant contributions highlighted and grouped with other similar themes/codes/memos

			• Courses content • Permission letters	• Course content, and relevant attachments (e.g.Chief's Letter of permission), were re-read, sorted according to themes, copied and tabulated into coded/dated rows or filed in appendices. • Data was transferred to Word, tabulated in Excel and transferred to Nvivo • Significant contributions were highlighted and grouped with relevant themes/threads/codes.
		Developing community links that sustain commitment from all members.	• WhatsApp text messages Strings of conversations with: trainer, facilitator, TC administrator, MECP treasurer and MECP secretary stored over a 4 month period.	• Re-reading from device • Isolating statements relating to the research study and coding. • Transcribed from SMS messenger WhatsApp to Word/Excel and NVivo v10 • Significant contributions were highlighted and grouped with other similar themes/threads
			• Workshop fliers • Recruitment Forms (20 forms) *Note: Quantitative data was extracted from relevant questions. It was tabulated and processed into summary charts in Excel*	• Read, checked and coded or filed in Appendices • Transcribed forms to Word/Excel and NVivo v10 • NVivo v10 used to sort and create memos. • Cross-reading with other comments from other YMs • Summarising/grouping statements • Extracting common 'results' threads from statements

Intervention stages	Research Questions	5 stages of CBPAR	Data collected	How was each data set analysed
During implementation	**RQ 2** How do we implement community-based ICT and nutrition training courses for young mothers in rural resource limited settings such that they are sustainable?	**Orientating systems to enable long term function of the process**	• Workshop plan	• Plan was typed in Word and highlighted with areas which drew discussion and contribution from participants
			• Workshop flip-chart sheets	• Chart sheets were photographed and images imported into Word document for commentary • Significant contributions were highlighted • Conclusions were summarised in Word for use in comparison with evaluation forms
			• Workshop evaluation form from YMs, and YM-Fs *Note: Quantitative data was extracted from relevant questions and tabulated into summary charts in Excel*	• Forms were transcribed and in some cases sections were translated (by Tivani Mashamba-Thompson) using Word. • Entries were coded and tabulated in Excel. • Tables were loaded into NVivo v10 to identify themes and common threads • Summaries were generated using memos, word trees and reports
			• Course application form *Note: Quantitative data was extracted from relevant questions. It was tabulated and processed into summary charts in Excel*	• Forms were transcribed using Word. • Entries were coded and tabulated in Excel. • Tables were loaded into NVivo v10 to identify themes and common threads • Summaries were generated using memos, word trees and reports
			• Reflective field notes	• These were added as notes in NVivo v10 'memos' which were assigned to significant themes. • Field notes were used to collate and organise datasets and record significant anecdotal findings/statements

			• Skype discussions with trainer and facilitator • 2 significant informal interviews which were set up with WhatsApp messages/texts. The WhatsApp texts were transcribed which enables cross-referencing of dates and outcomes	• Conversations were recorded and transcribed using Word • Transcripts were tabulated in Excel and uploaded to NVivo v10 • Significant contributions were highlighted, themed and coded. • NVivo v10 was used to: categorise, identify common strings, create memos and group relevant statements.
			• Video recordings of classes	Virtually all classes were recorded on HD video (very large data files) These require translation from XiTsonga to English and transcribing for further analysis. (Data is not used in this study)

Intervention stages	Research Questions	5 stages of CBPAR	Data collected	How was each data set analysed
After intervention	**RQ 3** How do we stimulate further constructive interaction as part of establishing a process of continuous improvement, through direct engagement (Pain et al., 2012)?	**Pursuing goals which are of value to all stakeholders – following outcome-based advocacy.**	• Student logbooks *(electronic)	• Logbooks/student work was were saved to electronic files by YM-trainer. • Logbooks were scanned for content and short observations on quality and content were recorded using Word.
			• Course evaluation *	• Forms were read, checked and coded under existing themes • Translation was done by TPMT • Transcribed forms using Word/Excel uploaded to NVivo v10 • NVivo v10 used to sort and create memos. • Word trees/ Word Frequency charts were created to identify commonly occurring words or themes. • Cross-reading with other comments from other YMs was made and references copied to relevant nodes/codes • Summarising/grouping of statements was done using NVivo v10 nodes and memos • Extracting common 'results' threads from statements was done using existing nodes, memos and reports
			Interviews * with: • 4 young mothers • ICT Trainer (YM-T) • ICT Facilitator (YM-ICTF) • Mahlefunye Head (YM-MECPS)	• Conversations were recorded on digital recorders, files copied to Olympus Sonority software for transcription using Word • Transcripts were tabulated in Excel and uploaded to NVivo v10 • Significant contributions highlighted, themed and coded. • NVivo v10 was used to identify common strings, memos and group relevant statements.
			• Follow-up WhatsApps dialogues with trainer and facilitator:	• WhatsApp dialogues with YM-trainer and YM-ICT Facilitator (used throughout the study) were transcribed, coded and relevant memos extracted to enable development of future evaluation instruments.

Once data was sorted and categorized it was organized using a qualitative data analysis package - NVivo v10 - the coding procedure followed using this packages will be detailed in subsequent analysis on MSWord in the results chapters (Chapters 5, 6 and 7).

Essentially, the analysis is trying to make 'common' sense of the data for all. By seeking to create clarity in the process it is intended that the outcomes can be interpreted by all of the main contributors. As a process of action research, the study aims to enable participants to devise actions and make decisions which are related to the issues under investigation (Stringer, 2004)

4.9.2 Qualitative data in relation to the research questions

In order to process the qualitative data from dialogues, evaluation forms, discussions and interviews, the data was further reviewed and sorted using emergent themes in order to maintain focus on the key research questions and to observe how the process unfolded through the CBPAR approach. (See: Chapters 5, 6, 7. Results - Analysis)

Coding of the data was necessary to maintain anonymity of participants and meet the requirements of ethical clearance (see: Section 4.8 and Appendix 1: Ethical Clearance)

To address the research questions using the qualitative data gathered:

- Data was first transcribed using Word and copied to Excel to organise and sort results in a compatible format for NVivo v10 software.
- XiTsonga dialogue/answers were translated with the assistance of YM-T and MECP Director.
- Key themes were assigned to the various datasets by scanning and reading data thoroughly.
- Further reviewing, sorting and coding of data was developed using NVivo v10 qualitative data analysis software. Initially open coding was used but as data revealed new links and causal factors, recoding was used to integrate categories along a dimensional level to help form theories and validate relationships (Glaser & Strauss, 2009).

4.9.3 Quantitative Data

Some of the data collected had quantitative value and helped inform future recommendations for similar interventions, for example:

- Eligibility criteria - YM's age and age of infant
- 'How many YMs completed the course in relation to the initial number that started the course?'
- 'How many YMs applied to do further courses at MECP after completing the basic course?'
- 'What proportion of the group had more than one child?'

Quantitative data extracted from forms was organized and tabulated using MS Excel in order to rationalise tallied responses from forms and develop a reusable electronically stored dataset. Using MS Excel presentation tools, it was then presented in the appropriate tabular or graphical format to demonstrate any themes which emerged from participants responses in a form which would be easily understandable for sharing with participants (See Phase 5, section 4.5.5).

4.9.4 Summary of analysis methodology

While the quantitative data provided informative statistical details, the primary focus of the study was to gather rich qualitative data which informed the study and encouraged active participation and discussion in the final phase of the 5 phase study. The analysis of the data was designed to serve two key purposes:

- Providing evidence of the study's effectiveness as a CBPAR study by addressing the research questions.
- Producing data which would stimulate discussion with participants to help develop a dialogue of 'continuous improvement'.

By following a thematic grounded approach to the analysis, it was possible make sense of data in relation to the research questions and produce results which helped evaluate the course in terms of the appropriateness of CBPAR. In addition, it aimed to draw out theories relating to the sustainability of the course in the village and wider SA adult education context.

4.10 ETHICAL CONSIDERATIONS

For this study to be successful and meaningful for the target group – young mothers - it aimed to enhance the lives of the target group in the community by participation and engagement in the study. Ethical considerations included procedures for confidentiality, permissions and informed consent. To meet the ethical needs of a CBPAR study

- It was necessary to gain access though pre-existing relationships with the village established as part of the MECP adult education project.
- A plain language statement about the purpose of the study was provided for all participants and this was read out in English and Tsonga before participants were invited to join the study.
- An informed consent standard letter for this purpose was prepared for all participants to sign.
- Following a request from the course trainer and facilitators, certificates of participation were produced for YMs to receive at the end of the course.

Other ethical considerations included an acknowledgement that the well-being and interests of the research participants was most important throughout the study. The list below was paraphrased in the informed consent letter to reassure participants of their

- Participation in the study was voluntary.
- Participants could withdraw from the study at any time without fear of reprisals.
- Confidentiality within the limits of participating groups was assured. Participants were asked if they wished to remain anonymous in the study "*Often participants may choose for themselves"* (Pain et al., 2012)
- Fictitious names or codes were used in the reporting process to maintain confidentiality.
- All information will be stored securely in the Department of Science and Technology, School of Education, Edgewood campus, University of KwaZulu Natal.

From a CBPAR viewpoint, one of the main ethical considerations was that of maintaining active participation from stakeholders through the process and informing participants of significant developments. The idea of reciprocity – "*The practice of exchanging things with others for mutual benefit"*[20] in the ethical consideration of CBPAR interventions was also seen as a guiding notion (Maiter et al., 2008). This guided the additional ethical considerations:

- Maintaining active dialogue and maintaining rigorous recording procedures to ensure dialogue was constructive and informing the participants of the benefits of the process. "*One of the main reasons that groups use PAR is to see some benefits from the research"(Pain et al., 2012).*
- Responding promptly and appropriately to requests and feedback.
- Sharing information and ideas in such a way that participants should have felt safe and empowered instead of vulnerable and isolated. "*All research carries risks. For example, research can cause environmental damage, cause distress to people, or inflame local conflicts"* (Pain et al., 2012)
- Guiding the study in such a way that the participants should have felt that it was 'their study' and they were not simply subjects of the study. (Wenger, 2011)

Access protocols were followed according to culture and custom of the Mulamula Traditional Council tribal office who were informed of all activity in the village and surrounding area in advance and lists of all participants and their ID details were presented for village records. By keeping the traditional council in the loop, acknowledgement of their role in instigating the study was reinforced and dialogue regarding community ownership of the intervention was extended.

> "*Meaningful participation eschews tokenism such as asking people in the community to share information that furthers the researcher's goals and yet not involving them once data are obtained or sharing research results*." (S. Mckay, 2011)

Permission to take photographs and use them in project-related publications was sought from participants in their informed consent letter. Photographs were also used to

[20] Definition of reciprocity *(Source: http://www.oxforddictionaries.com/definition/english/reciprocity),*

document and celebrate events such as the Science Fair on 22nd August and the completion of the YMs' course on 25th August. Some participants opted not to be videoed but all were happy to be photographed. Photographs are used in the Appendix: Photo diary to clarify chronological issues and illustrate milestone events in the process. (See: Analysis of Results Chapter 7). Faces of YMs and others involved on the periphery the study have been blurred to protect anonymity.

Ethical approval was sought in advance from the University of KwaZulu Natal's Humanities and Social Sciences Research Ethics Committee ethics committee using the appropriate forms and procedures (See Appendix 1: Ethical Clearance Letter).

4.10.1 Validity and Reliability

In order to ensure that data collected was reliable and valid to the study, a number of strategies were employed as part of the study. These strategies are laid out and justified in table 4.9 below:

Table 4.9 Justification of Validity and Reliability strategies

Validity and Reliability Strategies	***Justification***
Discussing of data with supervisors and participants.	As an instrinsic part of the CoP and CBPAR approach, participants are expected to share their 'collective competence' and make constructive contributions.(Wenger, 2011, p. 2)
Questionnaires/evaluation forms were piloted for content with YM-MECPS, YM-T and YM-ICTF.	To check for content validity/construct validity to remove inconsistencies. It was also necessary to check whether questions were clear enough for translation purposes and lacked double meanings.
Authentication of data with trainer (YM-T) and-facilitator (YM-ICTF) against registers	YMs' data is anonymised, therefore, it was necessary to check names against registers and application forms to ensure consistency and ensure a representative sample was used.(Fraenkel & Wallen, 1993, p. 13)

Table 4.9 continued:-	
Member checking – recorded audio/visuals were sent back to participants to check	Recordings were played back to participants at the conclusion of each interview to confirm identity on recordings. These were cross-referenced with coded tables to ensure consistency but maintain anonymity.
Triangulation – taking data from different instruments	Observing whether the young mothers were consistent or were affected by the research itself, for example: the *'Hawthorne Effect'*(Fraenkel & Wallen, 1993, p. 5) Were contributions what they thought were appropriate as they were part of a special study? Data from YM-T and YM-ICTF WhatsApp dialogues confirmed some data from other sources.

In a similar way to professional journalists, researchers are expected to be more vigorous in managing their sources and ensuring reliable and trustworthy information, this study attempted to follow a process of verification of data which included:

- Designing the data collection instruments so that they "measure what they are supposed to" (Fraenkel & Wallen, 1993) – focussing the data collection activity to answering the research question/s.
- Trialing and reading through interviews/questionnaires with participants – with a translator if necessary – to confirm understanding and content.
- Seeking approval of the data from the source (e.g. 'Are these your words?' 'Are you happy for this to be included in the study?')
- Ensuring that only data that has been approved by the source, is included in the study.
- Filing and storage of data in a systematic way which ensures that data can be cross-checked and accessed for verification at different stages of the process.

Reliability of results was ensured by:

- Using standardized forms, questionnaires and interview questions consistently and rigorously so that the sample group did not experience bias or variation in their treatment.

- Although the study involved a participatory process, which encourages ‘freedom of expression’, it was still be necessary to remain objective and sincere to the aims of the study.
- Cross-referencing and coding of results was done in such a way that the sources were not mixed up, anonymous contributions remained anonymous and individuals are cited correctly.
- Encouragement of vigorous record keeping by third parties involved in the study to the same standard as researchers.

4.11 CONCLUSION

The methodology presented above was developed with reference to theoretical methods employed previously under the research umbrella of ‘community based participatory action research’ (CBPAR). The choice of this approach was partly guided by the rural community involved and their previous engagement with the development of an adult community education centre in the village. The approach was also employed as it was seen that an intervention in such a setting would be most beneficial if the community were involved more in deciding how, what, where and when they studied outside the school environment. “*This process elevates community knowledge, challenges traditional power dynamics in the research process, and can directly benefit the communities involved”* (Balazs & Morello-Frosch, 2013) By recognising the role the community had already played in the past ,and building on these relationships, it was possible to put in place a research instrument to look beyond the bricks and mortar of the MECP building project and trial a course which could become a regular part of the education programme that MECP could provide in the future.

In order to establish a participatory process to implement the research an informal ‘community of practice’ (CoP) was established with different members of the village community in order to stimulate dialogue and encourage community ‘buy in’ to sustain the study.

In order to measure the effectiveness of the intervention, and the CBPAR approach, the methods used in the study were designed to move the implementation forward and generate relevant data for monitoring the progress of course as a process which involved the community. The approach also served to extract qualitative and more immediate information

relating to how the implementation affected the participants and what they expected to gain from the participation. In addition to this, the tools sought to gain insight into how the community/participants valued the course and ultimately.

Measures were put in place to ensure that the research methods were rigorous and followed standards of ethics acknowledged the involvement of the community as *sharing in the process* of implementation rather than being simply elements of the study.

The effectiveness of the methodology is measured in the results both on paper and on the ground. If the method is to be judged, it may be compared to other CBPAR studies in terms of its "*results, reach and rigour"*(Balazs & Morello-Frosch, 2013) As a first research outing in the village, it may also be seen as a springboard to future community-based interventions. This may depend on the willingness of the community to participate and how they are motivated to do so.

CHAPTER 5

DATA ANALYSIS – PRE-IMPLEMENTATION STAGE

Introduction

The data analysis has been separated into three chapters for greater clarity and to allow readers to observe whether the participants' were affected by the community based participatory action research approach as the study moved through the three stages: pre-intervention, during implementation and after intervention as explained in the methodology section 4.5 and illustrated in methodology table 4.8. This chapter deals with the pre-intervention stages of the process. Its purpose is to provide an analysis of the three pre-intervention phases in order to locate the study in the village with the permission of village structures and with the agreement and commitment of the stakeholders.

The first section includes an initial explanation of how the data was analysed generally in relation to the main over-arching research question (Section 5.1) and then proceeds to explain how the early stage of the study (pre-implementation) leading up to implementation was analysed using data from different sources which show evidence of the participation of the Mulamula community in setting the stage for the study (Section 5.2).

The second section matches data sources with the first three CBPAR phases, from the 5 phase approach, identified in the methodology (Chapter 4.1.2):

1. Getting stakeholders to agree to a long term vision for the process.
2. Creating infrastructure for the process that fostered participation and engagement.
3. Developing community links that sustained commitment from all members.

The data shows how formal and informal meetings with the community, careful recruitment of participants and participative planning helped to establish favourable conditions for the study to proceed.

The chapter concludes by presenting results in the form of themes which emerged through the qualitative analysis of the data sources used in this chapter. It summarises the results in relation to the 3 CBPAR phases covered in this chapter and uses these to construct the discussion with the other results chapters presented in chapter 8.

5.1 ANALYSING THE DATA IN RELATION TO THE RESEARCH QUESTIONS

In assessing the effectiveness of the community based participatory approach to the action research study, it was necessary to address the following questions to help analyse the data:

- **Was the study community based?** – If so, where is the evidence? If not, why not?
- **Was the study participatory?** – If so, who participated? If not, is it a problem?
- **Was the study action-based? –** If so, what was the strategy? Can it be replicated?

In seeking to place the study/identify the study as a community of practice, there is another question to be answered:

- **Was there an active community of practice? -** Were people contributing freely, sharing experience and skills, to develop something of benefit to the community? Were experts empowering novices and inspiring them to become experts?

As the existence of a community of practice helps to evidence the three questions above, it could be seen as a fundamental guiding question in this phase of the study.

As much of the data had been collected using structured or semi-structured means to address pre-determined research questions, a set of codes was initially drawn up to categorise data, identify key attributes of participants and develop key themes and identify patterns. The ordering and structuring of the coded themes and patterns (shown in table 5.1 below) served as a guide for organising the data in Word documents, Excel spreadsheets and in NVivo v10. As the data analysis unfolded, some of the attributes and themes carried across into different phases addressing different research questions.

Table 5.1 Initial classification and organisation of themes relating to research questions in relation to participants

Research Questions	Participants	Participants Attributes	Key Themes	Patterns
RQ1	Potentially all participants (all data sources) could reflect in CBPAR.	'ACTIVE' 'PASSIVE' 'INTERESTED' 'INACTIVE' 'VOLUNTEER' 'MERCENARY' 'MEMBER' 'CONTRIBUTOR' 'COMMITMENT'	'PARTICIPANTS' 'CHAMPIONS' 'COMMUNITY PARTICIPATION' 'SUSTAINABILITY' 'MOTIVATION' 'COMMITMENT' 'VOLUNTEERING' 'WIDER COMMUNITY' 'YMS' ICT AND BAE NUTRITION COURSE' 'SHARING'	Some are: • leaving the MECP CoP as course begins to hatch as an idea. • joining as a result of the potential course. (Effectively becoming part of a new CoP) • involved regardless of the course (MECP members).
RQ2	• Young Mothers (**YM**) • Facilitators (**YM-F**, **YM-ICTF**), • Trainers (**YM-T)** • Mahlefunye School • UKZN	'ACTIVE' 'PASSIVE' 'INTERESTED' 'INACTIVE' 'VOLUNTEER' 'MEMBER' 'CONTRIBUTOR' 'HOST/PROVIDER' 'WRITER' 'TRAINER' 'OBSERVER'	'CHAMPIONS' 'PARTICIPANTS' 'CHANGING ROLES' +'GAINING INTEREST' -'LOSING INTEREST' 'COURSE CONTENT' 'DATE/TIME' 'VENUE' 'HARDWARE' 'SOFTWARE' 'LOGISTICS' 'HUMAN RESOURCES'	Some are: • willing to help regardless of the activity. • involved purely for the duration of the course. • involved for a limited time. • hoping to extend their involvement.
RQ3	Potentially all participants (all data sources) could reflect in CBPAR at evaluation phase	'ACTIVE' 'PASSIVE' 'INTERESTED' 'INACTIVE' 'VOLUNTEER' - 'CHARITABLE' - 'MERCENARY' 'MEMBER' 'CONTRIBUTOR' - 'WRITER' - 'TRAINER' - 'OBSERVER' - 'EDITOR'	'OLD-CHAMPION' 'FUTURE-CHAMPION' 'SUSTAINABLE' 'FUTURE COURSE' 'CONTRIBUTOR' 'CRITIC' 'ADDING VALUE' 'SENSE OF ENTITLEMENT' 'REAL NEEDS' 'PRACTICALITIES' - 'FINANCE' - 'HUMAN RESOURCES'	After the intervention, the follow-up activities focus on building and sustaining the CBPAR by identifying key 'champions' and opportunities which will help facilitate and maintain future courses.

Five phases were used to organise the data chronologically (See sections 3.2 to 3.6). This was done to observe if and how community participation took place at the various stages of the process. It was also used to observe how the course implementation proceeded – taking

into account the role of the participants and systems and structures that were put into place to make the course effective.

As the course was developed and structured with participants, the data reflects more on the individual contributions of various 'champions'(see coding) of the study and the subsequent effect or responses these contributions elicited from the recipients of the course (the young mothers). In the latter stages of the study, the data is effectively being used as a monitoring and evaluating tool to critically appraise the course itself and the systems and structures which were put in place to attempt to implement it. In the final stages, the data is 'triangulated' or cross-checked to draw out consistent conclusions from participants relating to how to improve the course as well as answering the broader research questions which address wider issues of course relevance and sustainability in the rural village context.

5.2 HOW THE EARLY PHASES OF THE STUDY RELATE TO THE RESEARCH QUESTIONS AND THREE OUT OF FIVE OF THE CBPAR PHASES

RQ1: How to establish a community of practise to design and implement an ICT course which includes BAE Nutrition content?

Prior to this study, the link with Mulamula had been established via my involvement with the establishment of and fundraising for the Mulamula Education Centre Project (MECP) while I was the teacher responsible for the project at Sevenoaks School in Kent, UK. In order to act in the village as MECP, permission from the Traditional Council was sought at a number of key stages to legitimise the project e.g. site allocation, building and usage (See Appendix 5: Chief's Letter - MECP permission letters). When this study commenced, MECP building was completed but the internal infrastructure of the library, hall and ICT training room were not complete and there was uncertainty about future funding and which educational programmes should take priority.

In order to answer the first research question (in accordance with 5 phases of CBPAR set out in the Methodology Section 4.1.2) it was necessary to do the following:

1. Get stakeholders to agree to a long term vision for the process.
2. Create infrastructure for the process that fostered participation and engagement.
3. Develop community links that sustained commitment from all members.

These first three objectives address three out of the five phases of CBPAR. The remaining 2 objectives are discussed later in Chapters 6 and 7.
In the following sub-sections, I elaborate on each of the above objectives.

5.2.1 Getting stakeholders to agree to a long term vision for the process

Definition of *agreement* (Oxford dictionary) [mass noun] *Harmony or accordance in opinion or feeling*[21].
As the agreement was not subject to any legally binding arrangements beyond the permission letter from the traditional council it is slightly more abstract than '*a negotiated and typically legally binding arrangement between parties as to a course of action'(also part of the dictionary definition above).* The study benefitted from the fact that no preconditions were placed on the study by the community. This enabled the course to develop freely.

Definition of *vision*[22] (Oxford dictionary) [mass noun] *The ability to think about or plan the future with imagination or wisdom.*

Definition of *agreed vision* for the purposes of the study
The above definitions combined give a sense of what the study is trying to achieve with the stakeholders. A functional definition for the *agreed vision* for the study could be: *Planning a harmonious mutually beneficial arrangement for the future using the combined wisdom and imagination of stakeholders.*

Getting stakeholders to agree to a long term vision was essential part of the process of setting up a community of practice to encourage and promote community engagement in development and delivery of the course started in August 2012 - as noted in the introductory paragraph above. The long term vision for the MECP project had been established over 2 years prior to the study and is documented in project reports, newsletters and trip reports (Appendix 7: MECP Publications/…). The study is evidence of the vision of a community

[21] *Source: http://www.oxforddictionaries.com/definition/english/agreement*

[22] Source: http://www.oxforddictionaries.com/definition/english/vision

education programme starting to become a reality in the village. The vision was first elaborated in a promotional leaflet produced for potential sponsors in the UK (See Appendix 7: MECP Publications /MECP Adult Courses Leaflet 2014):

"MECP Objectives:

- *Build a community education centre and library in Mulamula Village, Limpopo Province to promote lifelong learning for all.*
- *Inspire students to get involved with public service through volunteering activities.*
- *Inspire enterprise in rural communities through fundraising activities*
- *Encourage sustainable development by seeking to engage, employ and train local people to do meaningful work in their home communities.*
- *Build realistic networks to encourage educational and cultural exchange between students and adults from different countries and students in rural South Africa*."

However, the significant meetings related to the establishment of this study took place after a UK sponsors', Sevenoaks School[23], visit to Mulamula in August 2014 when issues of sustainability of the project were raised (See Appendix 7: MECP Publications/Mulamula Trip Report August 2014, p14). The first meeting (See Appendix 10: MECP Minutes/…) took place on 21st August 2014. The aim of the meeting was to introduce the community to the potential ICT courses that could be available in 2015 following the pledge of computers by the German sponsor Dr Jutta Lenz[24] (See appendix 35: *Photo diary*). The meeting was also a transitional meeting as the old MECP committee was disbanded and a new committee for the development of education programmes was proposed. In addition, this meeting was the first time Boikie Maluleke (see: Methodology section: Participants' biographies) volunteers his services to help implement a future ICT course at MECP.

The second meeting (See appendix 11: MECP Minutes/…) took place on 23rd September 2014 following confirmation of Dr Lenz's visit in November 2014 to deliver donated laptops from Germany. The meeting was called by MECP Secretary Robert Vukeya

[23] Sevenoaks School, Sevenoaks, Kent, UK, has supported Mulamula project since its inception in August 2011. (For website references to Mulamula project see: http://www.sevenoaksschool.org/news/article/news/mula-mula-trip-2013)

[24] Dr Jutta Lenz became interested in supporting MECP following a meeting with MECP Director Tivani Mashamba-Thompson at the Womens' International Trade Fair conference in Cape Town 6th-8th March 2014 (See: http://witf.co.za)

and was attended by a scaled-down group of community members[25]. The aim of the meeting was to inform the community of the timing of Dr Lenz's visit in November 2014 with donated computers and to mobilise the community to identify potential candidates for adult education classes. At this stage a trainer and student group had not been identified so it was necessary to get the community's input and ideas. A significant outcome from this meeting was the suggestion that young mothers (YMs) be considered as early beneficiaries of ICT training in the village.

The third significant meeting happened in November 2014, during the visit of Dr Lenz. A meeting was held with Nobela Magezi, Administrator from the Traditional Council Office, with the Director of MECP Tivani Mashamba-Thompson. The aim was to seek help in recruiting YMs at the Traditional Council offices[26]. Mr Magezi is responsible for organising YMs' welfare payments and had regular dialogue with YMs passing through his office.

In line with UKZN ethical approval procedures, permission for the study from the Chief was sought via email, and followed up with telephone calls, through Mr Magezi in the traditional council office in March 2015. The actual permission letter for the study (See appendix 5: Chief's Letter) was issued following my visit in Easter 2015 with Sascha Lenz and Dr Rachel Yu from Sevenoaks School. (See appendix: *Photo diary*) The aim of requesting this permission letter was to open the way for establishing a programme of ICT training specifically for young mothers (as they had now been identified as the beneficiaries of the training course) and allowed development of the necessary infrastructure for establishing the course.

The fourth significant meeting happened on July 7th 2015 when I visited the village to hold a workshop to introduce participants to the study and invite their participation. However, the day before the workshop, I met YMs with Mrs Mavis Shivumbu at our village home to discuss the course. This meeting was called as a result of our concern that the workshop was not going to be attended well (See appendix 15: WhatsApp dialogue Sascha). As it happened,

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[25] MECP Committee had been scaled down from a 'building project management committee' to an 'educational programme management committee' following the meeting of 21st August 2014 (See section: *Minutes from MECP Meeting 21st August 2014*)

[26] The Mulamula Traditional Council Office is a distribution centre for welfare payments in the village. Welfare recipients such as: pensioners, single mothers and disabled people congregate at the office on a monthly basis to receive cash payments. It was therefore a good venue to meet young mothers on welfare to promote the course.

I was not the only concerned party. The YMs were also concerned. They were seeking clarification about the course and the workshop's purpose. This meeting is significant (elaborate) because it was the first time I met any of the YMs personally and it was the first time they made their wishes clear. (See Appendix 12: Informal meeting with Mulamula YMs on 7th July 2015)

In terms of the research objectives, the meetings that took place aimed to foreground the study and engage the stakeholders in the community to agree to the study proceeding under their terms. What emerges from the meetings, is that the planned events do not always meet the desired objectives in isolation. Other hidden forces occasionally work in the background to support the desired outcomes.

The permissions that were sought for the purposes of ethical clearance provide evidence of the agreement of the village through their traditional leader, Chief Mulamula, as a formal representative as head of the traditional council. The meeting with the YMs also served as a form of 'permission seeking' where the YMs wished to meet, under their terms, as a group so that they could decide whether they wished to agree to attend the course workshop (discussed in section 5.1.2 below).

5.2.2 Creating infrastructure for the process that fostered participation and engagement

Definition of infrastructure (Oxford Dictionary): *noun*. The basic physical and organizational structures and facilities (e.g. buildings, roads, power supplies) needed for the operation of a society or enterprise.

(Source: http://www.oxforddictionaries.com/definition/english/infrastructure)

Definition of infrastructure for the purposes of the study: *What enables the process to take place, holds the process together and supports it in such a way that it functions efficiently*.

It was necessary to create infrastructure for teaching the ICT course and for physically managing the resources because there was no institution in the village established for teaching computers: the high school had no computers or computer room; the two village primary schools only had a few computers for teachers'/administrators' use and the MECP adult education building (which will have a computer suite) is not completed (See appendix 7: MECP Newsletter). Luckily, Mahlefunye Primary School had an empty but clean and secure computer room with burglar bars on the windows and a burglar-proof door.

In order to create infrastructure for the YMs' ICT and BAE Nutrition course that fostered participation and engagement with the community of Mulamula, it was necessary to establish relationships with key stakeholders through activities which paved the way for the actual course. Some of the relationships had already been established in the preparatory work detailed in section 5.1.1 above and some relationships developed as a result of the activities in that section. Some relationships developed as a result of seeking agreement to undertake the study in the village and some resulted from the involvement of the external sponsor Dr Lenz.

Dr Lenz's most significant contribution was persuading her son Sascha Lenz (YM-ICTF) to take a career break to go and work in the village for six months as a volunteer specialising in ICT between March and August 2015. Sascha's arrival in the village acted as a catalyst to motivate Boikie Maluleke (YM-T) to take an active role in developing and delivering ICT courses. As YM-ICTF's stay in the village was limited to 6 months (on a voluntary working visa) the establishment of YM-T as a lead trainer emerged as a vital part of the system.

This approach was followed in order to build on the earlier relationships as a logical step in maintaining the community of practice. It was also a result of the organic development of the initial ICT courses as a trial package for a future MECP adult education programme which centred around ICT as a medium to stimulate adult learning in a wide range of topics. This approach was used because the ICT equipment was donated and the approach is recognised as valuable in an adult learning environment:

> *It is the ability to use ICT that is now seen as integral to obtaining and keeping jobs in almost every sector of industrialised economies.* (Ginsburg, Sabatini, & Wagner, 2000)

The practical infrastructure required to deliver the course specifically for young mothers was developed and put in place through maintenance of these relationships. The organisation of venue, IT equipment, teaching resources, storage and transport for equipment were a result of a circle of cooperation which grew out of the participants choosing to work together towards a common goal. Without the computers the infrastructure for teaching ICT practically would be missing. Therefore, the donation of the laptops by the Lenz family and their donor friends in Germany was a crucial element of this process (See section 5.1.1).

Key activities that contributed to this phase were:

1. Development of ICT teaching resources with YM-ICTF (son of Jutta Lenz)
2. Trialing of the ICT Basics course, by YM-ICTF and YM-T, with Photani High School students at Mahlefunye Primary school with the support of YM-MECPS and staff of the school.
3. Organisation of a workshop for YMs and other women from the village on July 8th 2015.
4. Preparation and sharing of ICT and BAE Nutrition course resources in advance of the course's implementation.

Sources:

1. Initial ICT Course resources
2. Dialogues with YM-ICTF, YM-T via WhatsApp, Skype and Email in the build up to the course and preparation of resources
3. Workshop plan and associated publicity.

Development of YM-ICTF and YM-T's first ICT Basics courses in May 2015

In order to stimulate participation from the future ICT trainer and facilitator in developing ICT training courses which could be sustained at the Mulamula Education Centre Project, I asked YM-ICTF to develop an ICT Basics course[27]. He did most of the background work while he was waiting in Cape Town to travel up to Mulamula in February and March 2015.

[27] Sascha Lenz, 27 year old son of German sponsors Dr Jutta and Erwin Lenz, arrived in Mulamula in the last week of March 2015 with myself and Dr Rachel Yu (visiting from the UK during her Easter holiday to reconnoitre the Sevenoaks School trip in August 2015). He had intended to come to the village earlier in the year but was advised to stay in Cape Town until trouble relating to Malamulele's Municipality dispute was resolved and roads were cleared. (See: News 24: http://www.news24.com/Archives/City-Press/Malamulele-A-ghost-town-fights-for-its-rights-20150429) While Sascha waited in Cape Town to start his volunteering in Mulamula, I asked him to start work on the courses he was intending to teach ICT as part of his volunteering.

Initial ICT Basics Course content

The initial content for the ICT Basics course was compiled using free online sources. YM-ICTF scripted the content and created Powerpoint summaries to complement the notes. YM-ICTF and I added relevant visual reference materials using screen shots of actual window and icons which students would see on actual laptop computers they would be using when we shared content via email for editing purposes. (See appendix 15. WhatsApp dialogues S. Lenz)

We conversed on the telephone occasionally regarding his progress. I trusted YM-ICTF to produce something worthwhile although I had not met him face to face and had only conversed with him via Skype and email. This was partly because he was determined to prove himself and partly on the recommendation of his mother and father - to whom I had spoken on a number of occasions via Skype following Dr Lenz's visit in November 2014.

By the time YM-ICTF arrived in Mulamula (see appendix 35: Photo diary item) he had the skeleton of three basic computer courses in place: 'Computer Basics', 'Introduction to Word' and 'Introduction to Excel' and he was working on 'Introduction to Powerpoint'. He was writing what were almost technical manuals in English supported by Powerpoint presentations for each course. These were for the initial ICT courses he wished to start teaching with to high school students in May. I intended to work with YM-ICTF to refine them, as he taught his early courses, to produce a custom-built course for the young mothers.

I informed YM-ICTF that I would edit the courses. This promise was made before I saw them! When they arrived by email, I was shocked to see how much he had produced. As a native German speaker his written English was good but not perfect. When he started sending me the drafts in April to edit, I spent over 20 hours editing the first 'ICT Basics Course'. (See Appendix 39: Draft ICT Basics Course)

The course we eventually settled on for YM-ICTF's first ICT course for grade 12 high school students in the village was long and detailed for use with students who are keen to learn all the minutiae of computing. By the time I had completed the YMs'workshop (See 5.1.4) I was convinced that the YMs' course could not simply be YM-ICTF's ICT Basics course with nutrition content added. It had to be technically simpler and more skills focussed. I also concluded that content for the courses should be pre-loaded on laptops, or contained on a local area network (LAN), if YM-ICTF and YM-T could build one, in case internet connection was not possible/unavailable.

Trialling the ICT Basics course - Dialogues with YM-ICTF and YM-T - Relationship - Brotherhood

Boikie Maluleke's (YM-T) [See: Appendix 8: B. Maluleke CV] involvement with the courses started as a supporting role to Sascha (YM-ICTF). He helped YM-ICTF get orientated in the village as he drafted the courses and set to work installing software upgrades and Microsoft Office software on the 14 donated laptops which his family and friends had donated to the project. YM-T and YM-ICTF became friends and YM-T volunteered to stay in our house with YM-ICTF to help him work on the machines and help him adjust to life in the village.

The development of YM-ICTF and YM-T's friendship was a significant event in the establishment of the early ICT courses which precipitated the development of the YMs' course. Their friendship with me and their enthusiasm to live and learn new skills together could be seen as fortuitous but I consider that their shared love of technology and computers was a significant bonding element. (See appendix 16: WhatsApp dialogues B. Maluleke)

YM-ICTF and YM-T together established weekly ICT Basics classes for Grade 12 high school learners from Photani high school which is located in Mulamula about 500 metres west of Mahlefunye primary school. (See Introduction. Figure 1.1 Mulamula map) Following my discussions with Robert Vukeya - MECP Secretary and Head of Mahelfunye School – (See participants' profiles in Methodology) during the Easter 2014 trip to the village, YM-ICTF and YM-T were given permission to use the Mahlefunye Primary school ICT room venue.

YM-ICTF and YM-T cooperated to teach these courses using the same 14 donated laptops and the digital projector I supplied for teaching. They also worked together to build a projector screen for their classroom using a large white sheet, wooden edging strip and angle brackets purchased in the local hardware store (See appendix 35. Photo diary). These activities were significant as they indicated the growth of a practical working relationship between the eventual YMs' course trainer (Boikie), ICT facilitator (Sascha) and Mahlefunye school administration (Headed by Robert) where local knowledge and expertise from different stakeholders were combined for a common goal.

Monitoring and resourcing the initial ICT courses

I was informed of progress with the writing of courses, technical issues and day-to-day developments via WhatsApp messaging, telephone calls and emails (See Appendices 15 - 18). What is significant about these interactions is how the initial courses became a testing ground for YM-T's and YM-ICTF's relationship with each other, the community and the school. By the time they had taught the first course for high school students in May – June 2015, they had established a working relationship in which they recognised each other's strengths and weaknesses and were able to work in tandem.

I was able to make the above observations because YM-T and YM-ICTF reported to me in an open and frank manner. This is evidenced in extracts from dialogues with the two which are detailed in section 5.1.5 below.

A benefit of having such open dialogue with YM-T and YM-ICTF was that I was able to respond to their practical needs for administrative paperwork and financial support. I produced class registers, advised them of the need to file all receipts and create Excel spreadsheets to record all expenditure. (MANAGEMENT SYSTEMS)

The two young men worked in a responsible manner and produced a file of receipts and a comprehensive spreadsheet of expenses relating to communications, course and household expenditure by the end of August 2015. (See Appendix 34: Course Expenditure) This enabled me to refund them for most of the costs incurred in setting up the initial courses and eventually the YMs' course. Thankfully, the pair were frugal and used their technical skills to improvise - as mentioned in the paragraph on setting up the ICT room in the previous section. As both had agreed to work as volunteers, and the courses were offered for free, they were profoundly aware that there was a very limited budget (IMPROVISATION) All of the courses proceeded without incurring exorbitant costs. This can be attributed to YM-T's and YM-ICTF's careful financial management and is a sign of the maturity that the pair showed in delivering the courses on a shoestring budget.

How progress with development of courses was monitored

WhatsApp messages, telephone dialogues and emails were used to help prepare the way for the young mothers' ICT and BAE nutrition course and maintain a remote support network for

YM-T and YM-ICTF from early April until August 2015. The purpose of the dialogues was to:

1. Set up the room for the YMs's ICT course (and other ICT courses) at Mahlefunye primary school because it had a tidy, lockable ICT room with desks and chairs and a reliable electricity supply.
2. Establish YM-ICTF in our home[28] in the village with fuel, water and electricity for 5 months so that he could live and work in the community without incurring too much expense.
3. Maintain a support network for YM-T and YM-ICTF so that they could work comfortably with the traditional council administration (TCA), and MECP village committee members such as Robert Vukeya (YM-MECPS).
4. Establish the ICT hardware and software needs for the course in order that software was consistently installed on all machines and functioned reliably.
5. Establish whether there was interest in the course amongst the young mothers registering for welfare at the TCA by providing a flyer and sign-up sheet for the TCA administration to show to young mothers on welfare money collection days.

Examples of a typical dialogues with YM-T and YM-ICTF

The dialogues with YM-T and YM-ICTF were transcribed and are presented in the appendices. The dialogues are divided into the 3 stages: pre-intervention, during-implementation and post-intervention. Significant sections of conversations are presented with the section 5.3 themes later in this chapter.

YM-ICTF and YM-T established a good working relationship while putting in place the first ICT Basics course and eventually ended up sharing our family house that I had set up for the German volunteer's accommodation. This way they were able to work together informally setting up computer hardware, software installation and organising the information management systems for collecting data for the study. This sharing of accommodation enabled the two young men to work together constructively and quite intensely. It also made it easier for me to communicate with them both as they could share a

[28] My wife Tivani (MECP-D) grew up in the village area and built a house in the village for our family to use when she was living and working in the United Kingdom.

data dongle and communicate with me via the project laptops they were maintaining for the courses.

Planning of the YMs' workshop

In order to meet YMs, course facilitators, potential course trainers, members of the Mulamula traditional council office and MECP committee members that were helping facilitate the course, a workshop was planned for the 8th of August. Permission to hold the workshop was sought by telephone conversation with Nobela Magezi the TCA administrator. It was held at traditional council office hall and set for a 10am start and was due to run for 3 hours[29].

The workshop was advertised through a flyer which was sent by email to the traditional council office for circulation to YMs two weeks prior to the workshop (See Appendix 20: Course flyer/..). The workshop was also promoted by word of mouth with the help of YM-T, Esther Matidze (YMF2) and Mavis Shivumbu (YMF1) who all attended on the day.

The purpose of the YMs' workshop was to introduce the community to the ICT and BAE Nutrition course and stimulate participation in the development of the course. I also wished to ascertain how many YMs were genuinely interested in the course and agree practical details with them with regards to date, time and venue of the course. The workshop also enabled other older women from the village to participate and contribute their ideas.

Results of planning the workshop

The workshop was planned to take place in the Mulamula Traditional Council hall and the items planned are shown in the workshop plan (See appendix 21.Workshop Outline). On the day, the activities were shortened to take into account the delayed start (see footnote). The items planned are shown below:

[29] The workshop start was actually delayed by about an hour as the traditional council called a meeting with the MECP committee and Mulamula crèche in the same venue to sort out an issue which had arisen about the two separate projects sharing the same plot of land. This meeting was significant as the Chief resolved to split the plot and give MECP a separate stand number which allows the MECP to operate independently to the crèche.

1. Discuss the proposed ICT and BAE Nutrition course and invite YMs to participate as adults in the presence of other participants to stimulate discussion within and outside their normal peer group.
2. Discuss 'ICT' and 'BAE Nutrition' definitions to establish level of understanding, encourage discussion and to gauge interest in the subjects.
3. Introduce the potential course trainer and ICT facilitator to enable YMs to meet them and get to know them as adults.
4. Demonstrate computer functions and software applications with a laptop and digital projector in order for those present to see some of the activities that would be part of the proposed course.
5. Encourage feedback/opinions via anonymous post-it notes using a noticeboard (flip chart stand)
6. Completion of informed consent for study as part of the formal process of implementing the study (See appendix 6: Chief's permission for study)
7. Encourage completion of Workshop Evaluation forms (See appendix 23) and Application forms (See appendix 25) to enable establishment of systems to
8. Discuss and agree the best venue, time, start date and course duration by recording decisions as a vote by show of hands to promote young mothers' ownership of the course they were signing up for.

In order to promote the workshop a flyer was produced (See appendix 20: Course Flyer) and emailed to the TC administrator and YM-T for distribution at the TC offices on the days that young mothers attended the office to collect welfare money. This method of promotion turned out to be fairly inefficient as no individual was approached directly to take responsibility for distributing the flyers. I was informed by Nobela Magezi by phone that 10 young mothers had taken flyers two weeks prior to the workshop date but was unable to confirm this.

The results of the workshop address research question 2 and are analysed in chapter 6. The workshop outcomes planned above were designed to illicit responses from YMs and other participants in an informal way. The use of the traditional council hall, which is used regularly by women's groups from the village (some who attended the workshop), was beneficial because the YMs were being introduced to a setting where adult learning already takes place. As some had not attended any formal education or training since leaving school,

it seemed appropriate to discuss the course in an adult setting to make the YMs feel like adults. This decision turned out to be a good one as the YMs reacted positively to the workshop.

5.2.3 Develop community links that sustained commitment from all members.

Developing community links that sustained commitment from all members was a challenging aspect of the study. This was due to a number of issues: cultural differences, language differences; physical geographical separation; reliability and cost of communication systems. In order to set up and maintain links, it was necessary to physically visit the village in advance of the study and meet people and reinforce old links established through MECP.

It was also necessary to establish and sustain long-distance links through communication with members of the community directly involved in establishing the course (YM-T, YM-ICTF and YM-MECPS) and those who supported it from other linked organisations in the wider community (Traditional Office and MECP).

Developing the links not only tested relationships but also tested different methods of communication. A combination of remoted dialogues, paper systems, direct conversation and online social media systems was used to reinforce, establish and maintain links using the sources described below:

Sources:

1. Dialogues with YM-T, YM-ICTF and YM-MECPS via WhatsApp, and Skype.
2. Application forms from YMs.
3. Engaging with YMs as adults through the teaching of the workshop.
4. MECP Facebook page - Keeping the wider community informed of the course's progress through social media.

Dialogues with the course trainer, ICT facilitator and MECP Secretary/Head of Mahlefunye school

As mentioned earlier, the dialogues with YM-T and YM-ICTF were a valuable source of information regarding the progress of the ICT courses; community participation in the courses and external factors that influenced the progress of the courses on a day to day basis.

I tried to communicate with them in a way which was supportive but also enabled me to gain timely feedback on events as they transpired.

Occasionally, it was necessary to talk to Robert Vukeya (YM-MECPS) via telephone/text messaging. I did this as a courtesy in the first week of the ICT Basics course to check that the courses were proceeding in a way which was satisfying to his school's daily organisation. I also communicated with Robert informally between the visit at Easter and the visit at the end of August to monitor progress with the MECP site[30].

The purpose of the dialogues described above was to maintain connection with what was happening on the ground, in real time, as the instigator of the ICT course programme. I also had an additional role which was to keep Dr Lenz and her husband updated on YM-ICTF's progress living as a volunteer in Mulamula. As the work progressed, I also realised that my interest in the day to day work on the MECP site and at Mahlefunye school played a motivational role. This is seen in some of the dialogues that are recorded on WhatsApp and Skype conversations. (See Appendices 15-17: WhatsApp dialogues and 18-19 Skype dialogues)

<u>What emerged from the remote dialogues with YM-T and YM-ICTF in terms of establishing systems to maintain the course/s</u>

The dialogues with YM-T and YM-ICTF via WhatsApp messaging and Skype conversations show that after an initial flurry of activity at the beginning of the process, I gradually become a sounding board for them to reflect on the progress of 'their' courses. They initially reported on the day to day practical issues in setting up and then gradually start to reflect on what happened during the lessons. Some key conversations are shown in the themes section 5.3.

What is significant is that I am able to contribute remotely using these relatively instant forms of communication and help sort out some issues using my previously established relationships in the village with individuals such as YM-MECPS and the Head of Photani High School. For example, an interesting anecdote/example from the first day of the first ICT Basics course, recorded in WhatsApp message is that no G12 students turned up from the high school:

[30] I also received updates on MECP site progress via text message and telephone from Boikie's father Jonas Maluleke the MECP Treasurer.

YM-ICTF – *'For the classes, no kids showed up. I am kind of angry now. I will go to the High school tomorrow and talk to [The Head]'*
Researcher – *'Sorry to hear that. Was Boikie with you?'*
YM-ICTF – *'Yes he was'*
Researcher – *'I will call Photani tomorrow and call you after 10am'*
YM-ICTF – *'I spoke to [the Head] but he said he wasn't there this afternoon so he doesn't know what happened. He blames the discipline of the students. I will go there tomorrow to follow up.'*

I had to follow this up with Robert Vukeya, on May 6th, (See Appendix 17: Transcript of WhatsApp dialogues with MECPS) as the Head of Photani High School was out of town and YM-ICTF did not know who else to follow up with:

Researcher – *'Hi Robert, I hear Sascha had not students from Photani today. Was there a mix up? If Photani can't get a group, why not pull together a G7 class for him to work with. He has done so much preparation and written an excellent course.'*
MECPS – *'Don't worry if Photani is failing to honour its commitment our school will never disappoint. We are ready to keep Sascha busy. Do not panic. Regards Robert'*
Researcher – *'Hi Robert, Photani delivered on Thursday. He had a class of 8-10. I think it will still be good for them to do a second class (even one for staff) if they are up for it.'*

It turned out that the Head had not delegated the job of reminding the students about the course to a junior member of staff on the day he was out. The students turned up for the course on the second day and the Head was very apologetic.

The above example typifies the value of the previously established relationships working with modern communications networks to solve problems when there is a unified determination to succeed. The actions described above also seemed to reassure YM-ICTF that he was not alone with YM-T trying to make the courses work.
The failure of students to turn up at the first class could have had tragic consequences if both YM-T and YM-ICTF had not shown determination and a 'champion's' spirit in persevering and continuing to set up for class the following day.

Application forms from the young mothers (initially collected from the YMs' workshop on 8th July)

Application forms were collected from 4 out of the 6 YMs that attended the briefing workshop. Following the workshop on the 8th of July, in the two weeks leading up to the start of the actual YMs' course and during the first session of the course, another 16 application forms were collected. YM-T took on the role of chasing the forms and YM-ICTF conveniently filed them in a folder for my perusal. Although they were aware that I wished the study to include 'young mothers older than 18 years and younger than 25 with at least one child under the age of 5', they did not exclude older mothers from the eventual class cohort as they wished to make it as popular as possible and promote their classes for the future MECP ICT course programme. I only became aware that the 'exclusion criteria' had not been applied when I began to process the forms after the course had started. This could be seen as an error in the research protocol. It could also be seen as an unexpected result which could have been predicted if more YMs had been able to attend the initial workshop.

Looking at the data from the sample of 20 mothers in table 5.2 below it is interesting to note:

- With exclusion criteria[31] applied, 14/20 (70%) of YMs do not fit the study criteria (Age <=25 with a child <=5years). This is due to the decision to include additional interested YMs after the eligible ones had a place on the course if places were available
- YMs in the sample were more happy to inform the study that they were single than to share details of their school Matric progression. 16/20 (80%) responded on marital status and only 6/20 (30%) responded on Matric level achieved. It could be hypothesised that those that did not respond to questions about matriculation did not matriculate and felt inhibited about it.
- 9/20 (45%) responded positively towards the idea of volunteering with Mulamula Education Centre Project in return for adult education classes.
- 3/20 (15%) responded that they were employed although the type of employment the mothers enjoyed was not pursued. This should have given an 85% unemployment

[31] [Limitations]. Note: These exclusion criteria were also used to determine which YMs interviews to include at the end of the study.

level in the group, however, 5 chose not to respond which meant that 12/20 or 60% responded that they were unemployed.

- 9/20 (45%) chose not to say how many children they supported and 10/20 (50%) chose not to respond to the question about 'adult dependents'. This may be due to a tight lipped attitude to answering questions which may relate to welfare entitlements.

It is uplifting that the YMs are willing to consider volunteering at MECP considering their lack of paid employment. This may be explained by the culture of 'internship'[32] that has grown in South African firms where they see that volunteering may lead to future employment. This hypothesis is partly backed up when the written motivations for attending the course are viewed. 4/7 that responded to the question indicated that they wished to attend the course because they saw it as a way to access future employment and the other 3 indicated that they were doing it to educate themselves and acquire new skills (which could be interpreted as a step towards future employment)

Regardless of how the data is viewed, including or excluding the mothers older than 25 years old, the 60% -admitted- unemployment level from the sample may be considered acceptable if the YMs were married with working contributing husbands. However, as 75% responded that they were single, it is alarming that some of the 'older' YMs have been out of school for more than 10 years and are still unemployed.

[32] Definition: Internship – 'The position of a student or trainee who works in an organization, sometimes without pay, in order to gain work experience or satisfy requirements for a qualification' (Source: http://www.oxforddictionaries.com/definition/english/internship)

Table 5.2. Biometric Data on young mothers extracted from the YMs' ICT and BAE Nutrition course application forms

Young mother code	Date of Birth	Age	Number of dependent children	Age of children	Number of dependent adults	Marital status	Completed Matric (Y/N - Year)	Final School year	Employed (Y/N)	Student (Y/N)	Willing to volunteer at MECP	Type of volunteering	Motivation for application
YM 1	23/03/1994	21	1	3yrs	0	single	Y-2010	G12	N	N	Y	cleaning	education
YM 2	22/05/1992	23	1	3yrs	0	single	Y-2010	G12	N	N	Y	cleaning	education
YM 3	10/03/1992	23	1	4	0	single	-	-	N	N	N	-	-
YM 4	21/11/1992	23	1	3	0	single	-	-	N	N	N	-	employment
YM 5	09/09/1990	25	1	6	0	single	-	-	N	N	N	-	-
YM 6	02/07/1990	25	1	3	0	single	-	G11	N	Y	Y	cleaning painting	employment
YM 7	18/09/1990	25	2	7	0	single	-	G11	N	Y			employment
YM 8	30/08/1988	27	1	-	0	single	Y-2006	G12	N	Y	Y	painting	employment
YM 9	18/10/1988	27	2	-	0	single	-	G11	N	Y	Y	painting	ICT skills
YM 10	25/08/1989	26	-	-	-	single	-	-	-	-	Y	painting	-
YM 11	24/12/1983	32	-	-	-	single	-	-	N	-	-	-	-
YM 12	20/12/1989	26	-	-	-	single	-	-	-	-	Y	collecting stones	-
YM 13	20/06/1984	31	-	-	-	single	-	-	N	-	Y	cleaning	-
YM 14	05/09/1987	28	-	-	-	single	-	-	N	-	-	-	-
YM 15	29/05/1986	29	-	-	-	-	-	-	N		Y	collecting stones	-
YM 16	02/10/1993	22	2	-	-	-	-	-	-	-	-	-	-
YM 17	27/01/1988	27	-	-	-	-	-	-	-	-	-	-	-
YM 18	04/06/1986	29	-	-	-	-	-	-	-	-	-	-	-
YM 19	06/07/1987	28	-	-	-	single	-	-	Y	-	-	-	-
YM 20	-	-	3	-	-	married	-	-	Y	-	-	-	-

Note: If rigid exclusion criteria are applied 14/20 (70%) of YMs do not fit the study criteria (Age <=25 with a child <=5years)

Although there were only 4 application forms collected from the initial workshop, they produced enough initial data to get some idea of what the YMs were looking for from the course. The fact that they filled in the forms during the workshop was partly helped by having a snack break during the workshop in which forms were handed out. The YMs were also given pens and asked to complete application forms and evaluation forms as the final stages of the workshop were delivered.

All participants in the workshop completed evaluation forms and consent forms including older mothers. The evaluation forms again feed research question 2 and are dealt with in section 5.2

Creating links through activities undertaken during the workshop

Additional agreement by the group was gained towards the end of the workshop by involving the YMs in a vote on which were the most favourable arrangements for the course in terms of days of the week, course duration and time. Although at the time this seemed like a superficial activity, it seemed to have a positive effect on the women in the room as they were invited to take part in a decision making process. The decisions taken as a group are shown below in table 5.3:

Table 5. 3 Decisions made by workshop participants during flip-chart voting page exercise

Decisions to be taken or discussed	Result	Votes
1. Best day to attend YMs' ICT and BAE Course	Mondays	3 out of 4 (one voted for Friday)
2. Best additional day to attend YMs' ICT and BAE Course	Tuesday	4 out of 4
3. Course duration	4 – 6 weeks	Initially, 4 weeks was suggested but ICT facilitators suggested that content would be limited to teaching basic word processing if the course was limited to 4 weeks.
4. Best time to study	10am – 12noon	4 out of 4
5. Ideal class length	Minimum of 2 hours	4 out of 4

The process of securing this agreement is detailed further in section 5.2. The result is significant at this stage because it signifies that the workshop went some way to engage YMs and other women in making planning decisions regarding the course they were going to attend. In the above *process of sharing information and experiences with the group the members learn from each other*[33] and are able to make informed collective decisions. This small inclusive group decision making processes improved my relationship with the YMs present and strengthened links with the community as everybody was appreciative of the opportunity to make decisions to make the course happen at the most convenient time for them as a group.

Engaging with the young mothers through the teaching of the course

Although I couldn't physically engage with the YMs during the early stages of the course, I was able to attend the last two classes. I was also able to gain feedback on YM's responses to the classes at various stages via Skype conversations with YM-T and YM-ICTF. To gain insight into the day to day interactions during classes between YM-T, YM-ICTF and the YMs, the classes were videoed by YM-ICTF using his personal digital camera.

The purpose of seeking this data was to ascertain the YMs' natural reactions to the classes and whether their participation/contributions matched what YM-T and YM-ICTF were reporting to me.

During the last two classes, as a third male (and second white male) in the room, I felt that I was possibly not the best person to get natural responses from the YMs by touring around the class and chatting with them. My Tsonga is limited to simple greetings and I didn't want to drag a translator around the class with me to try and get 'spontaneous responses'. I chose to let the video camera do the observation. I greeted the whole class in English, thanked the YMs for attending the course and asked for their help in filling out evaluation forms and discussing the course with me and YM-T in structured interviews.

Interestingly, Robert Vukeya toured the class chatting informally with the YMs when he visited the final class on the last day to help officiate distribution of the certificates of participation. (See: Appendix 35: Photo diary) As a Head teacher, this kind of classroom interaction seemed natural for him. He used his discussions with the YMs on this visit to add

[33] A fundamental process within a community of practice (Source: https://en.wikipedia.org/wiki/Community_of_practice)

feedback on his impression of the course in the interview that he did with me on the following day. (See Appendix 17: WhatsApp dialogue with R. Vukeya MECPS)

Observing the YMs' reactions to my visit to their class and Robert's visit to the class, I was very pleased to see how much the YMs appeared to enjoy the course and the interactions they were having with YM-T, YM-ICTF and YM-MECPS. This observation was backed up by the responses to the course and the trainer/s which came out of the course evaluations and interviews (See Appendices 24 and 32: YMs' Course Evaluations, YMs' Course Interviews)

The YMs enjoyed the interactions that were put in place to make the course happen and they enjoyed the opportunity to learn as a single sex social group. They reported that the course was a good opportunity for them to meet and discuss other issues as a group with shared needs and interests (this was not part of the plan but is a natural spin off from adult education groups that I have attended personally).

Keeping the wider community informed of the progress through social media

As part of my role as a project manager for MECP since August 2011, I have assumed the role of press officer and publicist (See: appendix 7. MECP Newsletters). As part of the MECP a social media site[34] was established to promote events relating to fundraising and development of the MECP adult education centre in Mulamula. During this study, I used the site to post reports and images as I received them from YM-T and YM-ICTF which showed course progress. These posts received responses from local people in the Mulamula area and from respondents from much further afield such as the UK sponsors Sevenoaks School.

The postings mostly received positive responses ('Likes) from most viewers of the page. One of the most interesting posts was from a young man responding to news of the new Young Mothers' ICT and BAE course (See appendix 36. Young Father-Facebook-13-08-2015):

Young Man: August 13th 2015: '*What about young fathers?*

Mulamula Education Centre Project: August 13th 2015:

[34] Mulamula Education Centre Project social media page. Source: https://www.facebook.com/MulamulaEducationCentreProject

'We plan to run young fathers' classes when we get into the purpose built ICT rooms in MECP. We are just awaiting a power connection and then we can wire the centre properly'

Young Man: September 2nd 2015:

'Is unfortunately I'm bit far from the village now but with the little chance I have I can cos if I look at our boys(young fathers) are getting twice older than their age ,they just wake up and wander where the yellow bucket is, As a result the future of our village will turn into decay'

The young man, from the village originally but now living elsewhere, is concerned about the welfare of young fathers in the village as much as young mothers.

The young man's comment is useful for future MECP education programme planning but also indicates that the social media site has some added future value in eliciting responses from the wider community.

5.3 THEMES WHICH EMERGED FROM THE PRE-IMPLEMENTATION PHASES OF THE STUDY

Establishing the community of practice to implement the ICT and BAE Nutrition course within the 5 phase CBPAR framework (as presented in the methodology section) produced results which were organized under key themes listed in section 5.1.

5.3.1 Theme 1: Recruiting Participants & Participation of Stakeholders and the Wider community

In recruiting the participants and mobilising participation of stakeholders in the study, with the support of the wider community, it was necessary to manage the process with activities and dialogues which gave the study an element of formality but also enabled the participants to influence the process.

Distributing sign-up forms/flyers and application forms (See Appendix 25: Course Application forms) to the traditional council (TC) office was a way of involving the traditional council office from the outset in the recruitment of YMs. It was important as it made the study fit with the *standards and norms* or *protocols* of the village with regards to

acceptable behaviour. [FORMALITY] In terms of results, the TC's role in recruiting through the use of forms was not very successful. They claimed to have informed 10 YMs and initially 6 materialised. However, the role of the TC was significant in providing a suitable neutral venue for the workshop. The result of the workshop was that the attendees were inspired to attend the course and the older mothers that attended as chaperones were inspired to spread the word and recruit more YMs.

The actual course recruitment process yielded 20 YMs who filled in application forms and attended the ICT and BAE Nutrition course. Six of the YMs were involved in the meeting that took place at our home (See: Section 5.1.1) and 4 were eventually able to attend the workshop (See: Young Mothers' Biometrics table above). The remaining 14 mothers were recruited through word of mouth, or *village grapevine,* [INFORMALITY] with the help of Mavis Shivumbu (YMF1), Esther Matidze (YMF2) and YM-T. This informal communication process enabled the course to have a significant attendance.

By locating the study in the community – making it community-based or *focused on or relating to a community*[35] the participation of the community was significant in finding the additional 14 YMs.

The other side of the recruitment process involved the mobilisation of YM-T and YM-ICTF as trainer and ICT facilitator/ICT facilitator and trainer to run the course on a regular basis. Their presence and involvement in the YMs' workshop seemed to inspire them to make the course happen. At the workshop, they contributed to the workshop activities (detailed in section 5.2) and helped set up a slideshow presentation with one of the donated laptops so that the YMs could see the technology that they would be experiencing on the course.

What the recruitment process finally yielded was a group of 20 YMs that signed up for the course during the 2 weeks between the YMs workshop and the start of the course. Their motives for signing up for the course were varied (see table below) The process also established the commitment of YM-T and YM-ICTF to teach and facilitate the course with the support of YM-MECPS at Mahlefunye School. In addition, the process drew the interest and support of older mothers (Mavis and Esther) who gave support in motivating the YMs and volunteered their services in facilitating the workshop. Other older local women (see

[35] Definition of 'community-based' Source: http://www.oxforddictionaries.com/definition/english/community-based?q=community+based

course attendees in section 5.4.1) showed interest in the potential for future adult ICT courses for the wider community.

5.3.2 Theme 2: Researcher flexibility

As the initial stages of the study proceeded the theme of 'researcher flexibility' emerged. This was not necessarily something which was stated in data. It was a result of the realisation that I – as lead researcher – was having to remain attuned to the day to day happenings in the village from a distance of 1,057km[36]. In choosing to locate the project at such a great distance from my workplace, I had to develop flexible approaches to researching the intervention. This involved developing relationships where I had to trust others to provide me with data when I was not in the village. These relationships required me to pass responsibility to 'intermediaries'(Fenwick & Edwards, 2010, pp. 11-12) such as YM-T and YM-ICTF. It also required me to take on a monitoring role using communications media which was more familiar to the younger men (WhatsApp and Skype) Gradually, they took over managing local issues on a day to day basis in the form of 'mediators'(Fenwick & Edwards, 2010, pp. 11-12) see examples in table 5.4 below.

In the period between the July 8th workshop and the beginning of the YMs' course I was no longer in the village to follow-up on recruitment. Mavis, Esther and YM-T's work in promoting and encouraging the young mothers to attend the course was therefore a significant factor in ensuring that the course was well attended. During this period I had to rely on updates from YM-T and YM-ICTF to keep me abreast of developments in the village.

My role as a motivator during the workshop phase was therefore modified by remoteness to a role of remote supervisor. The physical distance between Durban and Limpopo Province dictated that I rely on telephone and internet communications. In the period immediately after the workshop I was concerned that the course might not materialise with only 4 confirmed YMs signed up. I therefore tried to motivate YM-T and YM-ICTF to act as 'champions' by sending them course content and resources and asking them to comment/feedback on them.

[36] Distance from Pinetown to Malamulele (Source: https://www.google.com/maps/dir/Pinetown,+South+Africa/Malamulele,+South+Africa)

With YM-T and YM-ICTF already teaching two ICT Basics courses: one to the Photani High School students and one to teachers from Mahlefunye Primary and Chanyela Primary schools[37], their motivation to teach was undisputed. I was mainly concerned that they might suffer from 'burn out' before the YMs' course started in mid-July. By maintaining an interest in their work via WhatsApp, Skype, email and telephone I was able to play a motivational role from a distance.

Table 5.4 Significant early comments relating to 'researcher flexibility' which aids the process

Source	Date	Comments/Dialogue	Interpretation of the relationship to 'researcher flexibility'
WhatsApp message: Rowan Thompson – YM-T	April 26th 2015	**Rowan:** 'Hi Boikie, I sent you and Sascha application forms again to use for recruiting students for your first course/s. Please make sure students sign up for some MECP voluntary work..' **Boikie:** Thanks	My out-sourcing of administrative tasks but maintaining profile as MECP 'project motivator' pushing volunteering in return for lessons. YM-T taking on role as administrator of his courses.
WhatsApp message: Rowan Thompson – YM-T	May 11th 2015	**Rowan: '**Great pictures from the lessons last week. Try and get some feedback from the class in writing for future promotion.' **Boikie: '**I try to write down the feedback so the students understand everything. I had a one to one with one of the students. He told me he understood everything. I will written down feedback for every lesson we have.'	My encouraging YM-T to keep photographic records for the research while encouraging him to seek out comments for marketing the courses. YM-T acknowledging advice and providing feedback on high school students' course.

[37] Chanyela Primary School is a small school on the north side of Mulamula Village. Robert Vukeya had been deputy head there until his promotion to head at Mahlefunye PS. He still maintains strong links with the school and helps motivate teachers there to attend training events.

WhatsApp message: Rowan Thompson – YM-T	May 11th 2015	**Rowan: '**I would like to offer something for young mothers which includes basic intro to IT and Nutrition. I am going to work on setting up the YMs course when I visit at the end of the month. **Boikie: '**I can't teach the YMs due to lack of transportation, we knock off late. I can't have access to the school's safe after the teachers and school management are gone.' **Rowan: '**YMs course will not happen immediately. We hope to work it into plans for MECP. You have done well getting something started.' **Boikie:** 'OK, Then I am at your service'	My proposing YMs' course as a spin-off from earlier courses established together with YM-T and YM-ICTF. Reassuring him that I will be present to start the process in the village. YM-T, initially reluctant to get involved, modifies his viewpoint when he is reassured that it will not happen immediately. I also compliment him on his achievement to date.
WhatsApp message: Rowan Thompson – YM-ICTF	April 14th 2015	**Rowan:** 'Hi Sascha, I have edited 21 pages of 76 in computer essentials. It is taking a long time but the content and structure are very good. I think you should burn it onto CDS and sell it to MM students/teachers. It would be cheaper than printing. I will keep editing tomorrow.' **Sascha:** 'OK thanks. I'm done with presentation and just check it. I will put it in the drop box as well.'	**My responding positively to editing YM-ICTF's preliminary work on the ICT Basics course while suggesting that the length of content may dictate a different method of distribution (he had hoped to print notes).** **He responds appreciatively to the feedback and reports completion of the job. He also suggests uploading to an online 'cloud' storage site to store and share the content.**

Looking at the early WhatsApp dialogue examples shown above it is evident that the ‘researcher flexibility’ is linked with ‘changing roles’ (Fenwick & Edwards, 2010) which was identified as an emergent theme. The interactions show a sharing of responsibility which is driven by the desire for the courses to be successful.

There is also an indication that appreciative themes: ‘gratitude’ (showing gratitude); reporting of ‘actions’ and demonstrations of ‘commitment’ have a role to play in maintaining a constructive working relationship between the researcher (myself), the trainer and the ICT facilitator.

5.3.3 Theme 3: Establishing 'Champions'

Although a number of individuals in the community helped to create a community of practice by attending the different meetings, a few participants acted at a more significant level to motivate and bring together/unite members of the community. I categorised these individuals under the theme of 'champions'. How these individuals were established as champions is based on their constructive contributions in the various activities observed.

Dictionary definitions of a *champion* - ***n****. Person who fights, argues etc. for another or for a cause(Fowler, Fowler, & Van Santvoord, 1927)* or *A person who vigorously supports or defends a person or cause*[38].

Study Definition: *Participants whose contribution to the process was crucial to developing engagement in the community and enabled development of the course.*

The theme was then broken into sub-categories: established champions, emerging champions and future champions. These sub-categories acknowledged the contributions of: individuals with a prior interest in the project through MECP involvement (established champions); individuals who were taking on an active role in the establishment of the courses (emerging champions) and individuals who were putting themselves forward/offering to help establish the courses (future champions). These sub-categories start to give the participants identities which match in some ways the CoP heirarchies (Wenger, 1998) where 'masters' or experts work productively with 'apprentices' or novices. Eventually, ‘novices’ become

[38] Source: http://www.oxforddictionaries.com/definition/english/champion

experts and replace their ‘masters’- this is the intention of the course design. In the intermediate phases, the motivated novices are acting as enthusiasts by motivating others through their enthusiasm.

Myself, Robert Vukeya and my wife Tivani Mashamba-Thompson are categorized as 'established champions' in that we organised the meetings which stimulated the development of the course as a continuation of activities relating to the progress of MECP. We also brought our expertise in organizing formal meetings, human resource management and project management to the village. Our contribution had been proven through the development and building of the MECP (See appendix 7. MECP Newsletters). My historical role with MECP and subsequent involvement could also be categorized with the ‘emerging champions’ as a champion motivator. Without my prior involvement with MECP and academic motivation to implement the study it would not have happened. In preparation for the various implementation activities, I have to motivate other participants to meet goals.

Boikie Maluleke, Sascha Lenz and Dr Jutta Lenz, in a more remote sense, are categorized as ‘emerging champions’ as their participation and commitment is specifically related to the development and delivery of the ICT-based courses which ultimately resourced and paved the way for the YMs’ course.

The latter group, ‘future champions’, is populated by the older mothers and young mothers. They became motivated by: helping recruit additional YMs for the course; attending the workshop; participating in the development of the course; or through their classroom roles. These roles included: attending the lessons regularly, providing constructive feedback and helping weaker students voluntarily. YMs 1, 4 and 6, who were part of the process from the initial informal meeting at our home through to the concluding interviews at the end of the course, could be categorized as ‘**future champions**’. Their willingness to contribute ideas and volunteer for MECP-based activities are signs that they have been inspired to learn more and wish to participate in a way which is not simply for their own personal motives but driven by a sense that they want to help the community grow.

Table 5.5 below summarizes some results from meetings and dialogues which indicate how some of the above-mentioned individuals reveal themselves as champions through their commitment and desire to make the process work.

Table 5.5. Significant comments relating to 'champions'

Champions	Source/Tool	Date	Comments	Relationship to 'champions'
Young mothers (YM1-YM6) **[Emerging - Future]**	Meeting at our Mulamula home (arranged by Mavis Shivumbu – YMF1)	7th July 2015	*'During the discussion, one YM asked about the age limits for the course… One YM asked whether they would receive certificates for attending the course.'*	The determination of the YMs to find out more details about the workshop and make their concerns known in advance is a sign of them becoming 'emerging champions', or at least 'enthusiastic novices/apprentices'
Mavis Shivumbu (YMF1) **[Emerging - Future]**	Meeting at Mulamula Mansions	7th July 2015	*'I thanked the YMs for coming to visit and thanked Mavis for guiding them to our house in the village.'*	Mavis's willingness to rally the YMs who wished to know more about the course and act as chaperone when they visited our village home, were signs of her willingness to 'champion' the course.
Robert Vukeya (MECPS) **[Established]**	WhatsApp message	11th May 2015	*'Our school will never disappoint. We are ready to keep Sascha busy. Do not panic. Regards Robert'* *Rowan -'Any luck with MECPs municipality request? (to help with electrical connection) Robert - 'Hopefully so, I wrote a letter endorsed by ward reps to be submitted tomorrow.'*	Robert is an 'established champion' of the MECP adult education project. His offer to let us use Mahelfunye Primary School as a venue until MECP is electrically wired is significant. He is working with me to try and sort out wiring permissions for MECP from the municipality while hosting YM-T and YM-ICTF at his school.
Researcher Rowan Thompson **[Established]**	WhatsApp message	11th May 2015	*'Great pictures from the lessons last week. Try and get some feedback from the class in writing for future promotion. Great It will be useful for your future teaching but also good for promoting classes with 'sound bytes'. It will also be good for you if you are going back to study at a higher level'*	At the early stages of the trial of the ICT Basics course, it was necessary to motivate and encourage Boikie and Sascha by showing regular interest in the day-to-day events. I effectively acted as a champion of the new courses. As Boikie was in transition from a college course to employment/future study, I encouraged him to get feedback from students and consider future employment.

Champions	Source/Tool	Date	Comments	Relationship to 'champions'
Boikie Maluleke (YM-T) **[Emerging]**	WhatsApp message	11th May 2015	*'Thanks. I try to write down the feedback so the students understand everything. I had a one to one with one of the students. He told me he understood everything. I will written down feedback for every lesson we have …. I can't wait for tomorrow's class.'*	YM-T responded affirmatively and informed me that he was already sounding out students to get feedback which was positive and encouraging to him. This appeared to be a sign of his growing confidence and commitment. His informing me about his excitement about the next class is a sign that he was getting something special out of the experience personally and was growing into the role of a course champion.
Researcher Rowan Thompson	WhatsApp message	14th April 2015	*'I have edited 21 pages of 76 in computer essentials. It is taking a long time but the content and structure are very good…'*	I am responding to YM-ICTF's ICT Basics course which he emailed to me. I am encouraging him at the same time as reporting to him what I have done.
Sascha Lenz (YM-ICTF) [Emerging]	WhatsApp message	14th April 2015	*'I'm done with presentation and just checked it. I will put it in the drop box as well'*	YM-ICTF is persevering with the course and reporting he has completed the next stage and shared it with me.

5.3.4 Theme 4: Engendering volunteering/Motivation

Definition of volunteering - *[no object] Freely offer to do something [with object] Offer (help) freely*[39]

A characteristic of sustainable development in developing communities is the important role of volunteering or people giving their help or support freely. The study benefitted from volunteering and as data was gathered it was evident that this was an issue which would affect future development of courses in the village. Volunteering was a theme which Nelson Mandela tried to inculcate in Post-Apartheid South Africa in his inaugural speech as President:

> '*Our daily deeds as ordinary South Africans must produce an actual South African reality that will reinforce humanity's belief in justice, strengthen its confidence in the nobility of the human soul, and sustain all our hopes for a glorious life for all'*[40].

The MECP has benefitted greatly from volunteering in the past as all MECP development activities on the site - bar the actual physical building work by paid contractors - have been carried out by volunteers. This desirable feature of the project was created out of necessity as the donated funds have so far never been sufficient to pay salaries for project managers, secretary, treasurer etc. In short, the study inherited a legacy of volunteering – or unpaid work – from the MECP. As the course unfolded it was evident that the idea of volunteering was an issue relating to the motivation of participants. The course application form and evaluation sought feedback on motivation and volunteering from the participants as a way of reminding the YM-T, YM-ICTF and YMs that the free course they were participating in was a limited free offer. Future courses, hosted at MECP, will require participants to do voluntary work[41] for MECP if courses were to remain free for some participants although economic necessity dictates that courses are charged to recover the costs of ongoing software maintenance, office consumables, trainer/facilitator costs and power.

The study itself was developed through the work of key volunteers. Examples of contributors' roles in volunteering reflected in data are summarised in table 5.6 below.

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[39] Definition of volunteering. Source: http://www.oxforddictionaries.com/definition/english/volunteer

[40] Source: http://www.mandela.gov.za/mandela_speeches/1994/940510_inauguration.htm

[41] Sascha and Boikie required Grade 12 students from Photani High School, attending the first ICT Basics course, to collect rocks and help tidy the MECP site as their voluntary contribution for free lessons.

Tivani Mashamba-Thompson mobilised the MECP commitee to organise a volunteers meeting to address the issue of developing courses at the meeting on the 24th August 2014. Robert Vukeya (YM-MECPS) organised the meeting where Mavis Shivumbu (YMF1) volunteered to help with young mothers. Robert Vukeya offered the use of the school's ICT room for free, provided furniture and covered the cost of the electricity. YM-T and YM-ICTF volunteered their time and expertise for free offering three different ICT courses over the course of 5 months. All MECP committee members have so far worked on the project free of charge. For example: Jonas Maluleke, MECP treasurer, has maintained dialogue with contractors and monitored MECP building with local contractors in a voluntary role since the project began. In the cases where members incurred travel expenses or other costs they were reimbursed from the MECP project account.

YMF1 and Esther Matidze (YMF2) showed a commitment to volunteering by: setting up the meeting at our home (Section 5.1.1); attending and contributing to the YMs' course (See Section 5.2); helping with setting up catering (making rolls and mixing juice) and, more significantly, in helping find the remaining 14 young mothers that eventually attended the course. Their commitment to volunteering can be tracked through the records of the pre-intervention meetings.

In the case of the study, the issue of volunteering was extended by YM-ICTF's involvement. His volunteering was the result of a personal decision to give up his job for 6 months on what he called a 'social project'. Like many other European professionals, he sees it as beneficial to his curriculum vitae to do voluntary service. Thankfully, he was willing to do a great deal of work to implement the courses in the village for no fee. So long as I reimbursed him and YM-T for the cost of data, software and hardware expenses incurred. On reflection, YM-ICTF was receiving payment in kind as he had free accommodation, electricity, cooking fuel and whatever he wished to eat from our garden in the village. He also received a very good reference upon completion of his period of volunteering in the village.

YM-T's volunteering was remarkable. With his previous involvement in MECP as a student representative, he was aware that there were limited funds to run an ICT programme. His teaching work and support work with YM-ICTF were all done free of charge. I think his motivation may have been the opportunity to gain real work experience and build his CV. There is potential that, with further training, he could run an ICT training programme in the MECP ICT facility and make a living running courses for people in Mulamula and the surrounding district. As a resident of the village with transferable skills there is a good chance

YM-T will leave unless he has some tangible employment opportunity in the village. This was reinforced during feedback conversations with him on WhatsApp and Skype. (See Appendix 16 and 19: WhatsApp and Skype Dialogues B. Maluleke)

Table 5.6 Significant comments relating to volunteering

Volunteer	Source/Tool	Date	Comments	Relationship to 'volunteering'
Robert Vukeya Mahlefunye Head (MECPS)	Meeting Minutes	21st August 2014	*'She asked Mr Vukeya HR to organise a meeting to build a team with young mothers and student volunteers.'*	Tivani Mashamba-Thompson asks MECPS to organise an MECP volunteers' meeting. (He is already volunteering as secretary of MECP) Robert organises the above-mentioned volunteers meeting and raises the key issues about the potential for the ICT course with Dr Lenz's donated computers. He also indicates that the community need to decide on who needs computer training as a priority.
	Meeting Minutes (taken by Matimba Vukeya, MECP student group leader)	21st September 2014	*'The meeting was chaired by Mr Vukeya HR (MECP Secretary)'* *'Mr Vukeya HR suggested we need to decide who needs computer training as a priority.'*	
Mavis Shivumbu Young mother facilitator (YF1)	Meeting Minutes	21st September 2014	*'Mrs Shivambu M opened the meeting with a prayer'* *'Mrs Shivambu suggested that young mothers be given a chance.'*	Mavis moves from a observer's passive role in earlier meeting to an active volunteering role as she leads the prayers and suggests young mothers be given a chance to learn in response to Robert's request (above)

Volunteer	Source/Tool	Date	Comments	Relationship to 'volunteering'
Boikie Maluleke Trainer (YM-T)	Meeting Minutes	21st August 2014	*'Mr Maluleke BF said that he would be interested to help with IT courses after his course in Polokwane was finished'*	YM-T is offering to help with future courses as student representative of the MECP upon hearing of the donation of computers.
	WhatsApp message	11th May 2015	*'I had a one to one with one of the students. He told me he understood everything. I will written down feedback for every lesson we have .Yep, Indeed it will help. I can't wait for tomorrow's class.'*	He is giving feedback on lessons and seeking feedback from students in lessons in his first week of the course indicating his commitment as a volunteer already.
Sascha Lenz Facilitator (YM-ICTF)	WhatsApp message	7th May 2015	*'First class is done and it was a good one ☺ ' We will do the stone collecting thing on Saturday'*	May 7th was the first class that YM-ICTF taught as a visiting volunteer in the village. He and YM-T made it a condition of the free lessons that students helped tidy the MECP site by collecting stones.
	WhatsApp message	17th May 2015	*'Yesterday was another volunteer afternoon. I let them clean the centre, put the (spare thatch) grass into the container and equipment, collect rubbish and some more stones.' 'We will try and organise some extra lessons for grade 12 so they can participate even with day exams.'*	As the trainer for the early ICT Basics classes, YM-ICTF is already volunteering to give extra time to grade 12 Photani High School students that have missed his classes due to exams.

5.3.5 Theme 5: Sustainability/Commitment

Dictionary definition of sustainability

1. *Able to be maintained at a certain rate or level*[42]
2. *The endurance of systems and processes. The organizing principle for sustainability is sustainable development, which includes the four interconnected domains: ecology, economics, politics and culture.*[43]

Dictionary definition of commitment

1. *n. a willingness to give your time and energy to something that you believe in, or a promise or firm decision to do something.*

In the design and implementation of the course, the theme of sustainability and commitment of participants was a theme which dominated many discussions. The definitions hint that the endurance of the project is a result of different contributing domains (ecology, economics, politics and culture) which are much wider than the intervention in isolation. Enduring within these overlapping domains requires a spirit or willingness to show commitment, or give time freely, which is based on complex motives. These may include a combination of selfish and altruistic motives.

As the MECP project is still to reach a position where the project is self-sustaining, the MECP committee, traditional council and other interested parties in the wider community are keen to observe how the MECP can sustain itself. Suggestions for how this could be done are: recorded in MECP meetings (See: appendices 10 and 11: Minuted MECP Meetings); discussed in conversations with participants (See: Appendices 18 and 19: Skype Dialogues) and raised as questions in course evaluation forms and interviews with the YMs. Obviously, the two factors (sustainability and commitment of participants) are inseparable in the case of

[42] Oxford dictionary definition of 'sustainability' (Source: http://www.oxforddictionaries.com/definition/english/sustainable)

[43] Wikipedia definition of 'sustainability' (Source: https://en.wikipedia.org/wiki/Sustainability)

such a process. Without commitment of people, or participation, there is no activity to sustain and the project becomes a 'white elephant'[44].

How the project can be sustained is a theme of interest to the sponsors. (Sevenoaks School and Dr Lenz's German donors) Sevenoaks School has pledged to continue to support the project for two more years and will continue to benefit from the support of the village in their exchange trip to the village. [RECIPROCITY] Dr Lenz and her donors are waiting to see how the donated PC computers which are arriving in February 2016 are secured, utilised and maintained before committing to future donations [DIFFERENT ATTITUDES TO CHARITY].

Up to now, the community have relied on the generosity of outsiders almost exclusively to get the MECP building financed, the library stocked with books and computers donated to run ICT-related adult education lessons. To balance this the MECP committee has tried to show its commitment through volunteering as mentioned in section 5.2.4 above. This has worked up to a point but the real challenge will come when MECP facilities are complete and the village has to take a greater lead in maintaining courses at the site.

During the process of planning and implementation of the YMs' course, YM-T, YM-ICTF, YM-MECPS and some of the YMs all presented views about how this sustainability could be achieved in the future (See table 5.7 below). The application forms and workshop evaluation forms both sought information about what YMs would be willing to do in terms of supporting the project and sustaining it.

Qualitative data collected from the application forms gave some insights as to what the YMs could do to help sustain MECP as an adult education venue if they were going to attend ICT training there. The figure below shows what 9/20 of the YMs' were willing to offer in terms of volunteering. (Source: Appendix 38: Quantitative Data Summaries from 20 YM's application forms)

[44] Definition: 'White elephant' - A possession that is useless or troublesome, especially one that is expensive to maintain or difficult to dispose of. (Source: http://www.oxforddictionaries.com/definition/english/white-elephant)

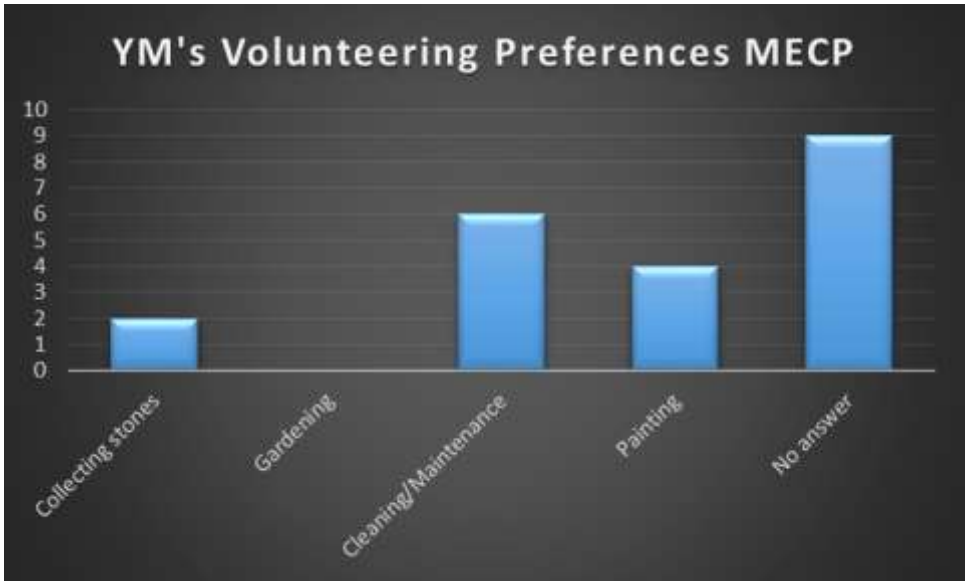


Figure 5.1 Bar chart showing YMs' volunteering preferences
(Source: Course application forms)

What both the YMs and other participants perhaps failed to realise is that by helping introduce ICT classes in the village, they were already helping create a vision of the future which could inspire others to sustain the project and generate local support. This is evidenced by the fact the course: attracted interest from additional young mothers over its duration (See Appendices 19 and 30: Skype conversation with YM-T, YM's Class register); people showed genuine interest on social media; people visited the village to find out more about the courses (See appendix 35. Photo diary: Visit from computer training school) and the local media was interested in promoting the courses (See appendix 35. Photodiary – Visit to Mala FM)

My personal continuing role in the MECP is to try and make the project self-sustaining. Initial ideas of how to do this were rather grandiose as we tried to offer 'all things to all men' (See appendix 7: MECP Newsletters). As the project has progressed, the emphasis has been on trying to get small successful projects working on the site which can be used to grow future projects. This approach was also advised when we attended a Department of Social Development meeting in Malamulele on 7th July[45]. The ICT short courses- such as the YMs' ICT and BAE Nutrition course - are examples of small projects which can be used as evidence of activity to 'champion' future courses and ultimately help the project grow.

[45] DSD Meeting on 7th July. When MECP found out that Mulamula Creche had applied for grant support claiming MECP adult education centre was their building. We were also advised that

Table 5. 7 below shows examples of individuals' or groups' commitment, or references to sustaining the course, which could be considered as helping towards sustaining the intervention or raising issues which relate to its sustainability:

Table 5.7 Significant comments relating to sustainability

Source	Source/ Tool	Date	Comments	Relationship to 'sustainability'
MECPS Robert Vukeya	Meeting Minutes	23rd September 2014	*'5.Computer courses After Mrs Mashamba-Thompson's announcement at the last meeting that they were looking at ways to get computers for the computer room, we are informed that the new donor from Switzerland Germany, Mrs Lenz is bringing us laptops in November. Mr Vukeya HR suggested we need to decide who needs computer training as a priority'*	The meeting organised by Robert was an action to help sustain the MECP. It was arranged to discuss volunteering and fundraising. It also brought to the fore the resourcing of ICT and it enabled women to have a more active voice in the MECP.
Young mothers (Examples from YM1, YM2 and YM4)	Workshop evaluation forms	Forms dated from 8th July onwards	YM1 (Q3) – '*I contributing by attending, listening and writing what I have hear and appreciating positive'* YM2 (Q6.3). *1. To write by computer….5. To make card e.g. birthday and wedding.* YM4 (Q6.3) - *'Internet, Powerpoint, To find jobs on computer, To send emails, Programming.'* YM6 (Q6.4) - '*Food that is good for children - Food that have vitamins'* YM5 (Q6.4) - . *I want to learn what I can give to elderly. I want to learn what food is good for mothers. I want to learn how I can plant it myself.*	YMs were asked to consider how they had contributed and could contribute to developing the courses in addition to attending the classes (which is already helping to sustain the course). They willingly shared what they had done and suggested ideas for future courses in ICT and nutrition. In their responses there is an indication that the YMs are not learning for selfish reasons but wish their knowledge to benefit others e.g. their children and elderly relatives.

Source	Source/ Tool	Date	Comments	Relationship to 'sustainability'
Researcher Rowan Thompson – YM-ICTF	Whats App dialogue	28th April 2015	*'Nobby in the tribal office has a letter from the Chief for me for young mothers' course. Could you please go to tribal office tm around 11 to pick it up. Could you please help him scan/photograph it so I can give a copy to UKZN this week and circulate copies to MM schools in the study'*	In dialogues with YM-T and YM-ICTF, I played a role in stimulating contributions to sustaining the initial ICT basics courses and then the YMs' ICT and Nutrition course.
YM-Trainer Boikie Maluleke	Skype dialogue	27th July	*'Some other people were asking about involving other ladies from other villages….I said, if ever that we do continue, we would like to have young women from other villages like: Vuwani, Mudabula. All the surrounding villages of Mulumula - we will involve them*.'	Having just started teaching the YMs' course, YM-T is already discussing ways of expanding the course's reach by including YMs from the surrounding villages.
YM-ICTF Sasha Lenz	Skype dialogue	31st July	'*Yesterday we went to all the local schools and high schools and offered our adult courses again… ...Some, particularly the primary teachers, were like: 'it's too expensive', 'I want it for free', 'special price', 'how do we get there', 'do you going to collect us'…'like a private taxi!'*	YM-ICTF is reporting on his and YM-T's attempts to recruit teachers onto the adult ICT Basics course they are teaching in parallel to the YMs' class. He is frustrated about the unsustainable expectation from employed adult teachers that their course should be free too. [DEPENDENCY/ENTITLEMENT]

The issues that emerge from the theme of sustainability are a combination of optimistic enthusiasm and hard reality. There is a great willingness to see the courses endure amongst those benefiting from it and those delivering it. However, the community, like the other participants

As the three phases of this stage were unwrapped, additional themes emerged which built on the earlier themes or succeeded them. These emergent themes are shown in table 5.8 below:

Table 5.8 RQ1 - Phase1 Emergent codes or categories arising from data analysis

Research Question	Participant Attributes	Initial Thematic codes	Emergent codes or categories
RQ1	'ACTIVE' 'PASSIVE' 'INTERESTED' 'INACTIVE' 'VOLUNTEER' 'MERCENARY' 'MEMBER' 'CONTRIBUTOR' 'COMMITMENT'	'PARTICIPANTS' **'CHAMPIONS'** 'COMMUNITY **PARTICIPATION'** 'SUSTAINABILITY' **'MOTIVATION'** 'COMMITMENT' **'VOLUNTEERING'** 'WIDER COMMUNITY' 'YMS' ICT AND BAE NUTRITION COURSE' 'SHARING'	'ACTIONS' 'GRATITUDE' **'COMMITMENT'** **'CHANGING ROLES'** 'MANAGEMENT' '**TRADITIONAL SYSTEMS'** **'WOMEN'S ROLES'** **'NETWORKS'** **- FORMAL** **- INFORMAL** **'DEPENDENCY – ENTITLEMENT'**

As some early data was not planned as part of the study but is necessary to set the scene. It therefore needed to be treated almost like mini case studies where meanings are condensed and interpreted to try and explain why things happened and what they meant. (Herbert & Rubin, 1995) . After reading and re-reading the three key documents in this phase and assigning codes spontaneously with NVivo v10, the initial thematic coding helped to focus and redefine the predicted themes into the sub-themes or sub-codes shown in table 4.

The reason that the new codes emerged in this way could be associated with the bias of future knowledge acquired from reading data produced at later stages of the process. It could also be biased by my active involvement in the participatory process retaining memories and having an invested interest in the success of the course.

A significant observation is how 'WOMEN'S ROLES' emerged as a theme. As the analysis proceeded, I became more interested in the 'WOMEN'S ROLES' as it seemed that

the maintenance of a CoP might hinge on women acquiring roles of responsibility or at least sharing, or taking over, roles which were initially occupied by men in the study (See: Discussion Section 8.5.2).

5.4 SUMMARY OF DATA ANALYSIS FROM PRE-INTERVENTION

What emerges from the stages detailed above is that there is need for continuous dialogue with stakeholders to, firstly, reach the initial goal to establish the course, and also initiate dialogue to agree long term goals. In this way the participants are involved with creating the future while enjoying the current experience. By doing this, it is desirable to create a strategic plan to develop and maintain future courses with the support of the community in Mulamula while riding the crest of the wave of the first course.

This reflects the theoretical approach detailed in the cyclical model used in the methodology (See Chapter 3. Theoretical Framework, figure 3.1). The process is not complete in one cycle, or one course, there is a need to re-evaluate earlier goals and establish future goals in order for the community to remain engaged in participation to sustain the course or similar future courses.

In order to achieve this, ‘future champions’ in the form of up-skilled, empowered, young mothers, or older mothers, may be significant in attracting future students and promoting the courses beyond the confines of the village through their established ‘informal networks’ which were employed to help establish the first course (See table 5.6). ‘Established champions’ have played a role in helping establish the course through ‘formal networks’ such as the traditional council and schools. These key participants should then work together building the course, communicating goals and developing links with the community and formal institutions structures using both ‘formal networks’ and ‘informal networks’.

By motivating the community through both the ‘formal’ and ‘informal networks’, it is intended that the net of participation can draw in additional committed members from diverse groups in the village population. By increasing the reach of the course through these interactions, its sustainability should be further guaranteed.

The following two chapters develop on these themes and discuss emergent themes that resulted from the course as it was implemented with 20 young mothers and evaluated with the help of the participants.

5.5 SUMMARY OF RESULTS OF ANALYSIS

The results in the early pre-intervention phases show that early engagement involves careful mobilization of the participants through a combination of: culturally sensitive strategic planning; empathic dialogues and responsible and responsive action. Remaining sensitive and empathic is a great challenge for all participants when language barriers get in the way, cultural codes can be unclear to the outsider and participants' motivations may be contrary to the researcher's ideals in the study. The CBPAR stages outlined give a structure to the pre-intervention process and enable more clarity in understanding the relationships between the various participants involved. This improved the focus on themes within the instruments and enabled better pin-pointing of significant actions which gave greater sensitivity in interpreting the data.

Themes emerged from working with Mulamula Education Centre Project (MECP) members, Traditional Council members, YMs' facilitators, ICT trainer, ICT facilitator, and sponsors which revealed that the establishment of a community of practice is a complex process which requires the researcher to use imaginative ways to adapt to changing circumstances on the ground and keep abreast of developments which may sometimes be out with his/her control. In many cases, it is necessary for the remote researcher to let go and trust local participants to allow the intervention to proceed naturally. This led to the changing of roles for participants in various stages of the intervention.

These themes were clarified and sometimes re-defined as the study progressed to the implementation phases and some individuals were transformed by their involvement.
The research identified different types of 'champions' that helped align the objectives of the study with the local community through their experience, or expertise. It also revealed how 'youth conscripts' were transformed by the learning process to become what could be 'future champions' helping implement similar courses. Some of the key participants emerged as 'risk takers' who were willing to try something new and share in their experience in a mature and reflective way. What was refreshing about the study was that these 'evolving roles' were not dictated by previous status, race, sex or age.

The intervention itself was shown to be a success with YMs' attendance growing as the course gained popularity. Some of the young mothers themselves emerged as 'future champions' through their commitment to establishing the MECP education programme.

From a practical viewpoint, the pre-intervention stage revealed many obstacles which had to be overcome to physically establish the course and maintain it. The participants overcame many of these through a combination of shared perseverance, improvisation, patience and good humour. In some cases, they sought or required encouragement or incentives. Feedback from 'formal' instruments was positive overall. Mostly, the participants demonstrated a common purpose in attempting to 'add value' in the community and improve their own lives and the lives of others in rural resource limited communities.

The YMs reported their own needs and aspirations as the process unfolded and they grew in confidence to speak and share their ideas. I was impressed by their patience and practicality as they adapted to different settings and seemed to be empowered by the opportunity to learn as adults in their local community. I was also impressed by the 'hidden' community support networks which enabled the YMs to participate.

The YMs' desire for certification/recognition, to be considered early on in the agreement, was a signal that their motivation and commitment may be dependent on personal, economic, cultural and wider societal issues which impacted on their lives. This is explored further in chapter 6.

As a microcosm of human social interaction, the CBPAR study revealed how community participation in education can change people by drawing on the wisdom of elders and the enthusiasm of youth. It revealed that there were established cultural codes which had to be acknowledge in order to progress the intervention in the village. It also revealed that women in the village had a 'hidden culture' with their 'unwritten codes' of operating and communicating to get things done in parallel with the established patriarchal traditions.

The intervention also exposed new 'future roles' which will be necessary to sustain such a course as part of an adult education programme in MECP. The study reveals that this will not be easy unless the community continues to 'participate willingly' and with an attitude of 'volunteerism', sharing and common purpose. There is a risk that beneficiaries of the course can have 'unsustainable expectations' when courses are offered for free by volunteers and this can lead to a 'dependency' on the courses which defeats their purpose in empowering participants.

The development of adult education courses is a complex process which requires sensitivity to the needs and motivations of the community involved. The next two chapters show how the implementation of the course was observed and evaluated in order to try and

establish greater understanding of these needs and motivations as the CBPAR process enters its final phases.

CHAPTER 6

DATA ANALYSIS – DURING-IMPLEMENTATION STAGE

This is the second of three chapters showing how the community based participatory action research approach as the study moved through the second stage: 'during implementation' explained in the methodology section 4.5 and illustrated in methodology table 4.8. The purpose of this stage was to show how systems were put in place to enable the study to proceed with the assistance of participants. It also reveals indicators which point the way towards sustaining the course beyond the implementation stage and therefore addressing the question of the long-term sustainability of the process.

The first section includes an initial explanation of how the data was analysed generally in relation to the main over-arching research question (Section 6.1) and then proceeds to explain how the second stage of the study (during-implementation) was analysed using data from different sources which show evidence of the voluntary participation of the Mulamula community in implementing the young mothers' ICT and BAE Nutrition course (Section 6.2).

The second section matches data sources with the fourth CBPAR phase (*Orientating systems to enable long term function of the process***)**, from the 5 phase approach, identified in the methodology (Chapter 4.1.2)

The data shows how formal and informal meetings with the community, recruitment of participants and participative planning helped to establish favourable conditions for the study to proceed.

The chapter concludes by presenting results in the form of themes which emerged through the qualitative analysis of the data sources used in this chapter. It summarises the results in relation to the 4th CBPAR phases covered in this chapter and uses these to help structure the discussion of results (Chapter 8).

6.1 ANALYSING THE DATA IN RELATION TO THE RESEARCH QUESTIONS

In continuing to assess the effectiveness of the community based participatory approach to the action research study, in the second implementation stage, it was necessary to continue to address the key questions raised in stage 1:

- **Was the study community based?**
- **Was the study participatory?**
- **Was the study action-based?**
- **Was there an active community of practice?**

However, in this stage, the data is also addressing practical issues as well as 'human resources' issues. As much of the valuable data was sourced through informal dialogues with the trainer and the ICT facilitator, the practical and social issues were often discussed together. It was necessary to analyse these issues separately to get an understanding of the systems and structures which were functioning and those which might be malfunctioning or missing from the process.

The ordering and structuring of the coded themes and patterns (shown in table 6.1 below) served as a guide for additional re-organising of the data. As the analysis continued, further themes emerged. 'CHANGING ROLES','WOMEN'S ROLES', 'DEPENDENCY-ENTITLEMENT' emerged as strong themes from stage 1 (Chapter 5) which continued to reflect in stage 2.

Table 6.1 Initial classification and organisation of themes relating to research questions in relation to participants

Research Question	**Participants**	**Participants Attributes**	**Key Themes**	**Patterns**
RQ2	• Young Mothers (**YM**) • Facilitators (**YM-F**, **YM-ICTF**), • Trainers (**YM-T)** • Mahlefunye School • UKZN	'ACTIVE' 'PASSIVE' 'INTERESTED' 'INACTIVE' 'VOLUNTEER' 'MEMBER' 'CONTRIBUTOR' 'HOST/PROVIDER' 'WRITER' 'TRAINER' 'OBSERVER'	'CHAMPIONS' 'PARTICIPANTS' **'CHANGING ROLES'** 'COURSE CONTENT' 'DATE/TIME' 'VENUE' 'HARDWARE' 'SOFTWARE' 'LOGISTICS' 'HUMAN RESOURCES' '**WOMEN'S ROLES**' '**DEPENDENCY – ENTITLEMENT'**	Some are: • willing to help regardless of the activity. • involved purely for the duration of the course. • involved for a limited time. • hoping to extend their involvement.

The fourth of the five CBPAR phases was used to organise the data chronologically This was done to observe if and how community participation might be sustaining, or could sustain, systems and structures that were put into place to make the course effective.

As the course was developed and structured with participants, the data reflects more on the individual contributions of various 'champions' of the study (see: Chapter 5, stage 1 coding themes) and the subsequent effect or responses these contributions elicited from the recipients of the course (the young mothers). In the latter stages of the study, the data is acting as a monitoring and evaluating tool to critically appraise the course itself and the systems and structures which were put in place to attempt to implement it.

The process of designing and putting the course in place in the village was documented using different data once more. As part of the second stage of the process – implementation - I am seeking to demonstrate how the designing the course brought together different participants to draw on their skills and experience in order to design a course which was relevant and sustainable for the young mothers. In this phase, I am part of the process putting together the course and running a workshop in the village to showcase it. I am however, not the only actor as the following stages show.

Data to support the design of the course grew out of the preparatory work for the writing of the course and the pre-course workshop with the young mothers, facilitators and representatives from the MECP and Mulamula community. Data was sourced from:

1. Young Mothers' Workshop 8th July 2015
2. Initial ICT Basics Course (Designed by Sascha Lenz (YM-ICTF) – edited by myself)
3. Dialogues relating to the first ICT Basics course and revised ICT course for YMs design with Boikie (YM-T) and Sascha (YM-ICTF)
4. Design of the Actual ICT and BAE Nutrition Course

The systems and structures that were eventually put in place/identified/observed in the various sources generated some different sub-categories for organising data using NVivo v10 software (shown in table 6.2 below):

Table 6.2 Additional coding applied to organise practical data in Phase 2

Additional Codes applied to Phase 2 Data in 'YMs ICT and BAE Nutrition Course' Section		
'DATE/TIME'	'LOGISTICS'	'POWER SUPPLY'
'HARDWARE'	'SOFTWARE'	'COURSE CONTENT'
'VENUE'	'HUMAN RESOURCES'	- 'NUTRITION'
'FINANCIAL'	'YMS' SUPPORT SYSTEMS'	- 'ICT BASICS'

6.2 THE IMPLEMENTATION PHASE OF THE STUDY RELATES TO THE 2ND RESEARCH QUESTION AND ONE OF THE FIVE CBPAR PHASES

RQ2: How do we implement community-based ICT and nutrition training courses for young mothers in rural resource limited settings such that they are sustainable?

6.2.1 Orientating systems to enable long term function of the process

In order to orientate systems to enable the YMs' course to be established with the consent and active participation of the young mothers, facilitators, trainers, members of MECP committee and the traditional council administration, a workshop was conducted in the

traditional council hall on the morning of 8th August 2015. The planning of the workshop is discussed earlier in section 5.1.2. The workshop was deemed necessary to stimulate more direct participation in development of the course from the YMs and other women in the community.

The workshop enabled me to meet the YMs and other participants together in order to establish a constructive dialogue/relationship of trust and cooperation. In order to maintain this constructive relationship it was necessary to identify individuals who could: maintain contact with the YMs; inform and motivate them to attend the course; organise the course and communicate with me.

The workshop was established to gather information, stimulate action and build consensus on course content. The workshop also enabled gathering information which would be useful in establishing the course practically with YM-T and YM-ICTF and communicating with YM-MECPS who had agreed to let us run the YMs' course temporarily in Mahlefunye Primary school[46]. The workshop enabled gathering of the following information which was useful to setting up systems to manage the course:

1. Informed consent from participants to take part in the study (See appendix 4: Informed consent letters).
2. Personal details: educational history, marital status, employment status and contact details on the YMs (See appendix 26: Application Forms (Results)
3. Needs and aspirations of the YMs relating to the proposed course (See Appendix 24: Workshop Evaluation Forms)
4. Personal details: educational history, marital status, employment status and contact details on the trainer and facilitator (See Appendices 8 and 9: S. Lenz CV, B. Maluleke CV)

6.2.2 The young mothers' workshop in Mulamula Traditional Council hall on 8th August 2015

Location: Mulamula Traditional Council Office Hall

[46] The intention was to run the YMs' ICT and BAE course in the Mulamula Education Centre building but delays in connecting the electricity meant that it was no longer a practical setting to teach computing.

Time: Planned 10am – Actual 12noon

Present: (See table 9 below: Workshop participants)

The briefing workshop itself followed a straightforward agenda:

1. Welcome by MECP Director
2. Introduce participants and stakeholders – Ice breaker: "Stand up and introduce yourself and write your name and favourite food on the flipchart"
3. Discuss proposed ICT and BAE Nutrition course and invite YMs to participate
4. Completion of informed consent letter for study
5. Discuss 'ICT' and 'BAE Nutrition' definitions
6. Demonstrate laptop functions with a laptop and digital projector
7. Encourage feedback via post-it notes noticeboard (flip chart stand)
8. Evaluation forms and Application forms
9. Discuss best venue, time, start date and course duration and record decisions as a vote.
10. Warm down – Write the name and favourite food of children on flipchart

Introduction/Welcome:

I (UKZN1) led the YMs' workshop which started with an apology for the delayed start. I introduced my wife Tivani to the group and said that she would translate if participants did not understand my English. The group said that they did understand me but would seek help from Tivani if necessary.

The workshop was attended by: 4 young mothers, 3 Traditional Council representatives (female), 1 Facilitator (female), 2 ICT trainers (male), 2 representatives of Mulamula Education Centre Project (female) (See table 6.3 below).

Table 6.3 Participants at young mothers' workshop

Name	Designation	Function	Abbreviation
Rowan Thompson	Researcher	Workshop leader	UKZN1
Boikie Maluleke	MECP Student committee/future course trainer	ICT presentation facilitator	YM-T
Sascha Lenz	German volunteer/future course facilitator	ICT presentation facilitator	YM-ICTF
Tivani Mashamba-Thompson	Mulamula Education Centre Project Director/	Translator for workshop	MECPD
Mavis Shivumbu	Mature single mother/chaperone	Escorted YMs to event. Assisted with catering.	YMF1
Esther Matidze	Member of MECP/Mature mother/chaperone	Escorted YMs to event. Assisted with catering.	YMF2
Hobyane Gremah	Traditional Council (TC)	Assisting with discussion	TC1
Rirhandu Mokamu	Traditional Council (TC)	Assisting with discussion	TC2
Maria M. Novela	Traditional Council (TC)	Assisting with discussion	TC3
[redacted]	young mother	Participating in workshop	YM1
[redacted]	young mother	Participating in workshop	YM2
[redacted]	young mother	Participating in workshop	YM3
[redacted]	young mother	Participating in workshop	YM4

During informal introductions it emerged that most of the older women present (MECP and Facilitators) had been single mothers at one point in their lives, or were still single mothers and had experienced many of the problems faced by the YMs present on the day.

The expected number of YMs was much reduced from the predicted 10-15 due to the 2 hour delay in starting. Some had come to the event and had left to return to their children.

Figure 6.1 Young Mothers' ICT and BAE workshop August 8th 2015 attended by young mothers, facilitators, MECP representatives and ICT trainer.

Initial workshop activities:

Flipchart pages were pre-prepared with key definitions and key words to be discussed in English (See Appendix 22: Workshop flipchart sheets). Tivani Mashamba-Thompson asked if participants wished her to translate into Tsonga. Participants said they understood my speech so we proceeded in English.

The purpose of the study was introduced:

- Voluntary participation of members of the Mulamula community in development of an ICT and BAE course for YMs under the age of 25 with children under the age of 5. Most importantly, participation of YMs in development and planning of the young mothers' course to suit their specific needs.
- The intention to develop the course as part of a group of courses to eventually be provided on a regular basis at Mulamula Education Centre Project.
- To introduce the concept of learning ICT skills using practical/relevant contexts which relate to the needs of the participants (e.g. nutrition for mothers and their vulnerable children)

The relevance of the age limit was explained:

- Under 25 and out of school – not part of the school support system
- Limited access to post-school opportunities for education

- Children under 5 – most vulnerable group in Africa and also outwith the formal education system.

Mothers were asked if they used the Mulamula Creche – next to Mulamula Education Centre Project as it was the nearest crèche to Mahlefunye school if they needed childcare. One (YM1) - out of the four - said she used the creche occasionally. The others said they would not use the crèche if they signed up for the course but would make separate arrangements.

Ice breakers

In order for participants to introduce themselves and establish a relaxed atmosphere between the YMs and other adults present everyone was invited to come and write their name on the flipchart and write their favourite food. The workshop leader also shared his favourite food with the group (steak and kidney pie, mashed potatoes and vegetables) and his daughter's favourite ('cheese pie' or shepherds' pie). The results of this activity are shown in table 6.4 below:

Table 6.4. Ice-breaker activity to introduce participants and discuss favourite foods

Name/code	Favourite food	Child's code	Favourite food
YM1	rice and meat	**YM-C1**	tea, bread, juice, pap, guxe (okra)
YM2	pap (maize porridge) and meat	**YM-C2**	rice, meat, juice
YM3	chips	**YM-C3**	meat, guxe (okra)
YM4	pap and milk	**YM-C4**	vuswa na miroho (pap and milk)
TR1	pizza	**N/A**	N/A
TF1	pap and vegetables	**TF1-C1**	cornflakes with milk
TA1	pap and beef stew with vegetables	**TA1-C1**	cornflakes, yoghurt, meat, soft porridge
TA2	pap and meat	**TA2-C1**	vuswa tinconolo na ti hlapfi (pap and tinned fish)
TA3	pap, vegetables and chicken	**TA3-C1**	pap and meat, rice and meat
MECP1	vuswa na guxe (pap and okra)	**MECP1-C1**	'Bovril' sandwiches
MECP2	pap (dini) and guxe (okra)	**MECP2-C2**	yoghurt, pap and vegetables

Informed consent:

All present were asked to listen to a reading of the informed consent letter and were shown copies of the ethical clearance letter and permission letter from the Traditional Council. Participants (including YMs, trainers and facilitators) were asked to sign and return a copy of the letter. All present signed. During the reading of the informed consent in English it was proposed that MECP1 help translate if necessary. The form was read out in stages and key issues were summarized/reinforced in XiTsonga by MECP1 although the group stated that they understood the English reading.

Presentation of ICT Equipment to be used on ICT and Nutrition course

To set the scene for the ICT training, course to be provided, a digital projector (bought in early April for the first ICT course) was used to project from a laptop onto the wall of the meeting hall. The equipment was explained in simple terms in order to introduce the huge potential of computers, and their associated hardware, to the participants. Table 6.5 below lists what was discussed:

Table 6.5 Items from YMs' briefing workshop to demonstrate ICT skills to be taught on course.

Slide/Screen	Reason
Start-up screen/Screen saver	• Use of images (*to personalize computer)* • Date and Time (*evidence of a computer working passively)* • Security/Password screen (*user security features*)
Desktop view	• Icons (*similar to a smart phone's*) • Folders (*to store files in an organised way – like a virtual office*) • Background images (*to personalize computer*)
Powerpoint Slideshow	• Slideshow format was explained as a good teaching aid (pictures and images combined) • The deeper purpose of the study was explained through 6-8 slides which summarized: aims, objectives, research methods, data to be collected and methods of analysis etc. • The use of hand drawn (scanned) and internet source images in the slideshow was explained. • The motivation to explore a combined ICT and nutrition course was discussed using the slideshow as an example. (vulnerability of hardware, methods of communicating messages regarding access to good diet supplements etc.)
Hardware	• The key parts of the laptop and projector were explained: keyboard, screen, inputs/outputs, light source, lens adjustment/focus etc. in order to communicate the complexity but user friendliness of modern computers. • Cost of hardware was mentioned (without specific costs being assigned to items being used)

The main items of hardware for different types of computer (PC tower, laptop, tablet, smart phone etc.) were summarized using images on a graphic flip chart slide towards the end of the session (See Appendix 22: Workshop flipchart content).

Completion of Group Activities

Following the initial exposition, it was agreed that it would be best to use some group activities to encourage more engagement and discussion of issues relating to the course. The three activities were designed to give feedback on a range of issues covered in the workshop by seeking:

1. Questions generated by participants
2. Positive (+) comments relating to the workshop
3. Negative (-) comments relating to the workshop

Data was collected by asking YMs to write comments on stickie ('post-it') notes and asking them to stick them to a pre-prepared sheets (See example: table 6.6 below) on the flipchart stand. These activities was reflected positively by the YMs in their workshop evaluation feedback (question 3):

YM1. *I contributing by attending, listening and writing what I have hear and appreciating positive.*

YM2. *I contribute to all activities we have on workshop.*

YM3. *I contributed by writing notes and by answering questions.*

YM4. *By putting my opinion. Writing on the board.*

Table 6.6 Flip chart table used for eliciting anonymous feedback on the workshop via stickie notes

Questions (?)	Positive (+) comments	Negative (-) comments

Note: As the comments were written on post-it notes and affixed randomly to the flipcharts it is difficult to assign 'authorship' to the comments listed in the three activities above.

6.2.3 Young Mothers' ICT and BAE Nutrition – Initial Workshop Feedback – Post-It Notes 'Stickies' on flip chart pages

Activity 1. Eliciting spontaneous anonymous feedback comments

To encourage the YMs to contribute to the workshop's evaluation and gauge their willingness to participate practically in the study a workshop activity was undertaken.

Aim:

To encourage participation of the YMs in early feedback processes and observe their willingness to participate in the process of implementation and developing of the course.

Method:

Explain the purpose of the exercise – to elicit spontaneous anonymous comments. Encourage YMs to write personal comments regarding the course on small post-it 'stickies' and stick them to the flip chart pages. The mothers were given three topic areas, represented by a symbol, to comment on to get them thinking about what they might write in their more formal evaluation form: '**?**' - Questions, '**+**' – Positive comments, '**-**' – Negative comments.

Apparatus/Equipment:

- Flipchart stand and flipchart paper
- Felt tipped pens (one for each participant)
- Post-it/ 'Stickies' – small self-adhesive colour paper squares

Results:

The results from the exercise to illicit feedback spontaneous responses from the YMs are shown below. The comments are listed as they appeared on the flip chart sheets. All four YMs present at the workshop contributed.

Table 6.7 Comments from Post-It Notes 'Stickies' on flip chart pages exercise.

Topics	Participants' comments	Notes – Identifying themes for future analysis (and possible future studies)
1. '?' - Questions	1.1 ' ***How many days to attend per week'*** 1.2 '***How long did this course going to take (no. of days or months)'*** 1.3 '***When are we going to start this training course?'*** 1.4 '***Where is the training project place'*** 1.5 *'What type of food is good to my child'* *1.6 'What kind of food can I give my child for balance diet'* 1.7 *'**Are Sevenoaks kids going to help teach us computers**?'*	1.1 – 1.4 Issues were dealt with in 'Closing Activity 2' – Group discussion of venue/time/start date/class duration. 1.5 – 1.6 Nutritional content to be dealt with in actual course content. 1.7 Question refers to 'Sevenoaks School' MECP sponsor school from the UK which brings students to the village for an annual trip in August[47].
2. '+' – Positive comments	2.1 *'Research of the Mulamula Community'* 2.2 *'It is a good to learn IT'* 2.3 '***Nutrition is good to know balance diet'*** 2.4 *'To learn computer is good'* 2.5 '***Computer training is good'*** 2.6 *'The workshop was very informative'* **2.7** *'I want to do and ICT and also a BAC Nutrition **– I am doing this for me and my child'*** 2.8 *'Positive Issue-Learning computer is good cuz computer simplify's things'* 2.9 '***Positive – I really appreciate this project because it encourage us as a young mothers that we still have a chance to study and it was a great workshop I enjoyed myself'*** 2.10 *'Your training was fantastic even your lunch was super thanks'* 2.11 '***IT training is very good'***	2.1 Pleased for study to be located in Mulamula? **Welcoming nature** 2.2-2.6 **Enthusiasm** - **Motivation** – '**Buy in**' General positive feedback on course proposed and workshop itself. 2.7 **Motivation** – doing the course for personal advancement and for child'. 2.8 **Perception of the value of ICT/Computers** – **Sustaining value of computers?** 2.9 **Motivation** – '**Buy in**' - Recognising the value of post-school education. 2.10 '**Buy in'** – enjoyment of participatory process. **Gratitude** 2.11 '**Enthusiasm** – **Motivation** -**Buy in'** – anticipating enjoyment of adult learning process.

[47] *Sevenoaks students are not running ICT training course but may participate in future, during their exchange trip to the village in August 2016, if courses are sustained at the MECP site or in local primary schools.*

Topics	Participants' comments	Notes – Identifying themes for future analysis (and possible future studies)
3. '-' – Negative comments	3.1 '*Cold drink is too hot*' 3.2 '***We need to involve other young mothers in neighbouring communities'*** 3.3 '*Nothing negative*'	3.1 The importance of **comfort** 3.2 Involving YMs from the wider population – **sustainability/expansion/inclusion**

Note: This activity took about 30 minutes

Limitations of the workshop data

The anonymous posting of opinions on the flipchart allowed YMs to be free with their comments. Direct confrontation of the points in a subsequent discussion would have been unfair. However, key factual responses were dealt with in the second feedback activity (Feedback Activity 2).

Summary of results from Activity 1

YMs as a group (4) are keen to study together and are keen to learn ICT and more about nutrition for themselves and their children's health. The women as a whole (including the facilitators) enjoyed the workshop format and responded well to the interactive approach where participants were encouraged to give opinions, note their thoughts/opinions and contribute to initial decision making.

In terms of short term sustainability, the enthusiasm of the YMs' group, village facilitators and trainers (attending the workshop) is seen as good enough motivation for proceeding with development of the short ICT and BAE Nutrition course.

The comments shown in table 6.7 also link to the participatory process which was undertaken in section 5.3.2 to reach agreement about key issues to establish the course.
Key results from are summarised below:

1. The women were keen to know the practical details of the course: Where will it take place? How long will the course run? How many classes per week?
2. They acknowledged the value of studying computers and also recognised the need to learn more about nutrition for themselves and their children.

3. One YM was interested whether overseas volunteers (*Sevenoaks School students*) would be involved in the training.[48]
4. A significant positive statement which summed up the atmosphere in the workshop was:– *'I really appreciate this project because it encourage us as a young mothers that we still have a chance to study and it was a great workshop I enjoyed myself'*
5. The YMs were appreciative of the workshop itself and happy that there were some snacks provided with the help of Tivani Mashamba-Thompson (MECP-D) and Mavis Shivumbu (YMF1).
6. Under 'negative comments' one mother had suggested that we should expand the course to include mothers from other local villages.

6.2.4 Activity 2. Working from key questions in Activity 1 to help YMs, Trainers and Facilitators to reach agreement about key issues to establish the course.

Background

Having previously met and discussed the use of Mahlefunye Primary School as an initial venue for starting the ICT and BAE Nutrition course with Mr Robert Vukeya, Head of Mahlefunye (and acting Secretary of MECP), it was necessary to use the workshop to agree the best dates, times and duration of classes to fit the majority of the group.
The data below is taken from another activity that YMs were encouraged to participate in during the workshop to increase their confidence in decision making and encourage 'buy in' through participation in deciding the ideal days/times for the course.

Aim

To encourage participation of the YMs in early decision making processes and observe their motivation to participate in the process of developing the course.

[48] During in the workshop the YMs were introduced to Boikie Maluleke and Sacha Lenz as potential trainers for the course.

Apparatus/Equipment:

- Flipchart stand and flipchart paper
- Felt tipped pens (for presenter/researcher)

Results:

The results from the exercise to elicit discussion and decision-making responses from the YMs are shown below in table 6.8. They are listed as they appeared on the flip chart page. All four YMs present at the workshop contributed.

Table 6.8 Decisions made regarding course date/time/duration using voting page exercise.

Decisions to be taken or discussed	**Result**	**Votes**
1. Best day to attend YMs' ICT and BAE Course	Mondays	3 out of 4 (one voted for Friday)
2. Best additional day to attend YMs' ICT and BAE Course	Tuesday	4 out of 4
3. Course duration	4 – 6 weeks	Initially, 4 weeks was suggested but ICT facilitators suggested that content would be limited to teaching word processing if course was limited to 4 weeks.
4. Best time to study	10am – 12noon	4 out of 4
5. Ideal class length	Minimum of 2 hours	4 out of 4

Note: This activity was completed in about 15 minutes.

Observation/Conclusions

With the length of the workshop cut down due to the over-run of the Traditional Council meeting, it felt significant that the YMs were able to contribute so efficiently to making clear decisions. YMs' agreed that Monday and Tuesday were the best days to attend the course and were content to attend for 2 hours per day from 10am to 12noon over the course of 4 – 6 weeks.

With these clear agreements about the timing of the course from the workshop, it was possible to set a course start date with trainers and the primary school for two weeks after the workshop date. This gave the workshop real sense of value and enabled it to conclude on a very positive note.

6.2.5 Workshop Evaluation Activity

Background

The participants in the briefing workshop were asked to complete an evaluation form towards the end of the briefing workshop.
The contents of the evaluation form generated some quantitative results and some qualitative results that were necessary for the administration of the course and guided the writing of the nutrition content for the course. The data also gave some insight into the motivation of the students.

Method

Participants were given pens and a pre-printed evaluation form and were asked to fill it in during the final phase of the workshop.
The questions were read out in English and read out again in XiTsonga.
Participants were asked if they understood the questions and they confirmed that they did.

Apparatus/Research Instruments

- Workshop Evaluation form (Appendix 23: Workshop Evaluation)
- Flip chart for reinforcing or explaining questions
- Ball point pens

Results from the workshop evaluation

1. YMs enjoyed the workshop and the style of presentation: YM1 – '*Presentation was good to me*'. They also appreciated that the course was being offered for free: YM6 – '*I am very happy for doing this course for free'*.
2. They enjoyed the hands-on practical elements of the workshop when they were included in activities (e.g. Post-it notes activity and writing on the flipchart).

3. They contributed by writing notes, giving their opinions and answering questions and felt this was a positive attribute of the course.
4. They were encouraged by the workshop and would like to do more practical training in future. 5 out of 6 would like to do practical workshops in future.
5. Motivations to come to the workshop were the desire to learn, to gain more knowledge of ICT and to '*be part of the project'* (YM6).
6. They all thought combining ICT and Nutrition in the same course was a good idea with both YM3 and YM6 looking forward to accessing more information using the internet: YM3 – '*I will use internet to find out more healthy food'.* They were aware of different types of software available on computers and were keen to learn: how to write using word processor software; how to use databases and spreadsheets; how to send email and access the internet and present work using PowerPoint and graphics packages. Some had fairly simple ambitions: YM5 – '*I want to learn to write my name*' and others had clearer ideas: YM2 – '*1. To write by computer… 2. To print more page. 3. To draw picture. To save everything written. 5. To make card e.g. birthday and wedding.*'
7. Areas of interest relating to nutrition included: balanced diet, healthy food, nutrition for children and adults: YM1 – '*Balanced diet. Nutrition for good and bad food'*; YM4 – '*How to eat properly. How to prepare food for others'.* YM6 – '*Food that is good for children – Food that have vitamins – Food that is not good for children'.* The most popular choice for a future nutrition course study was child nutrition.
8. ICT subjects that YMs suggested they would like to study in future, after the ICT Basics course, included: Word, Excel, Powerpoint, Internet use, Web design and programming. Excel, Powerpoint and Internet use came out as the most popular future choice.
9. General feedback about the workshop was very positive: YM1 – '*It was so wonderful*'. YM5 – '*It was fantastic*' and reasons given for this were: YM4 – '*It was good cuz I have learn more things about ICT and Nutrition*'

Results from the workshop evaluation activity enabled further insight into the interests and motivations of the YMs which were used as the basis of designing and structuring the YMs' course evaluations used later in the study. They also helped establish better understanding of what was required in the YMS' ICT and BAE course in terms of content.

Another issue that emerged from the course evaluations was the desire of some of the women to communicate in Tsonga and study in Tsonga (evidenced in their answering the English questions on the form in Tsonga).

6.2.6 Skype interview/discussions with Boikie Maluleke (YM-T) and Sascha Lenz (YM-ICTF)

The ICT trainer (YM-T) and ICT support facilitator (YM-ICTF) were consulted about their willingness and availability for interviews in the early stages of the process to get some feedback on its inception, development and delivery. Initial dialogues were maintained via cell phone (WhatsApp and text) to set up Skype calls. Two significant interviews about the early classes were recorded in July (27th and 31st July) – one with the trainer and one with the ICT support facilitator which relate to the sustainable implementation of the course are presented here. Themes which emerged from these interviews helped to structure instruments used for the final section of the study (See Appendices 27 and 31: Course Evaluation forms and Interview schedule).

Initial analysis of Skype dialogues with the ICT Trainer (YM-T)

Initial organisation of the ICT Trainer dialogues in NVivo v10 was done using thematic nodes and initial coding related to the themes inherent in the research questions.

An initial word frequency count was undertaken to establish if there were any significant words relating to the themes of and the results displayed in a Word Cloud (figure 6.2) as shown opposite.

The top five recurring words were: ‘COURSE’, ‘GET’, ‘COMPUTER’, ‘LOT’ and ‘NUTRITION’. A superficial rearrangement read like an advertisement: ‘Attend our

Figure 6.2 Word frequency count 'Word Cloud' from dialogues with the YM- Trainer produced

'COMPUTER' 'COURSE' and 'GET' a 'LOT' of 'NUTRITION'! More seriously, the word clouds communicate that the dialogues are focussed on discussing the course, course content and the YMs/women

Initial analysis of Skype dialogues with ICT Facilitator (YM-ICTF)

An initial word frequency count was undertaken to establish if there were any significant words relating to the themes of and the results displayed in a Word Cloud (figure 6.3).

Figure 6.3 Word frequency count 'Word Cloud' YM-ICTF's interview dialogues produced on

The top five recurring words were: 'REALLY', 'COURSE', 'GOOD', 'GET' and 'BOIKIE'. A superficial rearrangement of this words could reveal: With 'BOIKIE' you 'GET' a 'REALLY' 'GOOD' 'COURSE'! Deeper reading of the dialogues does reveal that YM-ICTF develops a great deal of respect for the younger man YM-T as he reveals his natural ability to teach:

An interpretation from word frequencies might be that YM-ICTF is prone to exaggeration, or pride, when his most commonly used words are 'REALLY', 'GOOD' and 'COURSE'. However, the use of 'really' and 'good' are a result of YM-ICTF's spoken English which was fluent but lacked variation when it came to the use of reinforcing language.

The Skype dialogues are the best data in this study to use methods such as word frequency counts as they were mostly unstructured conversations where I contributed a general question on progress and the two young men gave their feedback and opinions.

The value of Skype dialogues with YM-T and YM-ICTF

The Skype dialogues with YM-T take place when he has just established himself as the lead trainer and is getting used to managing the teaching of lessons. His feedback relates to day to day issues initially but expands to broader issues as he relaxes into the conversation. His

conversation appears ‘closer’ to the YMs and gives more detail about what YMs and the local community were saying.

The Skype dialogues with YM-ICTF started much earlier in the process but initially these were concerned with his personally needs as he settled in to his volunteering period in the village. The most interesting conversations came as the courses were established and he reflected on what he and YM-T were doing.

His dialogues are more emotive and critical but show a level of commitment which seems to have had a positive effect on YM-T.

Together, the dialogues have value to me as a researcher as they enable verification of practical administrative issues requiring clarification. They also help me gauge how the course is affecting the young mothers and how this might be impacting on the wider community. The formal and informal systems and structures that interact to sustain the course start to emerge as these dialogues reinforce what is happening on the ground as the course is implemented.

Extracts from the Skype dialogues described above feature in the themes described in section 6.4.

6.3 HOW THE IMPLEMENTATION STAGE RESULTS RELATE TO THE MAIN RESEARCH QUESTION

The implementation stage results reflect on how the systems and structures - that were put in place to establish and run the course - indicate that there is need for an organised framework of activities as part of the CBPAR approach. The activities reflect a number of organisational elements (inputs) which feed the process of implementing the course in a sustainable way.

Some of these organised inputs were ‘administrative’, for example the creation of application forms, and others were ‘participative’ or related to the motivation and organisation of the people involved in the implementation.

The workshop served both an administrative and participative role in the system enabling constructive human interaction with the YMs and other participants. It also allowed me as researcher to gain useful administrative data to organise the course with YM-T and YM-ICTF. It allowed YMs to participate actively as adults in an educational activity which is normally used for adults (discussion workshop) and brought the YMs together with older women who initially acted as ‘chaperones’ but eventually acted as equals in the workshop.

The subsequent informal dialogues relating to establishment of the course and its day to day running, with YM-T and YM-ICTF, then became an extension of the participative dialogue that started at the workshop. The elements that were agreed at the workshop enabled a structure to be put in place to manage the WhatsApp dialogues in a productive way to stimulate action as well as seeking feedback for monitoring purposes.

The administrative paperwork generated from the workshop created useful reference material for monitoring the course and stimulating follow-up dialogues with participants. The paperwork also acted to give the course validity in the eyes of the participants by convincing them of the professionalism of the course and the work that had been put into the course prior to their involvement.

As the study progressed, I found that a pattern developed in the informal conversations on WhatsApp and Skype that enabled me to get YM-T and YM-ICTF to participate in a productive manner without me acting like a 'Big Brother'[49] figure. This pattern involved: introductory greetings, enquiries about the general state of play of the course, making encouraging statements and then seeking further detail about issues of concern. The use of encouragement seemed to be a stimulus to YM-T and YM-ICTF to open up and talk more deeply about issues of interest or concern.

The affirmation that a positive 'appreciative' (Kevany & MacMichael, 2014) approach to seeking feedback was an important aspect which linked all of the 5 phases of the CBPAR approach.

6.4 THEMES THAT EMERGED FROM THE IMPLEMENTATION STAGE

Themes that emerged from the implementation stage related to the practical systems which were being put in place to make the intervention happen but also included emergent themes relating to the participants. In addition, key themes which were identified in pre-intervention stage 1 (CBPAR phases 1-3) continued to reflect in implementation stage 2 (CBPAR phase 4) as activities in stage 2 were part of the continuum of action that had been instigated in stage 1.

The process of designing and putting the course in place in the village was documented using different data but was part of a continuum, established in the earlier

[49] 'Big Brother' from George Orwell's book '1984' where the futuristic totalitarian state becomes a force of fear monitoring citizen's thoughts and actions (Source: (Orwell, 1984))

phases, where activities in the action research are complemented by dialogues with significant participants. As part of the second phase of the implementation, I am seeking to demonstrate how the process of the designing the course brought together different participants to draw on their skills and experience in order to produce a resource which was relevant and sustainable for the YMs. In this phase, I am part of the process putting together the course and running a workshop in the village to showcase it. I am however, not the only actor as the following stages show.

Data to support the design of the course grew out of the preparatory work for the writing of the course and the pre-course workshop with the YMs, facilitators and representatives from the MECP and Mulamula community.

Data was sourced from:

1. Young Mothers' Workshop 8th July 2015.
2. Initial ICT Basics Course.
3. Dialogues relating to the first ICT Basics course and ICT course for YMs design with YM-ICTF and YM-T. [27th and 31st July 2015]
4. Design of the Actual ICT and BAE Nutrition Course.

The systems and structures that were eventually put in place or identified during the implementation are observed in the various sources presented. They generated some different sub-categories for organising data in NVivo v10 (shown in table 6.9 below):

Table 6.9 Additional coding applied in Phase 4

Additional Codes applied to Stage 2 Phase 2 Data in 'YMs ICT and BAE Nutrition Course' Section		
'DATE/TIME'	'LOGISTICS'	'POWER SUPPLY'
'HARDWARE'	'SOFTWARE'	'COURSE CONTENT'
'VENUE'	'HUMAN RESOURCES'	- 'NUTRITION'
'FINANCIAL'	'YMS' SUPPORT SYSTEMS'	- 'ICT BASICS'

These categories were chosen to reflect the structures and systems that were perceived were necessary to make the course achievable and effective for the young mothers. It also reflects issues that arose from discussions with YM-T, YM-ICTF and the YMs and women from the Mulamula community who attended the workshop, which was run on July 8th 2015, to promote and discuss the ICT and BAE Nutrition course.

The feedback from Skype and WhatsApp discussions with YM-ICTF and YM-T, relating to implementation of the courses, helped clarify and justify some of the practical elements of putting the course in place.

They also brought forward further 'emergent' themes to feed the discussion on how the course can be sustained in a rural resource-limited community such as Mulamula. The additional themes are shown in table 6.10 below:

Table 6.10 Emergent themes used in coding from stage 2 phase 4

Additional Codes applied to Stage 2 Phase 4 Data in 'YMs ICT and BAE Nutrition Course' Section		
'REGISTRATION'	'TRANSLATION'	'DIFFERENTIATION'
'CERTIFICATION'	'RESEARCHER ROLE'	'ENDURANCE'
'LOCAL TEACHERS'	'UNSUSTAINABLE EXPECTATIONS'	'DEPENDENCY'

The emergent themes/nodes from phase 4, shown in table 6.10, relate to the themes already recurring from the wider research question themes discussed in chapter 5:

Theme 1: Recruiting Participants & Participation
Theme 2: Researcher flexibility
Theme 3: Establishing champions
Theme 4: Engendering volunteering/Motivation
Theme 5: Sustainability/Commitment

Some of the emergent themes are effectively adjusting the focus on themes 1 – 5 above. For example: 'REGISTRATION' looks at how the paper/computerised registration process is valuable in managing the recruitment and participation of participants.

In considering the CBPAR view of 'reciprocity'(Maiter et al., 2008) as part of a successful participatory process, an additional 'critical' angle was used. By taking a more pragmatic stance on how sustainability should be achieved within the study, I started to seek out areas where potential barriers, or warning signs, were appearing in the more informal dialogues with YM-T and YM-ICTF. They were freely reporting their experience and were sharing both what they considered the positive and negative aspects of the course implementation. The themes of: ENDURANCE, LOCAL TEACHERS, UNSUSTAINABLE EXPECTATIONS and DEPENDENCY relate to the general theme of sustainability but

address issues which are impacting on YM-T and YM-ICTF as they start to run the course and see how the community reacts.

The emergent themes of 'DIFFERENTIATION' and 'TRANSLATION' are initially concerned with the practicalities emerging from phase 4. For example: YM-T and YM-ICTF recognise the need for there to be remedial and extension activities added to the basic course in order to respond to the needs of the weakest and strongest student. However, over the course of the analysis, the themes of 'DIFFERENTIATION' and 'TRANSLATION' also impact on all of the 5 general themes.

In order to analyse data to answer the second research question the systems and structures required to sustain the course were organised into: practical systems and structures required to sustain the course and wider issues relating to sustainability. Data from these two categories is presented below. The data references are summarised from the sources listed in section 6.1.

6.4.1 Data relating to systems and structures required to sustain the course

Data relating to practical systems and structures required to sustain the course includes dialogue with participants relating to:

- The use and effectiveness of administrative systems put in place to sustain the course.
- The effectiveness of the course itself in stimulating the young mothers' learning.
- The effect the different trainers and their training methods had on the young mothers.

Administrative systems

The use of sign-up forms, application forms, registers and evaluation forms was consciously programmed into the study in order to give the course an academic formality which was recognisable to the participants embarking on the course.

The forms were generally well received by young mothers, the trainer and the course facilitator. YM-T and YM-ICTF also appreciated that I sought feedback on the forms themselves as part of the process of continuous improvement (Dialogue 1 below).

I did regular checks on use the of the class register (Appendix 30: Class Registers), both with YM-T and YM-ICTF, and followed up with questions about consent forms (see tables 6.11 and 6.12 below):

Table 6.11. Skype Dialogue with YM-ICTF re: Registration - 27th July

Rowan:	**Sascha:**
Was it the same number of Young Mothers (11) who came this week?	*Yes, we have 11 young mothers still. We check the list every time they come so you can check when you come. We put it here.*

Table 6.12. Skype dialogue with YM-T re: Registration and consent forms – 31st July

Rowan:	**Boikie:**
Sascha said 11 young ladies turned up?	*Yes, I'm expecting more tomorrow*
Did they all sign the consent form?	*Yes, they did and I still have the other copies that others will sign and extra copies. I think we are going to end up having maybe close to 20 or past 20 students who have signed the consent forms.*

YM-T also reported on their solution for retaining student work for assessment which involves: saving work to named folders on the computer desktop on numbered machines. Students use the same laptop for each lesson and save in the same place each time.

Table 6.13 Skype dialogue with Boikie re: course data management – 31st July

Boikie:
They can save their data. We have numbered the machines. Using the specific computer to save their data. So they have all their data in all one folder. If ever the university wants to see their work it will be stored on the machines for them to see.

<u>The YMs ICT and BAE Nutrition Course</u>

As feedback on how the course content was delivered was expected to be available on video footage in English, much of the dialogue about the course itself is mixed with conversations about the video recordings:

Table 6.14. Skype dialogue with Boikie re: Video documentation of courses and the transition from English to Tsonga teaching – 31st July.

Rowan:	**Boikie:**
Sascha says you managed to record some of the sessions?	*Yes, we did. They are very big files. They are more comfortable if I explained in Tsonga. Getting them to answer stuff in Tsonga. I was explaining the questions in English and furthermore in Tsonga. Some answered in English and some answered in Tsonga. It's good in terms of interacting with them. In the future we can show that they are making progress*

The dialogues seem to reveal that YM-T and YM-ICTF are both concerned with documenting the course as part of the process and are conscious of its potential value as a resource. They are also conscious of the issue of sharing large data files using the internet as they are using pay as you go data dongles to connect to the internet to read email and send pictures and video to me.

Information regarding technical difficulties relating to teaching with laptops also emerges as YM-ICTF reports how YMs initially struggle with the use of the inverted mouse pad for moving the cursor which doesn't match their experience of using touch screen telephones (which are more advanced technology). He suggests using mouse controllers so that the laptop works more like a desktop computer:

Table 6.15 Skype dialogue with YM-ICTF talking about YMs' technical difficulties - 27th July

Sascha:
... They had a lot of problems to understand the principle of the cursor. Some of them are using smart phones. ... So some tried to type on the display. It was really hard to explain to them that on one side you have a mouse you can move around and on the other hand you have the cursor where the focus is. So a lot of them messed up the text rather than really getting a proper text done….   *…We need more exercises in how the cursor and the mouse works. Another problem is with the laptops I hadn't noticed. You know when you type you have the tendency to touch the mousepad with the palm of your hand and the cursor jumps. What we need is a mouse for each of the computers and switch off the mouse pad. It happens to me too.. That happened a lot with the young mothers.*

The same conversation also reveals issues about the need for differentiated resources and how YM-T and YM-ICTF modified their approach with the other adult learners' classes in order to try out alternative ways to teach basics. It reveals that there possibly needs to be a more basic practical introductory course which uses uncluttered simple software (Paint and Notepad) to introduce the keyboard skills before progressing to use Word:

Table 6.16. YM-ICTF talking about YMs' software learning challenges - Skype 27th July

Sascha:
We were more successful with the teachers. I created an exercise with Paint. When they open Paint and draw some stuff with the mouse. They get an idea of how the mouse works. Only when I press the button really something is drawn and when I let go of the mouse it stops drawing. These concepts are fun. Then we went to Notepad, not Word, to write some text down so they get really not distracted…. For me and for you it's simple it's clear it is nothing but for them it is magic. It is best to go to an absolutely basic text editor for typing when nothing else happens and they can really do the typing exercises…

Both YM-T and YM-ICTF identify that there are stronger students in the class who need higher level activities to avoid boredom and extend them with something of value.

Table 6.17 YM-ICTF talking about more advanced YMs' learning challenges - Skype 27th July

Sascha:
…Some are very smart but have pre-knowledge about these things. One mother even did a degree in administration. I don't know why she is in that course. I guess it is for the nutrition content. For her it was really easy. She was done with the exercises pretty quickly compared to the others.

YM-T seems more connected to the YMs more as he raises issues about their existing nutrition understanding which they have communicated to him in Tsonga:

Table 6.18 YM-T reporting on his progress with teaching YMs in Tsonga – Skype 31st July

Boikie:
They are more comfortable if I explained in Tsonga. Getting them to answer stuff in Tsonga. I was explaining the questions in English and furthermore in Tsonga. Some answered in English and some answered in Tsonga. It's good in terms of interacting with them. In the future we can show that they are making progress…

They do know stuff about nutrition. I asked them numerous questions about what stuff they were feeding themselves while they were pregnant. Stuff they were eating – Stuff they were feeding their children. Stuff they were craving for and whether it was good for them. And does this stuff help the baby when they are pregnant and now that the baby is now born.

Trainers and training methods

The Skype and WhatsApp dialogues which are transcribed in this study give regular references to the training methods used by YM-T and YM-ICTF.[50] For the purposes of this study, the issue that emerges, from the ICT Basics courses that they teach prior to the YMs course, is that the students' understanding of complex ICT and Nutrition terminology is not easy due to their level of English comprehension (See Chapter 5).

By the time the YMs' course is being taught, the decision has been taken to make YM-T the main teacher in order that he can simultaneously translate difficult terms or teach in Tsonga incorporating some essential English terminology relating to ICT and nutrition:

YM-ICTF reinforces this decision a number of times in WhatsApp dialogues, Course Evaluation and in the Skype dialogue below:

Table 6.19. Feedback on trainer/teaching from YM-ICTF - Skype 27th July

Sascha:
No, he speaks only Tsonga. Well he says like key words in English like 'right click' 'click'. Apart from that he speaks only in Tsonga. Like I said, I tried it with English and said they can answer in English and Boikie can translate it but it didn't work out they are too…. It's really a confidence thing. When they talk in English they are really quiet. It is really hard to pick up in the recording. Anyway, I think Boikie is a really awesome teacher.

He reflects that this change of roles may be due to the inhibition of YMs working with a white male teacher for the first time or possibly just due to the quality of YM-T's teaching:

[50] Note: A significant study could be undertaken to compare their teaching feedback with the video data recorded during each lesson.

Table 6.20 Feedback on trainer/teaching change of roles from YM-ICTF - Skype 27th July

Sascha:
Maybe they are afraid to say something wrong in English and maybe they don't know me. Next time I will just help organise structure of the plan. YMS are not open enough to me to give me any feedback....An example: the teachers they gave me immediate feedback if they didn't understand something…… That's how I can work. If they don't give me any feedback, because they are afraid about me, I have no chance to teach them anything. Boikie is better with the interaction with the young mothers.

YM-T accepts the role reversal without fuss and reports specific issues relating to the class/es he has just taught or is about to teach. He is also reinforcing that he is in control now – giving the YMs the option to do classwork in English or Tsonga:

Table 6.21. Feedback on trainer/teaching from YM-T - Skype 31st July

Boikie:
Yes, we told them to type down the questions down (exercise 1) We showed them how to type. We got them using CAPS lock, switching on switching off, to navigate to get to Word. In terms of answering the questions tomorrow. Some were quick to type the questions. Tomorrow the first thing they will do will be to answer the questions themselves according to their understanding. I told them they could answer in Tsonga if they don't know how to answer in English.

The language of the course started out as English and evolves into Tsonga with English technical content. The first teacher was an English speaking German volunteer.
The ultimate teacher is a locally educated Tsonga and English speaking young man. The course content has not changed radically but the delivery has. Eventually, this may mean that the course will require re-drafting and translation to fit a new model with the course being taught in the students' home language with English and home language resources.

6.4.2 Data relating to wider issues of sustainability

Data relating to wider systems and structures required to sustain the course includes dialogue with participants relating to:

- The use and effectiveness of village structures required to sustain the course.

- The use and effectiveness of the wider community in stimulating and supporting the YMs' learning.
- The potential effectiveness of the Mulamula Education Centre Project in stimulating and supporting the YMs' learning in future.
- Formal and informal systems which are working to sustain the course.

Issues of sustainability raised in the YMs' Workshop

The workshop evaluation touches on how the YMs and other women at the workshop could contribute to supporting the development of adult education courses in the workshop evaluation form. (See Appendix 28: YMs' Workshop Evaluation form results) Some quantitative data is summarised below:

Requests for future workshops	Number
Presentations	3
Practical work	8
Group work	3
Discussions	2
Total sample	10

Preference for Nutrition course	Number
Baby/Infant Nutrition	7
Teenage Nutrition	3
Adult Nutrition	4
Total sample	10

Preference for ICT course	Number
Word	8
Excel	9
Powerpoint	10
Internet use	10
Web design	3
Programming	3
Total sample	10

Figure 6.4 Sample of quantitative data from YMs' workshop evaluation forms.

The data shows an interest in sustaining a programme of adult education through attending other ICT and Nutrition practical workshops courses delivering specific nutrition education (e.g. infant nutrition) and ICT training requiring the use of specific software (e.g. Internet, Web design, 'Powerpoint'). Issues relating to how YMs could support the course/s by doing voluntary service in MECP are raised in the course evaluation discussed in Stage 3.

The issue of volunteering to help sustain courses was discussed in the workshop informally but not included in any formal record. It featured in subsequent interviews and in the course evaluations as a result of it being raised in this forum.

6.4.3 Wider community issues relating to sustainability of courses in the village including the use of Mulamula Education Centre Project's ICT room)

Data relating to the wider community issues relating to sustainability of courses in the village including the use of Mulamula Education Centre Project's (MECP) ICT room came mostly

from dialogues with YM-T and YM-ICTF. Issues relating to the sustainability of MECP itself were not recorded in detail for this study, however, it is worth noting that developments on the MECP site were having an influence on YM-T and YM-ICTF as they passed it daily on their way to the school to teach the courses (figure 6.5 below).

Figure 6.5 Map of Mulamula village showing YM-T and YM-ICTF's accommodation, MECP and Mahlefunye Primary School (Source: Google Maps)

They also both have a personal interest in seeing courses established at that venue in future. YM-T – as a student member of MECP and YM-ICTF – as the son of the donor of the computers and laptops for the centre.

With regards to general sustainability of the course in the village and local area, YM-ICTF gets slightly disillusioned in July when he realises that ours is not the only course available in the district and other providers are providing ICT training for teachers[51]. This comes after a tour of the area with YM-T promoting their course to local schools:

[51] He is not aware that many of these providers are not doing practical training with hands-on experience but instead are demonstrating ICT skills or teaching ICT theory without ICT equipment.

Table 6.22 Skype – YM-ICTF regarding adult learners from teaching community -27th July.

Sascha:
Yesterday we went to all the local schools and high schools and offered our adult courses again. Unfortunately, there is competition right in the next village and they did that job already. I don't think we have any chance to get other students. *Well I have learned education is not for free… No, no wrong, good education is not for free. Bad cheap education – yes - that might be free. But really good education with good teachers and good learning materials you have to pay for. From where should that come from?*

YM-T returns to the issue of certification of courses as a key for attracting YMs as students and sustaining their involvement:

Table 6.23. Skype dialogue with YM-ICTF regarding certification of courses– 27th July.

Boikie:
One thing that I would love to happen. Let's say – for the university research - they get a certificate showing their commitment - let's say - in attending the course. That for them will show something. They can say on their resume that they got a certificate of participation from UKZN....That would be great. If we were to continue with it, we involve other mothers that also would be a big hit...From our first class, I can see, by the enthusiasm that they have, that we can involve and help a lot of young mothers.

An example of the mixture of feedback on the course with feedback about MECP progress comes from Sascha reporting on YMs' class attendance and student volunteers painting the interior walls at the MECP building in preparation for the visit of Sevenoaks School at the end of August:

Table 6.24. WhatsApp dialogue – YM-ICTF reporting YM-T's absence, cancelling the class and recording of volunteers painting at Mulamula Education Centre Project – Aug 17th

Rowan:	**Sascha:**
I sent you the simplified nutrition table for the Young Mothers' Nutrition course. *OK Thanks*	*Thx got it… But we don't do classes today. Boikie is sick and in bed* *I am uploading more video recordings and right now some pics of the painting. The painting pics you find under volunteer work/painting in the Dropbox.*

6.4.4 Formal and informal systems working to sustain the course

In this stage of the process, informal and formal systems established in stage 1 are operating to achieve course objectives. To do this, YM-T, YM-ICTF and I used WhatsApp and email to try and maintain smooth running of the course and incorporate aspects of continuous improvement.

By using virtually 'immediate' methods of communication (WhatsApp) we are able to establish agreement about issues which will require the use of different systems and which may take more time to execute:

Table 6.25. WhatsApp dialogue with YM-ICTF regarding improvements to course resources

Rowan:	**Sascha:**
Thanks for your call. I sent PDF with Nutrition content of common foods by email (Canadian source) *I will try and simplify it down for you.*	*OK, Received it.* *Thx for the PDF but that is too much. Would you mind to make a nice simple table out of that with only the food from the exercise.* *We will do that on Monday.* *Thx*

While complementing YM-T on his success with the YMs, he informs me of how he told one YM, who lives on the other side of the village, to tell other YMs about the course. This has attracted 6 more students by word of mouth:

Table 6.26. Skype dialogue regarding informal recruitment of YMs by word of mouth

Rowan	**Boikie**
I think it's funny. I never expected this little short course to be inspirational but I think because you have already taught this other course, this one is adding something special.	*Some on the side of the primary school had not heard anything about the course. I told one of the young ladies that side and at least 6 are going to get involved. It shouldn't just be people that live my side who get to participate. Actually almost all the young ladies from the village will now get to participate….*

The combination of modern and traditional systems of communication working side by side is notable. It could be seen as an indication of how the formal systems created in education

programmes need to be complemented by a flexibility of approach which also includes a willingness to adapt to the participants' preferred methods of communication.

6.5 SUMMARY OF DATA ANALYSIS OF IMPLEMENTATION PHASE

What emerges from the stage detailed above is that there is need for the community to remain engaged in participation to help set up systems and structures to sustain the course or similar future courses. In order to achieve this, 'existing champions' and 'future champions' in the form of up-skilled young mothers, or motivated members of the wider community, emerged as having valuable roles to play. These roles included: disseminating information about courses; promoting courses via peer networks and providing peer support to new students in courses they attend.

'Established champions', such as the MECP management committee, also have roles to play in communicating the needs of those providing courses and helping secure funds to sustain the hardware and provide an income for trainers.

The feedback from the YMs' workshop gave some indication of their expectations but also provided warning of the difficulties we might have if the course was too technical and loaded with technical ICT vocabulary or medical jargon relating to nutrition. The issue of translation of materials to Tsonga was not explicit in the workshop, but the need for improved understanding of English, or translation of resources into Tsonga, was implied by the YMs' use of Tsonga answers when presented with questions in English.

This study does not seek to analyse the YMs' course content at great depth but instead seeks to observe how the course affected the participants.
Their feedback on potential content was useful for designing the course but their comments about the value of the course to them and the community are more valuable. Their comments at this stage serve to answer more significant issues about their attitude to learning and their desire to learn using modern computer systems which helped with finalisation of the course.

The content and delivery of the course were analysed to the level expected as the video data which was originally expected to be in English was dominated by Tsonga. This created a practical difficulty for me as a researcher (as a large amount of data needs translation from Tsonga to English) However, the change had a positive impact on the motivation and learning of the YMs and the teaching of YM-T.

Feedback from the trainer (YM-T) and facilitator (YM-ICTF) highlighted the importance of having ‘real-time’ discussions with those delivering the intervention in order to maintain an active involvement as a participating researcher. The informal feedback received from the two young men gave me a good sense of what was happening on the ground. Receiving feedback from two individuals from two different cultural backgrounds was also a good way to triangulate the information and get some verification of what was happening on a daily basis.

Practically, the candid conversations with YM-T and YM-ICTF were invaluable in helping create structure to establish the YMs’ course from a distance during the periods when I was working remotely. Their positive and negative feedback also revealed the deeper issues relating to the response of the wider community and exposed a layer of themes which helped to give me greater appreciation of the underlying attitudes of the community.

The methods of communication used to maintain and develop the course express something about the complexity of establishing a course of study. They also indicate that the participants wish to use their preferred forms of communication to get things done in their own way.

CHAPTER 7

DATA ANALYSIS – POST-INTERVENTION STAGE

The data analysis in this third chapter shows how the participants' were affected by the community based participatory action research approach as the young mothers' course moved to a conclusion and the study entered its post-intervention stage as explained in the methodology section 4.5 and illustrated in methodology table 4.3. The purpose of the chapter is to show how the participants helped to reveal and prioritise the goals which are needed to establish such a course over the long term in such a rural setting.

The first section explains how the data was analysed in relation to the main research question (Section 7.1) and then proceeds to explain how the final stage of the study (post-intervention) was analysed using data from different sources which show evidence of the participation of the young mothers, course trainer, course facilitator and staff of Mahlefunye Primary school (Section 7.2).

The third section matches data sources with the fifth CBPAR phase (*Pursuing goals which are of value to all stakeholders – following outcome-based advocacy***)** from the 5 phase approach, identified in the methodology (Chapter 4.1.2), relating to research question 3: *How do we stimulate further constructive interaction as part of establishing a process of continuous improvement, through direct engagement? (Pain et al., 2012)*

The data shows how the use of evaluation tools (questionnaires and interviews) are used as an instrument to draw out constructive feedback from the participants in the course in order to try and establish a route map for sustaining the course. It also uses informal WhatsApp dialogues with the trainer and ICT coordinator to provide some background to the evaluation by reflecting on their feedback as the course approaches its conclusion.

The chapter concludes by presenting results in the form of themes which emerged through the qualitative analysis of the data sources used in this chapter. It also incorporates a a SWOT analysis to try and establish a strategy to approach future interaction in a form of continuous improvement.

It summarises the results in relation to the final CBPAR phase covered in this chapter and in order to generate conclusions relating to the main research question and the two subordinate-questions presented in the final chapter of the study.

7.1 ANALYSING THE DATA IN RELATION TO THE RESEARCH QUESTIONS

The final phase of the course implementation uses course evaluation forms (or questionnaires) and face-to-face interviews (with a XiTsonga translator present) to gain valuable feedback on the course from the young mothers, course trainer, course facilitator and school head. These were collected when I visited the village to observe the last two days of the course on August 24th and 25th 2015. Some interview also took place on the 26 August.

Additional feedback was also sought through WhatsApp mobile messaging dialogues with the course trainer (YM-T) and ICT facilitator (YM-ICTF) during the later stages of the course. These took place before I returned to the village to observe the last two days of the course.

In order to evaluate the effectiveness of the course, general themes were identified to group feedback from the various sources:

1. Perceived relevance and value of course content in terms of ICT and nutrition content.
2. Effectiveness of combined ICT and BAE course – taught together.
3. Ability and effectiveness of the trainer/facilitator – to understand the impact of teaching style on the students.
4. Future application of knowledge gained for vocational purposes – recognising the long-term value of the study.
5. Motivation to attend the course and future courses.
6. Willingness to participate in future courses/MECP activities – to gauge sustainability.

To make these themes more manageable in NVivo v10 they were given simplified codes shown in table 7.1 below:

Table 7.1 Phase 5 Themes, Thematic Codes and Sub-Codes used in drawing out comments

Phase 4 Themes	Thematic Codes	Sub codes
1. Perceived **relevance and value of course content** in terms of ICT and nutrition content.	'COURSE CONTENT'	'ICT VALUE' 'NUTRITION VALUE'
2. **Effectiveness of combined ICT and BAE course** – taught together.	'COMBINED COURSE'	'ENJOYED' 'DISLIKED' 'INDIFFERENT' 'OBSERVER'
3. **Ability and effectiveness of the trainer/facilitator** – to understand the impact of teaching style on the students.	'TRAINER EFFECTIVENESS'	'PERSONAL INSIGHT' 'OBSERVED INSIGHT'
4. **Future application of knowledge gained for vocational purposes** – recognising the long-term value of the study.	'LONG TERM VALUE'	'PERSONAL VALUE' 'VALUE TO COMMUNITY'
5. **Motivation to attend the course and future courses**.	'MOTIVATION'	'MOTIVATION FOR COURSE' 'MOTIVATION BEYOND COURSE'
6. **Willingness to participate** in future courses/MECP activities – to gauge sustainability.	'FUTURE PARTICIPATION?'	'FUTURE COURSES' 'FUTURE MECP ACTIVITIES'

In terms of identifying future goals, each of the general themes contributes to the over-arching question relating to the effectiveness of the 5 phase community based participatory action research (CBPAR) approach by: addressing the views of the participants; how they perceived the intervention and what they thought could be done to improve it.

The future goals addressed in this final stage were then sub-divided into: wider goals pertaining to the maintenance of the community of practice and more specific practical goals relating to the maintenance of the YMs' ICT and Nutrition course itself.

7.2 HOW THE POST-IMPLEMENTATION PHASE OF THE STUDY RELATES TO THE 3RD RESEARCH QUESTION AND THE FIFTH CBPAR PHASE

RQ3: How do we stimulate further constructive interaction as part of establishing a process of continuous improvement, through direct engagement (Pain et al., 2012)?

7.2.1 Pursuing goals which are of value to all stakeholders – following outcome-based advocacy.

In order to identify and pursue goals which are of value to all stakeholders in the implementation of the young mothers' ICT and Nutrition course, it was deemed necessary to interview the YMs, trainer, ICT facilitator and Head of Mahlefunye on the last day of the course. By discussing the course using questions which were similar to those used in the course evaluation it was intended to draw out issues which would form the basis for creating future goals. This process was also intended to help identify 'future champions' who may be able to run and support future courses and raise suggestions which related to sustaining future courses. Having a face-to-face interview dialogue with participants was seen as a way of stimulating further constructive interaction and involving them in the process of continuous improvement.

Conducting the interviews on the last day was intentional as I wished to get immediate/spontaneous responses to the course. It was also necessary to try and see the YMs before they went back to their homes as it was difficult to rally them together when they were back at home.

Before undertaking interviews with the YMs a short review of their work from the course was undertaken to establish what they had achieved practically as evidence from the course. As YM-ICTF had set up the laptops with individual folders to save students' work, it was possible to have and overview of what the YMs had been doing in the lessons. The purpose of this exercise was to give insights into the YMs' productivity and achievement but also give pointers about how the course may be improved in future.

By comparing actual class outcomes with what was said about the course it was intended to focus more precisely on what was needed for the future and generate goals or targets for future courses in discussion with the participants. This process was desirable as it addressed the fifth phase of the CBPAR cycle and made logical sense as a way to move

forward after the completion of the first YMs' course. The results from this section were sourced from the instruments listed below:

Sources:

1. Evidence of YMs' work from the ICT and BAE Nutrition Course
2. Results of YMs', trainer's and facilitator's evaluation forms from the course.
3. Results of YMs', trainer's, facilitator's and Mahlefunye Head's interviews relating to the ICT and BAE Nutrition Course.
4. Feedback, via WhatsApp dialogues and Skype conversations, from the course trainer and course facilitator.

7.2.2 Evidence of young mothers' work from the ICT and BAE Nutrition Course

The main physical evidence of YMs' involvement in the course on a day to day basis is present in three 'instruments':

1. The daily class register (See appendix 30)
2. The video footage which was taken of the classes
3. Records and examples of students' work stored on laptop desktops as a virtual logbook (table 7.2).

The record of examples students' work was organised as a method of retaining evidence for verification of the course – through UKZN or ICDL – and as a method of assessing the ability level and progress of YMs as they progressed through the activities. As the objectives of this study did not directly involve seeking verification or providing formal assessment of the YMs' progress, the data has been stored electronically and filed for possible future use in an extension study.

There was a stipulation in the research plan to consult student logbooks to assess students' motivation and commitment and gauge the level of intervention required. As the written English of the group was considered weak, and logbooks may become a burden and obstacle to student progress in class, it was suggested by the YM-ICTF that we log the students' work directly on the laptops as a kind of single entry logbook.

This turned out to be a very good idea as there were limited funds for the production of printed paper/card logbooks and we did not wish to burden the local school with course photocopying.

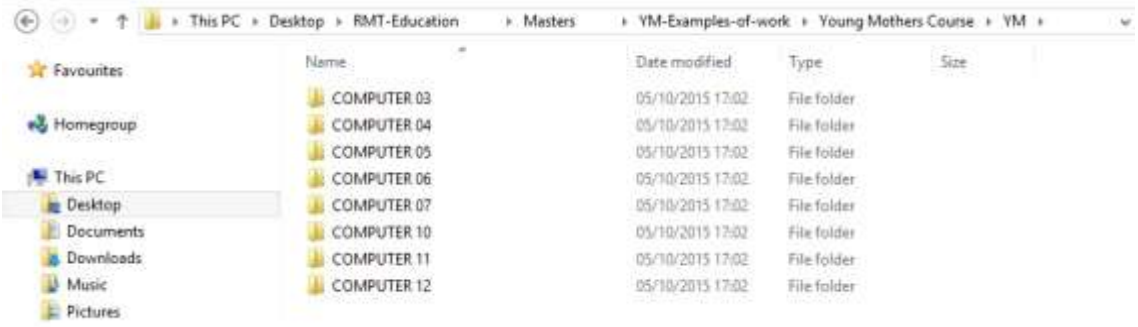
The table below (table 7.2) shows how the YMs' work files were organised to enable multiple users to store work on one laptop. The YMs used the same numbered laptop for their lessons to ensure that they were able to save their work in re-usable files. This procedure turned out to be a very useful tool for managing the different levels of student ability (differentiation) as the more advanced mothers could pick up on previous work and move forward while the slower mothers could return to previous tasks if necessary.

> "*Differentiated instruction is a process to approach teaching and learning for students of differing abilities in the same class"*(Hall, 2002)

The process of differentiation may have arisen as sort of consciousness group activity between researcher, trainer and ICT facilitator. It was not part of a conscious plan for the course. The fact it arose, is a sign that there were some constructive dialogues going on as the class developed which attempted to "*maximize each student's growth and individual success by meeting each student where he or she is, and assisting in the learning process"* (Hall, 2002) It may also have arisen from the practical need to fit 20 YMs onto 14 laptops and to give everyone a chance to do some practical work.

The issue of creating differentiated work for students was raised in course evaluations in section 5.5.3. As part of the process of establishing goals for future courses, the survey of student outcomes reveals that more differentiated teaching materials may be required to address the different ability levels within the YMs' class.

Table 7.2: Example of YMs' virtual logbooks stored on numbered laptops



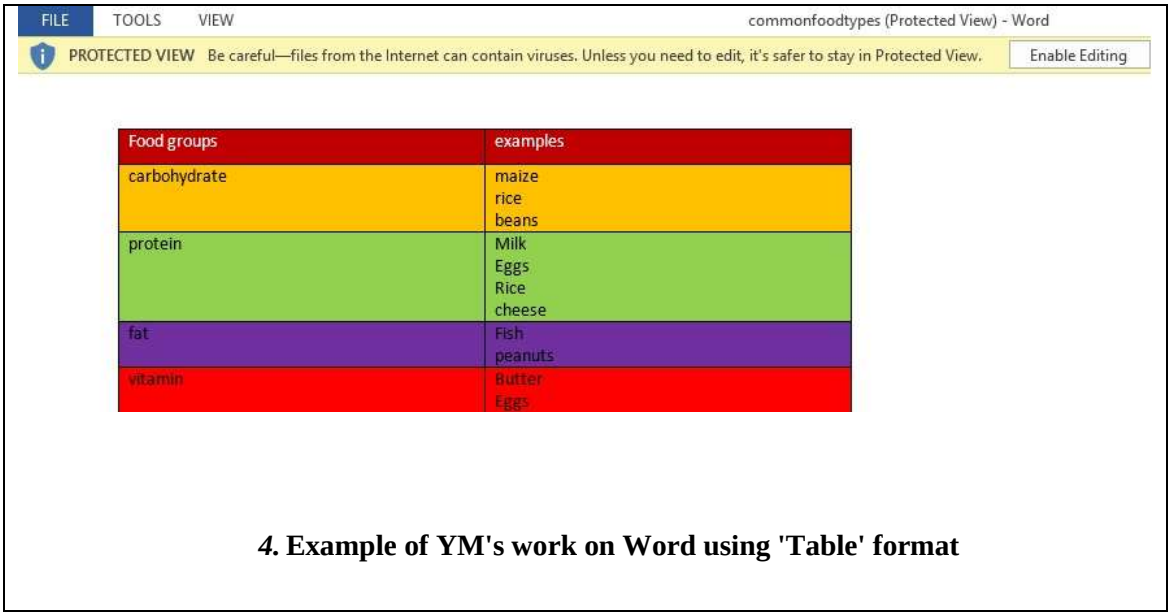
1. Folder tree of exemplar logbook data taken from YMs' laptops

2. Folder tree from one shared laptop showing YMs' folders

3. Individual student's work folder with pre-loaded resources

Note: The study did not have the financial resources to build a fully operational computer network for teaching and saving work. The method of creating individual student folders on the desktop of each laptop and getting students to use the same machine is an old fashioned but reliable way to save students' work on stand-alone machines.

Table 7.2 (continued): Example of YMs' virtual logbooks stored on numbered laptops



***4.* Example of YM's work on Word using 'Table' format**

The example shown above in table 7.2 indicates that YMs' folders showed evidence that they were completing activities which were planned as part of the course on dates which matched the course plan. They are also using the software applications which were specified - in this case, 'MS Word-Tables'.

The folders of work stored on the laptops do not however show that the student named actually completed the task. This is difficult without individual students working on password activated accounts which is the norm in university settings now. To do this, the computers have to be installed on a managed computer network[52].

[52] Sascha was keen to organise the laptops onto a 'LAN' (local area network) but was unable to source all the equipment to achieve this before the courses started. It is hoped to build a LAN when the machines are installed in the MECP ICT training suite.

7.2.3 Results of young mothers', trainer's and facilitator's evaluation forms from the course.

Results of YMs' course evaluation forms

As mentioned in 5.4.1, evaluation forms were used to gain feedback on the YMs' course at the conclusion of the course to gain immediate responses from the YMs, trainer and facilitator while the course was still fresh in their minds. In terms of helping to establish future goals, they helped raise points which addressed sustaining the course, funding future courses and promoting the course. Although 14 YMs filled in evaluation forms on the last day of the course, the data from YM1, YM4 and YM6 was used for this section. YM1, YM4 and YM6 were eligible under the exclusion criteria and were involved with the study from its inception.

The results from these forms show that the YMs were motivated to learn, valued the combined ICT and Nutrition course and felt that they learned about computers and nutrition (Questions 1-3).

They responded positively to the teaching of YM-T (Question 12) and were complimentary about YM-ICTF's support. A poignant comment was from YM6 – '*He respects us and we respect him*'. They uniformly preferred the single sex class setting (Question 10-11) and were not keen to be taught by women (Question 13).

In relation to the course content, the YMs were not asked to give detailed feedback on individual elements of ICT and Nutrition course (which may form the basis of an impact study) but were asked to comment on what types of course they would like to attend in future. The range of suggestions was quite varied but tended to focus on what might be considered academic subjects (History, Geography, Biology, Life Sciences etc.) rather than vocational subjects. [Possibly a result of unsatisfied Matric/Tertiary education ambitions]

The one more vocational subject which was raised was 'agriculture'. In addition, YMs requested future opportunities to study childcare and infant nutrition (Question 6.4) which could be interpreted as vocational skills if YMs wished to pursue care work or nursing as careers. YM6 extended this with her desire to learn about '*mental development*' in relation to '*reduced productivity*'.

In terms of skills acquisition, the YMs appreciated the opportunity to use computers practically to: activate and shut down laptops (something users take for granted) learn typing

skills and attempt model assignments based on nutritional content. This was a change in direction from their pre-course evaluation when the most popular requests were requesting 'Powerpoint' and 'Internet' training.

Requests for future practical training (Question 6.2) included: more 10 finger typing practice; opportunities to use email; printing and photocopying. Future ICT specialisms requested included 'Excel' and 'programming' training (Question 7). The size of the class (15-20 YMs attending regularly) meant that some mothers had to share a laptop in class in some instances (See appendix 35: Photo diary). YM4 and YM6 requested their own computer to work on alone in future courses.

An issue which was relevant to the management of future courses was (Question 5.3) was the quality of childcare facilities in the village (YM1 – '*Lack of childcare facilities in the village*', YM4 – '*No childcare facilities …*' and YM6 – '*Not enough childcare facilities…*')[53]. However, when questioned about current difficulties with childcare for attending the course, YMs claimed that children were being cared for by their grandmothers (see Appendix: YMs' Interviews)

In addition to what might be called 'predictable responses' from a structured questionnaire, some more nuanced comments emerged which indicated that the YMs wished to share more about their experience on the course. In responses to questions relating to course teaching and style, (Question 10-11) it emerged that YMs used the course as an opportunity to have their own group discussion to share their experience as young mothers (YM4 – Question 10-11 '*We have discussion after the lesson to know exactly about our young mothers*') A peer support network appeared to have grown in the group (YM1-'*They help me when I don't understand'*) which was acknowledged by the evaluation feedback given by YM-trainer and YM-ICTF.

The responses from the evaluation forms enabled a better understanding of issues which were previously anticipated as relevant for sustaining future courses (childcare, course range, skills required etc.) These comments helped me gain a better idea of what future courses might require and therefore what the goals of course organisers and trainers might be. Answers given in Questions 15-16 also gave an indication of how some YMs might contribute to achieving these goals in future courses [VOLUNTEERING/PARTICIPATING]:

[53] The Mulamula Crèche is located next to Mulamula Education Centre Project and struggles with limited facilities and staffing. MECP has helped the crèche in the past by building an extension to the crèche building, building two sanitary pit toilets, supplying trees and a 3000 litre JoJo water tank

YM1- '*I will like to help others who is at home like me'*

YM4- '*By teaching a children'*

YM4- '*By teaching a children'*

The YMs saw no barriers that would prevent them from attending future courses (Question 17) other than finding employment [MOTIVATION]:

YM4- '*When I get a job in the middle of the course'*

The use of the evaluation form was valuable in gaining feedback from the YMs which could serve as a starting point for setting goals or targets for a new course or extending the current course. The answers given show that YM-T and YM-ICTF had achieved a level of trust with the YMs which was heartening and productive in terms of establishing future goals.
As a tool to establish future goals for a similar course for 'older' YMs, data could be revisited to compare, for example, under 25s with over 25s.

Results of trainers and ICT facilitator's course evaluation forms

The feedback gained from the all-male grouping of trainer (YM-T) and ICT facilitator (YM-ICTF) was interesting when compared with the responses from the young mothers (all female group). Their responses also gave insights into how those delivering the course as volunteers saw the potential future courses. Their ideas, gained from first-hand experience, will enable setting of practical future course goals.

Their responses indicated that the YMs were a responsive and appreciative group who were willing to work: YM-T - '*They were good listeners and they did all that was required'.*

YM-ICTF's viewpoint as a volunteer from outside the country seemed to have matured: YM-ICTF - '*Even a young mothers can learn how to use a computer if you use the right method'* His appreciation of the value of peer support in the classroom was evident: YM-ICTF - '*When they started to help each other and the questions for simple things dropped because they got more confident'.*

Both saw that the combination of practical ICT skills with another subject as a valuable way to learn: YM-ICTF – '*With a context, it is much easier to learn the IT skills'.* They also realised that without additional English training the teaching of higher level ICT skills would be difficult (Question 6.1, 9) and additional Life Skills may be beneficial

Their ambitions for future ICT content for courses were slightly more advanced than the young mothers, suggesting: 'internet training', 'web design' and 'programming'.

The did concur with the YMs in agreeing that young mothers should be taught in a single sex group especially when it came to topics relating to child care, health issues and diet.

Methods of achieving future course success suggested included more differentiated content: YM-ICTF – '*Optional exercises for advanced students to keep them busy'.* Resourcing of courses in the remote setting was addressed (Question 15) practically by YM-T in stating his continued commitment to the project: YM-T – '*I am always willing to continue'.* It was addressed differently by Sascha (YM-ICTF) who suggested designing '*support software that can help deliver exercises directly to the computer'.*

At the stage when YM-T and YM-ICTF filled in their evaluation forms, they had been having a dialogue with me for more than 5 months. Their answers are candid and refreshingly constructive. This could be seen as a result of the growth of the community of practice over time through shared human experience. It could also be a sign of constructive results borne by developing trust and friendship between people who share a common goal or interest.

7.2.4 Results of young mothers' interviews relating to the ICT and BAE Nutrition Course

Interviewer: Rowan Thompson
Interviewees: Eligible young mothers **(**YM1, YM4 and YM6)
Tool used: Digitally recorded structured questionnaire with 10 questions
Simultaneous Translation: Provided by Boikie Maluleke (YM-T)
Locations: Mahlefunye Primary School – classroom next to ICT classroom (2) and HOD's office (5)

Interviews with two of the eligible young mothers took place in an empty classroom at Mahlefunye school on the final day of the ICT course. Interviews with five more YMs, including the third eligible one, took place on the following day in a room in the school administration block. Robert Vukeya (YM-MECPS) had generously made this room available for YM-T and YM-ICTF to use as an office on the days when they were working at the school.

The YMs had already completed evaluation forms at the stage when they were interviewed. I had informed them, when I met them before their last class, that the interview was a chance for them to air their opinions freely in order to help improve the course and help with the planning of future courses. The structured questions produced responses which were similar to those which were given in the evaluation but revealed more about the young mothers as individuals expanding on their motivations to attend the course and expanding on their ideas for the future.

Note relating to translation

The YMs had asked if it was possible to speak in Tsonga so I recruited Boikie Maluleke (YM-T) to act as a translator. I read the questions in English. YM-T translated them into Tsonga. The young mothers responded in Tsonga or English and YM-T translated them back into English. The YMs appeared to speak freely and openly.

Applying exclusion criteria

All of the young mothers were keen to be interviewed. However, I asked if we could interview those who had been with the course from its inception. Seven YMs came forward all together. As three interviewees (YM1, YM4 and YM6) were eligible under the exclusion criteria, I have used their results in this study. The other four interviews have been saved onto CD with the rest of the raw electronic data.

7.2.5 Results relating to RQ3 - development of future goals and outcome-based advocacy

Questions 1-3 aimed to gain feedback on the course and identify what might be perceived as valuable from the course. YMs 1,4 and 6 all gave positive feedback on the combined course and all stated that they had learned more about infant nutrition which is something they did not learn in depth at school.

The YMs reiterated what had been stated in evaluation forms: **stating that they learned a lot about computer use and nutrition**. However more details were given:

YM1 – '*Food types she should eat before and after the birth of the baby'*

YM6 – '*How to take care of yourself and your baby so that the baby is healthy'*

YM6 – *'She knows how to access different applications on the computer'*

The course seemed to have awakened or refreshed the YMs regarding **lifelong learning** and learning beyond high school level:

YM4 – '*You should not give up on learning. You should continue learning'*

The **course was taught in a way which was conducive to learning and opened their eyes to adult learning styles** (Question 1, 2, 6):

YM4 – '*There's a difference when it comes to teaching tactic'*. So you like the teaching style? '*Yes*.'

The combined ICT and Nutrition approach was appreciated and ICT was seen as a useful tool for future learning:

YM1 – '*She can go on the computer and look up information on the internet about nutrition for her baby'*

YM1 had completed matric and attended adult education classes in human resources at college and initially was concerned that the class with less able women would be too basic. She admitted that she had enjoyed the social element of the class and although some work was revision, she felt she had learned new skills.

YM1 – '*Initially the environment was king of awkward for her. Over time she got used to being with people from different educational backgrounds'*

Awareness of the value of the course as a route for gaining necessary ICT skills for employment was stated clearly:

YM1 – '*It's also advantageous that if ever there is a job post and it requires computer skills, at least you can type'*

The different range in ability levels in the class was more than was expected. Differentiation is something which needs to be accommodated for in future planning.

The growing awareness that looking after oneself was important as a method for looking after one's child permeated the YMs' responses.

YM1's responses regarding potential future courses reflected a mature worldly view of the world than some of the mothers that had completed evaluation forms. [FUTURE CHAMPION]. Her suggestions for more vocational ICT training (Pastel accounting software)

and life skills training (HIV and Sexual health awareness), in questions 6 and 7, reflected those suggested by older participants (See Appendix: Interview with Robert Vukeya) YM4 and YM6 reinforced this with their responses sharing an interest in accounting and life skills training.

All three YMs stated a willingness to help sustain future courses through sharing their knowledge and promoting courses amongst their peers. YM1 gave community practical fundraising suggestions:

> YM1 – *'If the community can give donations. About 20 Rand. They can help fund the courses at the education centre'*

While the other two stated how they could continue to participate to promote the course:

> YM4 – '*learning further/more and asking other women to join them while they are learning.*'
>
> YM6 – '*As she has attained knowledge on the course, she can go around spreading the gospel about the course itself and what other people can gain from attending the course.'*

The three YMs all invoked the inclusion of village structures to promote and discuss future adult learning opportunities through village meetings at the traditional council offices (question 8-10):

> YM1 – '*talk with the chieftancy'..'be at one and talk about other official projects'*
>
> YM4 – '*by informing the community members'..'by calling a meeting actually at the tribal office'*

To achieve future goals, the YMs all suggested improving the marketing of courses with production of a course prospectus, advertising with posters on village noticeboards and announcements at village meetings.

Overall, the YMs' interviews reflected much of what was gained through the evaluation forms. Undertaking the interviews soon after completion of the forms allowed the YMs to reflect and expand on what they had written in forms in English by talking in their native tongue. The structured interviews made it possible for fairly rapid translation of questions and answers as the translator got used to a routine of asking the same questions and listening for the differences in replies. This process enabled me as a researcher to gain virtually instant responses from the YMs and react to their answers in a way which was natural and spontaneous.

7.2.6 Results of interviews with the trainer, facilitator and Mahlefunye Primary School Head relating to the ICT and BAE Nutrition Course

Interviewer: Rowan Thompson

Tool used: Structured questionnaire with 10 questions

Simultaneous Translation: None required – all interviews were carried out in English

Locations: Mahlefunye Primary School – Headmaster's Office (1) and HOD's office (2)

Background

The ICT trainer and ICT support facilitator were consulted about their willingness and availability for interviews at the conclusion of the course on Monday 24th August during their penultimate lesson. They were keen to be interviewed to share their experiences and comment on how they felt the course could be sustained in future.

The Head of Mahlefunye/MECP Secretary (YM-MECPS) agreed to be interviewed to give a wider stakeholder's perspective on the project. He requested a copy of the interview questions to peruse the night before.

Two of the interviews with young mothers took place on 25th August before and after the final class. The interview with YM-T took place on 25th August before the YMs' class and the interview with YM-T took place on 26th August before the YMs' interviews. The interview with the Head of Mahlefunye (YM-MECPS) took place on the morning of 26th August before school started (See Appendix 31. Interview Schedule) and visible in the transcribed data tables (Appendix 32. Young Mothers Course interview results).

Note relating to translation

As the three adults involved in this part of the study were all confident English speakers, it was not necessary to arrange for translation of the interviews.

Applying exclusion criteria

As the three interviewees were part of the wider collaborative process to establish and run the YMs' class, it was not necessary to apply exclusion criteria used for the YMs.

Table 7.3 Young Mothers' ICT and BAE interview files as displayed in 'Olympus Sonority' voice recording management software

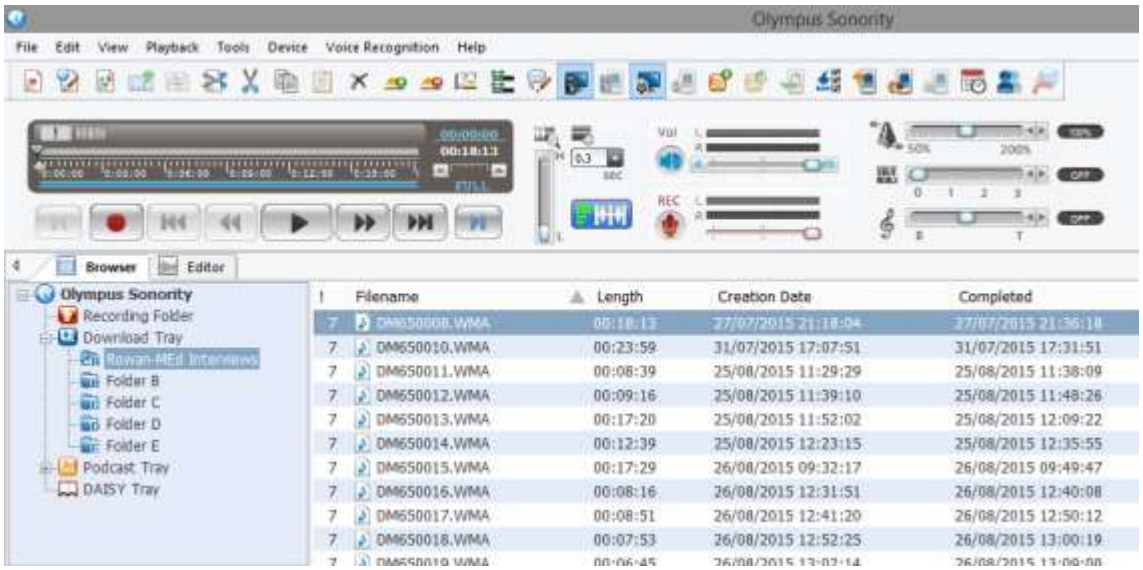


Table 7.4 Order of ICT trainer's, facilitator's and Head of Mahlefunye/MECP secretary's interview recordings

Interview Number	Participant identification code	Tape code	Designation
1	**YM-T**	**DM650008**	Young Mothers' course trainer
2	**YM-ICTF**	**DM650010**	Young Mothers' course ICT support facilitator
3	**YM-MECPS**	**DM650015**	Head of Mahlefunye Primary School and MECP Secretary
4	**YM-T**	**DM650023** **DM650024**	Young Mothers' course trainer
5	**YM-ICTF**	**DM650….**	Young Mothers' course ICT support facilitator

7.2.7 Results from post-course interviews with Boikie Maluleke (YM-T), Sascha Lenz (YM-ICTF) and Robert Vukeya (YM-MECPS)

The interview results from Boikie Maluleke (YM-T) and Sascha Lenz (YM-ICTF) who were directly involved in teaching the young mothers - were contrasted with the interview with Robert Vukeya, Head of Mahlefunye primary school and secretary of MECP

(YM-MECPS). YM-T and YM-ICTF responses were more down to earth and related to what they picked up from interactions with the YMs.

YM-Ts responses are shorter than the other two men, He tends to limit his speech to the question but answers in more than one way as he tries to find the best English. YM-ICTF's responses become a narrative as he answers the questions and then proceeds to reflect on his experience until asked another question. His English is more fluent than YM-ICTF's but contains some unusual turns of phrase as his native language is German.

YM-MECPS's view was valuable as the 'host' of the courses but also because he represented the interests and aspirations of the MECP and had a vested interest in developing the courses to benefit the project.

Interview with Boikie Maluleke (YM-T) - 26 August 2015 [Mahlefunye School, HOD's office]

The interview with YM-T indicated that he had been uplifted by the experience of teaching the YMs having initially started in a supporting role teaching ICT basics courses with YM-ICTF (Question 5). He also implies that he was attracted by the novelty of teaching a combined ICT and Nutrition course:

> YM-T – '*As a computer trainer.. I didn't attain much experience while I was still busy training… I wanted to share my knowledge when it comes to computers. Cause down here in my rural area there are no particular computer course that comes for free or comes with a give and take parcel of nutrition.'*

He considered the combination of ICT teaching and Nutrition content was valuable for the YMs (Question 2) and he supported the single sex lessons (Question 9):

> YM-T – '*Having that I have only taught only ICT itself before so when comparing with the nutrition. Well, it helps other young mothers open up and talk more about their experiences as a young mother. So for them it is like a second chance and also trying to help out with the research itself to motivate other women on how to take care of themselves.*

He also highlighted that the course was fulfilling a need for better health education which is only provided in a limited way by rural clinics (Question 4) and (Question 8):

YM-T – '*The only information that they get is from the clinic and at the clinic they get told what they have to be told and are not told what can help them. There is not a lot of information that they get. There is not a lot of health education.'*

YM-T – *'If the YMs were educated more about HIV and AIDS that would primarily help a lot because in our village there is no clinic.'*

A suggestion to improve the course for the future was to provide internet access. His motivation was justified by referring to the needs of the YMs (Extension of Question 4):

YM-T – '*Yes, if we had internet access for them while I am teaching or for reference purposes, that would be more interesting … they could see that the teaching and learning doesn't end only with the prepared course …They could search for more information more answers….. If they have internet they can hear what other mothers think. Or how to take care of themselves. Internet has a lot of information that can help them.'*

He also stressed that a big motivation for attending courses is certification which may lead to employment. He felt this would be a necessity for future courses (Question 10):

YM-T – '*Certification is the most important thing ….The number of people that are here and the unemployment rate is very high. Even though they are seated at home, they wouldn't want to take part in a course where by the end of the day they wouldn't gain something in terms of a job.'*

As a result of his enthusiasm for the course, YM-T suggests how he could extend YMs' learning and train them up to be future trainers/facilitators (Question 5 – Extension):

YM-T- 'I could skill them from the course we have just recently done. I could build up from there. It would take close enough maybe a month to be reaching to almost the level that I am at with knowledge to also facilitate classes of this particular manner

In terms of achieving future success, he reverts to the village structures and suggests involving the traditional council but keeps himself in the picture as a participant/champion (Question 8):

YM-T- *'If we did outreach with the chieftaincy for regular meetings where by the certain courses of this particular manner are discussed. So that the whole community knows about certain courses or certain activities that are happening by so doing that I think we could have big number of people showing up.'*

Interview with Sascha Lenz (YM-ICTF) – 25th August 2016 [Mahlefunye School, HOD's office]

The interview with YM-ICTF indicated that he too felt he had been changed by the experience of teaching the young mothers. Having initially started in a teaching role delivering ICT basics courses, with YM-T acting in a support role, he had deferred to YM-T when he realised the cultural/language barrier was inhibiting YMs' progress (Question 2):

> YM-ICTF – '*They got more comfortable during the course…. since Boikie is doing the course in Tsonga and he is one of them'*

He feels that the main thing that the young mothers learned which could be passed onto others is that ICT and scientific knowledge are not beyond their capabilities and can be learned by anyone with the will to learn (Question 3):

> YM-ICTF – *'The main thing is that computers … and science is not something terrible – really complicated – it's something you can manage…it's something you can learn'*

He also acknowledges the value of using contextual examples when teaching ICT:

> YM-ICTF - *'If they have it in context with the topic, it's like linked to each other. It's easier in their mind - later to use it again. If they learn in some in Teaching should always be in the context of some topic.'*

He points out that peer support emerged naturally amongst some in the group and this was something which would be of value in the future (Question 2):

> YM-ICTF – '*The most significant thing I found was they started to help each other without asking. They saw one of the women had a problem to log in so others went to that women and helped her to log in'*

Although he has effectively lost the limelight as the trainer, it seems to have spurred him on to suggest constructive ways to improve and sustain the course. He suggests that the YMs could be 'future champions' of the course and help develop the MECP:

> YM-ICTF – *'If they spread the word and tell what they learned. Tell what they have learned on the course. … These young mothers could be a catalyst for the education centre itself.*

He also acknowledges that my workshop approach to promoting the course, as a researcher, may have had more success in attracting the YMs than his efforts to promote the earlier courses using the Head of the high school (Question 5):

> YM-ICTF - . *I guess your workshop motivated them. You kind of motivated, taught them why it is important… give them ideas before the actual course…I think that pre-run is really important… That's definitely more successful than was my trail with the high school when an only an external motivation was from teachers –'Go!'*

He points out the need for 'local motivators' like Mavis (YMF1) to get people to participate but also points out that the novelty is attractive when the alternative is boredom:

> YM-ICTF - *'I guess one thing is curiosity. Something going… well why not try it out! Also because they were told. Mavis (YM-F1) collected the YMs and told them they should come'*

YM-ICTF's suggestions for future courses for YMs initially include: *financial topics, small businesses running, reading body language* and *conflict management.* He then reflects on the village and suggests *agriculture with small business management* (Question 7):

> YM-ICTF – '*They have a small house or hut with huge lands around it which they don't use it. That agriculture knowledge they had 100 years ago is completely lost. It would be good to come back on that. They don't have money to buy everything in the supermarket. It costs. They could sustain themselves much easier if they learn how to plant stuff. Even sell their fruits. Make money out of it.'*

He has a slightly more compromising view of the single/mixed sex class debate and suggests offering mixed and single sex classes depending on the context/topic (question 9):

> YM-ICTF – *'I guess it would be good to have a system with mixed groups but also offering separate courses in childcare, nutrition etc. where it is really sensitive for women'*

He continues to provide ideas for developing participation, improving the course and sustaining courses within MECP (Question 8):

> YM-ICTF – *'... I had the idea with the fee reduction system with volunteer work. I call it community work. ...Picking up litter… Repairing soccer ground goals. MECP creates that courses with fees. People can do community work to reduce fees. Also we need people with knowledge to develop these courses. They maybe teach or train others about how to teach these courses….Fee reduction through community work is great… It needs to hurt! … That money can be used to sustain MECP.'*

He justifies the need to create an income to sustain the courses:

> YM-ICTF – *'Building needs to be maintained. Computers need to be maintained. Internet data needs to be upgraded. If there is any money left, it can also be used to help pay the teachers.'*

He identifies the participation of the community as the key and how the development of dialogue is the primary force in driving the participation (Question 8):

> YM-ICTF – *'Well first it would be beneficial to make a discussion. To make the whole thing in a dialogue. The community comes with ideas of what they need… MECP on the other side picks up these ideas and creates a course and offers it back to the community'.*
>
> YM-ICTF – *'It's a community thing…. Like teachers from here that have the knowledge.. The welding guy, that did the doors, he could come in and teach people how to weld. That system would sustain itself and involve the whole community.'*

As an extension from the community participation and to develop ideas for future courses, I was keen to see whether YM-ICTF thought his presence as an outsider/novelty was a factor in attracting YMs to the course:

> YM-ICTF – *'So if it was just because I am a white, and I come from the outside, I am pretty sure they would only stay when I would teach but then they stayed even when I was not teaching.'*

Regarding sustaining the course as part of the greater MECP project, YM-ICTF gave forthright answers (question 10):

> YM-ICTF – *'First we need a good management. We need people who are 100% there for MECP. We need people who are not just there for the status… The system only works when they are active people that get things done. They get the community doing things. You have to remind the community to get involved. Poking them. … Get continuously active…'*

In order to simulate future participation he suggests using the established hierarchical route:

> YM-ICTF – *'Get the community on the community meeting and say these are the things that we offer, get sign up forms and right away people can sign in and follow up… But we need people to follow up.'*

He also acknowledges that participation might equally be encouraged through the 'hidden communications network':

YM-ICTF – *'They have a system to get these community meetings going. I don't know how they inform the people but they all show up. So there is probably someone running around to tell all the people or call them….It obviously works. I've never seen a billboard or anything but it works… There is a system that works to get news around and that's the only way to get people involved in the system…'*

Robert Vukeya, Head of Mahlefunye Primary school (YM-MECPS) - 26th August 2015 [Mahlefunye Primary School, Head's office]

Robert's impression of the course were positive and based on observations from visits to the classes (question 1):

YM-MECPS – '*The ladies looked so excited'…' any time when I enter the room, I find them smiling to show that they are enjoying'*

His theory as to why the course was successful and could continue to be effective was that it was *'three dimensional'* (question 2) delivering ICT skills, nutrition programme and life skills. He elaborated on the life skills element in question 4:

YM-MECPS – '*The YMs benefitted from: basic mathematics, health life standard, ICT skills, language both Tsonga and English and time management. From my office I could see they arrived 30 minutes prior to the start of lessons and depart 30 mins after finishing their lessons'*

He acknowledged that the success of the course was partly due to the adaptability of the trainer and facilitator (question 3):

YM-MECPS – '*Their level of understanding is more than before they started the course. They improved their level on a day to day basis.'*

His contribution was progressive in the sense that he identified the value of training a group of YMs to inspire future courses and additional participants and suggested ways the YMs could act as 'future champions':

YM-MECPS – '*With their basic knowledge…The young mothers can inspire nearby villages'*

He sees the course as a foundation for learning more rigorous ICT software packages in future:

YM-MECPS – '*It's a good start. So next course, if they continue, they are comfortable – in what they actually need to learn what they need to know: Word, Excel'*

Robert was also keen to involve local structures in helping establish future courses having recognised that the burden for establishing the programme had been borne by the researcher working with the MECP (question 1):

YM-MECPS – '*it is being done under a very strenuous budget, only MECP, without the help of any other organisation'*

He proposes that course facilitators take more of a leading role in seeking out funding (question 8):

YM-MECPS – *'I can remind the facilitators to move out and look for more funds from department of education and non-profit organisations'*

He suggests involving: the traditional council office; local radio and newspaper media and other organisations to promote future courses and engage with the wider community beyond Mulamula:

YM-MECPS – *'To me, through the use of councillors, development committees, traditional office and media will be able to help them hook more mothers to come and enrol for these courses. There is this method I like the most: 'snowball principle. We start by one and when the information rolls out to different communities.'*

YM-MECPS's enthusiasm for adult education courses is evident in the ideas that he proposes for future 'blended' ICT and BAE courses in question 7:

YM-MECPS – *'breast feeding; greening their communities and the environment; financial management; office computing and cancer related diseases'*

His productive contributions during the interview are encouraging as we were relying on his generosity to locate the intervention at Mahlefunye school. He is realistic, however, about sustaining future courses and suggests that '*intervention by department of education and non-profit organisations'* may be of significance in future. He also recognises the need for the local community to contribute financially:

YM-MECPS – '*Little payments might help'*

7.2.8 Photographs used in the study

Photographs were used in the study to identify and illustrate key events and show participants in different settings and meeting scenarios. These were organised into a reference

source located in the appendices. (See Appendix 35: Photodiary). This is explained and justified more in section 1.7. Photographs showing the meeting of participants in various settings or scenarios shows that there is action taking place (RQ1) and could be interpreted in a number of coded ways. ('MOTIVATION', 'SHARING', 'PARTICIPATING')

During the implementation stage of the study, the photographs which were sent via WhatsApp messaging by Boikie and Sascha served to give me, as the researcher, evidence of the implementation happening on the agreed days. For example: WhatsApp message from Boikie: 4th August, 07.55am *'Photos of 'Yesterday's class included'* (See: Appendix: WhatsApp Dialogues with Trainer). The image is shown in Figure 3 below. At this stage of the analysis, they help me observe issues relating to the practical systems being employed for teaching:

- How the room was arranged for teaching?
- What resources are being used?
- How many young mothers are present?
- Do they look motivated?

Figure 7.1 YMs' ICT and BAE Class August 3rd 2015 – Sent via WhatsApp messenger service on 04/08/2015.

The above photograph verifies YM-T and YM-ICTF's reports that the class took place with 11 young mothers present. It also shows how 10 of the YMs are sharing laptops while one is working alone. Not all of the 14 donated machines were operational for every lesson and YMs had to share machines (They comment on this in evaluation feedback) The

YMs all appear to be ‘on task’ staring at their screens but it is not possible to know whether this has been staged without direct cross referencing with the video footage.

From a technical point of view the photograph showed that the Mahlefunye ICT room is tidy and well organised and the lesson is set up with a projector to reinforce students’ learning. From a safety point of view, the organisation of cabling for hardware is an issue as many devices are plugged into a centrally located multi-plug creating a trip hazard.

I received similar images on a weekly basis from YM-T and YM-ICTF via WhatsApp mostly and email when they had particularly good ones they wished to send (and sufficient data to send them). YM-ICTF uploaded pictures and video to a ‘Dropbox’ internet based cloud storage system which enabled me to selectively download images and review video.

With so much rich information available from images taken in Mulamula it is possible to get distracted from the reason they are included in the study: The images helped me gain useful direct feedback on lesson attendance and enabled me to observe some aspects of the lessons’ delivery without having to be present. Working with the video footage, they could be used as an instrument to give greater analysis of how the YMs worked in the lessons.

Combining these observations with dialogues (by Skype or WhatsApp) with the trainer and facilitator, it was possible to improve our discussions of the day-to-day issues relating to delivery of the course. It also seemed to empower the trainer and facilitator to talk openly about their work as we had shared reference points on which to reflect. See example below:

Table 7.5 WhatsApp dialogue – YM-ICTF relating to photograph file sharing and volunteer work at MECP

Rowan	**Sascha**
Thanks for uploading pics. I will update FB…	*There are new pics online of the classes and volunteer work. The centre is clean again and everything is stored in the container.*

During the final stage of the process, photographs were used to document the final few days of my visit to the village and act as reference material to recall and check details referred to in the final stages of the implementation. Photographs were taken as part of the celebration of the completion of the course as part of sharing in the event and recording for future reference.

The use of images can be problematic in research (Van Leeuwen & Jewitt, 2001), however, photography is a modern tool which can record the participation of members of the community - as it happens - for communication to the remote researcher. In phase 5, I am in the village and it is possible for me to photograph people and events as an aide memoir for writing up observations and as a way of celebrating milestone events with the community and sharing them quickly via mobile devices (See: Appendix 35: Photo-diary).

7.3 THEMES EMERGING FROM THE POST-INTERVENTION STAGE

Themes that emerged from the post-intervention stage related to use of evaluation instruments to establish goals for the ensuring the future sustainability of the course but also included emergent themes relating to the participants and the wider community. In addition, key themes which were identified in pre-intervention stage 1 (CBPAR phases 1-3) and implementation stage 2 (CBPAR phase 4). Activities in the final stage 3 (CBPAR phase 5) were part of the cycle of action that had been instigated in stage 1 and concluded in stage 3. Themes which were carried over from the earlier stages are shown in table 7.6 below.

Table 7.6 Coding of themes emerging from RQ3 - CBPAR Phase 5

Research Questions	Participants	Participants Attributes	Key Themes	Patterns
RQ3	Potentially all participants (all data sources) could reflect in CBPAR at evaluation phase	'ACTIVE' 'PASSIVE' 'INTERESTED' 'INACTIVE' **'VOLUNTEER'** - 'CHARITABLE' - 'MERCENARY' 'MEMBER' **'CONTRIBUTOR'** - 'WRITER' - 'TRAINER' - 'OBSERVER' - 'EDITOR' - 'TECHNICIAN' **'LATECOMERS'**	'OLD-CHAMPION' **'FUTURE-CHAMPIONS'** 'SUSTAINABLE' '**FUTURE COURSE'** 'CONTRIBUTOR' 'CRITIC' '**ADDING VALUE'** 'SENSE OF ENTITLEMENT' '**REAL NEEDS'** 'PRACTICALITIES' - 'FINANCE' - 'HUMAN RESOURCES' **'DEPENDENCY'** **'INDEPENDENCE'**	After the intervention, the follow-up activities focus on building and sustaining the CBPAR by identifying key 'champions' and opportunities which will help facilitate and maintain future courses.

The process of evaluating the course in the village was documented using different data, and involved some refinements in coding, but the evaluation was part of the CBPAR cycle established and implemented in the earlier phases.

As part of the final phase of the intervention, I am seeking to demonstrate how the evaluation of the course brought together the key participants to share their opinions and reflect on their experience in order to help develop future goals to sustain the course.

The themes established in stage 1 remain as the keystones of the analysis but acquire a layer of sophistication with the inclusion of evidence produced from the actual implementation.

Under each of the original themes are now different questions:

7.3.1 Theme 1: Recruiting Participants & Participation/Wider community/

Who really participated?

What lessons were learned from their participation which could be used in future?

The trainer (YM-T), the ICT facilitator (YM-ICTF), the Head of Mahlefunye and six young mothers (YM1-YM6) participated throughout the process. Other YMs really only got involved when the course started and some 'LATECOMERS' (a category which emerged later in the study) registered late and did not attend all of the classes.

Young mothers' facilitatorsYM-F1 and YM-F2, members of women's groups, the MECP Director, the traditional council administrator contributed in the early stages of setting up the course but had little involvement once the course was up and running. The pre-intervention participants' workshop was identified as a valuable tool for building participation and it was recommended that this approach should be taken forward to help establish future goals.

Future course planning could include a process of inclusion of village representatives to observe the course in action and feedback to the wider community as they were included in the workshop. In this way courses can be promoted by those involved and by the wider community observers.

7.3.2 Theme 2: Researcher flexibility

Has the remote role of the researcher had a positive or negative influence on the implementation?

Has the remoteness of the course added anything to the research process which could be valuable in establishing future goals?

The remote location of the course created challenges for me as a researcher but the locally based volunteers accepted responsibility and communicated very clearly with me using a variety of media so that I was confident that the initial goals would be achieved.

Future research could be simplified by the lead researcher locating permanently to the village but this may reduce the effectiveness of the intervention by imposing a greater formality on proceedings. The volunteer researchers gave the study greater potency by imposing their own value systems and methods of working on the process. Future goals should include a procedure to foreground volunteers' strengths in early discussions. This was undertaken informally in the YMs' workshop, with the introduction of the trainer (YM-T) and (YM-ICTF) but should be formalised in future.

7.3.3 Theme 3: Establishing champions

Who emerges as the real champion/s?

Can anything be done to ensure that these champions remain and are supported in future?

The initial group of six young mothers (YM-1 - YM-6) who presented themselves at the very early informal meeting (See: Chapter 5, stage 1, phase 1) emerge as champions of the course. Their commitment and dedication to helping other weaker students is recognised in feedback from other participants. Some of this group mixed with YMs who joined the class after the workshop emerge as 'future champions' with their stated willingness to volunteer at MECP to help sustain courses there. (See: Appendices 26 and 27: YMs Biometrics and Course Evaluation forms)

To support these champions and generate future champions the suggestion is that the most dedicated YMs be trained as future course facilitators by the current trainer. To achieve this goal, future funding will be necessary. Feedback showed that YMs need to, and want to, find practical ways to break out of the cycle of dependency on hand-outs and develop skills

which can initially improve their social circumstances and enable them to be more independent and generate their own income.

7.3.4 Theme 4: Engendering volunteering/Motivation

Has volunteering benefitted the course?
How can future volunteers be secured?
Can volunteering be a hindrance to sustaining successful adult education courses?

The evidence of the course's successful implementation is a sign that volunteers can work successfully to achieve significant results. YM-T and YM-ICTF s devotion as volunteers is mentioned in previous chapters 5 and 6. In this stage, their devotion is recognised by the YMs and the Head of Mahlefunye school (YM-MECPS). It was also reported to the wide community by radio on the Sevenoaks School visit to Mala FM radio station and acknowledged by the Chief's representative at the Sevenoaks School Science Fair (See Appendix 35: Photo diary)

Securing this kind of devotion from individuals requires effort and nurturing. I had to show regular appreciation of the volunteers as part of the continuous dialogue that transpired as the course was planned, implemented and evaluated. This was not difficult but was a necessary conscious action.

Recruiting volunteers is not easy. Many people 'volunteer' for the wrong motives or lack appreciation that volunteering does not come with payment at a late date. This is raised in dialogues with both YM-T and YM-ICTF. (See appendices 18 and 19: YM-T and YM-ICTF Skype Interviews).

Adult education is notoriously underfunded in South Africa (See Chapter 1). Volunteers can help to establish good adult education programmes but eventually these individuals need financial support and greater recognition. This is mentioned in closing dialogues with Robert Vukeya (See appendix 33: Interview with Head of Mahlefunye (YM-MECPS)) reflecting on the efforts of YM-T and YM-ICTF where he acknowledges that the course cannot be sustained if the trainer and facilitator do not receive some income.

7.3.5 Theme 5: Sustainability/Commitment

Has the course sustained itself?

Has the course modified over the course of the study? If so are there lessons to be learned?

Can the community contribute to sustain the course in future?

Is there a will to sustain an adult education programme in the community?

The course sustained itself in so much as the training was delivered for free by the trainer and facilitator as a free course for 20 young mothers.

Behind the scenes, the computers used were donated freely by sponsors but there were hidden costs that had to be covered to support the software and capital costs incurred in supplying cables, multi-plugs and most significantly a digital projector. The total cost incurred on this aspect of the course was approximately R12,000. (See appendix 34: Course Expenditure)

Day to day administrative costs for the course were kept to a minimum by frugal use of pay as you go data and communications systems. Copying of printed resources was avoided by preloading resources onto laptop machines. Some YMs did request paper copies of resources to take home**.** This was not possible with the funding available and was seen as wasteful if the course was going to go through a process of verification and modification.

Venue costs were avoided with the generous support of Mahlefunye Primary School. Future venue costs could be avoided by location at the MECP ICT centre.

The actual course itself seemed robust enough to keep the students motivated and challenge the trainer and facilitator to continue to learn themselves. A course like this should not be static as the technology used in ICT is always changing and resources for nutrition education need to be kept up to date with developments in health education.

All of the above issues require future goals to be agreed which allocate responsibilities to participants early on and gain financial support from local and national sources of funding for adult education.

7.4 A THEME FOR THE NEXT STAGE

Focussing the above emerging questions and answers with the themes established in section 7.1, table 1, the course evaluation forms and interviews, summarised in Sections lead the study into the final phase of the cycle where the research is taking stock of what has been achieved and trying to find ways to do it better next time. The emergent theme for this final

phase is effectively: ‘AGENDA FOR MEETING’. This theme reflects the need for the CBPAR cycle to proceed to the next course or revolution of the cycle with a clear set of aims and objectives.

To move the study forward, there is a clear need for the issues raised by the young mothers, trainer, ICT facilitator, Mahlefunye Head to be discussed in a meeting with the participants and members of the wider community.

By incorporating the key lessons learned and the observations made in the pre-intervention, implementation and post-intervention, the 5 phases of the CBPAR approach are more fully addressed.

7.5 SUMMARY OF DATA ANALYSIS FOR POST-INTERVENTION STAGE

What emerges from the stages detailed above is that there is need for further dialogue with stakeholders to agree long term goals and create a strategic plan to develop and maintain future courses with the support of the community in Mulamula. This reflects the theoretical approach detailed in the model used in the methodology.

The process is not complete in one cycle, or one course, there is a need to re-evaluate earlier goals and establish future goals in order for the community to remain engaged in participation to sustain the course or similar future courses.

In order to achieve this, ‘future champions’ in the form of up-skilled young mothers may be significant in attracting future students and promoting the courses beyond the confines of the village through their established informal networks. ‘emerging’ and ‘established champions’ also have a role to play in communicating goals and developing links with formal institutions and structures.

In order to complete the CBPAR cycle (see figure 3.1 in Theoretical Framework), and phase 5, it was necessary to reflect with the participants on the success, or otherwise, of the Young Mothers’ ICT and BAE Nutrition course. This is as a key step as part of the qualitative research process and also helps to complete the evaluation of the CBPAR process and the course which the YMs were trialling.

To generate an instrument to take back to the community to continue a meaningful and productive dialogue about the study, I used a SWOT analysis[54]. See section 7.4 below. It organises some of the course implementation's conclusions and observations into a matrix and links them to the future MECP adult education programme's issues. By doing this, I was seeking to use an evaluation tool which relates to analysing whether a system or procedure is effective or sustainable. I was also seeking to develop a better structure for the simplified set of questions to take back to the community to help them evaluate the course.

7.5.1 SWOT Analysis

The SWOT (Strengths, Weaknesses, Opportunities, Threats) matrix (shown in table 7.7 below) organises results or conclusions into thought provoking phrases grouped under 2 positive and 2 opposing viewpoints – which may be considered as negative viewpoints[55]. This tool enables a broad overview of an organization or project. As the study potentially has a future in programmes to be run at Mulamula Education Centre Project, it helps to look at the course as potentially part of something bigger.

The data sourced and classified in the study, in some cases, was coded and sorted to establish opposing viewpoints in order to enable a critical overview of the multitude of contributing issues affecting the project and its potential sustainability - or its extendibility if one is considering its value beyond the realms of the village setting. The points raised in the SWOT analysis are compiled from these opposing viewpoints and through a process of summarising which was achieved through the production of memos in NVivo v10.

I see the 'Strengths' and 'Opportunities' as indicators of what should be developed as the foundation of making the system more sustainable. Taking an appreciative stance, the 'Threats' and 'Weaknesses' are seen as indicators of where future action should be targeted or better relationships or systems developed.

[54] SWOT Analysis – A strategic framework for analysing strengths and weaknesses (internal) and opportunites and threats (external) in a system. (Source: http://www.netmba.com/strategy/swot/)

[55] SWOT Analysis. Definition: http://www.businessdictionary.com/definition/SWOT-analysis.html

Table 7.7. SWOT Analysis of the course as part of the future MECP Programme

STRENGTHS	**WEAKNESSES**
• Workshop training and dissemination methods are popular with adult groups. • The mixed ICT and BAE course contextual teaching model is popular. • The style of training was popular. • Young mothers and other members of the community desire to learn more. • There are established community relationships with committed members of MECP that wish to develop ICT and BAE courses in future. • Future training venue assured/secured. • Donations from UK donor for MECP are secured for 2 years. • Young mothers are keen to help develop the course and other courses at the MECP. • The trainer is keen to develop his career further as an ICT skills trainer.	• Second-hand computer equipment. • Software licences are time limited (1 year) • MECP Committee is shrinking in the village and some committed students are leaving the village for tertiary study/seeking employment outside the area. • ICT and BAE Course content is limited by researcher and is currently not verified for certification as a module/course. • The course needs to be translated. • The course was offered for free (expectations might be that all future courses should be free too) • There is an attitude of 'entitlement' amongst some of the young mothers and wider community which can inhibit development of programmes which are voluntary or run by volunteers.
OPPORTUNITIES	**THREATS**
• New ICT rooms will be finished in early 2016 and ready for future courses using laptops. • An established local computer training organisation wants to partner with the project (MECP) and use the venue. • A local engineering graduate is keen to help develop XiTsonga courses at MECP. • We have 14 laptops, networking hardware, a good data projector and 40 promised PCs (due from Germany). • Community education (post-school community-based education) is a fairly new concept in rural South Africa. • Funding exists to support/sponsor socially vulnerable groups (such as young mothers) • Opportunities and funding exists through Department of Education, NRF and other bodies to encourage rural development through unique education initiatives.	• Current software licences are time limited (1 year) and publicly accessed computers are always prone to costly computer virus attacks. • Cumbersome and inefficient customs procedures have held up our consignment of donated computers from Germany • Some members of the community have sought to benefit personally from the MECP project by using its address/reputation for their own funding applications. • Funding for MECP will not last forever and does not currently come as a constant income stream. • Mulamula's MECP's physical isolation makes it a risk for vandalism, robbery or environmental degradation in a hot, dusty environment.

7.6 SUMMARY OF RESULTS OF ANALYSIS

The results in the post-intervention stage, through phase 5 of the CBPAR approach, show that evaluation of the process should be handled carefully in order to remain sensitive to the needs of the community but also to allow the participation to continue to develop beyond the implementation stage.

Themes emerged from working with the young mothers, ICT trainer, ICT facilitator, and Mahlefunye school Head which revealed that the final stages of the process requires the researcher to continue to remain flexible to the changing circumstances on the ground and be willing to modify plans even at late stages of the process. Although I located to the village for the final stages of the research, I could not take over proceedings. I had to fit around the systems that had already been established in my absence. I was able to gather useful data with the support of volunteers it would have been very difficult to do this any other way.

The evaluations and final interviews reinforced earlier views about ‘champions’ and helped with establishing ideas for future recruitment and participation. YM-T and YM-ICTF are revealed as ‘emerging champions’, who had started out as ‘youth conscripts’, appear to have been transformed by involvement in the learning process and could already be classified as ‘future champions’ who could sustain future courses. The course was run by these volunteers giving up their time and skills for free. The need to acknowledge and support volunteering as a vital component of affordable community-based activities is a potential future goal.

The early ‘risk takers’ in the YMs’ group seem to have been reinforced by their experience and their contributions in evaluation process seem to indicate that they may also have a role to play in the future. The YMs identified as ‘future champions’ (YM-1 and YM-2) in earlier stages produced feedback which reinforced their position. They were also endorsed by YM-T.

The whole group appeared to enjoy and value their experience and this was partly due to the support that the weaker mothers received from the ‘champions’ in their midst. Their request for recognition through certification was met through the issuing of certificates of participation at the end of the course. Future validation of the course may provide more valuable certification in future.

Practically, the evaluation process continued to expose potential future obstacles which need to be overcome to maintain future courses. As a tool, the evaluation forms worked well with the structured interviews reinforcing statements or providing a basis for

more detailed questioning/discussion of future goals. Feedback from these 'formal' instruments was positive overall. Mostly, the participants shared a common goal of wishing to improve their community and improve their lives, their children's lives and the lives of others in rural resource limited communities.

The YMs continued to expand on their own needs and ambitions as they were questioned at the conclusion of the course. Their greater confidence and willingness to share ideas was noted in the paperwork but also evidence in their volunteering to help with the Sevenoaks Science Fair at the MECP site on 22nd August (the weekend before their course ended). The informal and formal community support networks, which enabled the YMs to participate and communicate, were acting once more at the end of the process as members of the group mobilized themselves to attend the event and assist with catering.

The final stages of the study, discussed in this phase revealed how community participation in establishing, designing, implementing and evaluating education programmes can change people in many ways. By being included in the process, all those who participated seemed to grow or benefit in the experience. A greater willingness to give and share was evident in the responses that came from the participants but also in their actions.

The post-intervention stage clarified some of the 'future' roles which will be necessary to sustain the course as part of an adult education programme in MECP. The evaluation did not provide all the solutions. Instead it helped raise further questions. Feedback from participants suggests that further dialogue with the wider community and established village structures is necessary to facilitate future progress. The results reveal that this will not be easy unless the community continues to participate willingly and with an attitude of sharing and common purpose.

Setting achievable development goals for such interventions in the future within a community such as Mulamula requires an understanding of the strengths and weaknesses of the existing course. By looking at these strengths and weaknesses, as part of the evaluation, a potential roadmap for future improvement can be laid out to make the community dialogue more focused and inclusive of a wider audience.

CHAPTER 8

DISCUSSION

The purpose of this chapter is twofold. Firstly, to analyse and discuss the results of the 3 research questions relating to the young mothers' ICT and Nutrition course in Mulamula village, undertaken between July and August 2015. Secondly, to identify the strengths and weaknesses of the intervention as a community based participatory action research process.

The results of the analysis are discussed in the framework of the research questions to give systematic shape to the study. The results are justified and reflected in the light of the theoretical CBPAR approach — which was used to structure the study.

Examples from the study are used to highlight areas of significance and to assess the effect the implementation had on all of the participants, in particular, the young mothers. Comparisons are made between the ideal and the actual results in order to judge the success of the CBPAR approach and to enable setting of future goals.

The discussion also raises questions that arose during the study and refines these to establish a shortlist of questions that may kick-start a dialogue about the potential for future similar courses in the village.

8.1 DISCUSSION OF RESULTS REFLECTING ON THE RESEARCH QUESTIONS

8.1.1 Research Question 1 - Establishing a community of practice (Lave, 1991) to design and implement an ICT training course which includes BAE Nutrition education

The results which arose from the first 3 phases, of the 5-phase CBPAR approach, were adopted to answer the first research question.
The results were used to answer the following questions related to the various instruments employed in the pre-intervention stage of the process:

- **Was the study community based?**
- **Was the study participatory?**
- **Was the study action-based?**
- **Was there an active community of practice?**

The study was community based. It was located in the village of Mulamula in Limpopo Province with the help and support of volunteer members of the local community.
The study was participatory. The course was designed following consultation with stakeholders in meetings, dialogues and a recruitment workshop held in the village council hall. People from the local and wider community were actively involved and their involvement produced concrete results.
The study was action based. The course was designed remotely using a collaborative process. The basic ICT course was first trialled using first G12 students and then teachers. The actual course was refined and then implemented using a collaborative process. It was then applied in the village over the course of 6 weeks, using locally recruited participants.
There was an active community of practice (CoP). The CoP enabled stakeholders to contribute to the planning and design of the course, take part in the delivery of the course and to evaluate the intervention at different stages— using both formal and informal methods.

The study, however, was not all 'plain sailing'[56] and there were difficulties on the way. The CoP was not a constantly present active group of people. It was something which transformed/metamorphosed as the process went through the pre-intervention, implementation and post-intervention stages. Some participants only participated in the early pre-intervention stages while others were a constant presence from start to finish. The participation of certain 'champions' made the study proceed smoothly. While others, who were expected to remain committed, sometimes disappeared from view. This fluctuation could be caused by the individual's perception of the benefits of the study to them or may have been a result of external unforeseen circumstances that drew their attention away from the intervention.

The second and third CBPAR phases: creating infrastructure and developing community links, could be interpreted as the part of the solution to the issues raised in the first phase. The study shows how over time, infrastructure was developed which held the

[56] 'Plain sailing' Definition: [mass noun] Smooth and easy progress in a process or activity: *team-building was not all plain sailing (Source: http://www.oxforddictionaries.com/definition/english/plain-sailing)*

community of practice (CoP) together and this was maintained by developing and sustaining community links through different approaches. Once these phases were in place the agreed goals seemed to make sense and the community became more engaged with the process.

RQ1. CBPAR Phase 1 - Getting stakeholders to agree to a long term vision

The study showed that the community based approach required participants to meet and agree on issues which related to the short and long-term vision of the project as well as the day to day factors affecting the implementation of the young mothers' ICT and Nutrition course. The initial meetings were in some cases formal and in other cases they were informal. As with all organised human activity, effective action often requires a combination of both formal and informal approaches to meet the cultural expectations of participants from different educational and social backgrounds.

RQ1. CBPAR Phase 2 - Creating infrastructure

The study clarified the need to create infrastructure and make clearly explained practical decisions with the community in order to locate the course in a suitable venue, to resource the course and to ensure that the course was managed in a manner which was productive. Creating this infrastructure required personal organisation on the part of the researcher but also called on others to take on voluntarily responsible roles without formal recognition or financial reward.

Some of the infrastructure created was enduring and should be applicable in future implementations. For example: the creation of electronically stored application forms, workshop plans and other tools will enable future course administration to be handled smoothly and professionally.

Other forms of infrastructure put in place for the duration of the course were dismantled at the conclusion of the course. For example: The improvised set up of the laptops to save individual's work to folders on the desktop is not sustainable as a method of managing student work for assessment. Once the first YMs' group finished their study, their work should ideally have been stored using a central networked system of computer storage (local area network - LAN). This was not achievable with the funds available. Fortunately, I

was able to gain access to computers to view examples of work while they could still be attributed to individual mothers.

Creating human 'infrastructure' was a major factor in implementing the programme. The recruitment of the YMs was scheduled to rely on local formal systems and structures that were regulated by the traditional council office. In fact, the YMs were recruited using a combination of formal and informal communication networks. Managing this process required the continuing support of local 'champions' working together to achieve the desired goals.

RQ1 – CBPAR Phase 3. Developing Community links

In order to achieve the two preliminary phases above, it was vital to develop strong community links. These were not developed after the earlier two phases but the process of establishing these links began as soon as the intervention began. This study showed that these links are not possible without direct interaction with the community and often required a commitment of time much greater than the length of the actual intervention or study itself. In the case of the YMs' ICT and BAE course, the relationships that enabled the study to happen were partly a result of three years of preliminary work in the village establishing the MECP.

It is difficult to attribute particular activities to developing community links sustained over a long period of time. Some of these links could be attributed to events that brought people together to force a link. For example: the YMs' workshop was acknowledged as useful for recruiting participants and establishing the course.

Other links are less tangible but were equally effective. For example: the bond that developed between YM-T and YM-ICTF was developed over a short period of time from March to August 2015. What seemed to bind them was a common interest in computers and technology. This link was strengthened by the shared experience, or challenge, of delivering the preliminary ICT Basics courses.

Links which had value, from the young mothers (YMs) perspective, were those that emerged with the involvement of the older mothers (Mavis Shivumbu (YMF1) and Esther Matidze (YMF2)) who acted as mediators for the course implementation and as chaperones for the YMs attending a briefing meeting and workshop. Their interest in the YMs' welfare seemed to spur the YMs to take the first step in attending the course. Once the YMs were in place, Mavis and Esther's involvement faded as if their role had been to energise the women

in some way. Their withdrawal to the peripheral role of observers may have been be due to a lack clarity about further opportunities for them. This could only be confirmed by a more detailed discussion with these two participants.

8.1.2 Research Question 2. Implementing an ICT and BAE Nutrition training course for young mothers in resource limited rural settings in such a way that they are sustainable

RQ2. CBPAR Phase 4 - Orientating systems to enable long term functioning of the process

To implement the YMs' ICT and BAE Nutrition course in such a way that is sustainable involved applying phase 4 of the CBPAR approach: 'orientating systems to enable long term functioning of the process.' This required: staging of a recruitment event within the community; evaluation of the event to generate feedback and ideas about the best way forward; and, dialogues with significant stakeholders to monitor and stimulate action as the process proceeded.

Once again, the use of formal and informal instruments was key. Organizing the YMs' recruitment workshop event gave the course added value and significance to participants who attended. However, not all of the YMs were informed of the event or were unable to take time away from their children to attend the event. This was due to a breakdown in communications between the traditional council office and the facilitators.

The use of forms and other tools relating to administration of courses added to the perceived value of the course in the lead up to the first class. YMs and other participants were engaged in the early decision making processes, and was appreciated by stakeholders as a good method to launch future courses. Although some interactions were handled in a more informal manner, the group participations encouraged 'buy in' to the course and cemented commitment to attending the course.

Practical arrangements relating to the actual launch and implementation of the course were managed through dialogues between various village structures and the key players delivering the course: Boikie Maluleke (trainer, YM-T), Sascha Lenz (ICT facilitator, YM-ICTF) and Robert Vukeya (the host, MECPS). The different media of communication media used enabled timely action to be taken to manage the process. Ability to use different media (e.g. mobile phones, laptop computers, digital cameras and video recorders) also showed that

a generational development in the use of mobile technology is happening which could play a significant role in managing and delivering similar adult education interventions in rural or remote settings.

Monitoring the progress of the implementation was done through dialogues, observations, records of work, video recording of classes and feedback forms. The collection and comparison of these different forms of feedback enabled a more comprehensive view to be taken of issues which at first glance seemed to be derived from individual points of view.

The data from video footage, recorded but not used in this study, has potential value beyond the realms of this study as researchers could benefit from observing how effective local and technical language can be combined to teach skills to adult learners. The video footage could be the basis for a translated Tsonga ICT and Nutrition course.

Sustaining the course, in the village, in future years, depends on a number of factors including: the career choices of the young trainer; developments on the MECP site where ICT facilities are planned, and financial support from local or national institutions. At the village level, the course has attracted interest in future courses that could potentially include young mothers (and fathers) from other local villages.

All participants put forward suggestions at various stages to help sustain future programmes. These centered around a need for the community and MECP to act together as a promotional unit — to inform residents of courses; raise funds to sustain course facilities; and fund trainers. These issues were revisited at more depth in RQ3 during the evaluation of the course.

The application forms used in this stage, and the evaluation forms used in Phase 5, revealed that a large number of the YMs were willing to consider volunteering at MECP even though most of them were unemployed. This indicates that the YMs were willing to make personal sacrifices of time to help sustain the adult education programme. The majority of the YMs viewed the course as a route to future employment. They expressed the wish to attend future courses for the same reason.

Their potential commitment to volunteering is significant as it sets the foundation for maintaining the MECP venue while trainers are running courses at MECP ICT suite and therefore will help to sustain the programme.

8.1.3 Research Question 3. Stimulating further constructive interaction with the community

RQ3. CBPAR Phase 5. Pursuing goals which are of value to all stakeholders following outcome-based advocacy

During the closing stages of the course participants completed course evaluation feedback forms and took part in interviews. This resulted in further activities to stimulate constructive interaction between stakeholders. In addition further feedback was gained from dialogues that took place between the YM-trainer, YM-ICT facilitator and sponsors at the conclusion of the course, dealing with the practical issues that relating to winding up the training programme. In order to develop something out of the various suggestions from these sources, it is proposed that future goals need to be clarified and agreed between stakeholders — following a period of reflection[57] on the outcome of the course. It was suggested by a number of participants (See Appendix 28: Course evaluations) that this future dialogue should begin with a village meeting with participants, MECP members and young mothers to enable them to present their views to the wider population.

Returning to the community to seek agreement for future goals will reinforce the cyclical model of CBPAR which was used as a theoretical model for the study.

Feedback from the young mothers and other committed participants

The evaluation forms and interviews with YMs indicated that they enjoyed the opportunity to attend a free ICT and BAE Nutrition course. They stated that they had learned more about ICT and nutrition and felt more confident about what foods were best to eat for their own and their children's health and benefit. Some YMs were motivated to learn simply to improve their own personal employment opportunities, while others were more community-minded and were keen to share their knowledge with others to enable the community to grow.

The group proved comfortable talking about their experiences with a male researcher and male translator and most favoured male teachers over female teachers. This may have

[57] If the study is to be taken further this reflection may need to be guided by an instrument such as open follow-up interviews or a focus group workshop.

been due to previously negative experiences with female teachers at school, or may have been due to the novelty of interacting with motivated educated young men in an unusual setting.

They enjoyed studying in a single sex group and saw benefits in learning with peers who shared similar background experience. The group also discovered that the course enabled them to form their own social group, after the course, where they could get together and discuss their lives as young single mothers. This peer group development may be a useful element to take into account in designing and promoting future adult education classes.

In response to questions about their interest and involvement in potential future courses, the most common responses from young mothers were suggestions of possible academic subjects that could be followed or picked up again (e.g. mathematics, geography, life sciences). Some more vocationally-orientated mothers suggested that future courses could include more advanced training in nutrition, childcare and accounting. Interest in financial management was highlighted by YMs and the other participants as a valuable skill in retail/service jobs. This gives some idea of the limited career vision that the YMs' isolation may have created.

As mentioned in the earlier section 8.1.2, almost half of the 20 young mothers (9/20) registered for the course said they were willing to volunteer at MECP to subsidise their attendance at future adult education classes. The issue of payment for classes was not discussed directly in feedback forms but was mentioned informally when I met most of group (17/20) at the penultimate course. The majority of the class said they would be willing to pay something towards future courses if necessary but said it would be difficult as they were living on government welfare grants.

In terms of sustaining the course in the future, both the YMs and the other participants (YM-trainer, YM-ICT facilitator and YM-MECPS) suggested that the wider village community should be mobilised further to help sustain adult education courses. They suggested this could be done through small donations (in a similar way to the collection of village contributions for local funerals) and earning credits to attend classes by volunteering at the MECP.

The YMs acknowledged the value of the local structures (traditional council) in motivating villagers and promoting events through village meetings. They did not suggest forming their own lobby group, to seek funding from local government, but this kind of initiative is the kind of development that might arise from their peer group meetings.

Older participants, such as Robert Vukeya (YM-MECPS) brought their wider experience to bear by suggesting wider promotion of courses using local media (Mala FM[58] and Limpopo Press) He also saw the current group of YMs as a valuable resource to promote future courses through their own friendship/peer networks. He also suggested engagement with formal institutions such as the Department of Education to gain support for longer term implementation and sustaining of courses.

The young mothers' perceived need for certification of courses

With the growing emphasis on 'certification' as a the pathway to recognition of education and experience in South Africa, from primary to tertiary levels of education, it is understandable that the participants in a community education process should also see this as a necessary component of their course. As part of the participatory process it was also acknowledged that: 'a culturally sensitive approach is instrumental in sustaining community-university partnerships'. (Dong et al., 2011) While, accredited certification may not contribute anything to participants' actual understanding of course content or the practical application of their knowledge, it is becoming a necessary element for progression in the modern workplace.

The desire by the YMs' to receive some sort of certificate (See appendix 19. Skype dialogue with B. Maluleke) was anticipated in the final week of the course and students were presented with certificates of participation (See appendix 37: Certificate of participation) in order to give them something physical to take home – and to acknowledge the knowledge and experience they gained from the course.

[58] Mala FM community radio station in Malamulele do some good community service programming and have promoted MECP events in the past. They could potentially promote future courses or act as partners in distributing learning materials via radio features on ICT.

Figure 8.1 Young Mothers with participation certificates at the end of the course. (Also present: Boikie Maluleke (YM-T), Robert Vukeya (YM-MECPS) and two teaching staff from Mahlefunye Primary school)

The YMs' joy at receiving certificates of participation (see figure 8.1 above) was heartening but at the same time reinforced the need for the course to be accredited 'officially' if it is going to be developed and used in future.

A successful model which has been used in large scale online courses[59] run from the United States has been developed whereby students who study online can receive free courses but are required to pay if they wish to receive certification for passing the courses. This model has been very successful in funding the university-based online courses. If YMs and other students could be convinced of this model of payment, it might help to stimulate income for sustaining the courses in Mulamula.

The contributions of the YMs in this section were valuable in helping determine an objective and practical set of goals for maintaining the current course, and/or establishing new courses in the village. However they were reluctant to prescribe a detailed strategy to achieve these goals. This may be partly due to the limitations of their English language and

[59] Coursera – Currently the largest worldwide provider of online courses. Bringing together contributors from all the major US education institutions and the best from overseas universities. (Source: https://www.coursera.org/courses?languages=en

communication skills but was also possibly due to their lack of confidence in roles of leadership.

Feedback and support from the wider community, sponsors and institutions

In addition to the feedback from the major players in the course (described above) it was acknowledged that sustaining the course/s will require wider dialogue with the wider community, sponsors and institutions dedicated to supporting adult education. The YMs, YM-T and YM-ICTF all suggested that a 'village meeting' would be beneficial to engage the community in a dialogue about future courses and their sustainability.

Both Sevenoaks School and Dr Lenz as sponsors have given reassurances of future support to establish MECP as a venue for teaching of ICT and have donated computers and financial support to complete a safe, electrically wired, building in which to teach adult education courses.

In order to legitimise the MECP adult education centre and further enable applications for funding from institutions that support adult education in SA, MECP sought separate status from the traditional council office in August 2015. This enables the MECP to exist primarily as an adult education venue (separate from the crèche with which it shares a site) and so apply for separate local funding to maintain the project. This development was partly accelerated because the traditional council were impressed by the courses that were offered at Mahlefunye Primary school and the devotion of the MECP team.

The courses therefore have benefitted the cause of sustainability by their deployment in the village. The participants, through their involvement have helped to wake up the village to the potential of adult education in such a way that the village institutions are now actively supporting the adult education initiatives.

8.2 RELATING RESULTS TO PREVIOUS RESEARCH

It has proved difficult to relate the results of this study directly to previous research when the Literature Search criteria were confined to combined ICT and BAE courses for young mothers in rural areas. As the approach adopted was fairly unusual, the search criteria were widened and the literature sourced used to compare the results under the following headings:

8.2.1 Relating results to previous research in communities of practice and CBPAR

Various research examples cited in this study (V. McKay, 2007; Pain et al., 2012; Van Niekerk, 2006) indicated that the CBPAR approach could be considered as a useful approach in researching rural and resource-limited communities. However, quantifiable/observable results from action-based implementations in such communities are still in short supply. This could be seen as a future research opportunity for researchers who wish to focus on the final phases of the CBPAR process in participating communities in rural South African (SA) settings to look at effectiveness, long-term sustainability, study 'reach'(Balazs & Morello-Frosch, 2013) and 'reciprocity'(Maiter et al., 2008).

Communities are generally willing to entertain education interventions that support vulnerable groups in their own community. CBPAR is considered appropriate for such interventions which are seen to encourage *participation, cooperation and interactive learning* (Van Niekerk, 2006, p. 69). Forming dynamic communities of practice in such settings can be complex and challenging. Community organisations sometimes lack the means, motivation and sophistication to provide much support for interventions other than providing initial permission and rudimentary monitoring support. The importance of community participation in agreeing and achieving goals is however, clearly important in the establishment and sustain of interventions in rural communities such as Mulamula. This is supported by another participatory action research study located in SA (Van Niekerk, 2006):

> *"Selecting a project management team was an imperative necessity to ensure ownership and cooperation of project team members. It was found that through the project management team, skills were transferred, knowledge shared and team members became motivated"*(Van Niekerk, 2006, p. 2)

Van Niekerk's study involved putting in place a formal project management team and observed how this team evolved through various stages. Both tasks involved building systems and structures to sustain the study from within the community.

Reflecting on (Maiter et al., 2008) a CBPAR study which explores reciprocity as a key factor in a health intervention, it is evident that there was reciprocity, or a mutually beneficial sharing process, in the development of this study. However, more research could be done into individuals' motives for their contributions to the study. Maiter et al. suggest that: '*collaborating in a CBPAR project may raise expectations about immediate benefits to*

the community, such as increased funding for the issues being investigated' (Maiter et al., 2008, p. 317). I feel that our study has benefited from the generosity of a number of participating individuals. Further research could be done to find out more about why participants were motivated to contribute. This may require more study of the motivators acting in such an environment — social, cultural, physiological, psychological, financial etc.

8.2.2 Relating results to previous research in adult education in rural settings of South Africa

This study has demonstrated that a combined ICT and Nutrition adult education course could be implemented in a remote rural area of South Africa — which is hard to access; where resources are limited; the community is relatively poor and young mothers often fail to complete their secondary education. The recruitment of participants who were: willing to 'champion' a mutually beneficial cause; persevere when difficulties arose; willing to learn together; and to maintain a common sense of purpose; was seen as important in achieving this goal.

Studies have stressed the need for improved education of YMs to improve their own prospects and ensure the health and survival of their children beyond the critical age of 5 years old. (Bhutta & Black, 2013) Nutrition education as part of early childhood development programmes (ECD) is one of a host of neglected ECD topics in the poorest communities where:

> "*more than 80% of children aged 0 – 4 years in the poorest 40% of the population are entirely excluded from registered ECD programmes and thus do not feature in national budget calculations".* (Albino & Berry, 2013, p. 78).

As our study attempted to address ECD needs it could be seen as an inspiration for others to follow and repeat the model elsewhere but this has to be handled sensitively by taking into account cultural diversity and local traditions. This point is acknowledged in Van Niekerk's study (Van Niekerk, 2006, p. 51).

In many geographically isolated areas of SA the implementation of adult education programmes which are inclusive, sustainable and meet the needs of the most vulnerable social groups in rural communities is difficult. The difficulties are caused by many factors: poor transport access; lack of skilled trainers and facilitators; security issues relating to safe storage of ICT equipment and teaching resources; and difficulties relating to retention of

trained educators in resource limited settings. The situation in Mulamula is difficult and matches many of the factors listed above and reinforced in other studies (V. McKay, 2007; Modisaotsile, 2012; Van Niekerk, 2006). However, it was possible to implement a beneficial adult education course in the village in a relatively short period of time (5 months). This indicates that such difficulties are not insurmountable.

Nationally, adult education has been neglected as the government has striven to provide school education for all: "*basic education and adult literacy are still the "stepchildren" of the education sector. This neglect underpins the relatively poor investment into adult education and the reluctant delivery across the country"*(V. McKay, 2007, p. 309). This was evident in the village where physical facilities exist (e.g. Mulamula Traditional Council Hall, Mulamula Education Centre Project) but very few courses of study are locally available for adults.

The above difficulties are possible to overcome with improved funding. Funding these interventions in a sustainable way is difficult when funding for basic adult education programmes is limited nationally. This study was funded completely by externally donated funds from overseas donors and by personal funding from myself. A recent study indicates that: "*The Department of Basic Education, primarily responsible for training ECD practitioners in ECD centres, spends less than 1% of the total basic education budget10 on learning opportunities for children 0 – 4 years of age."* (Albino & Berry, 2013, p. 78)

This study has shown that difficulties in implementing courses in rural settings are possible to overcome if the community is convinced of the value of the enterprise and a culture of volunteering and peer support can be engendered to sustain adult education courses. Studies support this approach in the sense that they see adult education as a process of developing skills of self-sufficiency:

> *"In the context of poverty, education needs to be coupled with helping people acquire skills to generate income and for sustainable livelihoods*."(V. McKay, 2007, p. 289)

A recurrent theme in the debate about sustainable development is the attitude of dependency, or reliance on the providers, that can develop in poor communities that participate in externally managed interventions:

> "*Dependency is another hindrance, where impoverished individuals often view assistance as the norm"*(Van Niekerk, 2006, p. 51)

The Mulamula study tried to address this through: direct engagement with the community; informing the community and following community protocols to build a form of mutual

respect. This worked well with the wider community, in setting up the course. However, I got a sense that the YMs had developed a slight (teacher-student) dependency in the formal classroom set-up that was used for teaching the course (See appendix 35. Photo diary) As an experienced teacher, I might be inclined to set up a room differently when teaching adults to create a less formal learning environment.

8.2.3 Relating results to previous research in the implementation of ICT education programmes

The study revealed that it was possible to teach an introductory six week - twelve lesson ICT basics course, combined with nutrition theory content, successfully to YMs in a rural primary school's ICT room. The course was taught using 14 donated laptop computers, a digital data projector, a few extension leads, a data dongle and a home-made white sheet projector screen. Studies (Taylor, van der Berg, Reddy, & Janse van Rensburg, 2015; Tinio, 2003; van Brakel & Chisenga, 2003) argue the need for better access to technology, for improved learning for disadvantaged groups, endorsing the Mulamula intervention:

> "*There are extraordinary opportunities for ICT to bring about significant change for adult populations with low literacy, especially since adult education is less hampered by rigid education systems"* (Ginsburg et al., 2000, p. 79)

One significant outcome of this course is that young mothers have been able to have free access to ICT training when they were a group that was least likely to benefit from learning through ICT. Published studies (Tinio, 2003) relating to ICT teaching, identify a number of gender related issues:

> "*The introduction of ICTs in education, when done without careful deliberation, can result in the further marginalization of those who are already underserved and/or disadvantaged. For example, women have less access to ICTs and fewer opportunities for ICT-related training compared to men because of illiteracy and lack of education, lack of time, lack of mobility, and poverty"* (Tinio, 2003, p. 19)

The conscious decision to provide the course for YMs met a need in the village but also challenged current trends in computer learning:

> *"Girls have narrowed some significant gender gaps, but technology is now the new 'boys' club"* (Tinio, 2003, p. 19)

The Tinio study also confronts the issue of providing a relevant context with which to teach young women in order to make ICT attractive and give them a sense of purpose in learning the skills - which was the intention of the Mulamula study:

> "*Equal attention must be paid to ensuring that the technology is actually being used by the target learners and in ways that truly serve their needs."(Tinio, 2003, p. 19)*

Ginsburg et al. reflect the answers given by YMs in this study regarding women's motivation to learn ICT:

> *"Participation may meet a workplace requirement, reflect an interest in learning skills not previously acquired, or be motivated by wanting to be able to support their own children's education."* (Ginsburg et al., 2000, p. 79)

This statement, coming from an older American study, indicates that South Africa is still well behind other countries in terms of ICT learning and in particular in providing ICT learning opportunities for adult learners. The '*digital gap',* or gap between ICT skills and access for the most developed nations and the developing nations of the world, is still vast if one takes into account the rural poor. Equally, the gap between the ICT literate in developing nations and their own poorer citizens is just as bad.

The effect that learning had on the YMs in this study was generally positive but there were students who performed less well than others using the new technology. Ginsburg et al. endorse this in their study:

> *"The integration of technology into adult education also changes the classroom culture. Some teachers and learners find the changes in the roles and relative power dynamics of the teacher and learners exciting, while others see them to be disconcerting and confusing"* (Ginsburg et al., 2000, p. 82)

A South African study (van Brakel & Chisenga, 2003) highlighted the value of ICT in remote learning using mobile communications technology or email. The Mulamula study was not taught with internet connection and students were unable to experience email first hand. However, as most of the YMs had mobile phones, they were already confident communicating with people via satellite connections using text messaging and with smart phones. Some had already experienced use of email without owning a computer through their phones.

Looking at more recent global developments (Stromquist & Monkman, 2014) the integration of ICT with globalized communications and financial systems has enabled MOOCs, or 'massive open online courses' (See footnote 4: Coursera – online courses), to

flourish online. These online courses were not part of the plan when implementing the study but their quality and accessibility could enable better differentiation of lessons for adult learners of mixed ability as the MOOCs, for example, could be used as routes to learn university level content via the internet while studying at home or in the village ICT suite.

8.2.4 Relating results to previous research in the implementation of nutrition education programmes in South Africa (SA)

The course was appreciated by all the YMs who completed course evaluations and by the limited group that were interviewed. The majority valued both the ICT and nutrition learning opportunities afforded by the course. Studies reveal that the long-term benefits of maternal health and nutrition education are significant (Bhutta & Black, 2013; Britto et al., 2013; Chopra, 2003; Phometsi, 2004; Scoones et al., 2014):

> "*The effect of community-based approaches to addressing childhood diarrhoea and pneumonia and under-nutrition among the poorest populations has been well recognized and could be an important foundation for reducing morbidity and mortality."*(Bhutta & Black, 2013, p. 2231)

I would argue that the real significance and impact of the course cannot be measured adequately without repeating the exercise – by running the same class again with similar numbers, or assessing the knowledge acquired on the course more rigorously.

The content used in the course was sourced from globally recognised sources: World Health Organisation, United Nations Food Programme etc. (See Appendix 14: Nutrition course resources) This was beneficial for YMs who admitted having very little nutritional knowledge. This is not surprising as local nutritional studies have shown that:

> "*individuals of high socio economic status tend to follow a diet that is more in line with dietary guidelines for health in comparison with individuals of low socio economic status"* (Naudé, 2007, p. 11)

However, the YMs' course would also benefit from a more localised approach drawing on local skills and indigenous food knowledge. The global food production system, and the biased nutrition agendas that undoubtedly follow it, is seen as part of the problem in countries such as South Africa where industrial scale farming is being questioned as a way of guaranteeing food security:

> *"The global food system has rigged rules and deep inequalities that allows a few to make billions while leaving hardworking poor farmers – especially women and their children – and vulnerable and ordinary people everywhere to face the highest prices in a generation."* (Scoones et al., 2014, p. 20)

In future, by pursuing a similar course – perhaps using different computer applications or different contextualised content - using the same group of YMs it may be possible to measure the 'value added' nutritional knowledge in the first course by carefully assigned coursework or assessment tools. Returning to the village with additional resources and a refined future programme of study, or, better still, incorporating local indigenous nutrition knowledge, there is potential to empower new YMs who may have been stigmatised by the teenage pregnancy before it negatively impacts on their lives:

> "*Teenage pregnancy can have a negative impact on young mothers and their children by placing limits on the mother's educational achievement and economic stability, and predisposing her to single parenthood and marital failure in the future"* (Modisaotsile, 2012, p. 5)

Chopra identifies the need for strategies "*which aim to empower women and thus increase their ability to secure increased family resources for child nutrition."* (Chopra, 2003, p. 650) In this study, the course set the young mothers off on a pathway that could lead to future family security through the increased employability. This has to be balanced with the reality of the employment prospects in rural Limpopo and the cost and risk factors which come into play when a single mother has to leave her child/children in care in order to go to work. Although some mothers pointed out that they were able to leave their children with their own mothers, or close relatives, to attend the course, this was only for a few hours over two days. Full employment would undoubtedly bring additional challenges for single mothers in Mulamula if YMs have to leave the village to work.

8.3 THEORETICAL IMPLICATIONS OF THE RESULTS

Comparing the study methodology with the study findings enables a critical review of different aspects of the study in relation to the theoretical framework. The 5 phase approach to CBPAR (See Theoretical Framework Chapter 3), adopted as a theoretical scaffolding with which to enact the study, proved useful in managing the study in a rural setting such as Mulamula.

8.3.1 How the CBPAR approach supported the study

The recommendations from the study findings (Section 6.2) would have been difficult to extract with much clarity if the research questions had not been dealt with systematically within the 5 phase framework. More crucially, the framework would have been ineffective without the establishment of a community of practice (CoP) in the preliminary stages of the research project.

In answering the research questions, the CBPAR approach enabled me to look at the participants through a lens that was critical and empathetic when it could have been easy to take a more nostalgic or judgemental approach. This was due to my personal involvement with the larger Mulamula Education Centre Project that may be the venue for sustaining the YMs' ICT and BAE Nutrition course or similar adult education courses in future. This study has shown, and it is recommended, that this type of course should not come to an end but stimulate growth of future similar courses instead. This could be achieved while the momentum still exists in the community by future participatory research collaboration with academic institutions and funding bodies, to cultivate a broad consensus and build upon previously productive working relationships. (Dong et al., 2011).

It is clear that future studies need to acknowledge and develop the role of the community by an appreciative thematic approach to understanding the community. In particular the women of the village need to be engaged, by "*actively forging co-generative relational processes and outcomes*" (Kevany & MacMichael, 2014, p. 34) to encourage sharing of knowledge and better distribution of information and roles. The study has confirmed what has been represented in previous studies in rural communities, namely that: "*instead of community members being viewed as subjects, they become instead research designers, participants and analysers"* (Kevany & MacMichael, 2014, p. 36). They are sometimes not aware of the need to report what is not working or, in the case of many rural African women, lack a voice to report their needs.

In the Mulamula community, the YMs have clearly expressed an interest in further education, have actively participated and expressed their enjoyment and appreciation of the course. What is harder to measure is the long term benefit that participation will provide for them, without some continuation of the course or a new intervention.

By following an "appreciative mode of enquiry" (Kevany & MacMichael, 2014)it might be possible to find more of what can be considered worthwhile knowledge. By allowing the established YMs more direct involvement is designing the course, there is potential that their appreciation of the opportunity to attend the course can be converted into productive participation in the refinement of the course;

It is suggested that future research should seek to follow CBPAR structures identified and applied through this study in maintaining productive participation in rural community health programmes (Dong et al., 2011). The list below is a modified version taking into account the type of facility that is being developed as Mulamula Education Centre Project:

A refined vision for the future:

1. Agree a longer term vision for the MECP community ICT training centre and associated library resource centre.
2. Create and manage infrastructure that fosters participation and engagement in the design and delivery of appropriate adult education courses for young mothers and unemployed youth in rural resource limited settings.
3. Create and maintain community linkages that sustain commitment from all participants linked with MECP as well as external stakeholders.
4. Orientate systems to maintain long-term functional effectiveness and allow for growth which is stimulated by the community itself in consultation with committed participants (champions).
5. Implement outcome-based advocacy by identifying and pursuing goals by ensuring greater collaboration from initiation to evaluation.

8.3.2 Where the CBPAR approach may not have supported the study

Looking back at the early reading on community of practice (CoP), community based participatory action research (CBPAR) and the initiation of the 5 phase approach to the study, it is necessary to consider where some of the results could be seen as contradicting the idealised community of practice approach where interactions are "*not limited by formal structures*" (Wenger, 2011, p. 4)

The study could not have proceeded legitimately without formal agreement from the traditional council and the Head of Mahlefunye School, therefore, constraining the process in some formality. The actual teaching of the course, although not strict or formal in a school sense, was bounded by the restrictions of the school day and the timetable of the host school. This meant that the young mothers' learning was slightly restricted by the constraints imposed by locating the course in a school venue. This gave the learning a kind of formality that could be dispensed with if the courses were located in the purpose built MECP ICT room.

The use of an external trainer/facilitator (YM-ICTF) in the village with a local trainer/facilitator could be seen as a departure from a fully operational community mobilising itself to educate its population. However, YM-ICTF's willingness to immerse himself by living in the village for five months could be seen as cancelling his outsider status, making him an 'adopted member' of the village.

Taking an appreciative viewpoint, having an outsider in the village as a support to a local trainer may have actually served to "*create connections across organizational and geographic boundaries*" (Wenger, 2011, p. 4) which may also serve to sustain a future programme of community-based ICT and BAE courses.

Modern views of the CBPAR approach (Maiter et al., 2008; Reason & Bradbury, 2001) introduce the concept of reciprocity: "*reciprocity can contribute to discussions of validity and quality in CBPAR"* (Maiter et al., 2008, p. 321) Looking at CBPAR through the lens of reciprocity, beneficiaries from the process may gain differently from the experience and therefore generate imbalances in the ideal system.

In the study, some students obviously benefitted more than others while other participants also benefited in different ways. For example: YM-T discovered he enjoyed teaching roles and YM-ICTF discovered that he enjoyed the technically supportive observer's

role. YM-MECPS enjoyed the role of a detached evaluator in his new role as Head of Mahlefunye School. Some YMs enjoyed the role of peer educator.

8.4 PRACTICAL IMPLICATIONS OF THE RESULTS

8.4.1 Practical implications of the study

As the process was designed to be a participative study, which unfurled as it proceeded and enabled members to interact and learn together (Wenger, 2011), the final outcomes were expected to differ from those of other recorded similar interventions. As the environment for the study was a new one, and the participants for the study had not taken part in any previous academic research, there are a number of variables that may have affected the envisaged outcomes. Certain outcomes were predicted in the methodology in Chapter 4. They are now compared below (in table 8.1) with what emerged from the actual study:

Table 8.1 Comparison of anticipated and actual outcomes from the study

Anticipated outcomes	Actual outcomes
• Young mothers should emerge from the course with more skills to enable their future learning and greater awareness of theirs and their children's fundamental needs.	Young mothers attended the course willingly, responded constructively in evaluation forms and showed gratitude for the opportunity of attending through their feedback and willingness to help with the Science Fair at MECP.
• Increased participation in locally delivered projects will bring greater dialogue about education in the village as a whole.	Dialogue was generated through the YMs' workshop and the follow-up work that YMF1, YMF2, YM-T and YM-ICTF did to promote the course. Further dialogue is needed at the village council level to convince the community of the value of having their own community education venue.
• Certain individuals will emerge as 'champions' of the study and other may emerge as 'detractors' as human nature tends to throw up positive and negative viewpoints in any endeavor.	Early champions emerged from MECP committee meetings helping foreground the course and promote the course to young mothers. YM-T and YM-ICTF developed as major motivators and champions of ICT education. YM-T emerged as the more natural teacher, championing teaching in Tsonga. YM-T and YM-ICTF realised the value of the combined course approach recognising the value nutrition education had for the YMs. Individual mothers emerged as future champions promoting the course, working with weaker YMs in the classes and as volunteers. There were no objections to the course from individuals or groups in the village. Young fathers are now interested in similar opportunities being afforded to them.
• Researchers, participants and trainers will have a better understanding of the logistic pros and cons of implementing a combined ICT and basic adult education course in rural resource limited setting.	The experience has been valuable to me as a researcher in reinforcing the value of careful planning and preparation in education settings. As an adult education intervention, it has highlighted the value of speaking to the potential beneficiaries before trying to start something new. The value of the pre-course workshop has been identified from a number of sources. Professional standards set in administrative tools (paperwork) added weight to the course and their use indicated that they were appreciated and valued by participants.

Anticipated outcomes	Actual outcomes
• Researchers, participants and trainers will have a greater awareness of each other's viewpoints regarding: community participation, basic adult education and ICT.	As a social activity, I have a greater awareness of the needs and motivations of some of the younger generation of adults in South Africa. The trainers appear to have grown through the activity: acquiring greater maturity, patience and awareness of the needs of others. The shared experience appears to have been beneficial to the YMs from a social and educational point of view — their willingness to express their opinions to researchers being a sign of greater empowerment.
• Researchers, participants and trainers should have a greater empathy for the needs of each other and for the benefits the intervention has to the wider community.	Some individuals appear to have acquired a greater community spirit in the activity. Some have treated it as a personal venture. Both camps acknowledge short-term benefits. Long term benefits remain to be observed. Benefits to the wider community include the completion of three ICT courses in the village in the space of 4 months.

8.4.2 Unpredicted or unexpected outcomes and their implications

As the community participation developed in the study, and the ICT and Nutrition course progressed, practical issues emerged from the study that can be considered as positive outcomes and some could be considered as negative outcomes or challenges.

Taking a community of practice (CoP) viewpoint, these outcomes are predictable in the sense that the researcher is learning at the same time as the study is proceeding – with the participants as the community of practice being dynamic this involves learning by all participants (Lave, 1991) These results are worth including as they could potentially affect the sustainability of future YMs' courses and the long-term sustainability of the MECP project. *Communities of practice make possible certain kinds of transformations of understanding, identity, and knowledgeable skill, not simply changes of a quantitative sort* (Lave, 1991, p. 81).

The results are shown below in table 8.2 below:

Table 8.2 Unpredicted outcomes which arose during the process and their potential value to the study

Unpredicted outcomes	Value to the study	Result
1. Mulamula crèche put in a claim to DSD for funding of MECP main building as a crèche.	MECP committee members went to DSD Malamulele to seek clarification. DSD insisted on separate demarcation (fencing) of the shared site. The two organisations are now physically separated and can apply for funds separately: MECP from DoE and MM crèche from DSD.	• MECP now has a separate stand number that allows MECP to run courses in its own venue independently. • Infants are more secure at the crèche as they are separated from the adult venue.
2. YMs completed the ICT and BAE Nutrition course and 5 approached MECP Director to volunteer to help maintain the MECP building as a way to get involved with the project.	MECP needs committed local people to manage, sustain, maintain and secure the MECP building and help promote ICT and BAE courses in future. Having YMs volunteering to help after attending one course is a sign of their motivation and appreciation of the course.	• Future courses at MECP will potentially benefit from attendance by more ICT literate YMs who can act as mentors to novice learners.
3. Young fathers saw publicity on social media: (https://www.facebook.com/MulamulaEducationCentreProject) and requested similar 'men only' courses.	MECP are now aware of the desire for similar courses from young men in the village and they are now aware that the MECP online presence is working as a publicity medium for the target audience in the village.	• MECP wish to seek funding for similar interventions for young fathers (YFs).
4. Sevenoaks School observed the presentation by YM-T and YM-ICTF at the Science Fair and upon return to UK pledged further support for the project for 2 years.	The value of external sponsors is acknowledged as a vital factor in sustaining the course/s until significant local funding can be secured. The centre cannot rely on external funding to manage and staff the education centre in the future. Funding must come from local or national sources.	• YMs' courses can continue at MECP if funding is available. • If YMs follow the suggested idea of volunteering at MECP for learning credits, the centre may be easier to establish on a limited budget.

Unpredicted outcomes	Value to the study	Result
5. Pascal Dinnies (Germany) has now shipped 40 donated second-hand personal computers to MECP. They are due to arrive in February 2016.	The generosity of the German sponsors, organised through Dr Jutta Lenz and her son Sascha Lenz, is acknowledged as unique motivation to younger 'champions' in the village. (e.g. YM-T)	• Future courses can be located in the MECP ICT suite using equipment donated for the purpose.
6. Local businesses have pledged support for the MECP project (REMS – Power connection contractor and Ronald – NIHS ICT Training organisation)	To activate courses at the MECP education centre, the building needs power. With the support of local sponsors such as REMS this should be achievable by Easter 2016.	• Electrification will enable reliable power supplies and enable desktop computers to be permanently located in the MECP ICT suite.
7. Traditional local administration has offered MECP Director more land to develop for community education purposes.	The separation of the MECP/Mulamula crèche plot into two separate entities has helped the status of the MECP project and will reduce confusion in any future grant funding applications.	• The potential to expand the MECP education centre to include additional land could pave the way for different adult education studies.
8. South African and British businesses are interested in the MECP model and have pledged support.	The Palladium (SA) accounting software company was inspired by the MECP model and pledged free software for the computers in the centre when the PCs are in place. Techsoft (UK) have pledged to supply a 2D Design software site licence for half price. Shonaquip (SA) CEO Shona MacDonald is keen to develop vocational training courses for the disabled community. Her company manufactures specialised wheelchairs and assistive devices. Her model involves training disabled users in manufacturing skills, to empower and motivate them and improve their profile in rural communities.	• YM-T benefitted from a free weeks course of training in the use of Palladium software so that he, or others, can potentially teach different software from MECP ICT centre in future. • Additional assistance from established companies in SA could stimulate the education centre to become a model nationally.

8.5 NEW CONTRIBUTIONS THE STUDY HAS MADE TO RESEARCH IN THIS AREA

8.5.1 Achieving results in isolated rural communities in a limited timeframe

The study has demonstrated that it is possible to implement a trial course in a rural setting within a short timeframe of less than 6 months if the conditions are favourable. To achieve this, the study has shown that work has to be done in advance to set the scene and establish agreement and build relationships of trust and mutual respect within the community that will hopefully benefit from the intervention.

To achieve productive results within a limited timeframe, the study has shown me, as an essentially remote researcher, that it is necessary to support and empower 'delegated researchers' within the community to act on behalf of the remote researcher in his/her absence.

To achieve results in a short timeframe, it is necessary for researchers to develop flexible attitudes to communicating and gathering data in order that the 'delegated researcher' grows in the experience and feels valued.

Finally, the remote researcher/s must be willing to immerse themselves in the community at key stages to remain recognised and valued participants. This requires researcher flexibility, a degree of cultural awareness and an acceptance that his/her role may change as a result of the empowerment of others in the process.

8.5.2 Empowerment of young mothers and unemployed youth in Mulamula

> *'The delivery of quality adult education depends on well-trained adult practitioners who play a pivotal role in addressing critical economic, political, and social problems specific to learners across a variety of contexts (e.g., health and HIV/AIDS, the environment, labour, etc.), as well as across a variety of societal contexts—urban, rural, informal, and so on.'(V. McKay, 2007, p. 295)*

Recruitment of young mothers as potential future trainers

A significant phenomenon to note from the intervention was the way that the YMs were empowered to suggest their involvement in developing and sustaining future courses. They

offered to do this by: promoting future courses through community channels of communication; by continued attendance; by helping with peer teaching in lessons; and by volunteering to help maintain the MECP site in return for 'learning credits' for courses (See appendix 28: YMs Course Evaluations).

Taking their suggestion to a higher level, I was inspired to consider how the YMs could be transformed from their role as student beneficiaries of the course into future facilitators, trainers, active MECP committee members and researchers if their learning could progress within the framework of a structured programme of adult education.

I have used a graphical model (See figure 8.2 below) to represent the YMs and other stakeholders in the course in order to try and demonstrate a potential pathway for the progression of YMs using community based education courses in an isolated setting such as this:

The participants in the process represented as icons

The main participants are represented in the figure shown below:

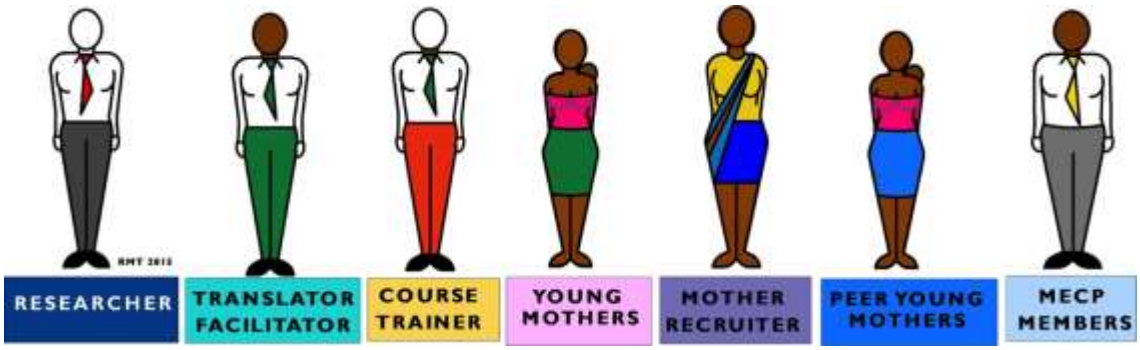
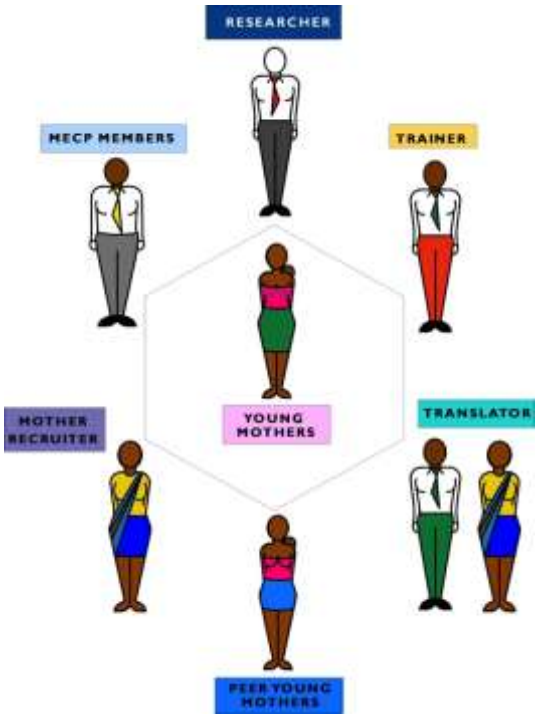
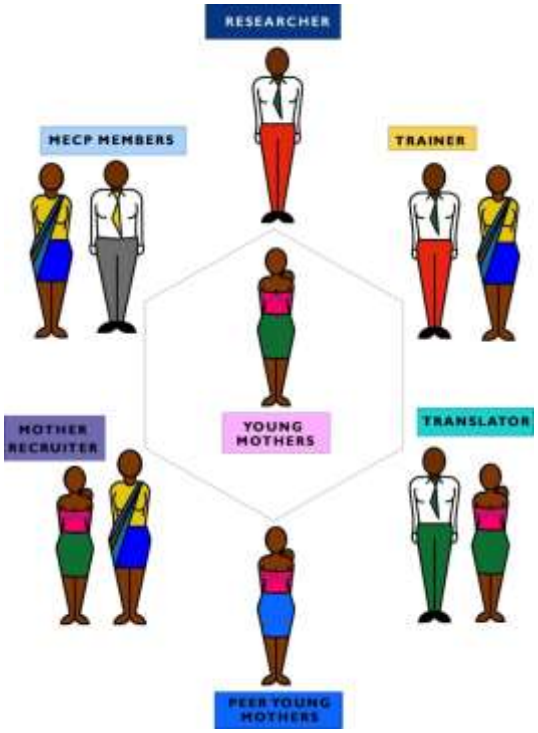
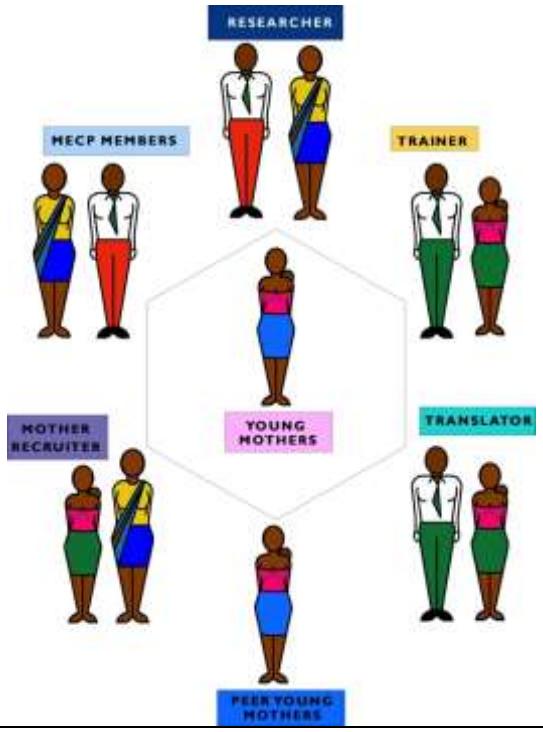
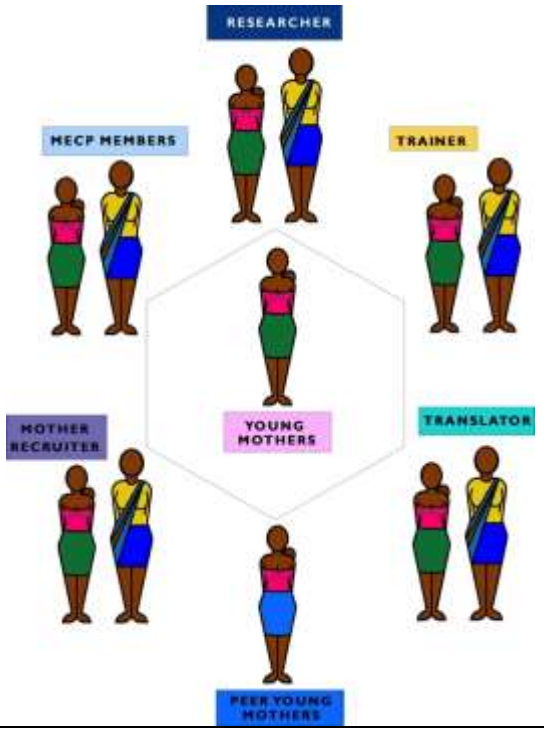


Figure 8.2. Stylised icons representing the main participants in the study.

The participants were grouped around the YMs as the central figures in the study to organise the analysis (shown in table 8.3). Following analysis of the data, the same model was recycled to create a predicted future scenarios showing where the YMs and the single mothers would eventually acquire more significant roles as future courses progressed. This ideal pattern is obviously dependent on the future availability and commitment of the YMs in relation to the education centre programme.

Table 8.3. Potential progression of YMs' within the participatory process

1. Young mother facilitators take on new roles 	2. Young mothers enter new roles 
3. Young mothers trained as trainers 	4. Young mothers and older mothers potentially running their own courses. 

The use of stylised icons to represent the main participants above is a simplification but also reflects an increasingly powerful element of identity fixing in modern society [e.g. social media users creating their own 'avatars' in video games and on-line chatrooms or posting stylised portraits of themselves instead of photographs to identify themselves to others].

The stages shown above illustrate how older YMs facilitators could be trained to take the lead in adopting roles of greater responsibility — initially in acknowledgment of their volunteering role and their unofficial role as chaperones to the YMs. As time passes, and YMs gain more experience, their roles could adapt through more training to enter roles of responsibility until eventually it is possible to fill all roles (See stage 4 in table 8.3)

Recruitment of trainers for rural adult education interventions

Trainers such as Boikie Maluleke (YM-T) are very valuable to courses in remote settings such as Mulamula, however, they need support and opportunities to develop as educators in an incremental manner. YM-T expressed a willingness to remain working with the ICT and BAE course provision in Mulamula but was realistic about his inability to sustain this working as a volunteer. He suggested that an immediate role he could play would be in the training of the more skilful and qualified YMs in the group (such as YM1 and YM2) to be course facilitators.

The ABET Institute programmes run by University of South African (UNISA) (V. McKay, 2007, p. 297) were set up to provide training for educators involved in adult education sector. The UNISA programme was very popular and attracted over 12,000 students per year via a flexible learning programme which enabled students to study using a *"blended" approach (part distance, part face-to-face), in which practitioners read assigned text on their own, supplemented by audiotapes and videotapes, and accompanied by regular contact with a designated tutor in their region"* (V. McKay, 2007)

Looking at the standards that are expected for such a programme, those with technical or vocational qualifications they wish to share in their community may initially find it daunting to try and seek qualifications in this way. The course is designed to create trainers who are able to deliver a wide range of socially relevant subjects and, at the same time, conduct workshops, manage venues, recruit, and research. They also may find it too costly or technically difficult to access resources or attend meetings with tutors.

An improved system of community education training qualifications is required for those with specialisms who wish to follow a non-academic route. These should enable a rural trainer with an enthusiasm for a subject, or related groups of subjects such as different ICT applications, to pick up modular qualifications, or credits, towards a higher certificate of learning. Not all trainers want to be formal teachers and not all trainers want to be researchers – they want to share their skills with like-minded people

8.5.3 Alternative or improved ways to deliver similar studies in the wider community

The immersion of myself, YM-T and YM-ICTF in the delivery of the YMs' course revealed ideas for ways to deliver similar studies in the wider community. In immersing ourselves in the issues relating to the intervention we were able to discuss ideas and picture possible future improved ways to deliver ICT training to rural areas.

The Mulamula YMs' ICT and BAE course was always going to be limited in terms of: scale; the rural location; and scarce population (compared to peri-urban and urban settings). In addition, the limited funding available meant that the implementation was only ever going to be possible with a maximum of 28 YMs (with couples sharing 14 laptops). The fact that the study managed to attract 20 participants in its first outing was a positive outcome. To explore the findings on a larger scale there are three possible future approaches that were discussed:

1. Scale up the provision of the course with a larger group of young mothers (possibly including nearby villages) and offer the same course on consecutive days throughout the week at the MECP ICT facility.
2. Transport the laptops using a robust secure vehicle to other village centres and run a drop-in programme of training for the wider population.
3. Broaden the study to include different established education centres – which already have computer facilities – using a standardised course.

Approach number 1 is the most affordable, manageable and attractive option in the short term as it fixes the scaled-up study in the same established community and allows the community participation to develop beyond the initial study phase.

Approach number 2 is only attractive if MECP ICT centre is set up as a base for safe storage, maintenance and charging of laptops. This has been proposed to the sponsors as a way to use the laptops once the donated PCs arrive from Germany.

Approach number 3 is an ideal way to roll out the study as a method of reaching policy makers. This will however require sponsorship or a significant grant to cover scaling up, long-distance travel and additional training resources for each centre.

The process of brainstorming about alternative sustainable futures with people immersed in something in which they share common interest is something which is not unique to action research. It is heightened in action research when participants are living in the moment sharing common goals. It also acts as a way of getting people to aspire to and take ownership of realistic goals as they work from a shared experience or location.

8.5.1 Important questions raised by the study which can aid the setting of future goals and sustain the adult education programme

As the ideal implementation process is considered cyclical (see Chapter 3.Theoretical Framework), the process of implementing the course can be considered just the beginning of a process of continuous improvement which could potentially roll on for years if the community continues to support adult education in the village. The study generated many questions that could be the starting point for a debate about how to develop and sustain future courses. The reassuring thing about the questions is that they came from discussions with all of the stakeholders as a result of the action that took place in the village. Questions arising from the various roles that developed from the study are shown in figure 8.3 below.

Many of these questions were addressed in the final stages of the course using the phase 5 interviews and evaluation forms; including answers given from a select group of YMs, the course trainer (YM-T), ICT facilitator (YM-ICTF) and Head of Mahlefunye Schools (YM-MECPS). Some questions were not asked of the whole group but reserved for individuals. For example, I had a post-intervention conversation with YM-T (See appendix 16: WhatsApp dialogues B. Maluleke YM-T-final dialogue) to find out who his choice of potential 'future champions' from the YMs' group would be. He named YM1 and YM2[60] (Highlighted in green in Chapter 5. table 2). Significantly, these two mothers had been with

[60] Note: Sadly, YM2 was not available for the last two sessions of the course as her child was ill.

the process from the beginning, had attended the pre-workshop meeting, the workshop, attended the classes regularly and helped other weaker students.

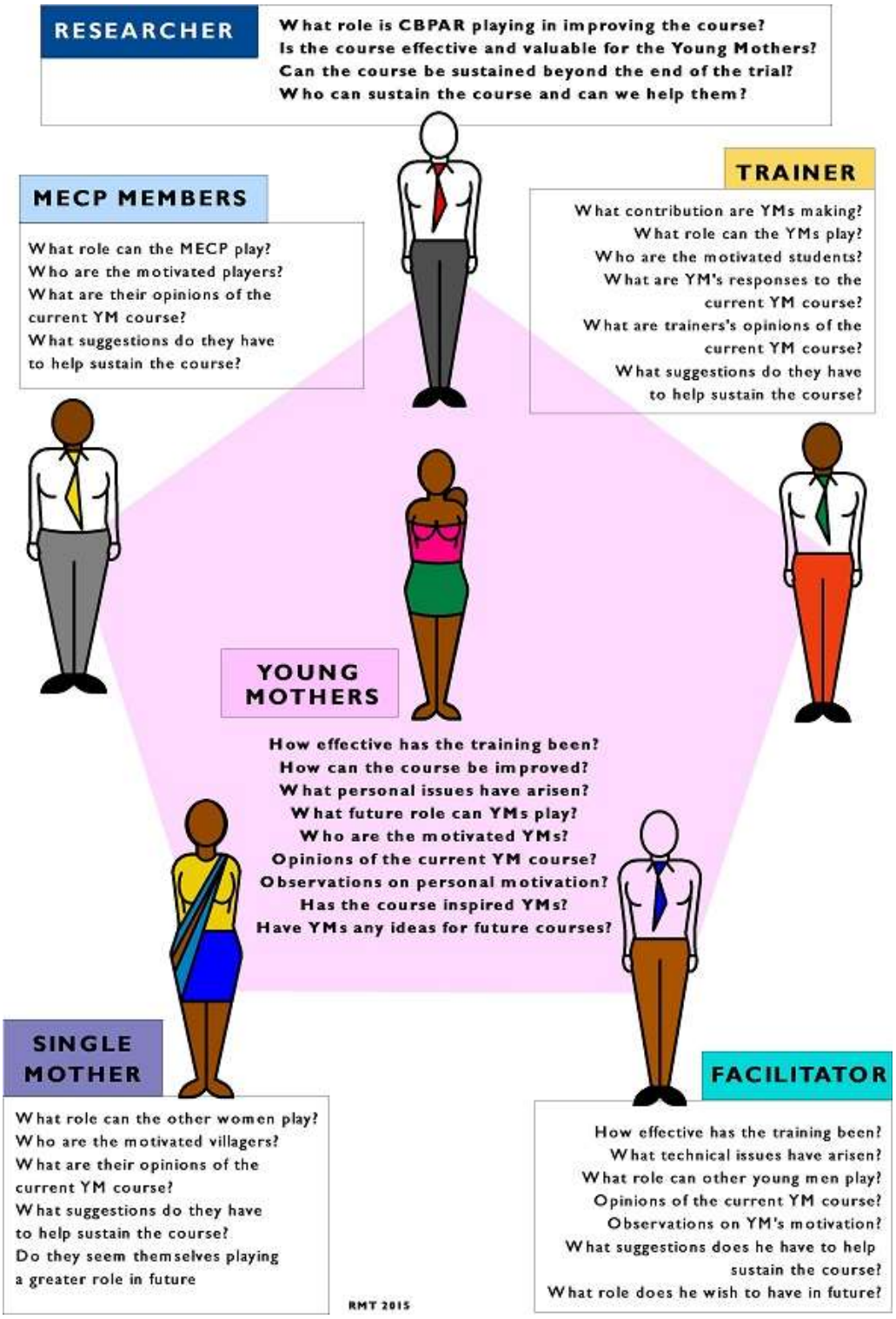


Figure 8.3 Questions arising from the various roles created during the study

The clarifying of questions for future community based participatory research in the village is important — as it was suggested by many of those interviewed, that the next stage should start with a discussion or village meeting. The above role-related questions would be a good starting point with which to structure a debate but may cause the debate to last for a month. A simpler set of questions may be used to start the debate:

1. Do you think the YMs' ICT and Nutrition course was a good course?
2. Do you think courses like this should be a regular thing in the village?
3. Who do you consider are the priority groups in the village for adult education courses?
4. Will you support the development of MECP as a venue for similar courses in future?
5. How will you support the development of MECP as a venue for such courses in future?
6. What other adult education courses would you like to see offered in the village?

8.6 SUMMARY OF DISCUSSION

This chapter has discussed the results of the implementation of the YMs' ICT and Nutrition course and has attempted to identify the strengths and weaknesses of the intervention as a community based participatory action research process. The results were discussed in relation to the research questions to rationalise the study and help to justify the results against the 5 phase community based participatory action research (CBPAR) approach that was adopted to structure the study.

Results were considered in relation to the key theoretical elements that underpinned the study and were also gauged against research literature which related to the various key themes of the study, namely: adult education in rural settings; implementation of ICT in adult education; basic adult education nutrition courses for young mothers and other vulnerable groups. Some key results were used to highlight areas of significance relating to the implementation regarding the YMs and the other participants.

Comparisons are made between the ideal and the actual results in order to judge the success of the CBPAR approach and enable setting of future goals or improvements.

The discussion identified significant questions that arose during the study and refined these to establish a shortlist of questions which helped in framing the conclusions and recommendations chapter which follows.

CHAPTER 9

RECOMMENDATIONS & CONCLUSIONS

"Yet, it's a real good bet, the best is yet to come!"[61]

The purpose of this chapter is to address the findings of the study in relation to the research questions and present recommendations and conclusions which have arisen from the analysis and discussion of the results in relation to relevant literature. By discussing the reality on the ground in comparison to the ideal scenario it is possible to develop goals and questions to guide future interventions of a similar scale.

9.1 SUMMARY OF FINDINGS FROM THE STUDY

9.1.1 Establishing a community of practice to design and implement an ICT training course which includes BAE Nutrition education

The study showed that the community based approach required participants to meet and agree on issues which related to the long-term vision of the project and the day to day factors affecting the implementation of the YM's ICT and Nutrition course. The meetings were in some cases formal and in other cases informal. As with all organised human activity, real action often requires a combination of both formal and informal approaches to meet the cultural expectations of participants from different educational and social backgrounds. The key to the success of these meetings lay in the openness of the engagements and the opportunity for participants to have a voice in planning.

The study also identified the need to create the infrastructure to enable practical decisions to be made with the community — regarding a suitable venue for the course, how to resource the course and how to ensure productive management of the course. Creating this

[61]Lyric from "**The Best is Yet to Come**" is a 1959 song composed by Cy Coleman, with lyrics written by Carolyn Leigh. It is generally associated with Frank Sinatra, who recorded it on his 1964 album *'It Might as Well Be Swing*' accompanied by Count Basie, under the direction of Quincy Jones.

infrastructure required personal organisation on the part of the researcher but also called on others to voluntarily take on responsible roles without formal recognition or financial reward.

In order to achieve the above objectives, it was vital to develop strong community links. The study showed that this was not possible without direct interaction with the community and that it often requires a commitment of time that is much greater than the length of the actual intervention or study itself. In the case of the YMs' ICT and BAE course, the relationships which enabled the study to happen grew out of three years of work in the village establishing the Mulamula Education Centre Project.

9.1.2 Implementing an ICT and Nutrition training courses for young mothers in rural resource limited settings in such a way that they are sustainable

To implement the YMs' ICT and Nutrition course, in such a way that could be sustainable, involved setting up systems to enable long term operation of the process. This required: a) staging of a recruitment event within the community; b) evaluation of the event to generate feedback and ideas about the best way forward; and, c) dialogues with significant stakeholders to monitor and stimulate action as the process proceeded.

Once again, the use of formal and informal instruments was key. Attendance at the planned event gave the course weight and significance to participants. The use of printed forms and other tools relating to administration of courses added to the perceived value of the course. The stakeholders appreciated that engaging the YMs and other participants in the early decision making processes was a good method to launch future courses. Although some interactions were handled more informally group participation encouraged 'buy in' to the course and cemented commitment of participants to attend the course.

Behind the scenes, practicalities relating to the implementation were managed through formal and informal dialogues between various village structures and the key players delivering the course. The combination of formal and informal approaches revealed the alternative communication methods used by YMs as part of their own village system. The use of different communications media enabled timely action to be taken to manage the process. These media also showed that a generational development in the use of mobile technology is happening which could play a significant role in managing similar adult education interventions in rural or remote settings.

Monitoring the progress of the implementation was done through dialogues, observations, records of work, video recording of classes and feedback forms. The collection of different forms of feedback enabled a more critical view to be taken of issues which at first glance seemed to be derived from individual points of view.

The data from video footage has potential value beyond the realms of this study as researchers could benefit from observing how effective local and technical language is combined in a modern hybrid manner to teach skills to adult learners.

From a practical point of view, sustaining the course in the village in future years, is linked to a number of factors including: the career choices of the young trainer; developments on the MECP site where ICT facilities are planned and financial support from local or national institutions. At the village level, the course has attracted interest in future courses that could potentially include young mothers (and fathers) from other local villages. Training of local 'future champions' is seen as one of the keys to the success of future courses and success of the Mulamula Education Centre Project.

9.1.3 Stimulating further constructive interaction with the community

In order to develop something out of the course and from the suggestions arising from the evaluation activities, it is proposed that future goals need to be agreed between stakeholders following a period of reflection on the outcome of the course. A suggested method for confronting these future goals is through a village meeting, possibly located in the completed Mulamula Education Centre, where participants can share their experience of the course with the wider community and agreement on future goals can be reached as part of a wider dialogue on how the village would like to develop and sustain their own adult education programme. This meeting will serve two purposes: it will sustain the community of practice that has developed as a result of the study and it will showcase the future adult education venue.

9.2 LIMITATIONS OF THE STUDY

9.2.1 Limitations of the young mothers sample size

Although rich data was gained in the study through the combination of instruments employed, the total sample of young mothers that could be used for the study was reduced considerably by applying the exclusion criteria that YMs included in the study should be under 25 and with a child under 5 years old. The fact that the course attracted 20 YMs who were all under 33 showed that there was a need for such an intervention in the village. The study could easily be expanded by an adjustment of the exclusion criteria as evaluation forms and additional interviews were filed with mothers who fell outside the criteria of the study.

The contributions made by the older 'young mothers' in the group are interesting in their own right. This group includes young women that appear to have been single and unemployed for more than a decade (See Section 5.1.3). The fact that these mothers showed persistence and faith in the course, after a longer period outside formal education, could be a theme for further investigation.

9.2.2 Course assessment material

The design of the course as an active community based participative trial in combining ICT skills training and nutrition was successful as far as the perception of the YMs, trainer, ICT facilitator and Head of Mahlefunye school were concerned. However, to fully assess the success of the individual students more work needs to be done on developing assessment of the course. As shown in this study, there is a risk in designing a course which involves students producing work on computer for assessment as there is increased risk of students copying and sharing outcomes. It is hard therefore to assess whether participants have learned anything without giving them individually an assessed activity to complete under supervision. Such assessment could include:

- A timed typing exercise which could include recall of knowledge learned on the course.
- An online multiple choice test on nutrition knowledge.
- A timed presentation design exercise using pre-loaded resources stored in a desktop folder.

These exercises continue the theme of combining practical ICT skills with nutritional content.

9.2.3 Researcher participation

As a researcher, I gained a lot of experience through managing the implementation of the research from different locations. 'Researcher flexibility' became one of the topics of the analysis. I helped set up the intervention in the village and put systems in place to enable the course to happen with the help of volunteers. I was, however, unable to spend all of my time in the village, living the experience as the volunteers did, as the study progressed. Happily, the volunteers I recruited proved to be very committed and did a very competent job to ensure that I had the data I needed.

As the study progressed, and I proceeded to analyse the data, I realised that working remotely added a dimension of complexity to the study that was very interesting. However, this might have been unnecessary if I had been able to locate myself in the village for the duration of the study. With hindsight, or more extensive funding, being based in the village might have simplified the data collection process and sped up the process of data analysis.

In reality, working from a distance turned out to be a fruitful option as it enabled me to develop tools to work remotely and so gain more constructive results. I personally have learned much more sophisticated ICT skills as part of the exercise but my Tsonga has not improved since the study began.

9.2.4 Video Recordings of young mothers' classes

Virtually all of the YMs' classes were recorded on HD video (in very large data files) by Sascha Lenz (YM-ICTF), using his personal digital camera, following my request to him to do so as part of research question 2 (See: Chapter 4 Methodology. Table 3). As the initial plan was to teach the courses in English, with Boikie Maluleke (YM-T) doing occasional translation in Tsonga, this would have been a very useful data comparison for checking student outcomes and for triangulation with other data sources relating to key events.

As the trainer and facilitator switched roles and YM-T took over teaching in Tsonga, using our English resources, these recordings require translation from XiTsonga to English and transcribing for further analysis. The budget and time constraints of this study did not allow for this reversal.

However, the data has been secured and provides an opportunity for the development of a video-based Tsonga course possibly with English subtitles. The data may need refining

and re-filming to create a more valuable teaching resource but the opportunity is there if a 'future research champion' who wishes to accept the challenge.

9.3 SUGGESTIONS FOR FUTURE RESEARCH FROM STUDY FINDINGS

Future research suggestions from this study have been drawn from my personal journey as a researcher participating in the process and from the feedback I have received from the significant contributors to the implementation of the course. These were: the young mothers themselves; the trainer; the ICT facilitator; and, Robert Vukeya Head of Mahlefunye Primary School.

9.3.1 Suggestions for future research into community based participative action research approaches

I have been involved with Mulamula village through MECP for 3 years, in setting up the Mulamula Education Centre Project. This meant that I was able to 'pull strings' and use my network of friends to help make the course happen. In practical terms, this was helpful but from a methodological point of view it can be seen as a limitation of our approach.
An interesting comparative study could be undertaken using the same course in a setting where a community of practice had to be set up from scratch — provided another village nearby could offer similar classroom facilities, secure storage of the laptop computers and other teaching equipment. This type of study would need to be developed as a team project or by collaboration with a local university.

9.3.2 Suggestions for future research using Mulamula Education Centre Project as a venue

The project benefitted from the generosity of Mahlefunye School's Head, Robert Vukeya (YM-MECPS), who allowed our use of the school's empty ICT room for this study.
However, I would recommend that Mulamula Education Centre Project (MECP) be used as a site for a repeat study. An improved version of the same practical combined ICT and BAE Nutrition course would be required including the following:

1. A recruitment workshop for young women from the surrounding villages (Mudabula, Gumbani, Machele, Phaphazela).
2. A two month course which consists of a minimum of 16 classes.

3. A refined ICT skills programme that includes an optional introductory ICT Basics course to get students to a similar level before adding contextualised work.
4. Internet research in order for YMs to be exposed to the world-wide-web as a means to obtain additional national and international nutrition information.
5. Nutrition course resource book, or CD, for YMs to study course content outside the combined ICT and Nutrition course without the need for a computer.
6. A refined ICT and Nutrition course which includes practical skills in printing and emailing work to other participants.
7. Assessment material that includes continuous assessment records (log book) and online testing.
8. Extension material which more advanced students could obtain
9. Certification for the course which is recognised outside the confines of the study. (Accreditation from University of KwaZulu Natal or via established international computer course providers such as ICDL could be obtained.)

The above suggestions were drawn from feedback received through evaluation forms from young mothers, course trainer, ICT facilitator and Head of Mahlefunye School.

9.3.3 Suggestions from the young mothers who participated in the process from the beginning

In response to questions raised in their course evaluation forms, about their interest and involvement in potential future combined courses, there were suggestions of academic subjects which could be studied using the same combined ICT and BAE model: mathematics, geography, accounting, and life sciences. In addition more life skills courses were suggested including: advanced nutritional training, childcare and HIV/AIDS and Sexual Health Awareness.

In terms of sustaining future courses, the YMs suggested that the local community should be mobilised support adult education courses. They suggested this could be done by donations and volunteering at the MECP to earn credits to attend classes.

Six of the YMs expressed an interest in ‘funding’ their own attendance at future courses sited at MECP through volunteering at the site.

The above event would set the scene for a very interesting comparative study looking at the different levels of achievement and commitment of YMs attending the same course, comparing those paying a fee to attend and others volunteering to gain some kind of 'community education credits'.

9.3.4 Suggestions from, Boikie Maluleke (YM-T), Sascha Lenz (YM-ICTF) and Robert Vukeya (YM-MECPS)

Boikie Maluleke (YM-T), Sascha Lenz (YM-ICTF) and Robert Vukeya (YM-MECPS) all advanced similar ideas to the ones suggested by the YMs. They also added feedback to structure my suggestions in section 9.3.1.

Both YM-T and YM-ICTF were keen to see ICT courses being taught at the Mulamula Education Centre and suggested similar courses be used for young men and teachers, as well as YMs in the area — in order that local community members could be trained to become future trainers and ICT facilitators.

YM-T suggested that he could help train some of the more talented YMs from the original group to become future course trainers. This last point sets the scene for a very interesting ethnological study following the learning pathways of YMs' progression from unemployed volunteer students to potentially employed skilled ICT trainers in a rural setting.

9.3.5 Suggestion for future research with the support from the wider community, sponsors and institutions

Both Sevenoaks School and Dr Lenz, as sponsors, have given reassurances of future support to establish Mulamula Education Centre Project as a venue for teaching of ICT with 20 donated desktop computers and financial support to complete a safe, electrically wired, building in which to teach adult education courses. This would enable more extensive research into the teaching of ICT in Mulamula to be achieved using larger sample sizes.

In order to legitimise the MECP adult education centre further and enable applications for funding from institutions that support adult education in SA, MECP sought separate land status from the traditional council office in August 2015. This enables the MECP to exist as an adult education venue in its own right (separate from the crèche with which it shares a site). This development was partly accelerated because the traditional council were impressed

with the courses that were offered at Mahlefunye Primary school and the devotion of the MECP team.

This sets the scene for MECP to seek more sustained funding for the education centre which will include ICT training and a community library facility. It opens the way for the centre to become a more sophisticated centre of learning and a site for wider research into other forms of rural adult education intervention such as BAE literacy and numeracy.

9.4 FINAL CONCLUSIONS

This study has been an extraordinary journey both in a physical and spiritual sense:

- I have discovered the amazing power that communities working together can generate. I have developed a greater understanding of theoretical approaches that can help structure and give meaning to such enterprises.
- I have also gained greater appreciation of the complex nature of and problems involved in qualitative research undertaken in resource limited rural settings. Further, established cultural systems can be both an aid and a hindrance to progress in places where single mothers struggle to find ways to improve their learning.
- I have a heightened awareness of the day-to-day obstacles that rural South African communities face in seeking to transform their lives, improve their employment prospects and develop their children.
- My faith in humanity has also been reinforced by seeing people from different nationalities, races and social backgrounds working and learning together in a dusty village in a much neglected corner of this beautiful, occasionally troubled, country.

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