

**Researching QoL Change from ICT Training,  
Access and Use at South African Telecentres:  
empowerment through  
participatory action research**

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As the candidate's supervisor I have/have not approved this dissertation for submission.

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## ***Abstract***

A participatory action research project, Community-based Learning, ICTs and QoL (CLIQ) conducted in four areas within KwaZulu-Natal (South Africa) between 2008 and 2011, investigated whether information and communication technology (ICT) training, access and use could improve the QoL (QoL) of poorer people. Two thirds of the 113 CLIQ participants did improve their QoL, and furthermore, over three quarters of participants noted an empowering impact from their participation in CLIQ, in addition to other social and educational impacts.

Initial analyses of findings found a greater likelihood of improved QoL and CLIQ impact in research areas with better project implementation and participation (Attwood *et al.*, 2011). Initial analysis also identified factors contributing to different levels of participation and implementation (Attwood *et al.*, 2010). With reference to literature on QoL, agency and empowerment; Information and Communication Technology for Development (ICT4D); and participatory methodologies, a detailed analysis of the implementation of CLIQ identifies elements of the research process, methods and ethos that contributed towards participants' empowerment.

The post-field application of Kleine's (2010b) Choice Framework (CF) to CLIQ findings, confirms the usefulness of this empowerment framework for analysing ICT4D interventions. Analysis of the variety of individual CLIQ stories reveals examples of how all of the CF's agency resources and structural factors impacted on, or were impacted by participants' engagement with the intervention. Specifically, this thesis illustrates how interactions between aspects of agency, structure and individual characteristics result in different degrees of empowerment and development outcomes, thereby integrating and augmenting the initial analysis of CLIQ findings.

As a complex logic model, the CF accommodates the diversity and complexity of participants' engagement with CLIQ and efforts to improve their QoL, through providing a framework which allows for multiple, recursive and emergent causality. This thesis concludes by suggesting minor adjustments that could improve the CF, including an elevation of the importance of psychological resources. Based on the empowering outcomes attributed to CLIQ's participatory action research process, and recognising that problems facing telecentres in South Africa are the same as they were ten years ago, the thesis concludes with recommendations for public access computing in South Africa.

Preface

# COLLEGE OF HUMANITIES

## DECLARATION - PLAGIARISM

I, Heidi Elaine Attwood, declare that

1. The research reported in this thesis, except where otherwise indicated, is my original research.
2. This thesis has not been submitted for any degree or examination at any other university.
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Signed

.....

Heidi Elaine Attwood (20 June 2014)

## List of Contents

1	BACKGROUND AND INTRODUCTION .....	1
1.1	THE CLIQ PROJECT.....	4
1.2	FINDING FOCUS: REFLECTING ON ANALYSIS AND ANALYSING REFLECTIONS .....	8
1.3	CONSIDERING LITERATURE OF RELEVANCE .....	10
1.4	FOLLOWING THE FLOW OF THIS DOCUMENT .....	11
1.5	PRACTICAL INFORMATION FOR THE READER.....	13
<hr/>		
2	QUALITY-OF-LIFE, AGENCY AND EMPOWERMENT .....	17
2.1	HUMAN DEVELOPMENT, WELL-BEING AND QUALITY-OF-LIFE .....	17
2.2	AGENCY AND EMPOWERMENT .....	24
2.3	SUMMARY OF QOL, AGENCY AND EMPOWERMENT .....	34
<hr/>		
3	ICTS AND DEVELOPMENT .....	36
3.1	DEMAND: ICT USE.....	38
3.2	SUPPLY: PAC VENUES.....	44
3.3	CONSOLIDATING CURRENT ICT4D THEORY.....	50
3.4	SUMMARY OF ICT4D.....	68
<hr/>		
4	PARTICIPATORY METHODOLOGIES .....	72
4.1	ORIGINS AND BRANDING .....	73
4.2	CHALLENGES AND CRITIQUES.....	76
4.3	FUNDAMENTAL ASPECTS OF PAR.....	80
4.4	SUMMARY PARTICIPATORY METHODOLOGIES .....	91
4.5	COMBINING PMS WITH ICTs, DEVELOPMENT AND QOL.....	92
<hr/>		
5	IMPLEMENTING CLIQ .....	99
5.1	RESEARCH AREAS AND PARTICIPATING TELECENTRES.....	101
5.2	THE DESIGN AND IMPLEMENTATION OF CLIQ .....	120
5.3	CLIQ PARTICIPANTS .....	134
<hr/>		
6	ANALYSIS AND REFLECTION ON IMPLEMENTATION.....	139
6.1	DEVIATIONS AND ADAPTATIONS .....	140
6.2	METHODOLOGICAL AND FIELDWORK CHALLENGES.....	143

6.3	<i>JUSTIFICATION FOR METHODOLOGICAL CHOICE</i> .....	148
6.4	<i>PROJECT VARIABLES FOR SAMPLE DEFINITION AND ANALYSIS</i> .....	152
6.5	<i>SUMMARY OF FIELDWORK IMPLEMENTATION, ANALYSIS AND REFLECTION</i> .....	158
<hr/>		
7	<b>THE IMPACT OF CLIQ</b> .....	160
7.1	<i>LOCAL INDICATORS OF QUALITY-OF-LIFE</i> .....	162
7.2	<i>CHANGES IN QOL AND CLIQ IMPACT</i> .....	166
7.3	<i>FACTORS AFFECTING PARTICIPANTS' LIVES</i> .....	172
7.4	<i>SUMMARY OF IMPACT</i> .....	202
<hr/>		
8	<b>GATES TO ENGAGEMENT</b> .....	207
8.1	<i>SOCIAL NORMS, PERCEPTIONS AND EXPERIENCES</i> .....	209
8.2	<i>PERSONAL DISPOSITION AND HEALTH</i> .....	222
8.3	<i>OPPORTUNITY COST: TIME, MONEY AND ENERGY</i> .....	226
8.4	<i>TELECENTRE FUNCTIONALITY</i> .....	232
8.5	<i>COMPLEXITY, MULTI-CAUSALITY AND CONTINUITY</i> .....	235
8.6	<i>SUMMARY OF GATES TO ENGAGEMENT</i> .....	240
<hr/>		
9	<b>EMPOWERMENT, CAUSALITY &amp; MODELLING</b> .....	243
9.1	<i>FRAMING CLIQ PROCESSES AND FINDINGS: THE INITIAL CLIQ MODEL</i> .....	244
9.2	<i>CLIQ FINDINGS THROUGH THE CHOICE FRAMEWORK</i> .....	247
9.3	<i>ADDITIONS AND ADAPTATIONS TO THE CHOICE FRAMEWORK</i> .....	259
<hr/>		
10	<b>REFLECTIONS &amp; CONCLUSION</b> .....	275
10.1	<i>THE PROCESS OF RESEARCH AND ANALYSIS</i> .....	276
10.2	<i>QOL CHANGE, IMPACT AND EMPOWERMENT</i> .....	278
10.3	<i>MODELLING ICT4D: DOES THEORY FIT REALITY?</i> .....	284
10.4	<i>ENABLING PSYCHOLOGICAL RESOURCES AND INNER EMPOWERMENT</i> .....	287
10.5	<i>FURTHER REFLECTIONS ON THEORY</i> .....	292
<hr/>		
11	<b>REFERENCES</b> .....	297
<hr/>		
12	<b>APPENDICES</b> .....	309

## List of Boxes

Box 5-1: “The area where I live” by MusaM21 (2009) .....	104
Box 7-1: KhaboF25 (eNtshonalanga).....	173
Box 7-2: DuduzileF25 (eNyakatho).....	178
Box 7-3: NoziphoF26 (eMpumalanga).....	180
Box 7-4: MthembeniM28 (eMpumalanga).....	184
Box 7-5: JabulisiweF22 (eNtshonalanga, 2009).....	187
Box 7-6: MusaM21 (eMpumalanga).....	187
Box 7-7: NeneF27 (eMpumalanga).....	190
Box 7-8: SynthiaF21 (eMpumalanga) .....	194
Box 7-9: NonhleF24 (eMpumalanga).....	194
Box 7-10: SiyaF53 (eNingizimu) .....	200
Box 7-11: ZiphoF30 (eNingizimu) .....	201
Box 8-1: ChazileF23 (eNtshonalanga).....	216
Box 8-2: BenjiM19 (eNyakatho).....	223
Box 8-3: NelliF37 (eMpumalanga) .....	223
Box 9-1: Analysis of SiyaF53’s experience through CF sub-elements .....	248

## List of Figures

Figure 1-1: Arnstein's participation typology .....	2
Figure 1-2: Abuse of terminology for political gain .....	3
Figure 1-3: Linking the literature review to the research question .....	11
Figure 2-1: Costanza and colleagues' model of QoL.....	21
Figure 2-2: Rowlands' model for personal empowerment .....	31
Figure 3-1: Sey and Fellows' ICT4D model.....	54
Figure 3-2: van Dijk's ICT4D model .....	56
Figure 3-3: Heeks' ICT4D model.....	57
Figure 3-4: Barrantes' Digital Poverty diagrams.....	59
Figure 3-5: ICT as a tool for individual needs.....	61
Figure 3-6: Urquhart and colleagues' ICT4D model .....	63
Figure 3-7: Kleine's ICT4D model.....	65
Figure 4-1: The plan-act-reflect cycle.....	84
Figure 4-2: Dimensions of participatory research.....	85
Figure 5-1: Participants' map of eMpumalanga (2008).....	106
Figure 5-2: Participants' map of eNingizimu (2008) .....	108
Figure 5-3: Participants' map of eNyakatho (2008) .....	112
Figure 5-4: Time-trend (eNtshonalanga, 2008) .....	115
Figure 5-5: Participants' map of eNtshonalanga (2008) .....	116
Figure 5-6: Computer knowledge diagram (eNingizimu, 2008) .....	129
Figure 5-7: Participation of impact sample in QLAs .....	137
Figure 5-8: Participation of impact sample in training.....	137
Figure 6-1: Continuum of CLIQ implementation and participation .....	155
Figure 7-1: QoL-line for unemployed youth (eNyakatho, 2008).....	163
Figure 7-2: S'boF52's QoL-line (eNingizimu, 2010) .....	164
Figure 7-3: KhumbizileF24's QoL-line (eNtshonalanga, 2010) .....	164
Figure 7-4: Changes in participants' QoL.....	167
Figure 7-5: CLIQ intervention intensity, impact and changes in QoL.....	171
Figure 7-6: Location of tipping point on CLIQ intensity continuum.....	171
Figure 7-7: SliF30's computer use (eNingizimu, 2009).....	190
Figure 7-8: MesseM20's goal-setting diagrams (eMpumalanga, 2008) .....	199
Figure 8-1: ManeseF20's life-graph (eMpumalanga).....	215
Figure 8-2: SimphoF52's life-graph (eNingizimu) .....	220
Figure 8-3: SallyF24's life-graph (eNingizimu, 2010).....	237
Figure 9-1: Initial logic model of CLIQ impact .....	246
Figure 9-2: CLIQ through Kleine's Choice Framework .....	249
Figure 9-3: An amended Choice Framework .....	272

## List of Plates

Plate 1-1: CLIQ stakeholder diagram.....	5
Plate 1-2: CLIQ Community Report cover.....	7
Plate 4-1: Time Trend using buttons .....	90
Plate 4-2: Centre for Digital Inclusion.....	94
Plate 4-3: <i>ReflectICTs</i> .....	95
Plate 5-1: Map of KwaZulu-Natal showing CLIQ sites.....	103
Plate 5-2: Participant in front of her eMpumalanga home .....	104
Plate 5-3: Comparing maps at eNingizimu .....	109
Plate 5-4: Mapping in progress at eNyakatho .....	111
Plate 5-5: Thusong Service Centre at eNtshonalanga .....	114
Plate 5-6: The CLIQ field team for initial-QLAs .....	123
Plate 5-7: Phase 2 computer training at eNingizimu.....	127
Plate 5-8: IIDIs in progress at eNyakatho.....	131
Plate 5-9: eMpumalanga participants and CLIQ fieldworkers.....	135
Plate 7-1: CLIQ participants.....	161
Plate 7-2: Relaxing in the shade at eMpumalanga.....	177
Plate 7-3: BongaM20 on FaceBook (eNyakatho, 2012) .....	181
Plate 7-4: DinahF21 on FaceBook (eNyakatho, 2012).....	181
Plate 7-5: Entrepreneurs debate sources of information at eNingizimu .....	183
Plate 7-6: Participants review their maps of eMpumalanga.....	201
Plate 8-1: MlamuliM28 on FaceBook (eMpumalanga, 2011).....	236
Plate 8-2: BathaF21 on FaceBook (eNyakatho, 2011).....	236

## List of Tables

Table 1-1: Area identification via alias names .....	15
Table 2-1: Agency resources .....	26
Table 2-2: Different forms of power.....	29
Table 3-1: Phases in ICT4D.....	36
Table 3-2: Europe-Africa ratio of average ICT statistics .....	40
Table 3-3: PAC venue performance and sustainability.....	46
Table 3-4: Britz's elements of information poverty .....	55
Table 3-5: Kleine's degrees of empowerment.....	66
Table 4-1: Common chapter abbreviations .....	73
Table 4-2: Comparative lists of challenges to PMs .....	77
Table 4-3: Symptoms and causes of low-quality PRA work .....	78
Table 4-4: Dimensions of methods .....	89
Table 4-5: Core principles of PMs.....	91
Table 4-6: Core aspects of ICT4D (and CI).....	97
Table 5-1: Timeline for eNingizimu (2008) .....	107
Table 5-2: Comparison summary of telecentres in research areas .....	119
Table 5-3: CLIQ research design (May, 2008) .....	121
Table 5-4: Research stages, methods and topics .....	125
Table 5-5: Sequencing of methods related to QoL.....	130
Table 5-6: CLIQ selected and impact samples by area.....	135
Table 6-1: Deviations from design .....	141
Table 6-2: Nature of individual participation per area.....	153
Table 6-3: Indicators of success of CLIQ implementation .....	154
Table 6-4: CLIQ's core sample .....	158
Table 7-1: Local indicators of QoL .....	165
Table 7-2: Change in QoL according to CLIQ impact.....	168
Table 7-3: Participants' stories illustrating QoL change and CLIQ impact .....	169
Table 7-4: Change in QoL by area.....	170
Table 7-5: Factors affecting participants' lives .....	172
Table 7-6: Common factors underlying QoL change.....	173
Table 7-7: Common CLIQ impacts.....	174
Table 7-8: Summary of material and non-material CLIQ impacts.....	204
Table 8-1: Gates to CLIQ engagement .....	209
Table 8-2: QoL change by gender .....	210
Table 8-3: Nature of individual participation by gender .....	210
Table 8-4: Changes in QoL, level of CLIQ implementation and gender.....	211
Table 8-5: Forced and restricted mobility imposed on younger women.....	216
Table 8-6: Aspects of telecentre functionality.....	232
Table 9-1: Abbreviations for sub-elements within the CF .....	250
Table 9-2: Comparison of outcomes and impacts across ICT4D models .....	264

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## Abbreviations, Acronyms and Terms

Acronym, Abbreviation or Term	Expansion or meaning (with context where relevant)
ABET	Adult Basic Education and Training
APC	Association for Progressive Communications (a national NGO)
AR	Action Research
ASEM	Asia-Europe Meeting
BEDS	School of Built Environment and Development Studies (previously SDS)
CA	capabilities approach
CBO	Community-Based Organisation
cell-phone	cellular mobile telephone / mobile phone
CEO	chief executive officer
CF	Choice Framework
CI	Community Informatics
CLIQ	Community-based Learning, ICTs and Quality-of-life
CLIQ staff	Refers to the CLIQ project manager (myself), fieldworkers, computer trainers and research assistants
connectivity	a working internet connection
CV	Curriculum Vitae
DD	Digital Divide
DFID	Department for International Development (UK)
DoC	Department of Communications (SA national government department)
ECA	Electronic Communications Act (No.36 of 2005)
eFWS	eNingizimu Family Welfare Society
F	Female
FET	Further Education and Training
free hours	Refers to 100 hours of free computer time (at the local telecentre ) which was allocated to each participant
GDP	Gross Domestic Product
GPRS	General Packet Radio Service
GT	Grounded Theory
ICDL	International Computer Driving Licence
ICT	Information and Communication Technology
ICT4D	Information and Communication Technologies for Development
ID	Identity Document (compulsory national government document)
IIDI	Individual In-depth Interview
IIED	International Institute for Environment and Development
ITU	International Telecommunication Union
KZN	KwaZulu-Natal (a province of South Africa)
LDC	local development centre
M	Male
MDCnpo	eMpumalanga Development Centre non-profit organisation

MPCC	Multi-Purpose Community Centre
NCDT	Nandi Community Development Trust ( at eNyakatho)
NGO	Non-Governmental Organisation
NIBR	Norwegian Institute for Urban and Regional Research
NPO	Non-Profit Organisation
NRF	National Research Foundation
ODA	Overseas Development Agency
off-line/ unconnected	Refers to computers or computer use not relying on a working internet connection
on-line / connected	Refers to computers or computer use that requires a working internet connection
p'pnt	Participant
PAC	public access computing
<i>par</i>	generic participatory action research
PAR	Participatory Action Research
Para.	paragraph
PF	P.E.A.C.E. Foundation
PFMA	Public Finance and Management Act
PM	Participatory Methodology
PR	Participatory Research
PRA	Participatory Rural Appraisal
PSA	Public Service and Administration Act
QLA	Quality-of-life Assessment (set of CLIQ fieldwork days)
QoL	Quality-of-life
SA	South Africa
SDS	School of Development Studies (at UKZN, now BEDS)
sel'd	selected
SLF	Sustainable Livelihoods Framework
SMME	Small, Medium and Micro Enterprises
SMS	Short Message System
SWB	Subjective Well-being
TC	Telecentre
telecentre	a venue where people can use computers and the internet (either for a fee or for free)
telecentre staff	Refers to both telecentre managers and telecentre facilitators
TSC	Thusong Service Centre (new generation MPCCs)
UK	United Kingdom
UKZN	University of KwaZulu-Natal
UN	United Nations
UNHCR	United Nations Human Rights Commission
UNISA	University of South Africa
USAASA	Universal Service Access Agency of South Africa (falling within the DoC)
XSG	Xoxa Support Group (at eNtshonalanga)

# CHAPTER ONE:

## BACKGROUND & INTRODUCTION

### 1 BACKGROUND AND INTRODUCTION

Empowerment, participation, development and agency are “buzzwords” (Cornwall, 2007), “catch-all” or “hurrah” words (White, 1996) that are “...concepts that can float free of concrete referents, to be filled with meaning by their users” (Cornwall, 2007:474). In relation to empowerment and agency, Wray (2004:23) notes “[t]hese concepts confer different meanings and are understood and enacted in different ways”. In a similar vein, White and Pettit (2004:4) describe well-being and participation as “...highly contested, internally diverse umbrella terms”.

There is much concern about the misuse of terms and concepts such as empowerment, participation, sustainability, agency, development, and freedom in development practice. This has been noted in various ways by Luttrell and Quiroz (2009), Dill (2009), Cornwall (2007), White (1996), Hickey and Mohan (2004), Kumar (1996) and others. *Participation: the New Tyranny?* by Cooke and Kothari (2001) presents a collection of insights and commentary by practitioners and academics concerned with development, who were frustrated and angry at what was being passed off as participation. In reference to this book, Dill (2009:718) comments that while participation - without “...a fixed or agreed upon meaning”, has been a common approach in development, “[w]hat has changed in recent years ... is the extent to which participation has been embraced by proponents of both ‘mainstream’ and ‘alternative’ development.” In the 1990s, international development agencies and institutions increasingly began to embrace the terms *agency*, *empowerment* and *participation* (Chambers, 2005; Luttrell and Quiroz, 2009; Samman and Santos, 2009), however many have questioned the conception of and intention behind their adoption of these buzzwords.

Without commonly accepted definitions, these buzzwords can and have been used loosely to convey or disguise different intentions or worldviews underlying funding proposals and development projects. It became fashionable to claim to enact these

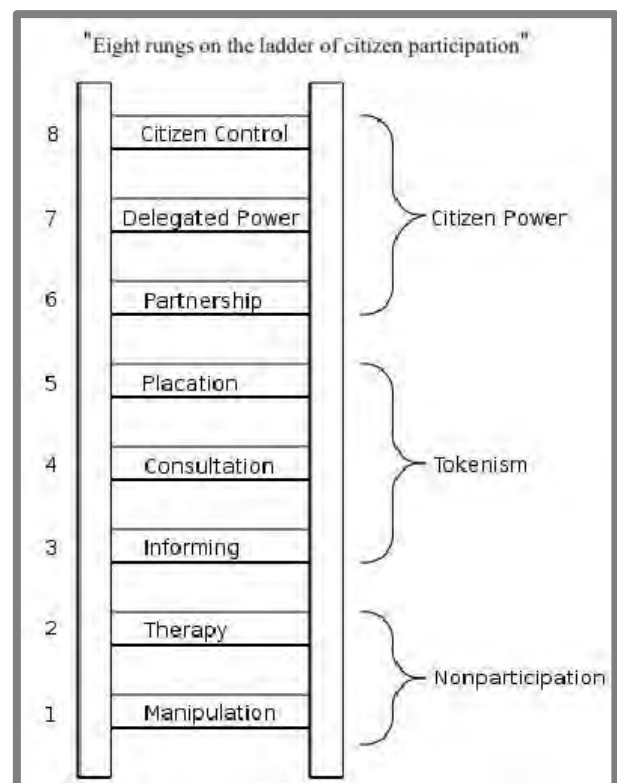
development buzzwords – they have become “...passwords to funding and influence” (Cornwall, 2007:471). The uninformed and careless use of terms like empowerment and participation can be just as dangerous as deliberate and manipulative misuse. For example, a shallow understanding of empowerment can result in a failure to recognise the complexity of local power relations and the impact that specific empowerment activities could have on the local socio-political context, such as the creation of local elites, who simply maintain the oppression of the poor (Luttrell and Quiroz, 2009:10).

The multiple concepts implied by or action implemented as *participation* was pertinently raised by Arnstein in 1969 in her landmark article: “A Ladder of Citizen Participation” where she differentiates between different types of participation and non-participation. Her typology based on different types of participation occurring in the United States of America at the time, includes for example, *manipulation* on the bottom rung of her participation ladder (see Figure 1-1).

Passing off manipulation as the facilitation of a participatory process is known by some as *facipulation* – a term that was used among South African and other participatory practitioners in the mid-to-late 1990s when reflecting on the quality of their practice.<sup>1</sup> Facipulation is “...the process whereby facilitators and other convenors of participatory processes get participants to produce the result that the facilitators want, whilst making the participants think they are expressing their own ideas” (Wakeford *et al.*, 2008:51).

“The status of participation as a ‘hurrah’ word ... masks the fact that

**Figure 1-1: Arnstein’s participation typology**



Source: Arnstein (1969:217)

<sup>1</sup> This is based on personal experience, having been part of this loosely defined group at the time.

participation can take on multiple forms and serve many different interests” (White, 1996:7). The concern is that such buzzwords are open to co-optation by large and powerful development and financial institutions, which do not support forms of participation and empowerment that challenge the status quo in terms of power relations (Cornwall, 2007; Dill, 2009). Figure 1-2 is a humorous representation of the abuse of buzzwords for political expediency.

The use of these terms to describe or claim activities that do not address power relations changes the understanding, meaning something less political or radical. As expressed by Andrea Cornwall and Karen Brock with reference to empowerment, such use has “...stripped it of any political potency” (in Luttrell and Quiroz, 2009:4). The purposeful lack of clarity regarding the meaning of popular terms facilitates a development context where “...buzzwords shelter multiple agendas, providing room for manoeuvre and space for contestation” (Cornwall, 2007:474).

Development activity that claims to be participatory or to focus on empowerment usually involves a range of actors with differing levels of power, status and financial resources, and certainly differing agendas. Therefore, awareness of the current abuse and misuse of popular developmental terms is critical when engaging in or reading accounts of such activity. Asking questions like ‘*what will each group actually be doing in the project?*’, ‘*whose view is that?*’ and ‘*who will ultimately decide on ....?*’ become extremely important when negotiating terms of engagement between development actors or evaluating a development initiative. Questions similar to these can reveal the embedded agenda of various role players and insight into power relations between role players.

**Figure 1-2: Abuse of terminology for political gain**



Source: Cartoonstock (n.d.[a]) & Cartoonstock (n.d.[b])

This thesis interrogates the concepts of participation, empowerment and agency, as well as quality-of-life (QoL) and Information and Communication Technologies for Development (ICT4D); and applies them to analyse the outcomes of an action research project investigating the impact of Information and Communication Technology (ICT) use on QoL.

## 1.1 The CLIQ Project

In late 2007, a research project concerning ICTs and QoL was initiated by two principal investigators who secured funding through the Research Co-operation Programme between South Africa (SA) and Norway.<sup>2</sup> The project was named Community-based Learning, ICTs and Quality-of-Life (known simply as CLIQ). Joining the project in early 2008, I was responsible for the design of the research methodology and process, project implementation and the analysis and write-up of results, with guidance from the principal investigators.<sup>3</sup> The CLIQ project took the form of a development intervention aimed at assisting people to improve their lives, and simultaneously a research project aimed at advancing the understanding of the impact of ICT access and use on the QoL of financially-poorer citizens. CLIQ's research question was whether needs-based computer training and free computer use could improve the QoL of poorer people as defined by them. Specifically, CLIQ objectives were to:

- a] assist participants to improve their QoL through access to free computer training and use at their local telecentre;
- b] build the capacity of participating telecentres where possible; and
- c] assess the impact of computer training and access on the QoL of poorer people, in order to improve policy (and the implementation of policy) regarding universal service access.<sup>4</sup>

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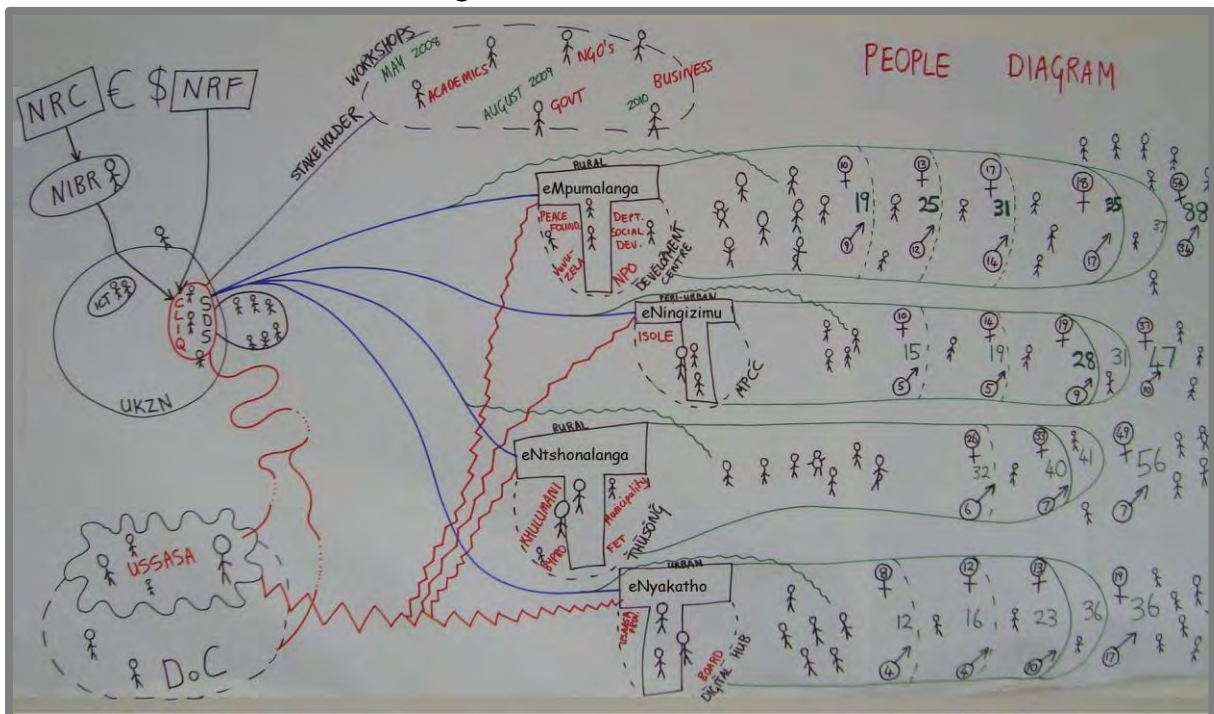
<sup>2</sup> The two principal investigators were Professor Julian May from the School of Development Studies (SDS), University of KwaZulu-Natal (UKZN) and Dr Einar Braathen from the Norwegian Institute for Urban and Regional Research (NIBR). Joint funding to implement the proposed research was awarded (in July 2007) by the National Research Foundation (NRF) of South Africa and the Research Council of Norway. Additional funding was also provided by the Department of Science and Technology (DST)/NRF South African Research Chair in Applied Poverty Reduction Assessment. SDS has subsequently been incorporated into the School of Built Environment and Development Studies (BEDS), at UKZN.

<sup>3</sup> More detail on the nature of my role as project manager is contained in Appendix A (p310).

<sup>4</sup> This paragraph is drawn from Attwood (2013:3), with only minor editing changes.

CLIQ was implemented through the (then) School of Development Studies at UKZN, in an attempted partnership with the Universal Service Access Agency of South Africa (USAASA); four USAASA-linked telecentres within the province of KwaZulu-Natal (KZN); people of the four communities where these telecentres were located; and a number of other ad-hoc organisations and stakeholders which operated in the research area (see Plate 1-1).<sup>5</sup> The fieldwork took place between June 2008 and May 2010, with community dissemination workshops occurring in the latter half of 2011.

**Plate 1-1: CLIQ stakeholder diagram**



Source: Photograph of my flipchart drawing used in CLIQ presentations

CLIQ was implemented through a participatory action research (*par*) methodology, to accommodate both action and research goals.<sup>6</sup> Fieldwork activities in each area centred

<sup>5</sup> USAASA is a unit within the Department of Communications (DoC) in the South African National Government, which funds telecentres in under-served communities and cyberlabs in government schools, as part of its mandate to provide universal service access. USAASA's KZN representative agreed to partner CLIQ in the research, facilitating access to the four USAASA-linked telecentres. The research partnership between CLIQ and USAASA did however, not develop as envisaged either by CLIQ or by the KZN USAASA representative and the partnership remained informal despite numerous attempts to secure a Memorandum of Understanding with USAASA.

<sup>6</sup> The concept of '*par*' is not the same as Participatory Action Research (PAR) as presented by Rahman (1993), as explained in Chapter 2.

round QoL assessments (QLAs) and computer training sessions, over a period of between 21 and 24 months. In addition, participants could use computers within their local telecentre free-of-charge, from after the first computer training session up until the final-QLA. After a locally-led process to inform community members about the upcoming action research project, CLIQ selected 162 participants in total, from the 227 people across all four areas who expressed an interest to take part.

In brief, the findings were that two thirds of participants from the final impact sample of 113 people improved their QoL, with over three quarters noting a positive impact from CLIQ on their lives. The success of project implementation and the extent of participation varied between the four areas, with quantitative analysis indicating a correlation between better levels of project implementation and better levels of participation, as well as higher proportions of participants with improved QoL or a positive CLIQ impact. These findings were presented at an International Conference on Development Informatics (see Attwood, Diga and May, 2011) and subsequently published (see Attwood, Diga and May, 2014).

An unexpected set of findings from CLIQ related to the performance of public access computing (PAC) venues or telecentre functionality and sustainability. The functionality of telecentres was never the focus of the research but the variety of unexpected events that unfolded during implementation, resulted in a wealth of information on this subject. With the capacity building of telecentres and ICT4D analysis for policy input as two of CLIQ objectives, a paper on telecentre functionality was called for. In summary, the findings on telecentre functionality were that the multiple interconnected problems experienced by telecentres in SA in 2010, were the same as the set documented a decade earlier by Benjamin (2001) who also worked with USAASA-linked telecentres. The first draft of this co-authored paper (Attwood, Braathen and May, 2010) was presented at the Chronic Poverty Research Centre conference in Manchester (UK) in September 2010. After two sets of revisions including analysis done for this thesis, the functionality paper was published (see Attwood, Diga, Braathen and May, 2013).<sup>7</sup>

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<sup>7</sup> Further analysis of results by one of the principal investigators gave rise to a third academic paper (Braathen *et al.*, 2012), which looks at the empowerment of telecentre managers. My contribution to this paper was limited to the description of the CLIQ methodology.

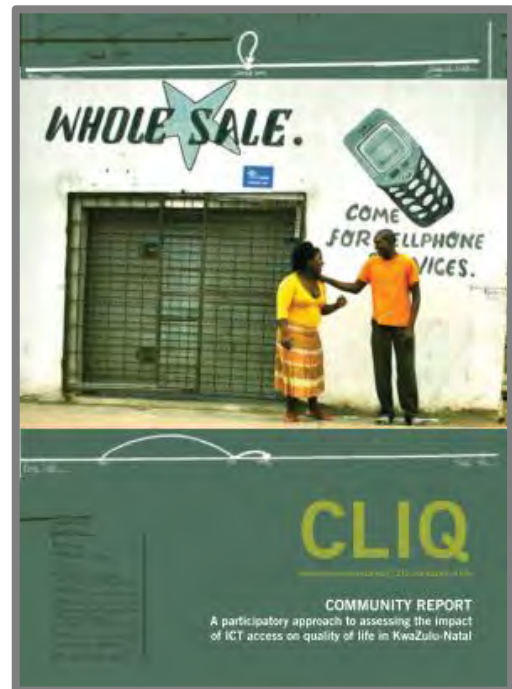
The community report on findings (CLIQ Participants *et al.*, 2011, see Plate 1-2), produced primarily for CLIQ participants and participating local stakeholders, provides an overview of the research process, findings and recommendations.<sup>8</sup> The report presents participants' reasons for their changed QoL (not covered in the impact and functionality papers noted above). The report also documents that regardless of QoL change, the most common CLIQ impacts were:

- a] feelings of empowerment;
- b] more friends and social networking;
- c] the acquisition of computer skills; and
- d] increased information and knowledge.

The community report set out to share the findings with participants in an accessible way, so that participants could make use of the findings (particularly by learning from how other participants had improved their lives). Sharing the CLIQ results through a community report was also considered as a form of accountability to participants and their communities regarding how their information was analysed and used. Furthermore, we hoped it would serve as a physical reminder of participants' efforts, learning and insights, as well as a source of individual motivation and pride for participants.

I am the principal co-author of both of the above-mentioned conference papers (and published revisions) as well as the community report.<sup>9</sup> The process of writing these

**Plate 1-2: CLIQ Community Report cover**



Source: CLIQ-Participants *et al.* (2011); Cover by Jessica Nicholson

<sup>8</sup> The CLIQ Community Report is available at [http://sds.ukzn.ac.za/files/CLIQ\\_Community\\_Report\\_2011.pdf](http://sds.ukzn.ac.za/files/CLIQ_Community_Report_2011.pdf)

<sup>9</sup> For successive versions of these papers, my co-authors contributed by reading and writing with respect to the introduction, literature review and conclusions concerning the South African and global context of ICT4D practice, theory and policy. To the best of my knowledge, all description and analysis of findings in these papers is my own, although my co-authors did assist with editing the methodology and findings sections. Where appropriate I have selected and edited sections of these papers for inclusion in this thesis.

documents was crucial to the development of a focus for this thesis, as it helped to identify options for further analysis of results.

## 1.2 Finding Focus: Reflecting on Analysis and Analysing Reflections

After fieldwork ended in mid 2010, the experience of implementing CLIQ including personal interactions with CLIQ participants, research team members and telecentre staff resided in my mind as a conglomeration of questions, lessons and ideas, as well as excitement, disappointment, frustration and hope about a range of things. After reflection, these were distilled as:

- a] my role as an outsider, in participatory action and research processes with people whose lives were very different from my own;
- b] the reality of conducting non-conventional externally-funded research as a contract staff member based at an academic institution and situated between a group of temporary fieldworkers and two tenured principal investigators; and
- c] the state of my nation (SA) with regard to the ability of government to deliver a 'better life for all' and in relation to my perception of my own life and well-being, alongside that of the fieldworkers, UKZN academic and administrative staff, CLIQ participants and other stakeholders from the research areas.<sup>10</sup>

With a concern for the ethics of my own research activities, I reflected on the CLIQ process and the contribution of different methods to data validity and to the empowerment (or otherwise) of participants, as part of my initial work on this thesis. This resulted in a paper on the empowering impact of a *par* methodology on participants of an intervention focussed on ICTs and QoL, with dual aims of research and action (see Attwood, 2013).

From living through the implementation of CLIQ, it was clear that we offered participants more than computer lessons and free hours of computers use. In drafting and editing the three academic papers (on functionality, impact and methodology), I analysed my experience of implementing CLIQ alongside the outcomes, to understand the emergence

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<sup>10</sup> "A better life for all" was the cornerstone phrase of the African National Congress's (ANC) 1994 election campaign (ANC, 1994).

of empowerment as a common CLIQ impact. This necessitated some introspection, which involved revisiting some of my beliefs and research assumptions, evaluating decisions made and identifying lessons. From the perspective of a critical reflective researcher, I had to assess which of my personal thoughts, feelings and actions (as) were reasonable to include, and which should be reserved for my personal learning. This raised questions of paradigm related to recognition of different ways of knowing, validation of information and the respective role of different stakeholders in an action research process (Gaventa and Cornwall, 2008).

After presenting the functionality paper (Attwood *et al.*, 2010) and the impact paper (Attwood *et al.*, 2011) at international conferences, I read Kleine's Choice Framework (2010b) which was a source of both surprise and relief. My surprise was at how well this theory supported what CLIQ had found and furthermore, how I could apply it to other situations, events and experiences which were unrelated to participatory research or ICTs. My relief was threefold: a) I could confidently use Kleine's theory (2010b) without having to alter or disregard any findings; b) the Choice Framework (CF) influenced my analysis after my initial detailed analysis of participants' stories; and c) Kleine's CF was developed in part through participatory fieldwork and was largely consistent with my practical approach to and experience of participation and development. Further in-depth engagement with the stories of the 113 participants and another visit to each study area to present and discuss the community report, raised questions about the role of human nature, personality and the impact of generations of racism and sexism on the nature of interaction between myself and participants - in particular how our interactions had changed between mid 2008 and mid 2011.

I had initially read the literature on what seemed to be the appropriate topics: QoL, ICT4D and empowerment. I also reviewed literature on participatory methodologies to substantiate CLIQ's use of *par* in general, as well as specific methods. Mulling over participants' expression of empowerment during the final fieldwork interview; my engagement with participants in mid 2011; and my own thoughts with respect to theory on participation, human agency, structure and empowerment; led me to broaden my review of literature to include some readings on psychology, mental health and human rights. With literature on participation and ICT use both as empowering tools for social justice, I was

struck by the emergence of common elements across the literature on QoL, ICT4D and Participatory Methodologies (PMs) with respect to agency and empowerment, and in particular the role of information, communication and participation in empowerment and development.<sup>11</sup> With the danger of an ever-expanding spectrum for analysis, I had to set aside my interest in pursuing information, communication and participation as the conceptual link between QoL, ICT4D, PMs and the agency-structure-empowerment trio.

After these experiences and with greater insight into relevant theory and previous research on ICT4D, my research question was refined to be as follows: *When researching the impact of ICT use on QoL, can people be empowered through their engagement with an opportunity for ICT training, access and use, as facilitated through a people-centred participatory approach?*

### 1.3 Considering Literature of Relevance

I engaged in an iterative process between consulting literature; revisiting fieldwork data; and writing up my further findings and analysis, through which I identified still more topics of relevance. Kleine and others (Gigler, 2004; Hamel, 2010) recognise that Sen's capabilities approach (CA) is most relevant to an analysis of ICT impact, "[g]iven the enormous potential of ICTs to give individuals choices" (Kleine, 2010b:687). Choice is a central concept within Sen's (1999) perspective on development, which underlies the recognition of development as a diverse and complex process (Hamel, 2010). The CF aims to comprehensively model the process of development: "[b]ehind each of the terms included in the framework lies a wealth of theoretical literatures which may need to be synthesised for different research purposes and key issues brought to the attention of researchers in the development field" (Kleine, 2010b:688). The variety of outcomes found through analysing participants' different experiences of impact and the inter-related web of issues affecting the provision of a functional telecentre, meant that almost the entire spectrum of literature that Kleine's CF refers to, was relevant to a holistic analysis of CLIQ process and outcomes. Fascinated with possible reasons for the range and diversity of participants' CLIQ

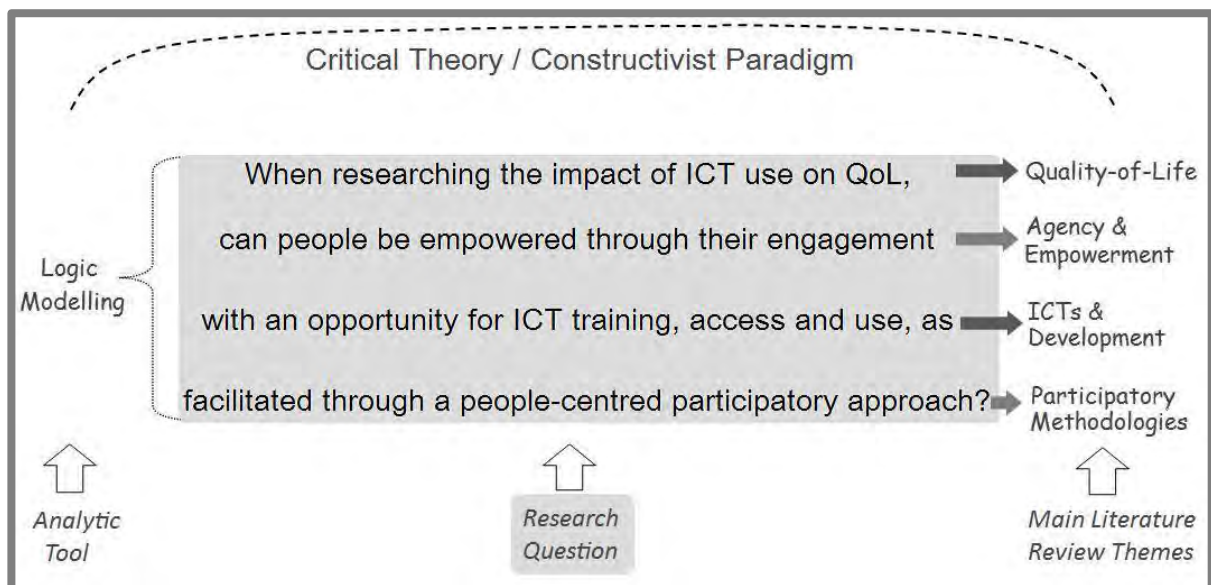
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<sup>11</sup> This refers to participation as 'relocated within the radical politics of development' (Hickey and Mohan, 2005).

experiences and outcomes, I decided not to focus on a particular sub-set of findings (that related to only part of Kleine's model) but rather to attempt an analysis of all participants' project engagement and outcomes, as well as my own and that of other selected stakeholders who were integral to the process.

As a research project, CLIQ falls within the interdisciplinary field of ICT4D and CLIQs research question necessitates a review of QoL and ICT4D literature. Because my analysis considers research methodology, intervention outcomes and empowerment; the other three topics of focus within my literature review are participatory methodologies, causality within logic modelling, and empowerment (including agency). The literature review is therefore, long. Figure 1-3 links the themes of the literature review to the research question.

**Figure 1-3: Linking the literature review to the research question**



## 1.4 Following the Flow of this Document

My experience of implementing CLIQ and the process of engaging with the results to produce academic project-outputs, form the basis of this thesis. Against the background of the differing concepts and meanings attached to particular feel-good terms (like participation and empowerment) in the field of development studies, the introduction thus far provided a broad overview of the CLIQ *par* project and has outlined my work and writing as CLIQ's project manager and researcher.

This first chapter continues with an outline of the structure of the thesis, providing practical information to assist the reader. Chapters 2, 3 and 4 present the literature review. Chapter 2 (QUALITY-OF-LIFE, AGENCY AND EMPOWERMENT) outlines the complexity and diversity of QoL and subjective well-being (SWB). Individual perspectives on QoL are reflected by an individual's goals. With goals as an important element of agency, chapter 2 also reviews agency and empowerment with respect to human development and a better QoL. Vast disparities in QoL reflect gross social injustice, and while ICT4D is broadly aimed at pro-poor development and addressing social injustice, the pattern of social injustice is reflected in the socio-demographic profile of ICT users. Chapter 3 (ICTS AND DEVELOPMENT) considers the nature and extent of ICT access and use; the provision of ICTs through the common mechanism of PAC venues (or telecentres); and consolidates current ICT4D theory. Evidence of the nature of ICT impact on QoL (where material and financial well-being is only a part of what is considered a good life) is limited (Sey, 2008). Therefore, chapter 3 also discusses causality and logic modelling, which is central to analysis that links ICT provision, access and use to individual outcomes, in order to tease out ICT impact.

It is argued that research on QoL and ICT4D benefits from a participatory approach. Chapter 4 (PARTICIPATORY METHODOLOGIES) presents some of the challenges facing the use of participatory methodologies (PMs) and details the core principles of PMs from my perspective.<sup>12</sup> Some of the principles underlying PMs are also found in the concepts of QoL, ICT4D, agency and empowerment. The final section of chapter 4 draws these four themes together, presenting two internationally recognised examples of participatory approaches to development practice which both involved participation and ICT use. The chapter concludes with a summary of participatory methodologies, as well as an overview of the synergies and complementarities between the QoL, agency, empowerment, ICT4D and PMs as presented in chapters 2, 3 and 4.

The nature of participatory research requires researchers to critically reflect on their actions drawing on practical knowing in order to identify and analyse the impact that they, and the research process, had on results (Guba and Lincoln, 2005:196). This made it

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<sup>12</sup> This is necessary given that CLIQ was implemented based on my approach to *par* and that there are differing interpretations of what can be regarded as participatory.

necessary for the implementation of CLIQ to be presented in some detail. Chapter 5 (IMPLEMENTING CLIQ) gives an overview of the four research areas and participating telecentres and proceeds to present the research design and resultant processes, and gives an overview of research methods. Chapter 5 concludes with a brief demographic description of CLIQ participants. Chapter 6 (ANALYSIS AND REFLECTION ON IMPLEMENTATION) presents my reflections and analysis of the process of implementation, as well as justification for choice of methodology. Based on these reflections and records of individual participation, chapter 6 concludes with a comparative area-based ranking of participation and implementation. This ranking is used to quantitatively analyse QoL outcomes and the impact of CLIQ on participants as set out in chapter 7 (THE IMPACT OF CLIQ). Chapter 7 moves on with an in-depth discussion of selected reasons for QoL change and project impact. Chapter 8 (GATES TO ENGAGEMENT) provides an analysis of the issues affecting CLIQ's delivery of computer training and levels of computer use by participants, as well as issues affecting project participation more generally.

Together, an analysis of project implementation, participants' experiences and outcomes, and factors influencing participation and implementation form the basis of a holistic analysis of CLIQ. Chapter 9 (EMPOWERMENT, CAUSALITY AND LOGIC MODELLING) links findings on research process and outcomes (presented in chapters 5, 6, 7 and 8) through the application of Kleine's CF (2010b). This penultimate chapter also suggests ways in which this framework could be enhanced. The final chapter (REFLECTIONS AND CONCLUSION) provides a summary of the findings of CLIQ and draws out key themes from within the analysis.

## 1.5 Practical Information for the Reader

In this subsection I highlight a few issues regarding terminology and presentation, in order to assist the reader.

a] Tables in the preliminary section of this document expand on various abbreviations used in the report and some specific terms are also defined. Other terms requiring explanation are dealt with as they arise, but it is necessary to clarify the way I make reference to CLIQ upfront. I use the terms 'we', 'CLIQ', 'the project', 'the fieldworkers' and 'I' interchangeably, to refer to something that I considered, planned or implemented as part of the CLIQ process; usually with advice, assistance or activity from CLIQ team members.

This acknowledges that many people that were involved in designing and implementing CLIQ and the consultative nature of project decision-making and activity. I err on the side of inclusiveness rather than claim sole agency, in recognition that people's ideas, decisions and actions evolve and are informed (sometimes unconsciously) by ongoing processes and interactions with those around them.

- b) I regard the use of terms describing nations, societies or groups as 'developing' as opposed to 'developed' as misleading and illogical.<sup>13</sup> However, I have used these terms when they have been used in the literature I draw on.
- c) My thesis contains many figures and other types of illustrations, which are visual portrayals of a concept. I believe that visuals convey more than that which is possible through words alone. Some people engage with concepts more easily through diagrams, while others prefer the written word, and therefore, in some cases the diagram may repeat part of the message contained in the text, and vice versa. Nevertheless, the diagrams in this thesis do carry an important part of the story of my thesis and not all aspects portrayed through visuals, have been explained in the text.
- d) Detailed findings on functionality (see Attwood *et al.*, 2010) which have been summarised in this thesis, discuss issues of telecentre management and the competence of telecentre facilitators. Therefore, the names of the research areas and the organisations directly concerned with running the telecentre have been changed in order to protect the identity of telecentre staff, as well as the participants and other local stakeholders.

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<sup>13</sup> This is because it infers an end-point – a state of being 'developed'. In order to assert whether a group is developed, developing, under-developed or undeveloped, requires a clearly defined and measurable target that is appropriate for all groups being measured. In this context, appropriate means that the target is one that all groups strive towards, therefore implying that all groups have contributed to (or otherwise understood and accepted) the definition of the target - inclusive of relative levels of achievement, as well as the process of measurement and analysis. Without a commonly accepted and appropriate goal or target, relative achievement cannot be gauged or if measured, would be meaningless given that countries or people are working towards different ends. To describe a nation or community as developed or developing is only meaningful in relation to specific aspect(s) of development or in comparison with similar measures from years past. Just as people continue to learn and their QoL continues to change until they die; nations, societies and groups continue to develop and change over time. Furthermore, as a nation nears a target, usually the next set of targets or dimension requiring progress has already been established. Development is a continuous process with shifting targets. Even those who use these terms, include disclaimers, for instance: "There is no established convention for the designation of "developed" and "developing" countries or areas in the United Nations system." (United Nations, 2013: last para.).

e] References to individual participants occur from Chapter 5, onwards. To protect the identity of participants, they are referred to through alias names. The first letter of an alias indicates the area the participant is from, and the alpha-numeric code after the name refers to their sex (F = female and M = male) and their age at the initial-QLA in mid 2008 (see Table 1-1). So for example, MandlaM34 would be a 34-year-old male from eMpumalanga. This conveys demographic information about the participant and their context, which contributes to a fuller understanding of the significance of examples used.

**Table 1-1: Area identification via alias names**

Pseudonym for Name of Area	First Letter of Participants' Alias
eNingizimu	S or Z
eNyakatho	B or D or A
eMpumalanga	M or N
eNtshonalanga	C or K or J

- f] Data from 113 participants are analysed quantitatively and qualitatively. The sample sizes for quantitative analysis are very small, with between 20 and 37 participants per area. With such small sub-samples, presentation of data in percentage form is not usually advisable. Nevertheless, this report uses percentages primarily to facilitate comparison between sub-samples of different sizes.
- g] Participants produced over 1100 diagrams either through group work or during the course of individual interviews. Some diagrams were done on A3 paper by participants, while others were done on the ground, on walls or on paper which was up to 6 metres long. Fieldworkers had to create a copy of the diagram immediately after the discussion, adding only logistical information. Diagrams from fieldwork presented in this thesis are copies of those produced by participants, except for original diagrams done on A3 paper which we were able to remove and scan before returning to participants. Information that could identify the individual(s) who produced the diagram or the area, have been changed to protect their identity.
- h] The methods, process and approach adopted makes audio recording of conversations impractical and inappropriate. Therefore, where quotes from participants are included, these are translations (from isiZulu into English) of what the participant said and meant through their choice of words, as understood by the fieldworker. Virtually all participant quotes are from individual interviews done as part of final fieldwork activity in 2010, and

are therefore not dated. Where quotes have been drawn from fieldwork in 2009 or 2008, the year is indicated.

i] Internal referencing is used to assist the reader to locate specific subsections, examples, terms or illustrations that are relevant to the current discussion, but have been presented elsewhere in the thesis. Internal references follow these guidelines:

- Reference to an aspect of a participant's story presented elsewhere in the thesis, is indicated by their alias name and code, followed by the page number on which it is presented, for example, ManeseF20 {p145} or {e.g. ManeseF20, p145}.
- Reference to the title of a (sub)section in the thesis where the (sub)section number alone does not suffice, is indicated by small capital letters followed (or preceded) by the (sub)section number, for example, INNER EMPOWERMENT (subsection 7.3.6).
- Direct reference to a term used in a figure appears in italics, followed by the figure number. The figure number is referred to only once per paragraph, when there are multiple references to terms from the same figure.

The latter three styles of internal referencing are used frequently in chapter 9, which draws together discussion on methodology (chapters 5 and 6); impact (chapter 7) and gates to engagement (chapter 8).

j] CLIQ obtained permission from participants for the use of their photographs in written work concerning the project. Participants generally felt proud to see their photograph in the CLIQ Community Report (CLIQ-Participants *et al.*, 2011).

# CHAPTER TWO:

## QUALITY-OF-LIFE, AGENCY & EMPOWERMENT

Agency and empowerment are frequently discussed together in the literature (see Alkire, 2008; Samman and Santos, 2009; Wray, 2004) and are linked to human development and well-being for example, through Sen's capabilities approach (1999). This chapter begins with a discussion of human development, QoL and well-being, moving on agency and empowerment in the second subsection.

### 2.1 Human Development, Well-being and Quality-of-life

Enhancing Quality of Life (QOL) has long been a major explicit or implicit life-style and policy goal for individuals, communities, nations, and the world. (Costanza *et al.*, 2008:18).

In the run-up to South Africa's first democratic elections held in 1994, a successful election campaign was run by the ANC under the theme of "...a better life for all" (ANC, 1994). Development is largely regarded as aiming to reduce, eradicate or alleviate poverty or alternatively to empower the marginalised. "The concept of human development is grounded in social justice" (Buskens, 2009:1) and descriptions of poverty often highlight social injustice in the form of inequality – whether referring to income inequality or inequalities regarding opportunity, basic services, political participation, and so on. Well-being and QoL in essence, refer to a similar concept, as suggested by the International Society for Quality-of-Life Studies [ISQOLS] (n.d.): "The focus of any QOL study is on the welfare or well-being of a social system or a major component of it". At an individual level, when Sen (1999) refers to 'what people value and have reason to value', it is in regard to the goals that individuals set and pursue. These self-defined goals are a critical part of his capabilities approach (CA) as detailed in his acclaimed book (Sen, 1999) which proposes *Development as Freedom*.

Differentiating between human needs, well-being, QoL, poverty reduction, and development is potentially a thesis in itself and arguably not useful in the fight for social

justice. In her article on Dimensions of Human Development, Alkire (2002:181) interrogates “... major ‘lists’ of dimensions that have been published in poverty studies, cross-cultural psychology, moral philosophy, quality of life indicators, participatory development, and basic needs” with reference to Amartya Sen’s CA (Alkire, 2002:181). Supported by Alkire’s (2002) analysis across these differently-named lists, in this thesis I regard development, poverty reduction, increased QoL, improved well-being and a better life as broadly similar, namely the improvement of people's living conditions with respect to all aspects of life (social, economic, cultural, psychological, material, political, etc.) that targets greater equity and eliminates gross inequalities.<sup>14</sup> Therefore I proceed on the basis that these terms refer to more or less the same goal, being pro-poor development based on human rights as outlined in the Universal Declaration of Human Rights (United Nations [UN], 1948), where freedom, inclusion, choice and recognition of difference are important guiding concepts for the process and outcome of development initiatives.

### 2.1.1 Defining and Modelling QoL

Quality-of-life (QOL) studies are defined as research across social, psychological, health, philosophical, art, environmental, managerial and policy-sciences that focus on the enhancement of QOL of a social system... Central to most QOL studies are QOL indicators. QOL indicators may be global or related to specific life domains, they may be concerned with objective aspects of reality, with their subjective perception, and/or with the relationship between both objective and subjective aspects of welfare. (ISQOLS, n.d.)

Quality-of-life is a complex concept without a commonly accepted way of measuring it (Costanza *et al.*, 2008; Diener and Suh, 1997; White and Pettit, 2004). Martha Nussbaum and Amartya Sen are frequently quoted with reference to concepts of QoL, poverty, and development. While there is much congruence between their approaches, one clear area of divergence is that Nussbaum has presented and defended a list of ten factors which constitute QoL, while “...Sen has refused to do so, claiming that specific lists of capabilities ought to be drawn up for a given research or policy context (Sen, 1993) and, crucially, that the process of choosing capabilities should be left to the individuals (Sen, 1997)” (Kleine,

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<sup>14</sup> Alkire (2002:182) does note some differences between these terms or concepts (for example that well-being is narrower than human development), but continues to discuss well-being and human development interchangeably. Based on her example and the range of topics covered in this literature review; the treatment of well-being, QoL, human development, etc. as generally similar is adequate for the purposes of this thesis.

2010b:676). Sen does not define development as an increase in objective measures such as income, education or health, but rather as an increase in choice or "... as an expansion of capability" (Alkire, 2002:184).

Whether at a local, national or international level, the need to integrate or combine lists from different people or across groups or areas seems natural or logical. After presenting a number of lists of dimensions of human development, Alkire (2002:193) cautions against universal lists for a number of reasons. Her fourth reason is the most compelling: "Finally, lists are useful not if they are universally acclaimed but if they are effectively used to confront the many challenges of this generation" (Alkire, 2002:194).<sup>15</sup> This reason reflects the tension between the academic pursuit of an accurate definition of QoL (and associated method of measurement) and action-oriented participatory research which facilitates local analysis and subsequent use of local definitions of QoL. The fight against poverty takes place in many spheres and on many levels. To support people trying to improve their QoL, an enabling national policy framework is required, indicating relevance for both locally specific and universal QoL indicators.

Jany-Catrice and Marlier (2013:20) also consider an aspect of the generation of universal lists of QoL indicators, questioning "... the institutional and/or socio-political conditions under which these composite indicators emerge and are socially validated". Referring to the dominant GDP-based judgements of what wealth is, they note that "[t]hese indicators of wealth and well-being, which have developed over time, constitute socio-political agreements (or 'conventions') founded on three pillars", referring to cognitive, power, and technical issues (ibid:21). These refer respectively to the influence of current knowledge; the political priorities of the powerful; and 'technical' choices made during the data gathering process. It is from this perspective that they consider new initiatives and indicators for measuring well-being (noted below) – and the political conditions required for alternative measures to supplement or replace GDP (ibid:24).

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<sup>15</sup> Alkire's (2002) first three reasons are that: firstly, input data is potentially biased by western analysis; secondly, it would require a huge amount of work through empirical testing and participatory debates; and thirdly, input lists can vary according to the subject of the project in which they are used.

Alkire (2002:182) refers to human development as "...human flourishing in its fullest sense - in matters public and private, economic and social and political and spiritual". Many authors acknowledge that 'indicators of QoL', 'basic human needs', 'dimensions of development' or 'aspects of well-being' are more than economic and that "...income per capita is a necessary but insufficient proxy of well-being" (Alkire, 2002:183). Alkire does not attempt to produce a universal list of human development indicators, because she found that "...the description and consideration of even as few as seven different lists raises more issues than can be adequately addressed..." (2002:193). Rather she identifies the characteristics that dimensions of human development or indicators of QoL need to have in order to give "...a clear account of how a set of dimensions might be a nonpaternalistic and useful tool in addressing a number of knotty development problems..." (ibid:194).

I did not attempt produce a synthesis of well-known lists of universal indicators. Rather, for the purposes of this thesis, I searched the lists for communication or social interaction, information or knowledge, and participation or inclusion (based on Vengerfeldt's three reasons for ICT use, discussed in chapter 3). Given the importance of choice and psychological resources (as will emerge later on) I also noted whether these appeared on the seven lists that Alkire includes in her article. Five of seven lists that Alkire reproduces, contained at least three of the following five dimensions of human development or indicators of well-being: a) knowledge and understanding; b) participation and affiliation; c) emotion, affection and relationships; d) self-esteem and identity; and e) freedom.<sup>16</sup>

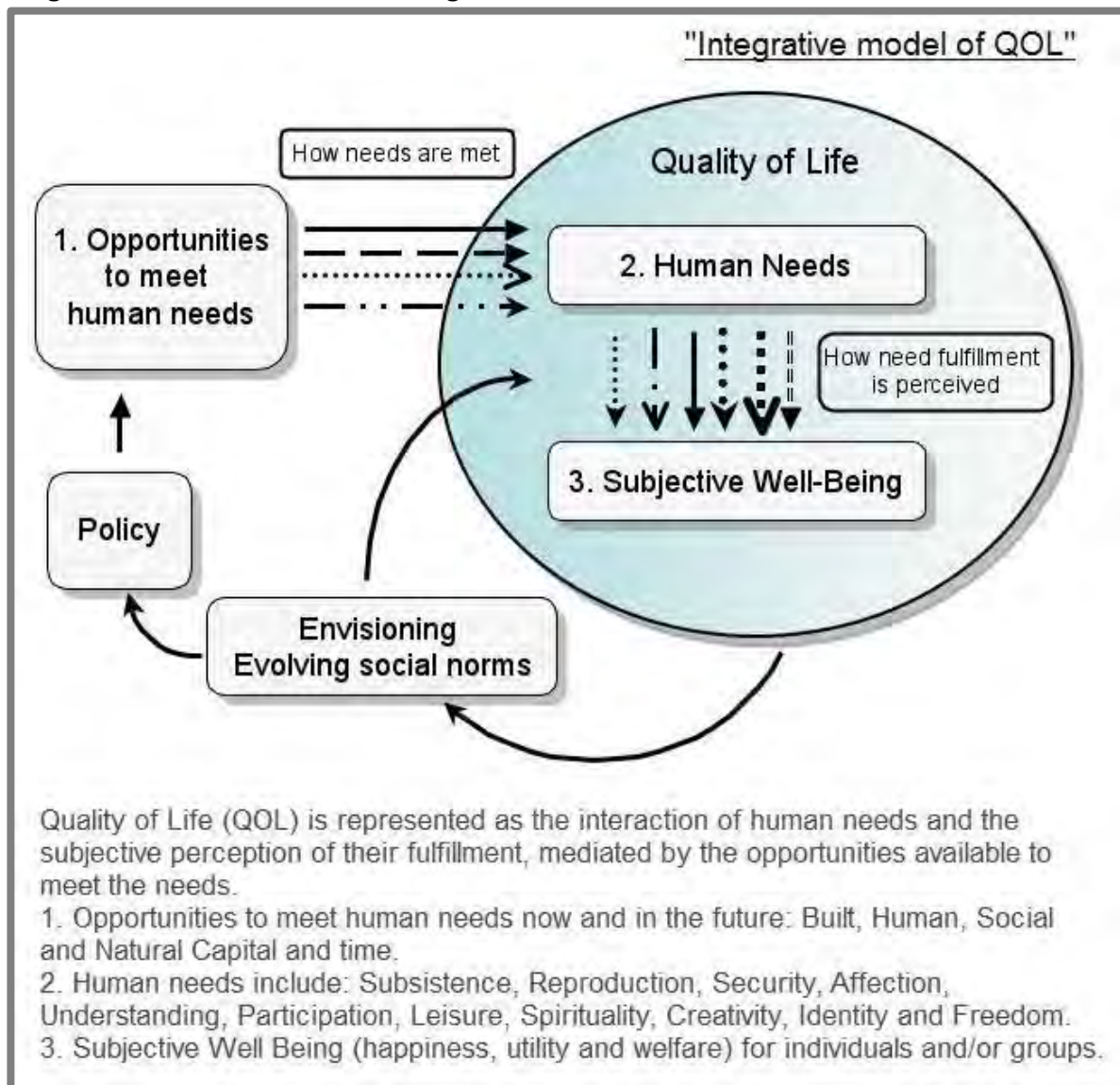
Kleine (2010a) and Costanza and colleagues (2008) suggest that economic measures of well-being could be regarded more accurately as a means an end i.e. better QoL, rather than an end in itself. Well-being incorporates more than that which is quantitatively measurable, as illustrated by the inclusion of elements such as identity, freedom, happiness, security, self-realisation and understanding in the lists of several respected authors on human development (Alkire, 2002). Based on discussions between researchers from varying

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<sup>16</sup> These five dimensions of well-being (which I have named) are represented in the lists as presented by Alkire (2002) of Finnis (Alkire, 2002:186), Ramsay (ibid:192), Nussbaum (ibid:188), Narayan *et al.* (ibid:190), Max-Neef (ibid:189), but not the lists of Doyal and Gough (ibid:192) or Schwartz (ibid:191).

disciplines, Costanza and 20 colleagues (2008:18) present a consensus statement on QoL research and a new logic model for understanding QoL (Figure 2-1).

**Figure 2-1: Costanza and colleagues' model of QoL**



Source: Costanza *et al.* (2008:18)

### 2.1.2 Indicators and Measurement of Quality-of-Life

Critical to the debate on adequate measurement of QoL, are questions concerning who defines and measures QoL and how they do it. Two basic approaches to measuring QoL emerged in the latter half of the twentieth century. Objective measurements are based on social indicators, such as literacy levels, infant mortality rates and crime statistics, while subjective measurements are based on people's own perceptions of their well-being, happiness, satisfaction and so on (Costanza *et al.*, 2008:18; Diener and Suh, 1997:191).

There are advantages and disadvantages to both approaches. On the positive side, social indicators “...are based on objective, quantitative statistics rather than on individuals' subjective perceptions of their social environment” (Diener and Suh, 1997:192) and these are usually easy to define and measure or “...technically convenient...” (ibid:193). However “...many objective indicators merely assess the opportunities that individuals have to improve QOL rather than assessing QOL itself” (Costanza *et al.*, 2008:18). The relationship between basic human needs and perceived well-being is complex and can be affected by a range of factors. Individuals and groups place different levels of importance on their different needs. The way they go about satisfying their needs depends on internal and external factors such as “...mental capacity, ...information, education, temperament, [etc.]...in quite complex ways” (Costanza *et al.*, 2008:18). Diener and Suh (1997:192) also note that “...wealth accounts for so much variance...” that social indicators are possibly of little additional value as QoL indicators. Costanza and colleagues (2008) provide an excellent expression of the shortcomings of objective measures:

While these measurements may provide a snapshot of how well some physical and social needs are met, they are narrow, opportunity-biased, and cannot incorporate many issues that contribute to QOL such as identity, participation, and psychological security. It is also clear that these so-called “objective” measures are actually proxies for experience identified through “subjective” associations of decision-makers; hence the distinction between objective and subjective indicators is somewhat illusory. (ibid:18)

This quote also implies a preference among those using objective indicators, for the subjectivity of decision-makers, rather than the subjectivity of those whose QoL is of concern.

Subjective well-being (SWB) measures based on internal judgements reflect experiences that are important to the individual and recognise individual values and goals. Importantly, they can “...directly measure the individual's cognitive and affective reactions to her or his whole life...” (Diener and Suh, 1997:200); that is, how they understand their experience of the world given their specific context, history and mind-set. SWB measures address some of the problems with objective measures, but despite acknowledging their validity, Diener and Suh concede that SWB measures have problems of their own. SWB is affected by temperament and personal relationships, and in addition, situational factors (such as social norms) may influence individuals' to reflect less accurately on their QoL,

concluding that “...SWB should be measured by multiple methods ...that do not share common methodological shortcomings” (Diener and Suh, 1997:205-206).

Moving away from seeing the two approaches as mutually exclusive alternatives, a combination of objective and subjective measures has been called for. As a multidimensional concept, QoL “... contains interacting objective and subjective elements” (Costanza *et al.*, 2008:17) that requires “... multiple approaches from different theoretical angles” (Diener and Suh, 1997:214). Furthermore, the process that gave rise to different elements or indicators of well-being also needs to be considered. White and Pettit (2004:5) refer to “...a third, social or process dimension, which shows how subjective perceptions and objective welfare outcomes are constituted through social interaction and cultural meanings...”.<sup>17</sup>

In their discussion of the selection and measurement of indicators of well-being, Jany-Catrice and Marlier (2013:19) refer to increased concern over environmental issues and the increased heterogeneity of populations as two key challenges to the economic (objective) approach to indicators of well-being. Moving away from the objective-subjective line of distinction, they present three new types of indicators. Jany-Catrice and Marlier (2013:25) favour their third type, named the “world of deliberative democracy” where “...collective decisions and social choices...” are made in hybrid forums (*ibid*:26). They describe hybrid forums as “...open spaces for debate and discussion in which experts rub shoulders with civil society and great care is taken with the deliberative processes” (*ibid*:26).<sup>18</sup> Deliberative democracy shares elements with White and Pettit’s (2004:5) third approach which recognises that the nature of the process influences emerging definitions and indicators of well-being – a process they regard as readily facilitated through a participatory approach.

QoL, poverty, wealth and well-being, have been widely researched through the use of participatory methodologies (PMs), with the development of specific methods like wealth and well-being ranking (see RRA Notes, 1992) and successful experimentation with hybrid

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<sup>17</sup> Their first dimension is material, human and social resources and their second is social or cultural action (White and Pettit, 2004:5).

<sup>18</sup> The first two are the “world of the expert” based on “armchair work and deliberation among experts” and the “world of the individual” based on “surveying and aggregation of individual preferences” (Jany-Catrice and Marlier, 2013:25).

methods that bridge the objective/quantitative and subjective/qualitative divide (see Simanowitz, 1999). PMs are able to generate both local and multi-site indicators of QoL, however, some trade-offs are required in the process. The use of participatory research focussing on well-being is supported by White and Pettit's (2004:7) stating that "[p]articipatory methods have thus contributed to the much wider recognition of contextual, subjective and non-material dimensions of human experience, and the complex dynamics and causalities behind poverty and well-being". Brock and McGee (2002) present a collection of critical reflections on participatory research undertaken to inform policy for poverty reduction. The various projects reflected on had a shared interest in "...the co-production with poor people of information about poverty which reflects their perspectives" (Brock, 2002:1), like White and Pettit's (2004) process approach or Jany-Catrice and Marlier's (2013) deliberative democracy.

A discussion of PMs is presented in chapter 4. This chapter moves on to discuss individual agency and empowerment, which are recognised as essential to the process of pursuing a better life.

## 2.2 Agency and Empowerment

Our placement in society rebounds upon us, affecting the person we become, but also and more forcefully influencing the social identities which we can achieve. (Archer, 2004:10)

Agency is frequently discussed together with empowerment in recent literature (see Alkire, 2008; Aslop and Heinsohn, 2005; Kleine, 2011; Luttrell and Quiroz, 2009; Samman and Santos, 2009), much of which is influenced substantially by the work of Amartya Sen, who links agency and empowerment to QoL (Sen, 1999). Agency is also often discussed together with structure, which Archer (2004:1) refers to as "...the 'problem of structure and agency' ...widely acknowledged to lie at the heart of social theorising". With parts referring to structure and people referring to agency, Archer captures the essence of the two extreme positions taken: "... *either* the 'parts' *or* the 'people' are held to be the *ultimate constituents* of social reality, to which the other could be reduced" (Archer, 2004:5 – my emphasis). It seems that neither side won, as recent literature refers to elements of both when discussing aspects of society.

Archer sees agency and structure as separate, but recognises the impact that the structure of our environment has on us, and therefore on our agency: “Our selfhood is unique, but it can largely be constituted by the things that have happened to us” (Archer, 2004:9). Aslop and Heinsohn (2005:9) describe opportunity structure as “... the presence and operation of formal and informal institutions, or rules of the game. These include the laws, regulatory frameworks, and norms governing people’s behaviour”.<sup>19</sup> I return to the impact of the context we live in (i.e. our structured environment) on what we do and who we are, further on in this section when discussing empowerment with respect to agency. Chapters 3 and 4 also note the relevance of structure to ICT4D and participation, respectively; however this brief introduction to structure is sufficient in order to proceed with a focus on agency and empowerment.

Interpretations of agency and of empowerment differ widely. Cornwall (2007:472) notes empowerment as “...a term that has perhaps the most expansive semantic range of all those considered...” in her article on deconstructing development discourse. Interpretations differ for a range of reasons, including the disciplinary background of the user and their worldview; their agenda or intention behind the use of the term; and their personal life experiences regarding development including their own well-being. Except for the separate subsections immediately below on the nature of agency and the nature of empowerment, these two concepts are discussed together in this section.

### 2.2.1 *The Nature of Agency*

The newer paradigms are more accommodating of the concept of agency, as seen for example in Guba and Lincoln (2005:195-196) with the addition of values, reflexivity, voice and so on, in their comparison between various paradigms and indeed, in their addition of ‘Participatory’ as a fifth inquiry paradigm. An agent, according to Sen (1999:19) is “...someone who acts and brings about change, and whose achievements can be judged in

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<sup>19</sup> Opportunity structure (or ‘parts’ as opposed to ‘people’) is conceptualised through different categories and types of categories, by various authors. For example, Aslop and Heinsohn (2005:14) put forward three domains (state, market and social) each with sub-domains (for e.g. justice, labour, and family/domestic respectively) which operate at different levels (macro, intermediary and local). Others simply refer to a set of contextual factors, such as social, economic, political cultural and so on, meaning that structure is essentially the multiple contexts or environments in which we operate.

terms of her own values and objectives...” indicating the subjectivity of well-being. The concept of agent views an individual as active in their own development: “...seeing people as agents rather than as patients...” (ibid:137).

Agency operates at different levels and in different domains (or spheres) for the individual (Samman and Santos, 2009:6; Alkire, 2008:11). Given the complexity of human existence, thought and action, people are alternately or simultaneously economic, civil and social actors. They can exercise their agency in these domains at different levels, for example the household (micro), community (meso) or national (macro) level, illustrating the complexity of agency. Under the human agency approach, the assets, capitals or resources that a person has access to is inclusive of physical assets such as land and machinery, and intangible assets such as social networks, self-confidence and knowledge. Aslop and Heinsohn (2005:8) present a set of seven asset endowments, namely psychological, organisational, informational, material, social, financial and human resources, as indicators of agency in support of their proposed empowerment framework, while the QoL model (Figure 2-1 above) lists five capitals (built, human, social, natural and time) as opportunities to meet human needs. Kleine (2010b:676-677) draws on elements of Aslop and Heinsohn’s empowerment framework; the Sustainable Livelihoods Framework used by the UK Department for International Development (DFID); and Sen’s CA, expanding resources (assets or capitals) supporting agency to a set of ten (see Table 2-1).<sup>20</sup> Kleine sees these resources as centring on the individual, interacting with the person’s age, gender, and ethnicity – a concept which draws support from Sen:

If the object is to concentrate on the individual’s real opportunity to pursue her objectives..., then account would have to be taken not only of the primary goods the persons respectively hold, but also of the relevant personal characteristics that govern the *conversion* of primary goods into the person’s ability to promote her ends. (Sen, 1999:74)

**Table 2-1: Agency resources**

1	Cultural
2	Educational
3	Financial
4	Geographical
5	Health
6	Information
7	Material
8	Natural
9	Psychological
10	Social

Source: Kleine (2010b:681)

<sup>20</sup> This forms part of Kleine’s Choice Framework – an ICT4D model, which is presented in subsection 3.3.8 (Figure 3-7) and not here, in order to maintain a focus on the nature of agency.

This is consistent with the human agency approach which views “...the individual as an independent actor in society, distinct and distinguishable from other people and the social environment” and therefore agency research requires that “... characteristics of the individual actors themselves be specified” (Titma and Tuma, 2005:112). Kleine (2010b) and Titma and Tuma (2005:113) have different concepts of what constitutes personal characteristics. The latter regard an individual’s characteristics as education, abilities, goals and self-efficacy, while Kleine presents personal characteristics as gender, age and ethnicity, recognising that these characteristics may influence the individual’s resource set, in relation to “...socially constructed axes of exclusion...” (Kleine, 2010b: 680). Goals and self-efficacy fit under Kleine’s psychological resources, while abilities and education fits under Kleine’s education resources (inclusive of skills).

Self-worth, creativity, self-confidence, unpredictability, motivation and so on are types of psychological resources that influence agency (Wray, 2004:26), which are more complex (and more difficult to measure) than other aspects of resources like literacy within educational resources (Aslop and Heinsohn, 2005:8). Kleine (2010b) retains psychological resources in her set of ten. Psychological resources are particularly important to consider because the way a person experiences their reality is partly determined by their mental health and psychological resources. For example, analysis of UK government work on continuing adult education, found that low self-esteem was a barrier to people’s participation in programmes of learning, asserting that “[s]elf-esteem and confidence in individuals has an effect on inclusions and achievement” (James and Nightingale, 2005:3).

Bandura (1989:1175), who has written extensively on agency in the field of psychology, asserts the importance of self-efficacy: “Among the mechanisms of personal agency, none is more central or pervasive than people’s beliefs about their capabilities to exercise control over events that affect their lives”.

Perceived self-efficacy is defined as people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives. Self-efficacy beliefs determine how people feel, think, motivate themselves and behave. A strong sense of efficacy enhances human accomplishment and personal well-being in many ways. (Bandura, 1994:71)

Bandura and Locke (2003:97) present human agency as consisting of four key features, namely intentionality, forethought, self-reactiveness, and self-reflectiveness, providing a

more operational understanding of agency. Action is guided by a person's estimation of the effort and resources needed to fulfil their goals.

People ... motivate and guide themselves ... by setting themselves challenging goals and performance standards ... They then mobilize their effort and personal resources on the basis of their anticipatory estimation of what it would take to fulfil those standards. (Bandura and Locke, 2003:91)

Psychological resources are therefore critical to the conception and enactment of human agency.

### 2.2.2 *The Nature of Empowerment*

Empowerment is ... viewed as the expansion of the assets and capabilities of poor people to participate in, negotiate with, influence, control and hold accountable institutions that affect their lives. (Samon and Santos, 2009:11).

Understanding empowerment requires some analysis of power. Gaventa's (2006:25) power cube reflects the complexity and dynamic nature of the exercise of power.<sup>21</sup> While the power cube represents advances in the modelling of power which are insightful and of practical use, Rowlands' (1997) four forms of power provides a simpler analysis, sufficient for this discussion of empowerment and furthermore, is still also often referred to in more recent literature on empowerment and agency (see Luttrell and Quiroz, 2009; Samman and Santos, 2009), as well as on empowerment and participatory practice (see Gaventa and Cornwall, 2008). Rowlands' (1997:13) analysis of power distinguishes between power over, power to, power with, and power from within (see Table 2-2).

The roots of empowerment can be traced to the work of Paulo Freire regarding popular education and the feminist movement, where empowerment is associated with bottom-up and actor-oriented methods (Luttrell and Quiroz, 2009:2). Empowerment concerns all marginalised groups, whether based on gender, race, ethnicity, disability or other aspects - as well as combinations of difference (Luttrell and Quiroz, 2009; Samman and Santos, 2009). Empowerment has increasingly been recognised by the bigger players in the

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<sup>21</sup> Gaventa's power cube (2006: 25) has three dimensions, namely levels, spaces and forms, which are each a continuum, creating a complex structure for the analysis of power. For further reading see Luttrell and Quiroz (2009:11-13).

development industry, as critical for individual and group development (Luttrell and Quiroz, 2009).

“Agency is inescapably plural in concept and hence measurement” with over 30 different definitions of empowerment (Alkire, 2008:7). Empowerment is defined by Aslop and Heinsohn (2005:5) as “...enhancing an individual’s or group’s capacity to make choices and transform these choices into desired actions and outcomes”, while Luttrell and Quiroz (2009:16) offer “...a progression that helps people gain control over their own lives and increases the capacity of people to act on issues that they themselves define as important”. Three aspects of these definitions capture the essence of the concept: empowerment is a process, combining power and ability, directed at attaining self-defined goals.

Luttrell and Quiroz (2009) refer to four different dimensions of empowerment, namely economic; human and social; political; and cultural. They describe human and social empowerment as a “...multidimensional social process that helps people gain control over their lives” (Luttrell and Quiroz, 2009:1). Economic empowerment is described as having access to resources, skills and capabilities in order to secure an income. Political empowerment refers to the ability to organise and mobilise, while cultural empowerment refers to changing the rules and norms of culture (Luttrell and Quiroz, 2009:1). Alternatively, Rowlands (1997:110) presents three categories of empowerment, namely:

- a] contextual or material: being part of the environment in some way;
- b] structural: regarding nature of organisations and their activities; and
- c] inner: psychological or psycho-social processes.

Following this, an increase in psychological resources would be regarded as inner empowerment. In addition, she notes different contexts within which empowerment can

**Table 2-2: Different forms of power**

<b>Power over:</b>	controlling power which may be responded to with compliance resistance...or manipulation.
<b>Power to:</b>	generative or productive power (sometimes incorporating or manifesting as forms of resistance or manipulation) which creates new possibilities and actions without domination.
<b>Power with:</b>	‘a sense of the whole being greater than the sum of the individuals, especially when a group tackles problems together’
<b>Power from within:</b>	‘the spiritual strength and uniqueness that resides in each one of us and makes us truly human. Its basis is self-acceptance, and self respect ...’

Source: Selected text from Rowlands (1997:13)

take place namely at a personal level, within relationships, and within a group (Rowlands, 1997:110). Whichever categorisation is used, the complexity of the concept of empowerment indicates the need for some differentiation between different types or levels of empowerment.

Rowlands' model for individual empowerment (see Figure 2-2) is based on research with women from Honduras who participated in basic community health care training. Her model portrays factors as having a positive (*encouraging* in Figure 2-2) or negative (*inhibiting*) effect on a persons' ability to change. The expression of these factors conveys a sense of action and reflects the use of power. For example, as inhibiting factors, *lack of control over use of time* and *active opposition by partner* are the negative equivalent to encouraging factors of *travel* and *activity outside the home*. Rowlands' model shows that a set of changes unique to each individual results from their interaction with encouraging and inhibiting factors and presents the individual traits of *self-confidence*, *self esteem*, *sense of agency*, *sense of 'self' in a wider context*, and *dignity* as core values.

Increases in self-esteem and self-confidence change the nature of the interaction between individuals or groups and the environment; an increased sense of agency increases the possibility of acting in the world, of making changes.....It seems therefore that the core qualities are those necessary for the exercise of 'power-to' or 'power-with'. (Rowlands, 1997:126)

These core qualities reflect *power-from-within* (see Table 2-2) and an increase in these qualities represents inner empowerment. Rowlands' empowerment model shows core values resulting from *personal experience* and *history* (in Figure 2-2), which is consistent with Archer's (2004) view that who we is largely determined by what has happened to us (see p25). Like Rowlands, Mruk (2006:182) also recognises the influence of a person's history, especially their "...history of competence and of worthiness..." which links to Bandura's (1989) assertion of the importance of perceptions of self-efficacy to agency (see p27). Therefore, a person's history, disposition and characteristics can partly explain why differences in types, levels, or domains of empowerment occur within a group that is participating in the same activity or project.

Figure 2-2: Rowlands' model for personal empowerment



Source: Rowlands (1997:112)

Rowlands identified dynamism and circularity as two important aspects of her model. Empowerment processes involve a complex and dynamic inter-relation and interaction between multitudes of different elements, for example, self-confidence can lead to greater economic independence, which in turn, fosters increased self-confidence: "The two may relate to each other in a circular manner that it makes it difficult to differentiate between them" (Rowlands, 1997:110). Rowlands concluded that the psychological or inner aspects of empowerment were the most significant and therefore central to the processes of empowerment. Furthermore, Mruk (2006) argues that self-esteem is becoming increasingly important for individuals' QoL based on advances in understanding the nature and role of self-esteem with regard to behaviour, achievements and so on.

Returning to the structure-agency debate (from p25), Aslop and Heinsohn (2005) see empowerment as based on a combination of agency and structure leading to development outcomes, while for Ibrahim and Alkire, empowerment is an extension of agency, where opportunity structure "...provides what might be considered as preconditions for effective agency" (2007:9). For the latter, opportunity structures operate alongside empowerment, which together lead to development outcomes (Samman and Santos, 2009:5). Both these sets of authors refer directly to Sen's CA, revealing different interpretations of the meaning

of his writings. Kleine (2010b) followed Aslop and Heinsohn's (2005) approach, which seems the more realistic one, namely that empowerment cannot be concluded, before the impact of the environment is taken into account, as this could leave empowerment meaningless where an individual is not able to make use of increases in one or more resources, due to their structured context. For example, a large gift of cash to a young women will not empower her to buy the personal things she needs that are only available in a relatively distant town, if her parents do not allow her to travel there, for fear that she may inappropriately socialise with young men.

### *2.2.3 Power, Perspective and Human Rights*

Empowerment and agency are complex, multi-dimensional concepts which have been described as applicable at individual and group level; based on individual (or group) defined values and goals; context specific; of importance as process and outcome (a means and an end); operational in different domains and to different degrees; involving the concept of power; and difficult to measure (Alkire, 2008:6-9; Samman and Santos, 2009:6; Wray, 2004). This is similar to aspects of QoL as discussed in section 2.1.

Empowerment and agency are regarded both as means to an end (to achieve a specific development outcome) as well as ends (outcomes or achievements), as in the result of having gained power or increased ability to act (Samman and Santos, 2009:6; Aslop and Heinsohn, 2005:5). A focus on means tends to have a more limited, material and predictable result, while empowerment as an end or outcome results in changes in power relations. Similarly, for Sen (1999:10) freedom is regarded as the primary end of development, as well as a means to achieve development. The arguments for these are similar, namely that through empowerment or freedom, a person is better enabled to define, pursue and achieve the things that they want to achieve, and that achieving empowerment or freedom is of value in itself as it gives the individual (or group) knowledge of and confidence in their ability to act (Samman and Santos, 2009; Sen, 1999).

However, a critical issue when engaging in activities aimed at empowering others is whether there is a shared understanding or definition of empowerment. Further to the debate on the use of universal versus local measures of QoL, Wray (2004) illustrates how a universal understanding of agency and empowerment are effectively a western

understanding, using western assumptions, practices, and values. Working with older women in the UK from minority religious and historical backgrounds, Wray (2004) found that power and independence in older women were not necessarily linked (as they often were in western culture). Rather, older minority women experienced inter-dependence as rewarding and the source of a sense of power. Even the lack of inter-dependence was seen as disempowering by some older minority women in the UK (Wray, 2004:31-34).

This links to the fundamental issue for human rights when considering the implications of using local as opposed to more universal definitions of QoL, agency, empowerment, or development. Nussbaum and Sen (1993:5) point out that “...it is difficult to desire what one cannot imagine as a possibility”. Local definitions of empowerment which reflect local values and culture can be (and often are) discriminatory against certain groups – most commonly women - as opposed to definitions such as that contained in Universal Declaration of Human Rights (UN, 1948). Oppressed people may not even be able to conceive of, let alone desire, certain goals and therefore they do not strive to reach them. Thus seeking social justice for all through universally conceived definitions of agency and empowerment brings the risk of paternalism (Nussbaum and Sen, 1993:4) or what is regarded as the imposition of the knowledge, views and goals of those who are more powerful or more wealthy, on those who are relatively marginalised.<sup>22</sup>

The impasse here is that as the alternative to universal definitions of human development, local definitions reflect the local rights, cultural values and social norms which may be discriminatory (like racism and sexism). Where local social and cultural norms reflect the interests of the dominant group in society at the expense of other groups, this perpetuates social injustice from a universal perspective. It may also be regarded as social injustice by those who are locally disempowered, if they had knowledge of alternative perspectives or a view into what was regarded as human development and social norms in other societies.

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<sup>22</sup> Section 4.3 (p80) elaborates on the importance of local goals, definitions and knowledge within PMs.

## 2.3 Summary of QoL, Agency and Empowerment

QoL is a complex concept with disputed definitions, alternate sets of indicators and different approaches to measurement. Objective social indicators, in addition to long-established economic indicators, have for decades been pitted against subjective indicators of well-being, each accompanied by their own methods and methodology. Recent work has proposed a third socially negotiated alternative, which incorporates both objective and subjective indicators, drawing on people's perceptions of their well-being, as well as academic theories of QoL. In addition to material, economic, and basic human-needs indicators, sets of QoL or human development indicators also include dimensions relating to psycho-cognitive, emotional, spiritual and affective indicators; social, interactive, inclusion and environmental needs; and dimensions relating to knowledge and abilities, as well as identity and freedom.

With pro-poor development requiring action at different levels of society, there is need both for local definitions of well-being (e.g. for accurate locally-specific information and goals) and universal national or global definitions (e.g. for policy formulation or comparison). With the ultimate objective of well-being research and development effort being improved well-being for those who are poorer and more marginalised, participatory approaches to defining QoL are effective at informing appropriate local action to fight poverty.

Personal goals reflect individual definitions of QoL and promote individual agency by directing and motivating behaviour and action. A range of different resources support agency. To understand the complexity of agency as a phenomenon, it is useful to consider the different types of resources that support individual agency, such as financial, social, education and information resources. Empowerment is an increase in one or more resources after accounting for the positive and negative effects of structure. This means that empowerment is not only an increase in an actual resource (like acquiring more land) but includes the ability of a person to use that land in a way that promotes their well-being, either by using positive structures in their local context or by navigating around structures that hinder their agency.

Agency can be seen as the ability to conceive personal goals; recognise resources held and how resources can assist with attaining goals; implement plans; adjust to unfolding events; and reflect on outcomes in order to redefine or create new goals. This imagine-plan-act-reflect agency cycle is similar to Bandura and Locke's (2003) four core features of human agency, namely intention, forethought, reaction and reflection. Personal goals are part of psychological resources, along with perceptions of self-worth, efficacy, motivation, creativity, cognitive ability, emotional intelligence, and so on. Psychological resources are an outcome of the interaction between a person's genetic make-up and their life experiences as influenced by their context (Mruk, 2006). Increases in different types of agency resources can be regarded as contributing to different types of empowerment. For example increased financial resources relate to material empowerment, while increased psychological resources relate to inner empowerment (Rowlands, 1997).<sup>23</sup> Psychological resources and inner empowerment are most critical to agency, achievement and well-being (Bandura, 1994; Mruk, 2006).

Definitions of QoL reflect the local context but also differ between individuals within the same context or locale. This is reflected by the inclusion of structure in addition to agency in many models of empowerment, even though the models differ with regard to how elements of agency, structure and empowerment relate to each other (see for e.g. Ibrahim and Alkire, 2007 as opposed to Aslop and Heinsohn, 2005). QoL, agency and empowerment are each means to an end, and ends in themselves. Models of QoL (see for e.g. Costanza *et al.*, 2008) and empowerment (see for e.g. Rowlands, 1997) accommodate this and the complexity of life by incorporating circularity and flexibility.

The above discussion on QoL, agency and empowerment has made reference to social resources and information as part of agency; and participation and freedom as part of QoL. Communication, information and participation are critical aspects in the use of ICTs for pro-poor development, where freedom of choice represents personally meaningful development.

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<sup>23</sup> This is, with the caution that too much disaggregation detracts from understanding the synergies between simultaneous, multiple and sequential increases in different types of resources.

# CHAPTER THREE:

## ICTS & DEVELOPMENT

The extensive impact of rapid technological progression in digital ICTs over the past 15 to 20 years is reflected in the common use of a number of terms, like the information society; digital revolution; knowledge economy, information superhighway and so on. A common term to describe this field of praxis is Information and Communication for Development (ICT4D) or ICTD, with Community Informatics (CI) used less frequently.<sup>24</sup> Gomez and Pather (2012) provide a succinct history of digital ICTs as a development tool, which I have converted to tabular format (see Table 3-1).

ICTs are a multi-faceted phenomenon (Moolman *et al.*, 2007:5) and the internet itself is not one single technology (Vengerfeldt, 2003:14). ICTs do not only refer to digital ICTs, but also to intermediate ICTs, using electronic waves like radio; literate ICTs such as the written word; and organic ICTs such as sound waves (Heeks, 2009:3). Contributing to the complexity of digital ICT provision, access and use is the range of user-types (e.g. individuals, networks, businesses, government, and non-governmental organizations); types of devices (e.g. laptops, mobile music devices, and global positioning satellite devices); different operating systems and languages (e.g. linux, MacOS, and Symbian); an almost endless variety of software applications and programmes (e.g. MSWord, iTunes and FaceBook); and various

**Table 3-1: Phases in ICT4D**

Decade	ICT4D Approach
1980s	ICTs are inconsequential: “...a needless luxury...”
1990s	ICTs are a panacea: “...will bring about a new world...”
2000s	ICTs are a disappointment: “...much cynicism followed... euphoria, fuelled... by... anecdotal stories of failure and success...”
2010s	ICTs are what for development? “...questions still remain as to what are the impacts, if any...”

Source: Drawn from Gomez and Pather (2012:1)

<sup>24</sup> Differences and similarities between these terms are not considered due to a lack of commonly accepted definitions and interchangeable use in the literature.

connectivity options related to internet use (e.g. satellite and fixed line). In this thesis, I am concerned with the newer digital ICTs (hereafter just ICTs), specifically computers, with some discussion on cell-phone use.

There is evidence of the impact of ICTs on economic growth and widespread acknowledgement of the potential and importance of digital ICT use for socio-economic advancement (Bakesha *et al.*, 2009; Sey and Fellows, 2011; Warschauer, 2008). Alongside this however, is evidence of differential access and use along geographic, economic, cultural, political and social lines. Thus, in the context of the persistence of relative and absolute poverty, ill-being and social injustice, existing and potential links between ICT use and development is still widely debated and researched (Gomez and Pather, 2012; Heeks, 2009; Urquhart *et al.*, 2008).

ICT4D literature addresses whether or not ICTs have had or will have an impact on development; whether impact is generally positive or negative; and how ICTs could be employed to best promote development (see Hamel, 2010). A particular feature of digital ICTs is continual and rapid pace of innovation and adaptation, such as the current trend of merging platforms, cloud computing and the upcoming ICTs woven into fabric (BBC News, 2013). While the need to review recent ICT4D literature is therefore obvious, from the perspective of development practice and analysis, lessons from decades ago are still relevant (Heeks, 2002:3); hence new and older literature on ICT4D is included in this chapter. Furthermore, as a trans-, inter- or multi-disciplinary field of study (Flor, 2012:50; Gomez *et al.*, 2012a:2), the range of what can be considered part of ICT4D is particularly blurred.

This chapter has three sections. Firstly, the nature of demand for digital ICT access and use, and the development impact of use, is discussed. Secondly, an overview of the supply of ICTs is presented, with a focus on PAC venues as a common means of facilitating ICT access for poorer, marginalised and disempowered people. The third section identifies and consolidates key elements of current ICT4D theory.

### 3.1 Demand: ICT Use

Telecommunications use in contexts characterised by a high incidence of household poverty displays a level of complexity and economic rationalism not immediately obvious in everyday telecommunications practice in developed countries. (Skuse and Cousins, 2005:6)

Three overarching reasons for ICT use have been named as information; communication and participation (Vengerfeldt, 2003:9), which is similar to Barrantes' (2007:32) classification of ICT attributes, namely information, communication and connectivity, where "...ICT demand will be understood as the demand for these attributes...". While the nature of accessing information or communicating through digital ICTs is commonly understood, online participation requires some description. Activities where the user plays an active role, such as requesting information from organizations online, posting comments on websites, signing digital petitions, and blogging is regarded as online participation (Vengerfeldt, 2003:13). van Dijk (2006:230) refers to this as the creative use of ICTs. Barrantes (2007:36) also distinguishes between levels of digital poverty according to whether ICT use is passive or active, where active use includes making transactions or using government e-services. *For example*, "The Stream" aired on Al Jazeera English television station and streamed online, accommodates all three reasons for ICT use (information, communication and participation) and is also an example of merging platforms.<sup>25</sup>

With merging platforms, it is increasingly difficult to research ICT access, use and impact, especially with regard to internet use. Nevertheless, much research has been done, particularly on who has access to and who uses ICTs, as well as the problems associated with different types of ICT provision. Less common, is data on reasons for and benefits from use, particularly the impact of ICT use on development or poverty, because of the complexity of reality-based ICT4D research. More recently, political activism through creative ICT use has

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<sup>25</sup> During a broadcast of "The Stream", the activists and other citizens with relevant experience and knowledge take part in a live discussion (which includes in-studio guests and guests connected through a live video-link) on a current topic. The general public can participate by sending a text message via Facebook, Twitter, Google Chat or Google mail or by sending a video message, which is fed into the discussion by a dedicated media-monitor host. People can also simply watch (and/or listen) on TV or live via internet (using a cell-phone, computer or iPad), and they can continue to take part in the live interaction after TV broadcasting ends, through the live online 'post-show'.

supported movements for social justice (as seen from the extensive and creative use of ICTs in the Arab Spring). This illustrates the rapidly changing nature and context of the application of ICT tools to people's collective needs. The use of ICTs for social justice during the Arab Spring was recognised by the UN Special Rapporteur on the promotion and protection of the right to freedom of opinion and expression, as an illustration of how the "...Internet has become an indispensable tool for realizing a range of human rights" (LA Times, 2011). It also indicates why impact is often difficult to measure, given that ICT use for social justice relies on the multiple, diverse, unplanned and uncontrolled effort of an immeasurable number of people through different types of ICT use. This subsection considers patterns in the nature of ICT use, ICT users and an overview of impact.

### *3.1.1 Patterns of ICT Use*

Data on ICT access (such as cellular phone subscriptions) and use (such as bandwidth consumed) that can be measured quantitatively, automatically recorded and collated, provides a less contested basis for the analyses of ICT access and use. The magnitude and growth of the information superhighway or digital revolution is illustrated through data from the International Telecommunication Union (ITU). Mobile-cellular subscription rates indicate this to be the most extensive ICT service: with close to 6 billion subscriptions by end 2011, which equates to 86% global penetration (International Telecommunication Union [ITU], 2012b:1) and it is estimated to reach 6.8 billion in 2013 (ITU, 2013:1). International Internet bandwidth increased by 700% in the five years up to end 2011, when about a third of the global population (2.3 billion) were using the internet (ITU, 2012b:2).

Rates of growth are extremely high; however when these global figures are disaggregated by region, a complex picture emerges with persistent gaps internationally. Based on 2006 data, the proportion of population using the internet in North America was 68.6%, compared to 2.6% for Africa (Warschauer, 2008:140). "By end 2011, 70% of the total households in developed countries had Internet, whereas only 20% of households in developing countries had Internet access" (ITU, 2012b:2). Estimates for 2012/2013 indicate growth to 78% of households in the developed world and to 28% in the developing world (ITU, 2013:3). While rates of growth are generally higher in the developing world for various categories of ICT use, huge differences persist. Overall, for different ICT platforms, as well as

for individual and household internet use, Africa as a region consistently has the lowest use on average, while Europe consistently has the highest use (see Table 3-2).

The extent of use puts the difference between developed and developing populations' internet use into perspective: an internet user in Europe uses 25 times more international internet capacity, than a user in Africa (ITU, 2012b:1). The difference in mobile cellular subscriptions is however not as great: rate of mobile cellular subscriptions per 100 citizens in

Europe is double that in Africa (ITU, 2012a), but data shows faster growth in mobile cellular subscriptions among people in developing countries, with four out of every five new mobile-cellular subscriptions added in 2011 originating in developing countries (ITU, 2012b:1). In the next subsection, a critique of the digital divide reflects a familiar development story about varying levels of access and use of basic services within national populations.

### 3.1.2 *The Digital Divide: the Same Old Development Story*

The poor, ...especially women, have limited access to and utilization of ICTs in their daily lives. (Bakesha *et al.*, 2009:142)

What Heeks (2002:1) refers to as a combination of the "...hype and hope..." generated by ICTs in the late 1990s led many to regard ICTs almost as the answer to development needs or at least as a fast track to tackling poverty. Earlier ICT4D projects centred on the transfer of technology based on the assumption that with technologically advanced ICTs, developing countries could leapfrog to quickly catch up with the developed world. This has not been the case (Britz, 2004; Heeks, 2002).

The digital divide (DD) became a common term, referring to the gap between those who had and those who did not have access to new forms of information technology (van Dijk, 2006:221). In the early 2000s, the technological and physical orientation of the DD

**Table 3-2: Europe-Africa ratio of average ICT statistics**

ICT users, subscriptions or platforms	Ratio for Europe: Africa
Active mobile-broadband	6:1
Mobile-cellular	2:1
Fixed-telephone	28:1
Fixed/wired-broadband	78:1
Individuals using Internet	5:1
Households with Internet access	12:1

*Source:* Own calculations based on 2012/2013 data estimates from ITU (2012a). *Note:* The Europe: Africa ratio has been rounded off to the nearest whole number.

concept (which had directed much ICT4D activity and research) was questioned by a number of sector stakeholders (see Barrantes, 2007; Heeks, 2002; Vengerfeldt, 2003). Physical infrastructure and technologically advanced equipment and software are an important aspect of ICT access, but access does not equate to use. Many have critiqued the concept, theory, identification and analysis of the DD with some analysis labelling the DD as confusing (see van Dijk, 2006); redefining the DD (see Jackson *et al.*, 2008); or refocusing on the intersection between technology and inequality (see Warschauer, 2008). Others looked beyond the digital divide (see Vengerfeldt, 2003) or opted to pursue alternative approaches (see Barrantes, 2007). Shifting from the concept of a DD to that of an information divide, Britz (2004:192-193) also notes a variety of issues of difference (e.g. cultural, linguistic, educational, socio-economic and so on) that characterise an increasingly complex divide.

The gender DD with regard to access, control and use of ICTs is evidenced from research over the past decade (Association for Progressive Communications [APC], 2013; Jackson *et al.*, 2008; Moolman *et al.*, 2007; Urquhart *et al.*, 2008; Vengerfeldt, 2003). “Most women within developing countries are in the deepest part of the divide further removed from the information age than the men whose poverty they share” (Hafkin and Taggart, 2001:1). Factors constraining women’s access are numerous: “...including literacy and education, language, time, cost, geographical location of facilities, social and cultural norms, and women's computer and information search and dissemination skills” (ibid:2). “The gender divide is one of the most significant inequalities, amplified by the digital revolution, and cuts across all social and income groups” (Moolman *et al.*, 2007:4).

Regarding other socio-economic patterns identified, Jackson and colleagues (2008:441) suggest “...a new digital divide based on the interaction of race and gender” from their research over three years with American children, and Warschauer (2008) notes sharp disparities in use of ICTs in the USA in the 1990s, according to race, income and education. Kalmus and colleagues (2011) and Vengerfeldt (2003) reported on age as a factor explaining patterns in ICT use, and Barrantes (2007) explores digital poverty with respect to levels of income and education in addition to age. Beyond these more common social differentiators motivation, interest, effort, goals and other psychological factors have also been researched with respect to the DD. Vengerfeldt (2003:17) investigates motivation and strategic skills as a possible reason for why people opt for particular types of ICT use. Kalmus and colleagues

(2011:385) consider the influence of personality traits (in addition to personal motives) with respect to online ICT use, as well as the impact of socio-economic variables and individual circumstances on user preferences (ibid:386). Pinkett (2000) noted cultural values, beliefs, and practices as influencing the way people see the world and therefore as impacting on ICT use.

Critical to moving beyond a technological DD, was the recognition that together these different dimensions of a multiple and complex DD were merely a reflection of society: “[T]raditional gender roles and issues are reproduced ...[b]ecause... those traditional roles and issues still dominate” Heeks (2005a:5). Referring to “...age-old demographics...” like income and ethnicity, van Dijk (2006:223) comments that “[m]ost often a historical perspective is lacking” with respect to “...other things that are unequally divided in contemporary or past societies” and Skuse and Cousins (2005:3) note a “...substantive lack of social analysis within contemporary debates...” regarding the DD and development.

In the last decade much effort has focussed on the need for theory in support of ICT4D (Heeks, 2002; van Dijk, 2006; Urquhart *et al.*, 2008). Flor (2012:50) noted blurred boundaries concerning which discipline ICT4D praxis fell under, which made it difficult to establish a theoretical anchor. Considering ICT access and ICT use separately promoted the pursuit of a theoretical explanation for ICT4D research findings. For example, Bakesha and colleagues (2009) provided insight into the complex reality beneath ownership of ICT devices: socio-cultural norms affect ownership, access and use; and therefore, just as access does not equate to use, neither does ownership of ICT devices equate to access. Moolman and colleagues (2007:7) quite rightly point out that “... the age-old question of who speaks for whom remains relevant”. This applies to the gender divide, where “...men dominate users, designers, content producers and decision makers...” (ibid:7) and beyond.

Participation through ICTs is increasing at a frenetic pace, as illustrated by the emergence and increasing popularity of citizen journalism, also known as participatory journalism (Okoro, Diri and Odii, 2013). While digital ICTs have empowered citizens to document and disseminate their reality, so too have powerful state forces used ICTs to try to dominate current public perspectives on events. While the internet may be the single most important factor that has facilitated challenges to dominant power structures and the globalised capitalist system; nations with both power and financial resources are often in a

better position to take advantage of opportunities created by technological innovation (Britz, 2004), than less powerful and poorer nations, organisations and individuals.

A positive impact of the technological DD concept was that it brought the underlying issues of unequal access and use to the fore (van Dijk, 2006:222). Questioning the DD concept provided insight into ICT4D's theoretical underpinnings, in pursuit of how best to use ICTs for the benefit of poorer nations (Urquhart *et al.*, 2008:203), promote pro-poor development, and advance social justice (Britz, 2004).<sup>26</sup> Other issues to be addressed by ICT4D theory relate to the changing nature of the divide over time (Jackson *et al.*, 2008; Warschauer, 2008) and the notion of a clear separation between those included and excluded from the information age (van Dijk, 2006:222).

### 3.1.3 Development Impact of ICT Use

Benefits from ICT access and use cover all sectors of society – financial, social, educational and so on. Drawing on a wide range of recent literature, Spence and Smith (2010:12) summarise the economic and social services enabled by connectivity (mainly through mobile phones) for poorer people as: a] finance (e.g. m-banking); b] distribution (e.g. connecting producers with markets); c] employment and income (e.g. accessing jobs through mobile phone use); d] personal advancement (e.g. managing child care); and e] public services (e.g. e-government services). There are also examples of inner empowerment: "... [t]he most immediate and direct effect of ICT programs seems to be the psychological empowerment of poor people, whereby newly acquired ICT skills provide poor people with a sense of achievement and pride, thus strengthening their self-esteem" (Gigler, 2004:32). Other evidence of social and psychological empowerment includes improved social status for rural women (Songataaba Association, 2007:92); empowerment for women in the home to take part in family decision making due in part to income from retailing mobile use (Yusuf and Alam, 2011:39); and increased social interaction and improved self-confidence through face-to-face contact with others at local telecentres (Bakesha *et al.*, 2009:150-151). Prado documents the case of the community of El Limón (in the Dominican Republic) who shared a common sense of ownership of their telecentre and benefited from

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<sup>26</sup> Key components of current ICT4D theory is taken forward in section 3.3.

the telecentre, either through direct needs-based use or from associated benefits of access to information, education and as a base for social interaction (Prado, 2010:10).

The overwhelming perception in the community was that the telecenter brought positive change to El Limón. Almost everyone agreed that the presence of the telecenter helped locals solve problems and provided a source of news and information. Practically all agreed that the telecenter helped empowered the community, fostered closeness, and trained young people for modern life. Most also agreed that the telecenter brought neighbors together to address common issues, helping them prepare for storms, imparting information about how to keep the water clean, and opening new markets for the goods produced in the area. Many credited the telecenter for providing information about health and child care. (Prado, 2010:8)

While there are other examples of the pro-poor impact of telecentres and other ICTs, the development impact of ICT4D projects remains under-researched (Heeks and Molla, 2009:1). Studies that have been done, show mixed results specifically regarding telecentre access and use (Sey and Fellows, 2011; Spence and Smith, 2010), although many articles refer to how ICT use has the potential to promote development or improve well-being. It is difficult to attribute development impact directly to ICT use, particularly non-financial and non-economic impact. In some cases, an assessment of telecentre functionality or sustainability is substituted in place of an assessment of development impact on the lives of people. This discussion is taken forward below, after considering supply.

### 3.2 Supply: PAC venues

The main ICT device of concern to the CLIQ research was the desktop computer, with internet capability and connectivity, located in state-supported telecentres. This section on provision of ICTs focuses on PAC venues.<sup>27</sup> PAC venues are commonly referred to as telecentres, but also as cybercafés, Internet kiosks, cyberlabs, digital community access points, etc. Snyman (2007:125) refers to Raul Roman's count of more than 30 names for such centres. In some cases, different names reflect differences other than one or more differences between the PAC venues, but this is not consistent.

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<sup>27</sup> I do not explore technical issues such as wireless versus fixed-line connectivity speed or the advantages of different computer operating systems, because the CLIQ research did not have a technical focus.

Defining different types of PAC venues is problematic. As part of global work on telecentres, Coward cites the following definition as the closest to a commonly accepted understanding of telecentres, namely: "...entities which exist primarily to provide the general public access to computing and/or the Internet with the explicit intent to serve a developmental purpose" (Toyama and Kenniston, cited in Coward, 2008:2). Key differentiators between different types of telecentres (irrespective of name) relate to the PAC venue's vision and purpose, namely whether they should function as a business or community service (Gomez *et al.*, 2012b:14) and the numerous types of partnerships and roles between multiple stakeholders (Bailey, 2009; Prado, 2010). Non-commercial PAC venues (e.g. telecentres, school labs) have been the primary mechanism through which governments, non-governmental organisations (NGOs) and donors have promoted ICT4D (Heeks, 2005b:1; Kumar and Best, 2007:1).

### 3.2.1 *Recurring Issues for Telecentre Success and Failure*

Research and documentation on problems with telecentre delivery is common. A decade ago, Roman and Colle presented themes for analysis of telecentre success based on their global work with telecentres (2002:4). Coward (2008) refers to a list of eight "...onerous challenges..." facing telecentres (by Renee Kuriyan and Kentaro Toyama) as a good multi-study summary; and more recently, Sey and Fellows (2011:191) present seven common factors for financial success, drawn from over 20 papers.

Table 3-3 synthesises issues regarding telecentre success and failure from seven multi-country studies.<sup>28</sup> For each of the ten issues listed, the table indicates which of the selected multi-country studies reported a finding in that regard, as well as which of three South African telecentre studies reported on the issue. I do not discuss these challenges, as the issues are commonly accepted across the literature and telecentre sustainability is explicitly noted as being a well-researched topic (Coward, 2008; Sey and Fellows, 2011). The purpose of Table 3-3 is collate the main issues affecting telecentre performance and sustainability, rather than indicate the frequency with which each aspect is referred to.

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<sup>28</sup> These multi-study summaries present issues affecting venue performance or sustainability either as challenges or in form of recommendations. Table 3-3 presents the aspects PAC venues underlying the challenges and recommendations presented in the ten articles.

**Table 3-3: PAC venue performance and sustainability**

<b>Aspects of PAC venues affecting performance and sustainability</b>	<b>South Africa</b>	<b>Globally</b>
1. The origin of the telecentre (TC) and the existence and nature of local ownership and participation in various aspects of the TC.	Be_01 MM_03 Go_12	RC_02 SF_11
2. The local relevance of services, including: whether services are based on local needs; provision of locally appropriate information, software and listings of websites; and activities to place local content on the web.	Be_01 MM_03	Co_08 RC_02 SF_11 He_02 vR_09
3. The nature and clarity of the TC's purpose and vision (often aligned as either a business for profit or a community development service) and the nature of associated activities e.g. public education regarding the value of information and ICT use; and the promotion of girls' computer use.	MM_03	Co_08 RC_02 SF_11 vR_09 Hu_01
4. The management of the TC with respect to sustainability, including: defining social or financial sustainability; directing activities according to an established business plan; monitoring use; and researching local needs.	Be_01 MM_03 Go_12	RC_02 SF_11
5. Local demand for TC services is affected by social and community access and use barriers e.g. user skills; awareness of applicability of ICT use to common life issues; social norms; usage charges; location and local transport options; and operating hours.	Be_01 MM_03	Co_08 SF_11 Hu_01
6. Supply and maintenance of technical hardware, software, networks and connectivity.	Be_01 MM_03 Go_12	C_08 SF_11 vR_09
7. Good governance, organisational procedures and guidelines to deal with reporting, accountability, maintenance, power contestation, finances, shocks (like fraud, repossession, theft) etc.	Be_01 MM_03	SF_11 vR_09
8. A local ICT4D champion and telecentre staff, including the skills, attitude, motivation and capability of TC staff with respect to engaging with users; maintenance of technological hardware and software; and administration.	B_01 MM_03 Go_12	RC_02 Hu_01 He_02 Ur_08
9. Government support through appropriate policy, effective implementation of policy, adequate systems to facilitate independent operation with adequate government oversight, public education and material support.	Go_12	RC_02
10. External linkages, networking, partnerships and multi-stakeholder platforms.	Be_01 MM_03 Go_12	Co_08
<i>Abbreviations used above:</i>		
<i>Citation for evidence from SA:</i> Be_01: Benjamin (2001) Go_12: Gomez <i>et al.</i> (2012b) MM_03: Mphahlele and Maepa (2003)	<i>Citation for multi-country evidence:</i> Ur_08: Urquhart <i>et al.</i> (2008) RC_02: Roman and Colle (2002) SF_11: Sey and Fellows (2011)	Hu_01: Hudson (2001) He_02: Heeks (2002) Co_08: Coward (2008) vR_09: van Reijswoud (2009)

There are numerous other studies reporting on issues affecting telecentres which I have not consulted. One such example is that of Chib and Zhao (2009), who present insightful lessons from rural projects in China and India. I draw on Chib and Zhao (2009) further on, because although similar problems with telecentre functionality are raised, their analyses reflects advances in ICT4D theory, rather than simply call for an end to investment in telecentres as a outdated or failed mode of delivery.

### 3.2.2 *Evaluating Impact from Telecentre Initiatives*

Studies have not established a clear link between public access to ICTs and socioeconomic change/impacts. Researchers are ... still limited in their ability to make definitive statements about impacts. There is a trend toward the view that the impacts of public access to ICTs are so highly tied to contexts that generalizability may be impractical. (Sey, 2008:3)

Research conclusions generally still speak to the potential rather than actual impact of public access to ICTs. Aside from the fact that impacts are difficult to measure and attribute, this could also be linked to the tendency for most studies to find that public access is underperforming (Sey, 2008:3). In 2002, Heeks referred to "...the sustainability failures ... of most telecentre initiatives" (2002:5) and in 2005, called for a greater focus on mobile telephony (Heeks, 2005a:12). Telecentres in poorer rural areas have raised "...serious questions about ... value and sustainability", with the private sector catering mainly for the mostly urban "high telecentre e-readiness locations" (Heeks, 2005b). However, telecentres remained popular to fund despite no consensus on the usefulness of telecentres, and many documented failures (Bailey, 2009; Coward, 2008; Gomez *et al.*, 2012b; Heeks and Molla, 2009; Sey and Fellows, 2011). With increasing attention from donors, governments and ICT4D academics on the impact of telecentres, "...it becomes increasingly important to empirically examine whether telecentres can provide an effective tool in promoting digital literacy and human development" (Prado, 2010:2). Sey and Fellows (2011) rightly point out though, that if telecentres are to be written off, it should be based on conclusive research. Below, I discuss four of the key difficulties encountered when seeking conclusive evidence regarding PAC venue impact.

**Sustainability of what?** There are different types of impact evaluations and different perceptions and definitions of success (Coward, 2008). Some telecentre evaluations focus on financial sustainability, while others focus on social impact performance (Sey and Fellows,

2011), which partly explains the variation in results. Furthermore, some telecentres have established their own visions and goals and these may be very dissimilar from those of the evaluators (who may design evaluations to allow for comparable results across different telecentres). It makes sense to evaluate a telecentre with respect to its goals. Telecentre evaluation based on a universal or externally determined definition of success is unlikely to accurately reflect the telecentre's achievements and successes. For example, a telecentre aimed at supporting local social justice groups will probably not fare well when evaluated for financial sustainability. Chib and Zhao (2009:154) argue that while financial sustainability does influence telecentre use, issues around social sustainability are more critical to effectiveness of telecentres and that a broader definition of success criteria is needed. Debate needs to move beyond provision and access "...to an examination of the drivers and barriers to optimal usage of ICTs in achieving specific development indicators" (Chib and Zhao, 2009:147).

**Comparing apples with blackberries:** Numerous differences between PAC venues make comparison difficult. For example, substantial differences between the number of computers housed, the duration of opening hours and the reliability of a power supply, are some practical and measurable differences between telecentres. Other issues of difference include the type of people who frequent a telecentre and their purpose; the attitude of telecentre staff; and the functionality of relationships between key partners. These realities can make the experience of using a telecentre empowering and supportive, or dangerous and offensive. Thus with very different types of PAC venues, comparison across telecentres becomes more complicated, obscuring analysis of linkages between telecentre experiences and success (Coward, 2008).

**Multi-causality and circularity:** Exclusion from the information superhighway can further marginalize countries, groups and individuals who are already worse-off (Hafkin and Taggart, 2001). The emergence of ICTs as a key tool to facilitate many aspects of life, makes it more difficult for poorer people to attain (and maintain) a reasonable QoL without effective ICT use, because of the "...negative effects of digital poverty on economic

development and social well-being...”(Prado, 2010:1).<sup>29</sup> From this reasoning, lack of access to and use of ICTs is both a cause and effect of relative poverty between nations (Warschauer, 2008:141), which applies equally at the level of the individual. Ng’ambi and Brown (2004:38-39) assert that “...the effect of technology is multi-causality impacted and has multicausal effect...” , which they name as the “...multicausal duality of technological effect ...”. Thus, researching impact involves tracing multi-directional and circular causality. Furthermore, the impact of digital inclusion can be positive and/or negative. Documented negative impacts include the use of the internet to perpetuate violence against women, human-trafficking and child pornography (Moolman *et al.*, 2007:6), as well as cyber crime and terrorism (Spence and Smith, 2010:11). This adds complexity to unpacking causality with regard to development impact and individual changes in well-being, especially when considering the impact of criminal use of ICTs on the well-being of others.

**Multi-causality and the socio-eco-political context of life:** Causality between ICT use and development impacts is difficult to research (Sey and Fellows, 2011) and conclusions regarding such causality are not readily available (Heeks and Molla, 2009:112-114). Evidence of causality is illusive, at least because of the myriad of personal and contextual issues that impact on people’s thoughts, actions and circumstance (Harris and Chib, 2012:6) and the complexity of the development process (Kleine, 2010a:2). Gigler (2004:32) notes that the relationship between ICT use and empowerment is complex, dynamic and indirect and concludes that “... a direct and causal relationship between ICTs and empowerment” does not exist, “... but that in fact this relationship is being shaped by a dynamic, multi-dimensional interrelationship between technology and the social context” (Gigler, 2004:1).

Other aspects adding complexity to researching the development impact of ICT use include working with indicators that are difficult to define and measure (like an increased sense of self-efficacy) and the changing nature of impact over time. Different time periods of ICT use are needed to attain different levels of impact, depending on the nature of the person and the type of impact. Thus the point at which an evaluation is done, affects the conclusions with respect to level of impact. A number of authors have drawn on empirical results to propose alternative approaches to ICT4D and suggest new theory, with different

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<sup>29</sup> This leads to a discussion on ICT access as a human right, which is taken further in section 3.3.

foci. Many of them have recognised and incorporated multi-causality and the contextual complexity of ICT access and use through telecentres, in their analysis.

### 3.3 Consolidating Current ICT4D Theory

The degree of exclusion from the digital revolution generally reflects the same socio-economic patterns of the degree of marginalisation found in other sectors of development. Critiques of the DD identified the need for robust ICT4D theory that addressed these patterns of exclusion, as well as providing some explanation for the common failure of ICT4D projects, and more importantly, provide direction for the way forward. This section attempts to consolidate current ICT4D thinking. Programme theory, logic models and associated concepts of complexity, emergence and causation are well suited to the implementation and study of complex ICT4D interventions (van Dijk, 2006) because they are able to show multiple, alternate and recursive causality (Rogers, 2008). Causal model building is beneficial for ICT4D, as reflected in authors' common use of logic models to present ICT4D concepts and theories (as illustrated below).

#### 3.3.1 *Logic Modelling and Causality*

[C]ausality is rarely linear and decisions are almost always based on multiple inputs. (Harris and Chib, 2012:6)

Ng'ambi and Brown (2004) note that difficulties in evaluating educational technological interventions are due to it being "...sandwiched by education, communication and sociological factors..." and "...it follows that teaching and learning is multicausal..." and that "...[s]ocial research ...generally deal[s] with multicausal models in which no event has a single cause and each event has multiple effects" (ibid:38).

Logic models have been defined simply by Rogers (2008:30) as "...the summarized theory of how the intervention works (usually in diagrammatic form)", who lists 15 other names that are used interchangeably to refer to logic models and programme theory.<sup>30</sup> Frechtling's definition conveys some of the complexity that is often encountered when using

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<sup>30</sup> Alternate names listed by Rogers (2011:7) include: Logic chains, Causal models, Cause map, Impact pathways, Intervention theory, Intervention framework, Intervention logic, Investment logic, Outcomes hierarchy, Outcome line, Program logic, Theory-based evaluation, Theory-driven evaluation, Theory-of-action, and Theory-of-change.

logic models to explain how something works: "...a tool that describes the theory of change underlying an intervention, product or policy. It characterises a project through a system of elements that include components and connections, with context being an important qualification" (Frechtling, 2007:1).

Some problems and interventions are simpler than others, as illustrated by the examples of baking a cake (simple), sending a rocket to the moon (complicated) and raising a child (complex) (Glouberman and Zimmerman, 2002:2). To solve simple problems, a standard procedure is followed resulting in uniform outcomes, while for complicated problems, more than one procedure or method is required as well as a variety of expertise, to create an outcome that can be predicted to a high degree of certainty and containing certain critical elements. A complex problem can use procedures and expertise, but because the problem is unique, "...uncertainty of outcome remains..." (ibid).

Simple linear models or causal diagrams cannot be used to describe complex situations or interventions, as these often have many, sometimes conflicting goals and many stakeholders often with different priorities in an unpredictable environment. The challenge is to provide a model that links diverse and inter-related inputs, the context, and the agency of various stakeholders. Aspects that define problems or interventions as complicated include the involvement of many groups or organisations, and many sites of implementation. Simultaneous causal chains linking inputs and outcomes, also a feature of complicated models, can either be multiple (meaning both or all need to happen) or alternative (meaning that any one of the alternative strands can link inputs to outcomes) (Rogers, 2008:35-36). Complex interventions can be explained by logic models that have additional features such as recursive causality where there is more than 'one pass' through the intervention i.e. where the causal chain contains feedback or reinforcing loops (Rogers, 2008). Numerous passes through at least parts of the model could represent a process where a build up to a critical mass is required, before the causal path leads outcomes. This is referred to as a tipping point, where a small additional effort can have a disproportionately large effect, on the desired outcome (Rogers, 2008:38). Multiple, alternative, simultaneous and recursive causal loops are also linked to another defining feature of complex interventions, namely emergence: when "...specific outcomes, and the means to achieve them, emerge during implementation of an intervention" because the "...path to success is

so variable and it cannot be articulated in advance” (Rogers, 2008:31&39). This would be true of broadly defined interventions with multiple stakeholders, multiple goals and varying environments that target change simultaneously at many levels.

Kubisch and colleagues (1995:1) describe comprehensive community initiatives as a varied range of initiatives that have a common goal of “promoting positive change in individual, family and community circumstances in disadvantaged neighbourhoods by improving physical, economic and community circumstances”.<sup>31</sup> In reference to comprehensive community initiatives as examples of emergent interventions, Rogers (2008) argues that a variety of models can be developed to explain the inherent logic in an intervention, which can change as the intervention - and the understanding thereof - changes.

Chambers discusses emergence and complexity with regard to a people-focussed approach to development, noting that “[m]essy partnerships...and unpredictable outcomes are commonplace” (2008:174). This is expected because development targets aim to improve QoL which, it is argued, is achieved in part through agency and empowerment (all of which are complex concepts). Similarly, Prado (2010:2) refers to unexpected outcomes from ICT use. The variety of linkages and loops that can be accommodated in logic models therefore make them applicable to explore ICT access and use, given the complexity of the internet and variety of ICT platforms; the range of socio-economic factors shown to influence access and use; the ever expanding range of applications and associated uses; the political, economic and geographical factors affecting supply; and so on.

There is general agreement with Warschauer (2008:143) that “... a broader view of access is required if we are to understand what enables people to deploy ICT in personally or socially meaningful ways”. Addressing the lack of ICT4D theory, logic models reflect this broader view, including various elements such as resources and skills needed for access and use; the context of access and use; and potential outcomes, within a model that frames the process for access and use. However, while ICT4D logic models do capture some of the

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<sup>31</sup> Kubisch and colleagues (1995:3) list six features of comprehensive community initiatives that make them difficult to evaluate, namely “horizontal complexity, vertical complexity, the importance of context, the flexible and evolving nature of interventions, the breadth of the range of outcomes being pursued, and the absence of appropriate control groups for comparison purposes”.

complexity, they are not (and cannot be) all encompassing (Barrantes, 2007; Urquhart *et al.*, 2008). In the discussion below, I have included various ICT4D models because they each illustrate a particular contribution to current ICT4D theory. The best summary of an ICT4D model is the visual representation of the model itself, as a brief description of each would not give justice to the concepts behind the model. I do not discuss all elements of the models, even though other elements may also be relevant, but I do include the visual representation of the entire model, as it provides a holistic sense of each author's concept of ICT4D.

### 3.3.2 *Changing Focus and Recognising Complexity*

ICT4D has a "profoundly moral agenda" that aims to empower people and communities by answering the difficult questions of not only "what should be done" in the practice of development but also "how we should do it" (Unwin, 2009a 33). (Hamel, 2010:6)

Reflecting on problems with the initial technological focus, a number of authors have suggested other foci for ICT4D, such as human development (Gigler, 2004) or information (Britz, 2004; Vengerfeldt, 2003); or have presented theoretical perspectives that are more holistic, outlining a range of skills and resources that are needed for effective use (van Dijk, 2006; Warschauer, 2008). Moolman and colleagues (2007) and Buskens and Webb (2009) emphasise empowerment and agency with respect to the persistent gender divide, which resonates with Hamel's reference to ICT4D's moral agenda (see above quote). In response to the need for ICT4D theory Barrantes (2007); Gigler (2004); Heeks (2002); Kleine (2010b); Sey and Fellows (2011); Urquhart and colleagues (2008); and others use logic or causal models to illustrate research findings or convey theoretical contributions in an effort to advance the debate on the best use of ICT for development (although not all of them convey complexity).

Sey and Fellows (2011:190) present a simple linear ICT4D model (Figure 3-1) informed by the outcomes approach, in order to "...represent and reconcile different interpretations of public access ICT impacts" found in the literature. The model does not attempt to capture the complexity of interaction between ICT use at public access venues and the surrounding context or the characteristics and resources of the users. The approach aims rather to identify the "...*contribution* of public access ICTs to development goals, whereas causal links

are relatively intangible...” (ibid:191) and impacts would only be partially attributable to public access ICT use. In Figure 3-1, *intermediate outcomes* refer to ICT use at public access venues, leading to *end outcomes* (such as securing a job), and then to *impacts* (referring to community-wide development impacts like lower unemployment) as the consequence of *end outcomes*.

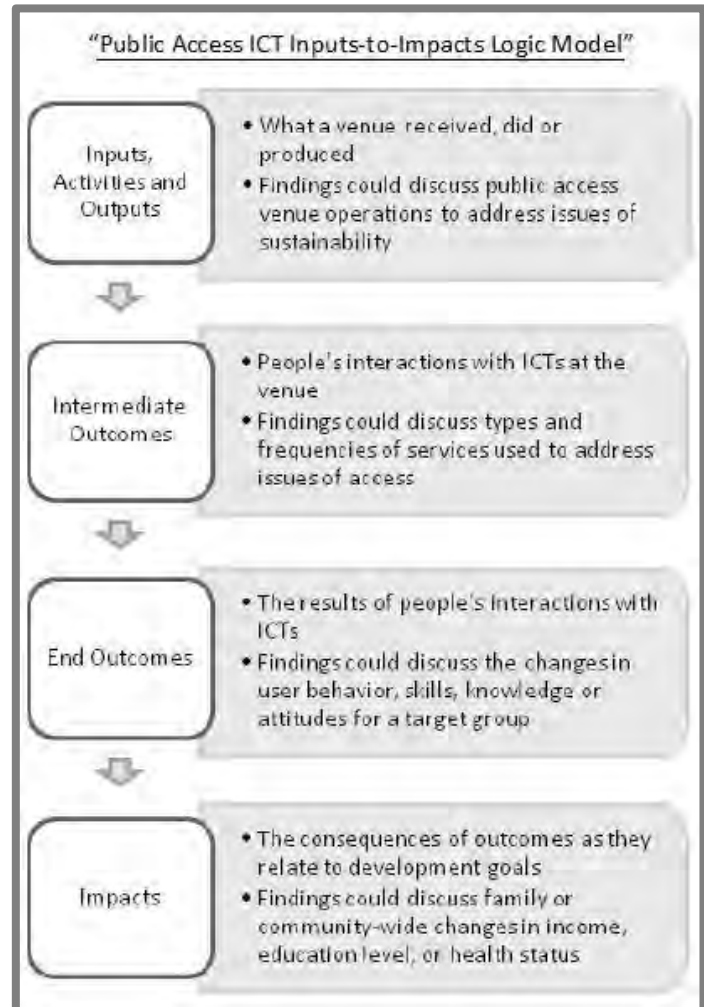
I do not find this model to be of much practical use, because it does not show if, how, where, why or which aspects of the local context influence development outcomes. They have side-stepped the complex issue of causality, stating that “... causal links are relatively intangible (or for the moment, valid means of measuring them have not emerged)” (ibid:191). However, a useful aspect of the model is that it illustrates different types of outcomes, outputs and impacts. Also useful is the recognition that “[t]he line between impacts and end-outcomes is ... a blurry one, and decisions about whether to classify a result as one or the other often have to be based on contextual issues...” (ibid:191). They propose that

longevity of the achievement could help to distinguish impacts from intermediate and end outcomes, where “[i]deally impacts persist over time...” (ibid:191).

### 3.3.3 Knowledge and Information

[P]overty is complex multi faceted issue ... [s]ome poverty is caused by lack of access to information and knowledge and other resources such as networks of contacts. (Urquhart *et al.*, 2008:209)

**Figure 3-1: Sey and Fellows’ ICT4D model**



Source: Sey and Fellows (2011:190)

Writing with a specific focus on ICTs and poverty reduction, Urquhart and colleagues (2008) take a human agency approach to ICT4D theory. From the quote above, their emphasis is on the contribution of ICT use to resources, specifically information, skills and social capital, which are needed for poverty reduction. This reflects Ng'ambi and Brown's (2004:38) analysis who contend that "the term education, communication, and socialization are one and the same thing..." because "...education involves communication, and therefore socialisation..." with the latter "...having the potential to liberate thought and facilitate communication of new ideas" (ibid:38).

Urquhart and colleagues (2008:204) discuss information with respect to theories of knowledge creation, which alongside theories of human and social capital, provide important conceptual insights for "...translating knowledge into action for poverty alleviation as they draw on effective use of knowledge for the formation of tangible and intangible social and human capital". This group of authors consider knowledge and action to be central to poverty alleviation. Britz (2004) focuses on information and skills as an education resource. He defines information poverty as "... that situation in which individuals and communities, within a given context, do not have the requisite skills, abilities or material means to obtain efficient access to information, interpret it and apply it appropriately" (Britz, 2004:192). The lack of access

to ICTs is regarded by some as one of the main causes of information poverty, which in turn is a critical aspect of poverty or ill-being. Those without access find it increasingly difficult to obtain information needed for decisions regarding their material well-being (ibid:193). Britz (2004) identifies seven key elements of information poverty, summarised in Table 3-4.

**Table 3-4: Britz's elements of information poverty**

1	Relevance of accessible information
2	Level of information infrastructure
3	Literacy levels
4	Attitudes towards information and its value
5	Varying material means to access information
6	Global occurrence of information poverty, while being context specific in nature
7	Influence across social, cultural and economic spheres of society

*Source:* Summarised from Britz (2004:194)

Once beyond the technical DD, a focus on information should be broad, questioning access to and control of information (Vengerfeldt, 2003); related to local development

objectives (Heeks, 2002:10); and cognisant of the need for “...knowledge and resources to translate access to effective use” (Moolman *et al.* 2007:6). Thus, issues surrounding the use of information (like power relations and analytics skills) impact on people’s ability to effectively use information and generate knowledge for action.

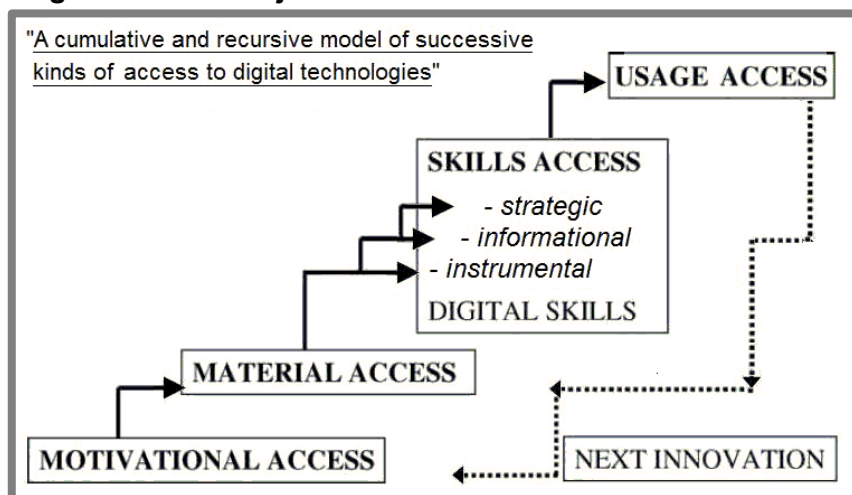
### 3.3.4 Skills and Resources

People must have the capacity to use their access to ICTs (Moolman *et al.*, 2007:6). To identify the range of skills needed, it is critical to recognise that ICT access is “...a process with many social, mental and technological causes and not a single event of obtaining a particular technology” (van Dijk, 2006:224 – my emphasis). van Dijk’s model (Figure 3-2) identifies different types of skills needed within a process that has different stages of access. Within *skills access*, van Dijk (2006:228) names these digital skills as:

- a] instrumental - “the capacities to work with hardware and software”;
- b] informational - “the skills to search, select and process information in computer and network sources”; and
- c] strategic - “the capacities to use computer and network sources as the means for particular goals and for the general goal of improving one’s position in society”.

Besides user skills, the skills to install, service and maintain ICT hardware and software are important (Urquhart *et al.*, 2008:205), as indicated by the sixth aspect affecting PAC venue performance (presented in Table 3-3).

**Figure 3-2: van Dijk’s ICT4D model**

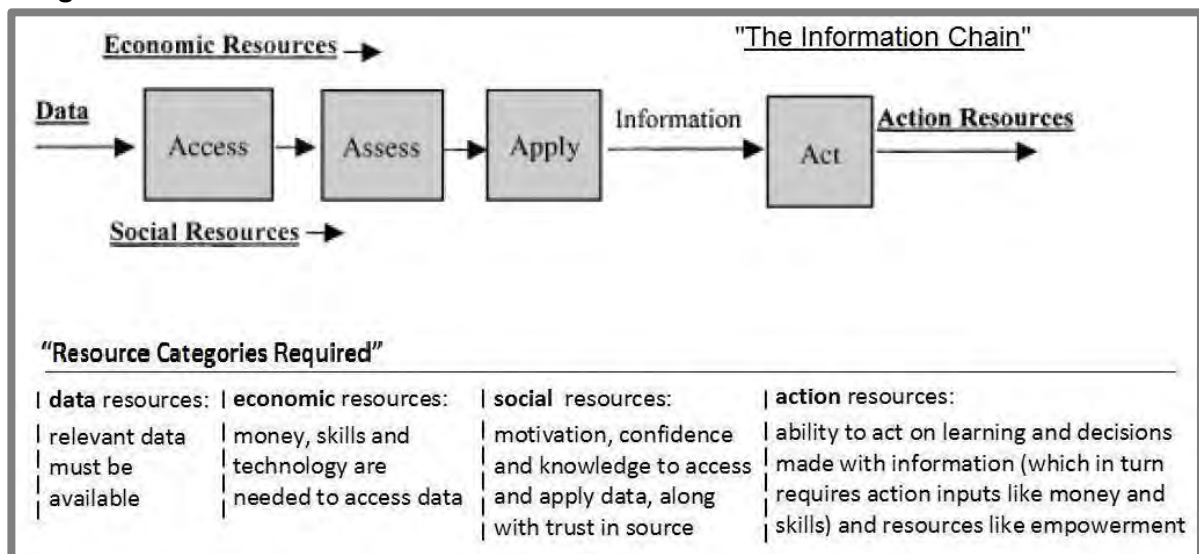


Source: van Dijk (2006:224)

Both Heeks (2002) and Warschauer (2008) also consider different types of skills needed, locating these skills within sets of resources needed for effective ICT use. Figure 3-3 outlines four categories of resources needed, located in Heeks’ *Information Chain* that

shows a progression towards action (Heeks, 2002:7). Skills to use ICTs and to access data (van Dijk's *instrumental skills*, Figure 3-2) are included under Heeks' *economic resources* (Figure 3-3), while skills to translate information to knowledge and to use knowledge for action (van Dijk's *information and strategic skills*, Figure 3-2) are included under Heeks' *social and action resources* (Figure 3-3).

**Figure 3-3: Heeks' ICT4D model**



Source: Heeks (2002:7-8)

Warschauer (2008:143-144) considers four areas of resources as assisting with analysis of ICT access, namely:

- a) the variety of devices (physical resources);
- b) web content (digital resources);
- c) traditional literacy and four types of digital literacy (human resources); and
- d) social relations, structures and capital (social resources).

While various authors use different terms for skills or resources, the concepts drawn on are not in conflict. Warschauer (2008), Heeks (2002) and van Dijk (2006) identify skills and resources needed that are not limited to the ability to operate an ICT device (such as sending an email or typing numbers on a keypad). The skills and resources needed are those that allow for meaningful ICT use in relation to the user's wants and needs. This includes the ability to evaluate the validity of information from alternate websites or the language style and content of a job application sent by email. The value of Heeks' four categories is that it

illustrates what is needed in the different stages of the process of using ICTs, such as the confidence to access and use information from the internet and being able to use new information or social networks to make a decision and to act (see Figure 3-3).

### 3.3.5 *Human Diversity and the Local Context*

[T]he issue of appropriateness of ICTs in a given context coupled to the conditions of their access must always figure in the analysis of their value and potential contribution to development. (Hamel, 2010:35)

Recognising that a range of resources and skills are needed for effective ICT use was important in order to move beyond the DD of the 2000s and the view that the mere presence of an ICT device would result in use and benefit. Similarly, recognition of the influence that context has on effective use, is also important. An individual's resources and skills are affected by their socio-economic background and access to economic, educational and cultural capital (Vengerfeldt, 2003:5), for example the quality of schools available locally or prevailing social norm. Evidence from research indicates that gender, age, race, ethnicity, income, education, culture, and psychological resources (like motivation) all impact on people's ability to access and use ICTs. Patterns in ICT access and use reflect society, including the diversity of people, as well as inequality and marginalisation (Heeks, 2002; van Dijk, 2006). Realising the limitations of the narrow technological DD approach, reminded academics, practitioners and funders that the one-size-fits-all approach or the dump-and-run approach usually fails (van Dijk, 2006; van Reijswoud, 2009).

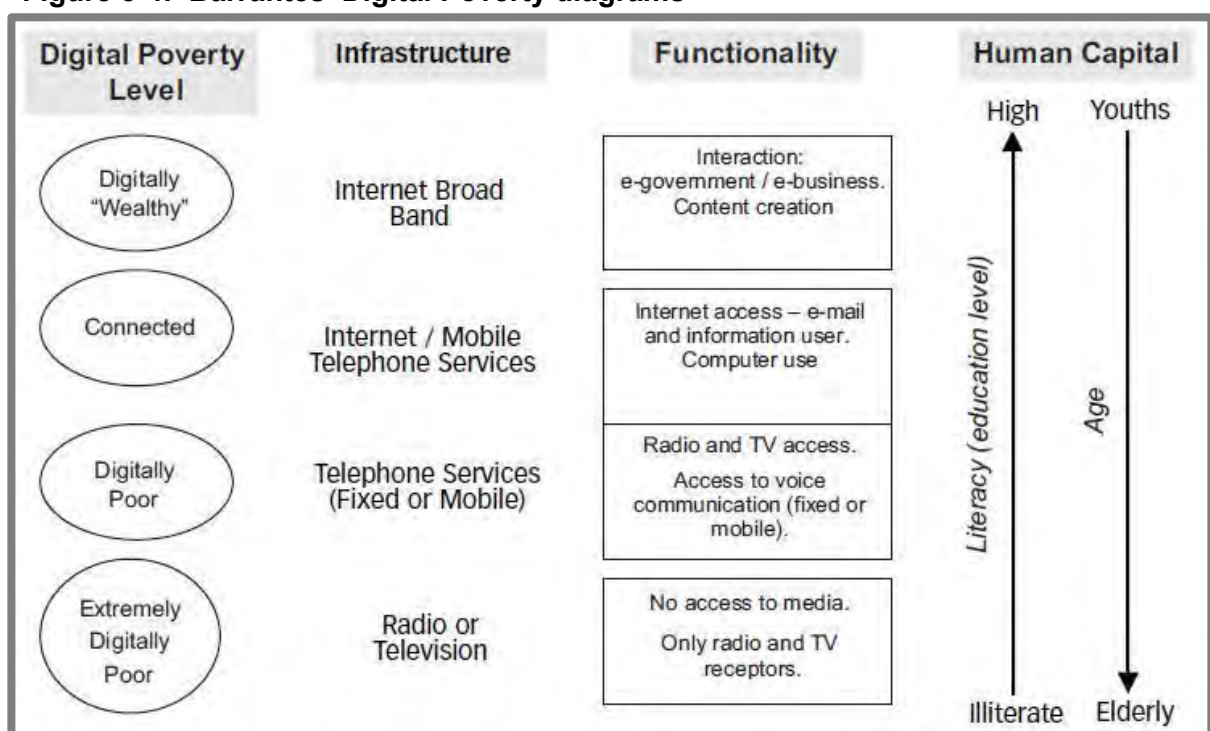
Among others, Pinkett (2000) asserts the contextual impact on ICT access and use, emphasizing that activities to engage people on ICT use must resonate with local culture and social settings. Warschauer (2008:144) refers to the context within which ICTs are accessed and used as including the resources available in the immediate environment, in light of users' broader external operating environment (e.g. the home or school) and internal operating environment (e.g. the presence and nature of individual goals which reflects individual socio-economic status).<sup>32</sup>

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<sup>32</sup> "Internal operating environment" is my term to refer to the mind, drawing on Warschauer's (2008:144) mention of personal goals.

Barrantes (2007) brings together supply and demand side issues in her model of levels of digital poverty (Figure 3-4), which illustrates a correlation between the context and personal factors with respect to levels of ICT use (or digital poverty). This reflects Sen's Capability Approach (1999), as discussed for example by Munyua (2009:127) where the same set of resources can allow different functions because of the individual's specific context and obstacles. Similarly, where individuals share a similar context, different resources and personal characteristics result in different levels of digital poverty (or well-being).

**Figure 3-4: Barrantes' Digital Poverty diagrams**



Source: Barrantes' Digital Poverty table (2007:35) and Digital Poverty Level diagram (2007:36), combined.

Regular access and use of ICTs is not always positive (Moolman *et al.*, 2007:5). For example, Munyua (2009:119) showed how access and use of cell-phones resulted in greater exploitation of women. Through cell-phones, women were still contactable by other household members when away from home. This allowed for women's income-generating work outside of the home, while they remained responsible for domestic affairs (due to local patriarchal norms). Thus, ICTs can be used to the benefit of the marginalised; to their detriment; or to maintain the status quo, illustrating the importance of viewing ICTs a tool, where the impact of access and use is determined in part by the local context. ICTs are an

“... amplifier of other social and economic factors and processes” (Warschauer, 2008:149) and therefore just as the social, geographic, economic, environmental, cultural, and political context influences the provision and quality of local ICT provision and infrastructure, so too do they influence the options, choices and actions of users.

[A]lways [bear] in mind that technology is only a tool. Many other interventions are needed to over-come the social, cultural, economic and educational barriers that exist in South Africa. (Snyman, 2007:130)

### 3.3.6 *Tools for Action: Agency and Empowerment*

Practitioners of ICT4D understand that technology itself cannot contribute to human development. What ultimately makes a difference in peoples' lives is the specific use of technology and the extent to which they help communities and individuals reach their development objectives. (Hamel, 2010:7)

Alongside education and knowledge, action is also central to poverty alleviation (Urquhart *et al.*, 2008:203-205), as illustrated in Heeks' information chain which progresses towards action (see Figure 3-3). However, before people will use ICTs as a tool for action, they need to be able to foresee potential benefits and drawbacks of use (Pinkett, 2000).

ICT devices with different applications and functions form a continuum of choice (Barrantes, 2007). Barrantes' Digital Poverty framework shows degrees of access, which consider different types of use of the same device, as well as use of different digital and non-digital devices (see Figure 3-4). Demand for a particular type of ICT use then, depends on people's subjective assessment of the costs and benefits of use and “[w]e might enter a vicious circle: the most excluded within marginalized sectors, those with no access to information, will never have demand, because they will never know the benefits of the service” (Barrantes, 2007:31). Similarly, Britz (2004) notes that at least some basic information is needed, in order to be able to demand ICT use. For example, the speaker in Figure 3-5 is trying to find out whether a new model of phone will meet his needs.

ICT demand can be understood as the demand for information, communication and connectivity or participation (Barrantes, 2007:32; Vengerfeldt, 2003:9), positioning ICT use as a tool to satisfy needs relating to knowledge, social interaction and a sense of inclusion. ICTs are a tool set within a basket of tools that can be used for personal or group advancement. For example, socialising and networking face-to-face or self-reflection and goal-setting are also tools useful for personal development. By focussing on the effective

use that a person can make of ICT access, shifts the focus to action or agency. Agency is the use a person can make of their resources, with respect to the local context, in pursuit of their goals. An increase in access to and use of ICTs can represent empowerment, if the person is able to use ICTs effectively (e.g. access lyrics of popular songs) in combination with their other tools (e.g. attending local community meetings), skills (e.g. ability to sing well) and resources (e.g. friends with musical instruments); while harnessing available opportunities (e.g. lack of local youth

entertainment) and overcoming structural obstacles (e.g. countering parents' concern regarding public performances) to progress towards their goals (e.g. start a singing career).

The context within which individuals and groups operate is however not static, and so I now turn to the implications of advances in ICT4D theory for the role of government in facilitating the effective use of ICTs to improve well-being.

### 3.3.7 QoL, the State and Human Rights

Digital inclusion is a right for all humans. ICTs are assuming an increasingly central role in all aspects of human and societal development across the world. As a result the ability to access and make effective use of ICTs has evolved into a necessary (albeit not sufficient) condition for the progressive realisation of a wide range of human and other fundamental rights. (Asia-Europe Meeting [ASEM], 2012: Recommendation 8)<sup>33</sup>

**Figure 3-5: ICT as a tool for individual needs**



Source: Cartoonstock (n.d. [a])

<sup>33</sup> In 2012, the 12th Informal Asia-Europe Meeting (ASEM) Seminar on Human Rights focused on ICTs, with participants (including government and civil society) from 42 of their 48 member states discussing wide ranging issues regarding ICT for and as a human right.

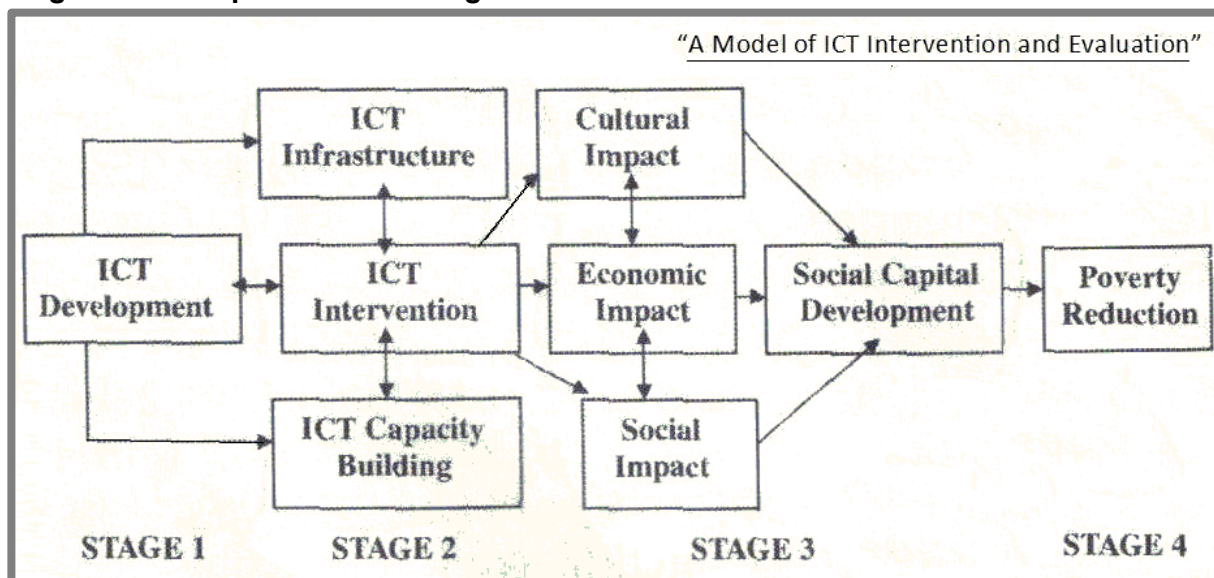
Because information and communication are important aspects of a reasonable QoL and because much information and communication is now facilitated through digital devices; it follows that not using digital ICTs marginalizes people. Given that those who are already marginalized are more likely to be excluded from ICT use (because they do not have basic information about benefits of use, cannot afford usage costs, or are prevented from use due to social norms), the digital era increases exclusion and poverty: “It is clear that the information era, which is characterized by globalization and capitalism and driven by ICTs, has exposed billions of people around the world to a new form of poverty: information poverty” (Britz, 2004:203). This perspective positions ICT access and use as a basic need, or at least as an essential way of for people to satisfy their basic needs. With the expectation that systems concerning all domains of human life (e.g. political, social, economic, and health) will make increasing use of ICTs, those without reasonable ICT access will find it increasingly difficult to pursue life goals.

The role of a national government includes provision of basic services; protection of human rights; and creation of a living environment that is conducive to a reasonable QoL for all. Subsection 2.1.1 (p25) identified participation, social interaction and information or knowledge as common among various authors’ definitions of the broad concept of well-being, QoL, human needs or human development. As ICTs facilitate these three aspects of life, it follows that governments have a duty to provide universal ICT service and access. The Special Rapporteur for the United Nations Human Rights Commission (UNHCR) on the promotion and protection of the right to freedom of opinion and expression (hereafter, the UNHCR Rapporteur) “...reminds all States of their positive obligation to promote or to facilitate the enjoyment of the right to freedom of expression and the means necessary to exercise this right, including the Internet” (La Rue, 2011:19). ICTs as a human right and ICTs for human rights are two interlinked issues receiving increasing attention globally (see APC, 2011; Britz, 2004; LA Times, 2011). The UNHCR Rapporteur stated that “Given that the Internet has become an indispensable tool for realizing a range of human rights, combating inequality, and accelerating development and human progress, ensuring universal access to the Internet should be a priority for all States” (La Rue, 2011:22).

Urquhart and colleagues (2008:206) recognize the role of government in poverty alleviation as including the provision of infrastructure, as well as ICT interventions and ICT

capacity building, with these together forming *ICT development* (see Figure 3-6). More specifically, a recommendation supported by the bulk of the ASEM member states in 2012, placed an obligation on governments to work towards digital inclusion, through infrastructure investment; regulatory oversight; non-discriminatory standards and design; ICT education; protection of user rights and fair access to content; maintaining alternatives to online services; and embracing open government principles, “...all with a particular focus on supporting the groups at risk of digital exclusion” (ASEM, 2012: Recommendation 9).

**Figure 3-6: Urquhart and colleagues’ ICT4D model**



Source: Urquhart *et al.* (2008:206)

This outlines a role for government beyond the provision of infrastructure that responds to advances in ICT4D theory, for example by recognizing that there are groups at risk of exclusion – and focusing on supporting these groups, including the need to educate people about what ICTs can be used for, and training people to use ICTs. Government action in this regard would include policies that promote access and use for poorer people; regulation and monitoring of content to limit violence against women perpetrated through the internet; school curriculum directives aimed at countering discriminatory perceptions and beliefs about who can and should be using ICTs; and so on. Having outlined the key issues and multiple foci of current ICT4D theory, the discussion below looks at a more comprehensive ICT4D model that is based on contextual definitions of development and subjective well-being, and that has agency and empowerment as central aspects.

### 3.3.8 Towards a Comprehensive ICT4D Model

Kleine (2010b) developed an ICT4D logic model, the Choice Framework (CF). The CF is based on Sen's CA and on Aslop and Heinsohn's empowerment model named "The Relationship between Outcomes and Correlates of Empowerment" showing that the "...capacity to make an effective choice is primarily influenced by two sets of factors: agency and opportunity structure" (Aslop and Heinsohn, 2005:6). The CF also draws on aspects of DFID's work on Sustainable Livelihoods, particularly the "...visualisation of the process and the resources' portfolio" and insights from Kleine's fieldwork in Chile (2010b:678). Although the CF was developed specifically to evaluate the contribution of ICTs to development, Kleine regards it as applicable more broadly to development processes and as a tool to be adapted and developed further (ibid:679).

Following on from my discussion of agency, Kleine's set of ten agency resources (Table 2-1, p26) are positioned around an individual's personal characteristics, such as age (see Figure 3-7). Personal characteristics and resources interact with contextual structural factors, to either positively or negatively affect processes of empowerment. Kleine provides examples of how different resources have the potential to reflect ICTs: for example, *geographical resources* refer to both online communities and the person's physical proximity to PAC venues and *psychological resources* include self-confidence, creativity and an increased sense of possibilities (Kleine, 2010b:681,684). Kleine's cultural resources include physical objects representing culture (like art) and prestige attached to positions within institutions (2010b:681); "...online space for sharing cultural knowledge and exhibition space..." in relation to ICTs (ibid:684); and aspects of gender norms, like the ability "...not [to] feel intimidated when entering a space like a library..." to use a computer (ibid:686).<sup>34</sup>

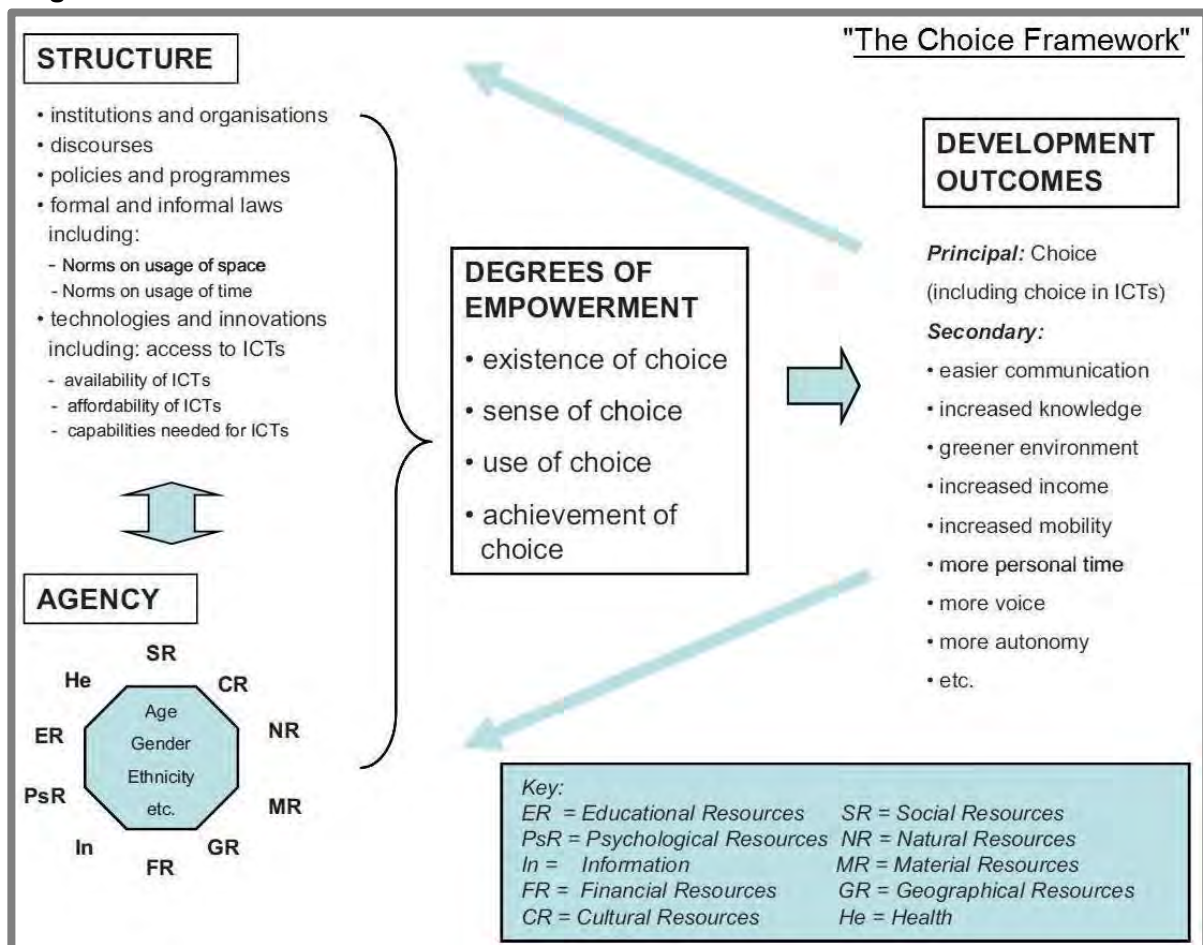
Figure 3-7 includes five aspects of structure, which each serve to promote or hinder the choices an individual has (Kleine, 2010b:682). The CF reflects current ICT4D theory which stresses the impact of context on ICT provision, access and use and follows Aslop and

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<sup>34</sup> From the range of things that Kleine includes under cultural resources, the boundaries between cultural resources and gender norms (under formal and informal laws as an aspect of structure), geographical resources and psychological resources are somewhat blurred. I therefore make limited further reference to Kleine's cultural resources in this thesis.

Heinsohn's (2005) positioning of structure in their model, as directly influencing empowerment, alongside agency.<sup>35</sup>

**Figure 3-7: Kleine's ICT4D model**



Source: Kleine (2010b:680)

Like Sen's CA, the CF allows for alternative processes of empowerment and variation in outcomes, in that the same set of resources can result in different functions or unequal ability because of an individual's context. An example of structure affecting agency (and therefore empowerment) is found in social and specifically gender norms. Gender norms that restrict women's free time and mobility can prevent women (but not men) from travelling to and using telecentres. At a national level, government policy on ICT (and other sectors like infrastructure) affects the pattern of ICT provision, access and use. For example, a policy specifying only fixed fibre-cable connectivity for telecentres could effectively exclude

<sup>35</sup> This is as opposed to Ibrahim and Alkire (2007) as discussed in subsection 2.2.2, who place structure alongside empowerment.

those in remote and mountainous areas where the landscape prevents fixed broadband access. Kleine added a fourth degree to empowerment to Aslop and Heinsohn's (2005:10) set of three - existence, use and achievement of choice. *Sense of choice* (placed second after *existence of choice*) recognises that if people are not aware of something or do not perceive it as an option, they cannot consider its use (see Figure 3-7). This is supported by Nussbaum and Sen (1993:5) who noted in relation to definitions of QoL that people cannot desire what they cannot conceive of. Table 3-5 expands on the meaning behind each of the four degrees of choice.

The CF explicitly reflects Sen's *Development as Freedom* (1999) in that the CF's principal outcome is choice. Examples of specific secondary development outcomes are included in the CF, but the framework does not provide a defined list of categories or domains into which all individual outcomes can be placed. My understanding of Kleine's two types of development outcomes is that secondary outcomes can be seen as steps towards or part-achievement of the principal outcome of choice within a dimension of human development (or QoL). For example, getting a job would be a secondary development outcome and the first step to ensuring regular household access to a higher quality of food, through increased access to money. With more money, the process of securing a household supply of potable water can be started. Such specific outcomes would eventually lead to the principal outcome (and the individual's goal) of household members having the choice to always consume good quality food and clean water, because it has been made available in the household. This may be achieved through numerous passes through the CF, representing various secondary outcomes.

*Development outcomes* achieved, impact on *agency* resources and on *structure* (as indicated by the feedback arrows in Figure 3-7). Continuing with the water example, impact on agency would be increased individual financial resources (initially) and in terms of

**Table 3-5: Kleine's degrees of empowerment**

Dimension of Choice	Meaning
Existence:	"whether the different possibilities exist and are, in principle, attainable"
Sense:	whether they are aware of different possibilities "to imagine use/non-use"
Use:	"whether or not an individual actually makes the choice"
Achievement:	"whether the outcome matches the choice expressed"

Source: Kleine (2010b: 679)

structure, could be increased public use of and support for the local water delivery programme (through word of mouth) or increased political support for the governing political party.<sup>36</sup>

The basic challenge that the capability approach offers to the orthodox methodologies of development research, and ICT4D in particular, is that, on a fundamental level, it questions the validity of outcomes that are defined a priori and without consulting the individual in question. Both the inclusion of a development goal and its position within a set of development priorities, however, relate to the question which kind of life people would choose to live and this, according to Sen, is what development is about. (Kleine, 2010b:683).

The above quote reflects the importance of subjective definitions of QoL, where pre-determined notions of what constitutes a good life are avoided. The CF follows the approach to agency and empowerment outlined in section 2.2 (p24).

**Clarifying personal characteristics in the CF:** The definition of elements and sub-elements of a model are important if the model is to be applied to research findings. Age and gender are two of a set of personal characteristics which Kleine puts at the centre of agency surrounded by resources in her CF (see Figure 3-7).

In the CF, age, gender, ethnicity, etc. are conceptualised as personal characteristics of an individual which may in a given social context become related to socially constructed axes of exclusion and influence the scope and scale of the resource portfolio. (Kleine, 2010b:680)

However, Kleine (2010b) does not specify much else about the element of personal characteristics. From my understanding of the CF, Kleine's intention was to identify personal characteristics as those characteristics that are innate to the individual (i.e. genetically determined). I refer to Kleine's intention because she has used the example of gender as a personal characteristic. Given that a person's sex is biologically determined, while their gender is learnt or socially constructed, it would be more appropriate if Kleine includes sex

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<sup>36</sup> The impact of outcome on structure appear more likely when a) similar development outcomes are achieved by a group of people or organizations; b) the outcome achieved by only one or two individuals is extremely prominent; and c) a series of development impacts occur over time, which impact on a particular aspect of structure.

and not gender within personal characteristics – that is, if indeed her intention was to portray personal characteristics as innate.<sup>37</sup>

### 3.4 Summary of ICT4D

Patterns of ICT use reflect society. Those nations and people who enjoy higher levels of ICT provision, access and use are also those who most often enjoy better access to other resources and services, for example those who are better educated and more wealthy; those that are male; and those that are from West European nations and the United States of America. While there has been much intention and activity aimed at promoting ICT provision, access and use in financially-poor countries, the level of provision, access and use in these countries remains very low (except for mobile-cellular ICTs). The push for the digitisation of poorer nations and of poorer people within nations is based on the prevailing belief that ICT use will promote development. However, aside from tangible and easily measurable socio-economic impact, evidence of positive impact from ICT use on the numerous other aspects of well-being remains limited (Gomez and Pather, 2012; Sey, 2008). A popular mechanism globally to provide ICT access to poorer people has been the telecentre. Even though research has uncovered more failures than success stories, calls to abandon the telecentre model have not been heeded, with many pointing to inappropriate economic definitions of telecentre sustainability rather than social sustainability (Chib and Zhao, 2009); to the difficulty of establishing causality between PAC and human development; and to unique aspects of successful examples of the impact of telecentre use on QoL.

The lack of a theoretical base for ICT4D (Flor, 2012) to guide the pursuit of pro-poor access, sustainability and impact was identified as contributing to a lack of evidence and insight into the causal links between ICT use and an improvement in well-being. Alongside this, the complexity and diversity of human development and of the rapidly-evolving ICT phenomenon, has frustrated efforts to establish how best to employ ICTs for development. A range of authors have contributed useful concepts and insights which further our ability to understand links between ICTs and human development, together providing a theoretical

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<sup>37</sup> The relevance of the definition of personal characteristics is taken forward in sections 8.2 and 9.3.

anchor for the practice of ICT4D. The current approach to ICT4D can be summarised into eight core points:

- a] The overriding agenda of ICT4D is pro-poor human development aimed at reducing inequality and transforming power relations, in pursuit of social justice.
- b] The one-size-fits-all technologically-focussed approach is deficient. The socio-political, economic and cultural context impacts on ICT provision, access and use; just as it does on the other aspects of human behaviour and institutional provision of services.
- c] Lack of information is a form of poverty. Furthermore, exclusion from the information society further marginalises those who are already marginalised in other ways (e.g. politically, economically, and geographically). ICTs facilitate access to information and inclusion, and enable participation and social interaction, which together are directly related to the educational, social and psychological aspects of QoL.
- d] Viewing ICTs as tools for needs-based use promotes a human agency approach, where alongside other tools, effective ICT use is that which addresses locally relevant needs and furthers self-defined goals. Viewing ICT use as a tool (rather than a goal in itself) facilitates agency, leading to empowerment which promotes a better QoL.
- e] A range of resources (e.g. access to transport or reasonable health) are needed for effective ICT use. This need for resources must be viewed in relation to the myriad of other activities that people need to engage in (which also require resources), to meet their basic survival needs. A specific resource needed to promote ICT use knowledge of the potential benefits and drawbacks of different types of ICT use.
- f] Human resources needed include a range of skills that go beyond the mere ability to use ICT devices. These include skills to identify and organise information; to apply knowledge; to imagine solutions and to set personal goals.
- g] Links between ICT use and impact on well-being display alternate, recursive and multi-directional causality, which has proven difficult to identify, analyse and monitor. Logic modelling facilitate analyses of causality between ICT use and pro-poor development because they accommodate complexity, diversity and emergence. Locating ICT4D within a development framework that recognises complexity and diversity allows for a central focus is on people and their QoL.

h] ICT use is critical to the fight for a reasonable QoL and for the promotion of human rights, with increasing calls for ICT access (including the internet) as a human right. Government, as the main protector of human rights, has an obligation to provide ICT access in a manner that addresses the multi-dimensional issues that prevent effective ICT use by those marginalised in society. This role for government includes promoting awareness of benefits; regulation of online content; and ensuring affordable access.

Kleine's CF (2010b) is a comprehensive ICT4D logic model that accounts for complexity, diversity and emergence, reflecting the eight core aspects of current ICT4D theory noted above. The CF visually represents how structural factors combine with agency based on individual resources linked to personal characteristics, to affect the degree of individual empowerment. Empowerment to act allows people to pursue their goals and to progress towards leading the kind of life they value. Importantly, the CF it is applicable to development activity in general, which helps to locate ICT provision, access and use within a broader development framework.

References to ICTs as empowering or enhancing capabilities (Gigler, 2004; Spence and Smith, 2010); the importance of needs-based ICT use (Vengerfeldt, 2003); and the role of community participation in the sustainability of telecentres (Chib and Zhao, 2009), suggest that a form of participatory methodology is appropriate for ICT4D research and practice. A number of ICT4D academics and practitioners use or support the use of PMs for implementing or researching ICT4D (projects). Urquhart and colleagues (2008:206) regard the action research approach as compatible with exploring and promoting ICTs for development, with reference to "soft and messy problem situations" found in the development sector. Ng'ambi and Brown (2004:39) used action research claiming that it was "...ideally suited to the study of technology in its human context..." as it merged "... research and practice, resulting in findings that are relevant to the context". van Reijswoud (2009) used action research which resulted in a process which encompassed "...a community oriented and participatory focus to address the needs, expectations and limitations in which the technology is to be used". Kleine (2010b) also supports the use of participatory methodologies for ICT4D research, having based the CF on some of her own participatory research.

The following chapter considers participation and PMs in some detail to illustrate the applicability of a participatory approach to QoL and ICT4D research and development interventions, and to provide an understanding of the process and approach adopted by CLIQ.

# CHAPTER FOUR:

## PARTICIPATORY METHODOLOGIES

Research methodologies continue to evolve incorporating new insights. Methodologies are also reinvented adding little that is new, except for a new name. Respected by many, Guba and Lincoln (1994, 2005) periodically update their chapter on research paradigms in a handbook on qualitative research. Of note, is their addition of *Participatory* as a fifth research paradigm and voice, values and reflexivity as dimensions for the analysis of research methodologies (Guba and Lincoln, 2005:194-195). Another example of work trying to enhance our approach to research is that presented under the name of Q-Squared, which explores alternative typologies or categories for data, methods and analysis that provide a finer differentiation than the common qualitative-quantitative divide (Shaffer *et al.*, 2007:5). This reflects an increasing trend for practitioners and academics to critically revisit old assumptions and a greater tolerance of or openness to new ways of doing things.

Participation and participatory approaches to research have become very popular amongst development professionals, practitioners, donors, civil society organisations and governments over the last two decades. For example, Hamel (2010:2) regards “...participation and empowerment two essential components of contemporary theory and research about human development”. Along with this, there has also been significant criticism of participatory practice and the approach in general, fuelled by vastly different interpretations and implementation of participation.

After briefly considering the origins and names used to refer to PMs, this chapter presents an overview of critiques of participation and PMs, before returning to outline some of the fundamentals of the approach. I opted for this sequence because many of the issues underlying these critiques have been part of, or addressed by the various versions of participatory research and action since the 1970s, and probably even before that. By presenting the fundamentals of PMs after the critique, I show that many of the issues

presented as challenges or problems, arise from the interpretation and implementation of PMs, and not in the failure of the bulk of PMs to recognise and engage with these issues.

Although discussion on research methodology is often presented together with a description of the research process, I have located this chapter within the literature review because the participatory approach used by CLIQ was simultaneously a research methodology and part of the intervention (alongside ICT access, training and use).<sup>38</sup>

Furthermore, the concept of participation shares theoretical and practical links with QoL, empowerment, ICTs and development, which will be elaborated on at the end of this chapter. Table 4-1 expands on the acronyms used in this chapter which can be confusing given the similarity of letters used.

**Table 4-1: Common chapter abbreviations**

PRA	Participatory Rural Appraisal
AR	Action Research
PR	Participatory Research
PA	Participatory Approach
PM	Participatory Methodology
PAR	Participatory Action Research
<i>par</i>	generic participatory action research

## 4.1 Origins and Branding

For a century sociologists have been generating research that affects social transformation (Abraham and Purkayastha, 2012:124). In their discussion of work linking research and action, Abraham and Purkayastha note the emergence and re-emergence of many participatory research and action research concepts and methodologies, but that: “[t]he origins and chronology of linking research and action are complex and cannot be attributed to any single discipline or any one part of the world” (2012:125).

Brock and Pettit (2007:1) refer to “...a veritable explosion in the use of participatory methodologies in international development work” in recent decades, which has been “...inspired by diverse traditions and experiences worldwide”. Parfitt, in defence of participatory development, asserts that participation “...has become one of the central influences in mainstream development thinking” (2004:537). With exponential growth in the use of PMs, propelled by the widespread use and efficacy of the approach in local development work and by the variety of bi- and multi-lateral agencies that require or even

<sup>38</sup> The CLIQ process and methods are detailed in chapter 5. Chapter 6 presents reasons for choosing a PM and discusses the challenges and limitations of the CLIQ approach, as well as presenting some findings on process.

demand participation (Chambers, 2008:91); misuse and abuse has become common. In 1993, Rahman predicted the corruption of Participation Action Research (PAR) alongside its growth: "PAR, after all, is threatening to become a respectable intellectual movement.... PAR is getting institutionalised, and this will corrupt some in this movement at the same time as promoting its growth" (Rahman, 1993:87).

Arnstein's (1969) ladder of citizen participation (see Figure 1-1, p2) and Roodt's comment that use of the term participation "...ranges from that of a legitimating exercise to a transformative one..." (2001:479), indicate the variety of meanings attached to participation in theory and practice. Claims of following PM, when an activity actually amounts to co-option or manipulation is social fraud, where the time, energy, hope and trust of poorer people is abused under the pretext that through their participation their views will influence policy or they will be in control of resource allocation dedicated to locally-defined projects. The proliferation of a range of unprincipled activities that are passed off under the name of one or another PM has a range of negative effects including undue criticism being levelled against PMs. It has nevertheless, also lead to useful reflection and analyses of PM processes by practitioners and academics (see Cook and Kothari, 2001; Gaventa and Cornwall, 2008; Hickey and Mohan, 2004).

Abraham and Purkayastha (2012:124) note 19 references to literary works that each recognise the variety of labels used to name participatory and action research approaches. For example, 20 years ago, the International Institute for Environment and Development (IIED) and the Overseas Development Agency (ODA) named 44 different PMs, prefaced with the remark that "[t]he interactive involvement of many people in differing institutional contexts has promoted innovation, and there are many variations in the way that systems of inquiry have been put together" (IIED and ODA, 1994:98-99). Attempting to define or distinguish between the unnamed and differently named or branded PMs, has remained a mostly a futile exercise. PMs are not static and there are few universally acknowledged definitions, let alone any that have widely agreed upon implementation standards and mechanisms to monitor, evaluate and regulate use. Chambers (2008:170) notes how a number of practitioners have abandoned labels. Recognising the continuing evolution of PMs based on a variety of catalysts including "...poaching and fusion (from other 'branded' PMs) as sources of creativity" (Jupp, 2007:115), Jupp suggests the use of "...generic language

to describe the different contexts in which participation is used... rather than brand names and acronyms" (ibid:122).

PAR (see Burkey, 1993 and Rahman, 1993) and Participatory Rural Appraisal (PRA - see Chambers 1997, 2005, 2008) are the two brands of PMs which together are the closest to the methodology employed for CLIQ. Hickey and Mohan (2005:6) refer to PAR, conscientisation and popular education (influenced by the writing of Freire, Fals Borda, and Rahman) as "emancipatory participation". The focus is on education, popular conscientisation, and socio-political action. As an action-orientated methodology, PAR falls within the critical theory set of paradigms (Guba and Lincoln, 1994:109), with Prozesky and Mouton (2001:537) describing it as "...a dramatic change from what is conventionally seen as 'proper' research in positivist terms, that is objective, impartial, scientific and quantified". Burkey (1993:63) defines PAR as "...a means for [poor people] to gain knowledge and to use it to improve their lives".

The three principle components of PRA are methods, attitudes and behaviour and sharing, with the visual and tangible PRA methods regarded by Chambers and many others as "...the most visible and obviously distinctive feature of PRA" (Chambers, 2008:86-87). Hickey and Mohan name this approach as "populist/ participation in development" (2005:6). In the early 1990s, PRA was practiced and adapted by practitioners around the globe.<sup>39</sup> As a PM, it was debated by practitioners and academics striving to share and learn from each other, facilitated through networks and workshops co-ordinated by the participation group championed by Robert Chambers at the Institute of Development Studies (University of Sussex).

The application of PMs to research on QoL and its use in development interventions is well articulated by McTaggart, as quoted in Reason and Bradbury's (2001:1) introduction to a handbook on action research (AR): "The aim of participatory action research is to change practices, social structures, and social media which maintain irrationality, injustice, and

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<sup>39</sup> PRA evolved from Rapid Rural Appraisal in the early 1990s. In 1995 amidst much debate regarding the name PRA, the core publication of PRA experiences was renamed from RRA Notes to Participatory Learning and Action (PLA) Notes. Some continued practicing under the PRA brand, while others adopted the PLA brand. Chambers (2008:87-89) details the variety of approaches that contributed to the evolution from RRA to PRA/ PLA and beyond.

unsatisfying forms of existence". The congruence of AR (see Altright *et al.*, 2002; Dick, 2005; Wadsworth, 1998) and Participatory Research [PR] (see Cornwall and Jewkes, 1995; White and Pettit, 2004) with aspects of PRA and PAR led to my inclusion of AR and PR literature in my post-field discussion of research methodology. PAR, PRA, AR and PR all discuss guiding principles, behaviour and attitudes of external researchers or activists, without which mere participation in visual methods for gathering information and facilitating local analysis would essentially be reduced to another extractive research tool. Following Jupp, I refer to CLIQ's research methodology as *participatory action research (par)*, being a generic name that describes the context within which the participatory approach was undertaken. It is from this post-field perspective, that chapter 4 discusses PMs and *par* drawing on literature inclusive of that which specifically discusses PRA, PR, PAR and AR.

## 4.2 Challenges and Critiques

Challenges facing PMs have been discussed by a number of proponents and detractors of PMs, like Brock and Pettit (2007), Chambers (2008), and Hickey and Mohan (2004). Cook and Kothari (2001) present a compilation of critiques of participation in the *Tyranny of Participation*. Introducing this conceptual and ideological examination of the theory, method and practice of participatory approaches (PA), Cook and Kothari (2001:13) assert that there are "...more overarching and fundamental problems with participatory approaches to development than those reflected in earlier critiques" (ibid:13). Table 4-2 summarises challenges to PMs from three sources.

Chambers' (2008) list of ethical issues related to PMs, focuses on local practical implications of poorly designed and implemented PMs. Brock and Pettit's (2007) list of methodological and conceptual issues, is based on their analysis of experiences from a range of practitioners working with a variety of PMs. Four of their five challenges are directly linked to *par* as a dual-goal process, and Chambers' (2008) list also relates to issues of purpose (see Table 4-2). Unfortunately, Cook and Kothari's (2001:14) list of challenges does not sufficiently capture the nuances of some insightful challenges raised by contributing authors, but all three sources do nevertheless, refer to challenges relating to unequal power relations, which is critical theory and practice of participation.

**Table 4-2: Comparative lists of challenges to PMs**

<b>Chambers' ethical issues</b> related to the use of PMs (2008:163-164)	<b>Brock and Pettit's key</b> <b>challenges facing PMs</b> (2007:6-13)	<b>Cook and Kothari's themes on</b> problems with participation (2001:14)
Ch_1: taking people's time Ch_2: raising expectations Ch_3: extracting information without being clear to those who provide it Ch_4: extracting info which will be used against people Ch_5: exposing people to danger Ch_6: repeating activities Ch_7: causing tensions and violence within community	BP_1: common words different meanings BP_2: scaling up and replicability BP_3: standardisation or adaption BP_4: external or local needs BP_5: information or learning	CK_1: the naivety of assumptions about the authenticity of motivations and behaviour in participatory processes CK_2: how the language of empowerment masks a real concern for managerialist effectiveness CK_3: the quasi-religious associations of participatory rhetoric and practice CK_4: how an emphasis on the micro level of intervention can obscure, and indeed sustain, broader macro-level inequalities and injustice

Other common issues relate to the purpose of participatory activity or the agenda of those implementing the research and the existence and recognition of difference within groups of people who are the intended beneficiaries (a.k.a. the community). For example, a focus on extracting information (*Ch\_1; Ch\_3; Ch\_4*, in Table 4-2) relates to the challenge of how to balance external needs for information (often using standardised approaches across areas for comparison purposes) against internal needs for learning, flexibility and empowerment (*BP\_3; BP\_4; BP\_5*). Cook and Kothari (2001) express a challenge around purpose as outsiders' focus on reaching output targets (e.g. for donors) which is masked as empowerment (*CK\_2*). This links back to the issue of the multiple interpretations, use and abuse of terms like empowerment or participation (*BP\_1*). Cook and Kothari also refer to a disregard for power relations and difference within communities (*CK\_1*) that paves the way for other problematic practices, such as the replication of standardised participatory methods and lack of flexibility (*BP\_2; BP\_3*) and public discussion of contentious issues (*Ch\_5; Ch\_7*).

These sets of challenges relate to four key aspects of approaches to development and research, namely:

- a] supporting paradigms, underlying concepts and fundamental principles;
- b] stakeholders' goals (where multiple or alternate goals are often in conflict) and result in trade-offs);

- c] politics and relationships of power (where there is often a lack of awareness or disregard for the existence and influence of power relations and an inability or unwillingness to engage with issues of difference and conflict); and
- d] the contextual relevance and flexibility of the methodology.

Perspectives relating to paradigms, purpose, power and context help define whether or not a methodology is participatory. Challenges and critiques of PMs are drawn from examples of the poor practice, as well as from reflection on the practical difficulty of implementing quality processes based on a set of fundamental principles. I believe that the literature does not give sufficient attention to the latter. Reflection on practice is a key element of the ethical use of PMs and there are numerous examples of formal and informal reports that draw out lessons for the improved use of PMs. One of the examples of practitioners' self-reflection on their own work aimed at promoting good PM practice, emanated from an international workshop with 27 leading PRA practitioners, as documented in Kumar (1996). Together these practitioners listed 58 symptoms and causes of low quality PRA work (Kumar,

1996:70-75). Table 4-3 lists 12 of these, and in comparison with Table 4-2 illustrates how many of the challenges identified by Cook and Kothari in 2001, were already receiving attention five years earlier, and how some were still challenges in 2008.

The tone of Cook and Kothari's introduction (2001) does not reflect constructive criticism or inspire any hope for the future adaptation and usefulness of participation: "...any meaningful attempt to save participatory development requires a sincere acceptance of the possibility that it should not be saved" (Cook

**Table 4-3: Symptoms and causes of low-quality PRA work**

1	assumed that PRA methods equals development and positive change
2	information extraction with rhetoric of political correctness
3	selling the 'PRA service' is a new commercial activity
4	impositions made on the poor
5	Unchallenged myths regarding community harmony
6	neglect of 'costs' to individual livelihoods
7	obscure political realities / divisiveness within community
8	historical inheritance of short-cut evangelism
9	get rich quick
10	lack of openness and sharing
11	lack of...analysis of difference
12	project-led/ focused, not community-led/focused

Source: Selected Text from Kumar (1996:74-75)

and Kothari, 2001:15). This suggests a lack of recognition of the numerous reported successes based on PM use. Success stories involving PM use continue (see Chambers, 1997:119-129), despite the almost inevitable inclusion of process errors. Chambers remarks that Cook and Kothari (2001) raise well-known shortcomings of PMs (which many practitioners have sought to address), while "... criticisms that should have been made were overlooked..." (2008:91).

In reference to Cook and Kothari's "...vigorous academic critiques that emphasised the 'tyranny' of participation..." Dill (2009:718), Dill refers to a softening of critiques in early 2000s, citing Hickey and Mohan (2004, 2005) who reassert the transformative potential of PMs. Hickey and Mohan (2004) collated a set of literary responses to Cook and Kothari, based on self-critical reflection from practitioners and constructive analysis from theorists, which they took forward in *Relocating participation within the radical politics of development* (Hickey and Mohan, 2005). Their key concerns with participation relate to:

- a] a lack of recognition of pervasive and persistent structures of oppression and social injustice (and an "...obsession with the 'local'...");
- b] an insufficient understanding of the processes of power and empowerment;
- c] "...an inadequate understanding of the role of structure and agency in social change...";  
and
- d] the technical or mechanical implementation of participatory methods, rather than participation as "...a political methodology of empowerment..." (Hickey and Mohan, 2005:8).

These concerns are reflected in part in Tables 4-2 and 4-3, with the exception of Hickey and Mohan's (2005) third point regarding structure and agency.

There is no common definition or set of minimum standards for PMs. While valuable, attempts to document and analyse the variety of PMs in use will always be overtaken by ongoing methodological innovation. "The sheer volume of books, journals articles, and conferences devoted to participatory and action-oriented research is indicative of its importance and likely to be used in more flexible ways and for many more purposes in the future" (Abraham and Purkayastha , 2012:126). Recent noteworthy additions and changes have been the move away from branded methodologies to methodological diversity and

pluralism; increased engagement with power relations; increased popularity of face-to-face learning such as immersions (Chambers, 2008:101, 160, 164 & 169). Debates on the ethics, effectiveness and theoretical base of PMs will continue, as will the spread and evolution of PMs in terms of concepts, focus, methods, process and topics. Nevertheless, a set of principle elements or fundamental aspects helps to identify the kinds of processes and approaches that could (or should) be considered as participatory.

### 4.3 Fundamental Aspects of par

[W]hile it is tempting to focus on its distinctive methods and techniques, the essence of participatory research lies not in these, but rather the commitment to certain principles, which guide the conduct of the research. (White and Pettit, 2004:11)

In the subsections below, I outline the fundamental aspects and principles of generic *par* as I have come to understand it through practice and as described in the literature on PRA, PAR, AR, PR and PMs.

#### 4.3.1 *Both a Means and an End*

Inherent in the concept and practice of participatory research is the assumption that participation will enhance well-being, both as a good in itself, and as the means for the better representation of other interests. (White and Pettit, 2004:4-5)

People's active participation in defining concepts, sharing and analysing information, prioritising problems, seeking solutions and implementing plans, are more likely to lead to solutions appropriate to their context (Kleine, 2010b): this is participation as a means. Participation as an end is similar to a state of collective being or socio-political order where, as the need arises, people can choose to be part of processes, activities and institutions that impact on their lives and therefore on their ability to achieve specific goals. Participation as an end resonates with Sen's central concern regarding the "... overall freedoms of people to lead the kind of lives they have reason to value" (Sen, 1999:10), where freedom is the primary end and this state (of freedom) enables people to pursue more specific development ends (or outcomes). Alongside Burkey's (1993:56) assertion that meaningful participation is the essence of development, participation in its active and political sense is

close to the concept of freedom – being free to choose to be involved (or not) in various activities and organisations.

People need self-confidence to tackle their daily problems, which often leads to self-reliance with regard to improving their QoL (Burkey, 1993:50). Self-confidence is often gained through participating alongside others, which is the basis of experiences of PMs as empowering. More specifically, “[p]erhaps the greatest contribution that development assistance can make is to help the poor regain their confidence in themselves and in their ability to fight their way up from poverty” (Burkey, 1993:53). This is similar to inner empowerment (see Rowlands, 1997:110) and self-efficacy (see Bandura, 1989) as discussed in subsection 2.2.2 (p28). Participation as an end resonates with the concepts of freedom, empowerment and development.

#### 4.3.2 *Having a Dual Focus*

It seems to me that action research is in a sense true to label. It seeks to achieve action and research simultaneously. It seeks better action, and better understanding of that action. (Wildman and Dick, 1998:3)

PMs usually have a dual focus on action and on research (Barahona *et al.*, 2007; Brock and Pettit, 2007; Cornwall and Jewkes, 1995). At the heart of PMs is the recognition of an unjust social order, where the oppressed and systemically disadvantaged need to empower themselves and work towards a more equitable state of human co-existence. The goal is to generate and implement action plans for social change, based on information and analysis generated through inclusive local participation. This information can also be used for non-local purposes, for example to generate theory or to inform policy, when accompanied by consent of those who produced the information.

Different emphases are placed on goals of action and of research, depending on the context, the relative power of local and non-local stakeholders, and how power relations are (or are not) dealt with. Some regard making a difference through action as the primary and abiding characteristic of participatory research (White and Pettit, 2004:6). When information generating activity and analysis is defined by and focuses on the information needed to plan and implement local action, these dual goals can work in harmony. However, when the research goals of non-locals dominate, the quality of participation and local relevance of

information suffers, reducing chances of empowerment. This tension is often present in *par*, but can be managed and need not be divisive if trade-offs are made (Brock, 2002).

#### 4.3.3 *Being Value-defined and Political*

How people acquire, process and use information is linked with the way they interpret the world, with the philosophy that underlies their system of analysis. (Barahona *et al.*, 2007:165)

In the context of an unjust social order, Prozesky and Mouton (2001:537) define PAR as “[a]n activity in research which is used to serve the ends of empowerment, conscientisation and emancipation in development”. Rahman (1993:81) defines conscientisation within PAR as the “...stimulation of self-reflected critical awareness on the part of oppressed people of their social reality and of their ability to transform it by their conscious action”. Thus the political context of the practice of PMs is that within an unjust social order, the marginalised and excluded need to be conscientised in order to challenge the status quo.

Our perceptions and experiences inform our reality (Rowlands, 1997) and therefore, bias is inherent in all concepts and no research can be value-free (Rahman, 1993:88&90). This is expressed by Guba and Lincoln (2005:195) as value-mediated findings, characteristic of the critical, constructivist and participatory paradigms, with respect to the relationship between local people (insiders), external agents (outsiders) and knowledge. “Participatory action research ... starts from the principle that it is not possible to separate facts from values and social relationships” (Burkey, 1993:61). Therefore it is important for outsiders to discover and account for their own values, beliefs and goals (Harding, 1993). The practical implication of this is the need to reflect on the process of data interpretation and analysis with reference to individual biographies and histories, as well as disciplinary bias of outside researchers (Wray, 2004:28).

Within PMs, the recognition of an unjust social order (as reflected through the different and multiple positions, power, perceptions, values, goals, and worldviews etc. of local and external stakeholders) is fundamental to the remaining key tenets of *par* presented below.

#### 4.3.4 *Flexible and Evolving, Responding to Diversity and Complexity*

[A]ction researchers... recognise that the world they operate in is complex and richly interconnected... When almost everything affects almost everything else, they recognise that simple causal models are quite misleading. (Wildman and Dick, 1998:4)

PMs are flexible in design; accommodate varying topics, contexts and purposes; and adapt in response to changing circumstances and emerging issues (White and Pettit, 2004). Mayoux (2007:93) refers to the Participatory Action Learning System (PALS) as "...an eclectic and constantly evolving methodology which enables people to collect and analyse the information they themselves need on an ongoing basis to improve their lives in ways they decide".<sup>40</sup> Jupp (2007:107-108) comments on the need for creativity, innovation and customisation when using PMs, especially when working with concepts that are not used locally (e.g. human rights) or issues that are habitually hidden from public scrutiny (e.g. violence against women). PMs are also suited to development and research activity concerned with concepts that have diverse or contested meaning, such as QoL (Costanza *et al.*, 2008; White and Pettit, 2004) and telecentre impact (Coward, 2008). *Par* is particularly appropriate to use with complex or emerging interventions (Chambers, 2008), as both have evolving processes where the focus changes and findings emerge over time. Flexible and evolving processes are critical in order to facilitate and support local agency and action, targeting local development solutions.

#### 4.3.5 *A Cyclical Process over Time*

Participatory action research takes place in time as part of the analysis-action-reflection process, where the people are both the subject and the object of the research; where the investigator not only shares this reality, but in fact participates in it as an agent of change. (Burkey, 1993:61)

Kurt Lewin's action-reflection cycle from the 1940s (cited in Sarac-Suzer, 2007) visualises the process of *par*, with many PM texts reproducing or adapting Lewin's cycle and discussing its practical and theoretical relevance to PMs (see Altrichter *et al.*, 2002; Burkey, 1993; Kemmis and McTaggart, 2000). The Plan-Act-Reflect cycle shown in Figure 4-1

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<sup>40</sup> PALS is one of the PMs described by Chambers (2008:93-96) as a promising participatory methodology which evolved alongside PRA.

illustrates an ongoing process with alternative activities of planning, action, reflection and revision. This cycle is referred to by Rahman (1993:80) as "...a progressive action-reflection rhythm" and fosters continuous learning. Goals and activities change over time, as people gain knowledge and insight into their reality, their place in the broader social order and potential solutions or avenues for progress (Burkey, 1993; Rahman, 1993).

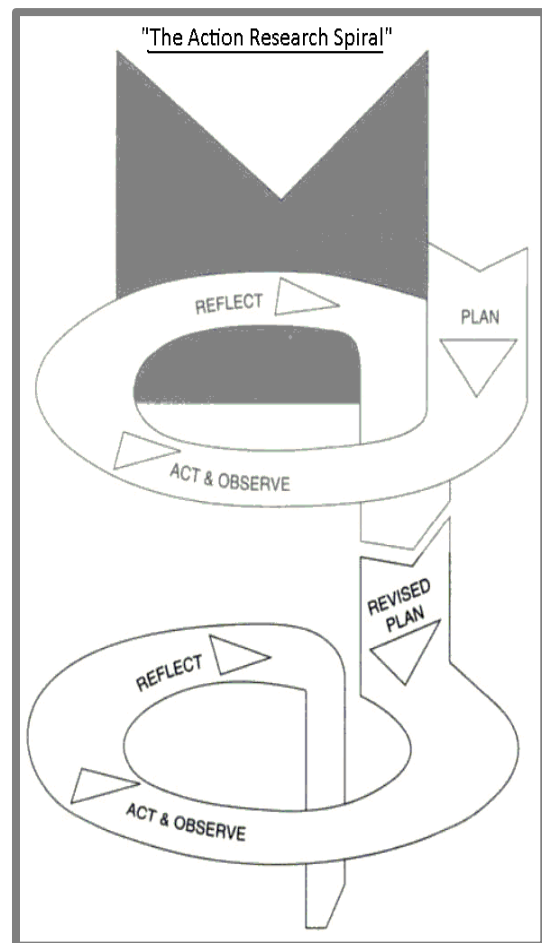
This cycle is time-consuming. "...[W]hilst meaningful development must be transformative, as opposed to top-down, there is no quick path to broadening the development process" (Wood, 2001:466). Time is needed for development processes to assess power dynamics; to include relevant groups and individuals; and for extensive consultation and debate regarding the local process and decisions (Burkey, 1993). Development initiatives using PMs rarely proceed according to planned time frames.

#### 4.3.6 Information and Knowledge

An immediate objective of PAR is to return to the people the legitimacy of the knowledge they are capable of producing, through their own collectives and the verification systems *they may decide to establish themselves, ...* and their right to use this knowledge – not excluding any other knowledge but not dictated by them – as a guide in their own action. (Rahman, 1993:91 – author's emphasis)

A major focus of Orlando Fals Borda's PAR work in Columbia "...has been the legitimisation of popular knowledge and its development..." to assist the masses to "...conduct their own struggle for social transformation" (Rahman, 1993:81). PAR questions *what* is regarded as knowledge and *who* the knowledge generators are, as does PRA (Chambers, 1997). Perceptions of the poor must form the basis for analysis – which is different from outsiders' perceptions (Burkey, 1993:62). Recognising that people are

**Figure 4-1: The plan-act-reflect cycle**

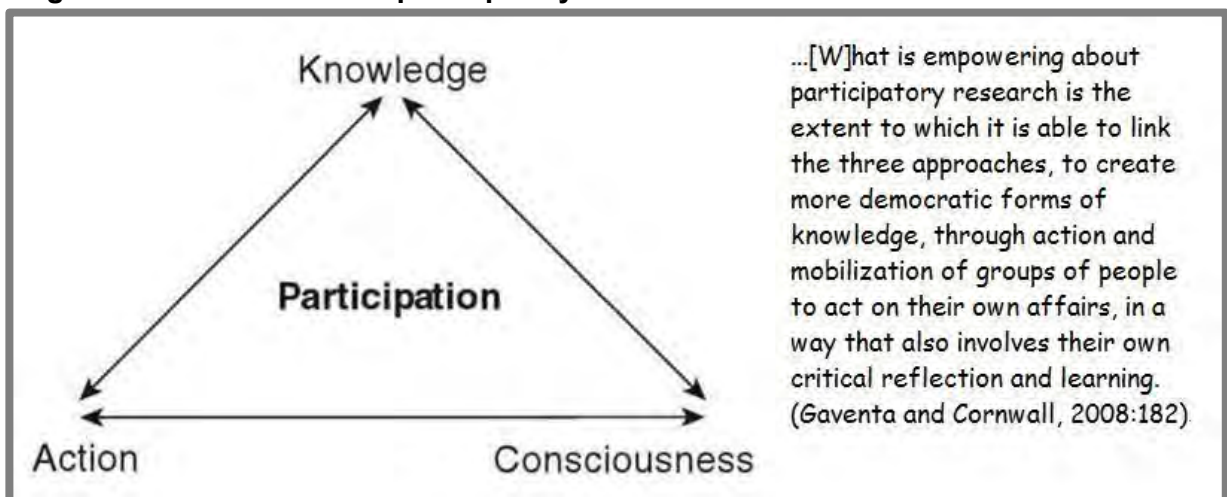


Source: Kemmis and McTaggart (2000:564)

capable of social enquiry (Rahman, 1993:159), local categories, definitions, issues, experiences and perceptions, analysis and action are at the core of *par*. While both professional and local knowledge together are needed (Burkey, 1993:80; Rahman, 1993:196), the nature, timing and purpose of introducing 'expert' knowledge should promote the overall goal of the work and not counter the potential for empowerment.

From the many examples of empowering strategies that work, the first of four elements identified by Narayan (2002:14) as part of successful efforts to empower poor people, is access to information - and the second was inclusion and participation.<sup>41</sup> Information and knowledge are critical to empowerment processes, participation) and action research (Rahman, 1993; Urquhart, 2008). This is well illustrated through Gaventa and Cornwall's (2008:179) view of the three dimensions of PR, namely knowledge, action and consciousness (see Figure 4-2). PR challenges power relations by addressing the need for knowledge, action, and/or consciousness. Many accounts of PR indicate a focus on one of these approaches, but Gaventa and Cornwall (2008: 179) aver that all three are needed because they related to areas of change that are intertwined.

**Figure 4-2: Dimensions of participatory research**



Source: Gaventa and Cornwall (2008:179)

<sup>41</sup> The remaining two are accountability and local organizational capacity, which act in synergy with information and inclusion (Narayan, 2002:14).

#### 4.3.7 Participation and Power: Exclusion and Inclusion

[C]ommunities often reflect divisions and competing interests and not that often harmony and common purpose. (Roodt, 2001:478)

With the focus away from the knowledge of the professionals or external researchers, the question of who participates – and what they participate in - still remains. Chambers (2005:158) points to the value of questioning *whose* knowledge, preferences, criteria, planning, implementation, experimentation and monitoring counts, elaborating on the focus of “Whose Reality Counts?” (Chambers, 1997). These are practical questions that interrogate claims of participation, by considering the detail of research and action processes.

Consideration of who participates and what they participate in, must go beyond the simple divide of local versus external stakeholders. The lumping together of people as *the community*, is the source of much criticism of activity purporting to be participatory (see Kothari, 2001; Taylor, 2001). Experienced and reflective PR facilitators recognise that power relations within groups and geographical areas, impact on the nature and extent of participation:

This much is clear: participation ... does not automatically include those who were previously left out of such processes. It is only as inclusive as those who are driving the process choose it to be, or as those involved demand it to be. (Guijt and Kaul Shah, 1998:19)

Furthermore, there are multiple dimensions, levels and types of power which can influence processes, as illustrated by Gaventa’s power cube (2006:25). Power is a relational concept and the roles of the various stakeholders in the process should take cognisance of the power relations within, between and across organisations, informal groups, families and individuals. An analysis of power is critical to action research activity (Gaventa and Cornwall, 2008; Prozesky and Mouton, 2001; Rowlands, 1997) and the critical theory paradigm recognises the need for the empowerment of the marginalised, oppressed, excluded, impoverished or disadvantaged. “Central to the ability of people to take control of their own lives and to undertake organised collective action, is the concept of power, more specifically power structures and relationships within particular communities” (Roodt, 2001:479).

In many development initiatives which originate from outside the area of interest (or group considered to be in need of development), unequal power relations between external

and internal stakeholders are present from the beginning of the process. These and existing local power relations are altered as the process gets going, often through initial negotiation by outsiders to gain entry into an area and the process of gaining local consent to take part in the initiative. How these power relations are dealt with, depends to a significant extent on conduct and worldview of outsiders, whether external researchers, development facilitators or “change agents”.

#### 4.3.8 *The Role of Outsiders as Change Agents*

Catalytic initiatives are taken by persons coming from the well-educated class ..., independent of macro social organisations ..., to promote self-mobilisation of the rural underprivileged for group or organised action to emerge from out of their own deliberations. (Rahman, 1993:79)

Sen (1999), Prozesky and Mouton (2001), Rahman (1993), Burkey (1993) and Chambers (2008) all refer to the role of a change agent within a participatory process. Burkey (1993:76) specifies that while the change agent initiates the process of change, the direction of change is determined through interaction with the people they are working with and that “[t]he primary role of change agents is to release the creative energies in people” (ibid:75). Through initiating a “...process of critical awareness-building...”, the change agent facilitates human development and conscientisation, striving to change the way people think (Burkey, 1993:78-79). The dynamic and evolutionary nature of participatory processes, especially empowerment objectives, means that the roles of various participants change as the process unfolds. With the process of conscientisation, capacity building and the development of internal leadership underway, the change agent’s role diminishes (Burkey, 1993; Rahman, 1993).

Burkey’s contention that change agents rarely arise from within the community (1993:75), places PA in the critical theory paradigm, where the external agent or inquirer is regarded as a “transformative intellectual”, as opposed to the constructivist paradigm where the change agent is regarded as a “passionate participant” (Guba and Lincoln, 1994:115). Rahman’s description of the changing nature of the role of the researcher indicates that the paradigmatic location of a particular participatory initiative can shift as it progresses or that it can be located in both paradigms. Some forms of citizen research or AR research are based on the initiator or catalyst being a local person, who is of and from the group

motivated to investigate or act on an issue (McTaggart, 1989). With an 'insider' catalyst, the implementation of some form of PM fits more naturally within the constructivist paradigm. The recognition of a personal agenda or motivation on the part of external change agents is a vital part of the concept and practice of *par*, but in many cases does not receive sufficient attention. Rahman (1993:80) refers to change agents' research interests as another agenda or motivator, such as the search for new visual methods of analysis with illiterate people, or the identification of an ethical role for intellectuals within people's development processes. The role of change agents is reflected in the attitudes, behaviour and characteristics regarded as appropriate.

#### 4.3.9 Guiding Attitudes, Behaviour and Ethics

The 'social life' of any research project - its principles, conduct and relationships established with respondents - is in fact central not only to its morality, but also to the quality of information it can yield. (White and Pettit, 2004:24).

The relationship between the external researcher or change agent and local groups influences the process and outcomes of development initiatives. The above quote reflects that the values, behaviour and attitudes of researchers are critical to both the action and research goals of *par*.<sup>42</sup> In order to effectively fulfil their role, change agents should espouse attitudes and behaviour that is most conducive to promoting the empowerment of those they work with. The conduct of researchers or change agents is regarded by White and Pettit (2004:11) as a primary principle of PR.

With reference to Internal Learning Systems (ILS), Narendranath (2007:79) notes the importance of external facilitators' belief in the capability of poorer people when guiding a process aimed at empowerment: "[t]hey have the right to set their life goals and strive to achieve them. ILS is a tool that has enormous potential to manifest this agency and build on women's internal resources and capabilities".<sup>43</sup> The need to trust in the ability of the oppressed is echoed by Freire (1970) and Chambers (2008).

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<sup>42</sup> White and Pettit's (2004:24) 'morality' refers to the need for PR to produce outcomes that are valued locally.

<sup>43</sup> ILS is one of the PMs described by Chambers (2008:93-96) as a promising participatory methodology which evolved alongside PRA.

Burkey reproduces a list of 14 roles of the change agent (1993:79-81) and a list of seven characteristics that change agents need (ibid:82). A comparison between Burkey's lists and the activities and behaviour of the PRA facilitator as discussed by Chambers (1997) again illustrates the commensurability between PRA and PAR. Both for example, refer to the need for respect, honesty and humility; the belief that "they can do it"; reflection on their own behaviour and role; and the promotion of broad participation, while also locating and working with vulnerable and invisible groups (Burkey, 1993:76-87; Chambers, 1997:131).<sup>44</sup> Jupp (2007:120) notes that competent *par* facilitators are willing to "...continually improve, adapt and create new ways of finding out". "Many of the changes in behaviour that make a difference concern power relations – handing over the stick (or pen or chalk), sitting down, listening, learning, not criticizing, not interrupting and so on" (Chambers, 2005:167).

#### 4.3.10 Research Methods

While visual diagramming methods are often used within PMs, a variety of methods can be used at different stages of a *par* process (if appropriate to the current need), including some quantitative and qualitative methods common to the positivist paradigm (e.g. questionnaires). Visual methods usually associated with PRA, include transect mapping, matrix ranking, flow diagrams, seasonality graphs, time-trends, and so on.<sup>45</sup>

Chambers (1997) identified six different types of information analysis that can be facilitated by various visual methods (see Table 4-4). When *par* principles guide the facilitation of such methods, it often has empowering benefits, such as instilling a sense of accomplishment; revealing people's capabilities to facilitate, draw, recount, and analyse; and uncovering unrecognised local knowledge. This boosts feelings of self-confidence and self-efficacy. It is the potential for such methods to reveal people's

**Table 4-4: Dimensions of methods**

1	spatial
2	nominal (naming, lists, collecting)
3	temporal (chronological, sequential)
4	ordinal (sort, compare, rank)
5	numerical (score, count, estimate)
6	relational (linking, relating)

Source: Chambers (1997:135)

<sup>44</sup> The discussion in Burkey (1993) does however make more direct reference to issues of conscientisation and conflict resolution, than that of Chambers (1997).

<sup>45</sup> See Chambers (1997: 116-119) for a menu of PRA methods and approaches.

capabilities they thought were beyond them and to circumvent low literacy levels, that makes these methods most suitable for use within an empowering process.

There are numerous other features of visual methods that contribute to the empowering effect. For example, the use of inexpensive materials for drawing encourages experimentation and exploration; the availability of many drawing instruments encourages multiple contributions; and the visual nature of methods allow for different types of interaction and participation (e.g. visually, verbally, and through visual outputs that can be debated and revisited at a later stage). In the time-trend shown in **Error! Reference source not found.**, participants used buttons to indicate how different aspects of community life changed over time. Here the use of movable objects encourages participants to express alternative opinions, because the number of buttons allocated to cells can be easily changed until a group reaches consensus or compromise. Where such debates occur, a record of the discussion during the production of a visual output is vital (particularly) for external research purposes, as it captures the range of opinions and issues affecting the topic of discussion. Similarly observation notes on the process followed and behaviour of facilitators and participants help to validate the data, because it provides a summary of how the information was produced and particularly events that may have influenced the data. Appendix B (p311) provides further detail on the nature of participatory visual methods and empowering impacts.

**Plate 4-1: Time Trend using buttons**



Photo: Heidi Attwood

## 4.4 Summary Participatory Methodologies

People's relative position in a world of inequality influences their values, perspectives and aspirations, along with their material well-being and many other aspects of life. Through self-defined needs and goals which reflect the local context, people are able to design, plan and implement solutions to contribute to local development and hold personal relevance and value. A participatory approach can facilitate a process whereby those at the centre of the development effort, take a leading role in all aspects of the process, while also incorporating the knowledge, resources and action of outsiders as appropriate. Issues of power and empowerment are central and therefore a participatory approach must be guided by some fundamental concepts and core principles. Table 4-5 lists the core principles presented in chapter 4.

While many in the development field claim to support or use PMs, practice includes a diverse range of activity, including approaches that do not challenge power relations or seek social justice. The practice of participation is messy, contested, time-consuming, arduous and potentially dangerous. Parfitt does well to capture the essence of why it remains a popular approach:

**Table 4-5: Core principles of PMs**

1	Both a means and an end
2	Having a dual focus
3	Being value defined and political
4	Flexible and evolving, responding to diversity and complexity
5	Process cycle and time
6	Information and knowledge
7	Participation and power: exclusion and inclusion
8	The role of outsiders as change agents
9	Guiding attitudes, behaviour and ethics
10	Empowering research methods

[W]hile this ... may make participation a problematic approach, it also gives rise to opportunities for promotion of an emancipatory agenda. In other words, participation is a problematic and contested ground, but one with the potential to deliver real benefits to those who have hitherto been incorporated in the project of development as objects of the manipulations of development agencies. (Parfitt, 2004:538)

A more political agenda was and remains present in the theory of participation (Hickey and Mohan, 2005). The question for future reflection and analysis is why many (but not all) paths of practice have deviated from an emancipatory agenda.

The final section of chapter 4 focuses on the application of participatory methodologies with regard to QoL and ICT use, where agency and empowerment form an important part of the type of participation envisaged.

## 4.5 Combining PMs with ICTs, Development and QoL

This post-summary section of chapter 4 brings together the literature on QoL, empowerment, ICT4D and PM. First, I consider Community Informatics (CI) illustrating the similarities it has with PMs, and then go on to present examples of the practical application of PMs together with ICT4D, ending with my view on the synergies between QoL, empowerment, participation and ICTs.

Making human development the goal of ICT4D is therefore a daunting challenge that requires participative and multidisciplinary reflection, continued research and evaluation, and meticulous preparation on the ground in order to enhance its potential for human flourishing. (Hamel, 2010:60)

### 4.5.1 ICT4D as Community Informatics

Returning to ICT4D theory and practice, some readings imply that CI and ICT4D are one and the same. Michael Gurstein contends that CI is a part of ICT4D, as well as an alternative to ICT4D. CI is “...one of the strategies ...within the context and framework of ICT4D” and simultaneously “... an implicit critique of the conventional approaches to ICT4D” (Gurstein, 2007:63-64), such as the technology-transfer approach to ICT4D.

A CI approach...ideally begins with the local community identifying a need or possible application and then beginning a process of working with those with the requisite skills to respond to or satisfy that need always within the context of where the local community is in control and is directing the process of its own technology enablement. (Gurstein, 2007:63)

Gurstein’s description of CI above places it firmly within the group of PA to development research and action, because a] it involves action and research; b] it includes locally identified needs and reflects other contextual aspects; and c] the process is initiated, directed and controlled locally. The description of a generic CI process above resonates with Kleine’s CF and Sen’s underlying CA with respect to the importance of strong local agency. From the definition below, CI also recognises the need for social justice and political empowerment for the marginalised:

Community Informatics (CI) is the application of information and communications technology (ICT) to enable and empower community processes. The objective of CI is to use ICT to enable the achievement of community objectives including overcoming “digital divides” both within and between communities. But CI also ... examine[s] how and under what conditions ICT access can be made usable and useful to the range of excluded populations and communities and particularly to support local economic development, social justice, and political empowerment using the Internet. (ibid:11)

CI as described by Gurstein (2007) represents an ICT4D approach that embodies the main aspects of current ICT4D theory, as summarised in section 3.4. The CI definition immediately above reflects issues of access, ability to use and the usefulness of ICTs; it sees ICTs as a tool for use to meet local objectives; and it recognises that some people are excluded from the digital revolution and in general, suffer social injustice and are disempowered. CI brings together QoL (through locally defined needs and goals for improved well-being); agency and empowerment (as mechanisms to promote social justice, pro-poor development and a better QoL); ICTs (as tools to promote empowerment and meet human needs); and participatory process (as guided by principles of PMs). But as with other branding debates (and sometimes the unfortunate addition of turf battles), it is what you do that counts:

The question for participatory interventions becomes how they can enhance the capabilities of participants to project their agency beyond specific interventions into broader arenas, thereby progressively altering the ‘immanent’ [or inherent] processes of inclusion and exclusion. (Hickey and Mohan, 2005:22)


#### 4.5.2 *Successful Initiatives Combining QoL, ICTs, PMs and Empowerment*

Two development initiatives that have been recognised internationally as examples of good practice are the Centre for Digital Inclusion (CDI) which was founded in 1995 in Brazil and *ReflectICT*, which is an adaptation of the Regenerated Freirean Literacy through Empowering Community Techniques (*Reflect*) methodology, piloted by Action Aid in the early 1990s. There are numerous differences between these two examples, most notably the field of development practice from which they originated.

CDI originated from a vision of how ICTs can empower people and evolved to incorporate a participatory educational approach to further its goals of transformatory education, empowerment and social change (CDI, 2012). CDI supports technology and

learning centres in impoverished communities in partnership with existing local organisations. “The true challenge is making technology relevant and useful in the context of marginalised populations” (ibid).

#### Plate 4-2: Centre for Digital Inclusion



"We believe in the potential of people and technology as a tool of liberation and empowerment."

"CDI methodology enables people to become active and informed citizens, capable of organizing their communities, making their voices heard, and affecting true change."

"CDI believes that underprivileged communities themselves are better positioned than governments or companies to decide how to solve the problems that affect them locally. This is why the CDI model places a premium on shared responsibility and local ownership."

#### CDI & our achievements

CDI has completed 18 years of operations.

Digital Inclusion Spaces:	<b>780</b>
Lives impacted since 1995:	<b>1.54 million</b>
Direct beneficiaries in 2012:	<b>92.084</b>
CDI Educators in 2012:	<b>1.007</b>
Countries in which CDI has presence:	<b>12</b>

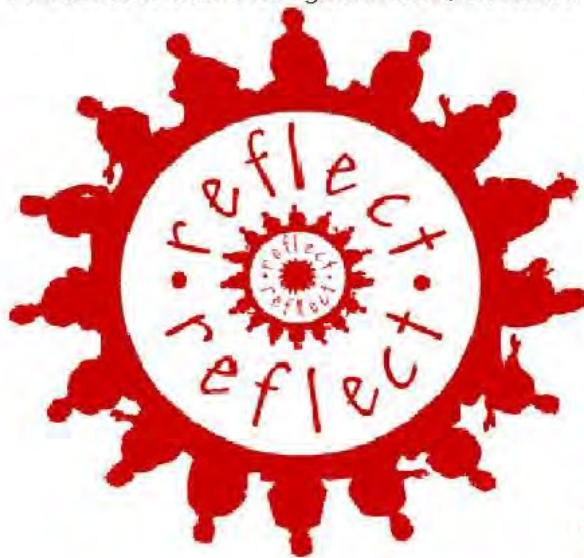
Source: CDI (2012)

The adult literacy project, *Reflect*, was based on a vision of how adult education initiatives can be enhanced through fusing the theoretical thinking of Paulo Freire with the practical visualisation methodologies developed within Participatory Rural Appraisal” (Duffy *et al.*, 2008:7). *Reflect* circles proved to be empowering, creating a democratic space for participants to share information, plan and act, based on a greater political awareness of power and increased confidence to express themselves. *ReflectICTs* was an extension of *Reflect* with a rights-based approach to information and communication aimed at building local capacity to make use of ICT tools to conscientise people and promote local needs-based action (De Vries, 2006). The quote below illustrates the nature of impact and Plate 4-3 contains further information about *ReflectICTs*.

Case studies reveal numerous accounts of mainstreaming women, amplifying voices of the marginalised, recognizing entitlements and demanding rights. In general empowerment was addressed effectively and broadly by improving the communication. (De Vries, 2006)

**Plate 4-3: ReflectICTs**

*Reflect* is an approach to adult learning and social change used by over 350 organisations in more than 60 countries; face-to-face, interpersonal exchange supports the goal of empowering economically poor people and their communities. Based on a rights-based approach to information and communication, the 3-country *ReflectICTs* project draws on the *Reflect* approach in an effort to build community capacity to identify specific information needs, to learn methods to access it, and to gain confidence to claim their rights. In short, the *Reflect* approach is a strategy for:



- Strengthening voice
- Stimulating participation as a political process
- Creating democratic space
- Drawing on existing knowledge
- Linking reflection and action
- Using participatory tools
- Facilitating power awareness
- Ensuring coherence of practice
- Promoting self-organisation

**act:ionaid**

Source (logo): Duffy et al. (2008)

Source (text): De Vries (2006)

Both these initiatives can be regarded as successful as they have each been sustained for more than a decade; have spread to a number of countries, and have received international recognition for their work. Against the backdrop of numerous telecentre failures (see section 3.2, p44) and extensive criticism of PMs (see section 4.2, p76), the similarities between key features of CDI and *ReflectICTs* appear to be at the core of their success. These include the following:

- a] Participants identify, select and tackle issues of common local concern, reflecting their context. A range of issues are accommodated through a flexible approach.
- b] Technology is viewed as a tool, to be used when relevant and as appropriate.
- c] Both are rooted in an educational methodology, with a focus on information and knowledge for conscientisation and transformative action.

- d] There is a focus on social justice, based on an awareness of power relations and the politics of participation and marginalisation, from a rights-based perspective.
- e] Both emphasise the need to make local voices heard, building on local organisations as well as local capacity and responsibility to affect change.
- f] Both provide empowering physical community spaces for social interaction.
- g] Both heed past lessons from theory and practice. CDI has avoided a number of pitfalls identified with regard to the provision of telecentres and the technological DD approach. *ReflectICTs* has retained the principles and practice of transformative political PA.

The examples of CDI and ReflectICT indicate that *development* interventions that make *use of ICTs* within a *shared local social space* can be successful when the aim is to address *locally defined* issues of inequality and injustice through *participatory processes* that are informed by a recognition of *unequal power relations*. Both CDI and *ReflectICT* use a human agency approach, employing ICTs as tools to serve locally defined needs and goals. As such, they are examples of the practice of participation that focuses on QoL, ICTs, agency and empowerment.

#### 4.5.3 Synergies between QoL, ICTs, PMs and Empowerment

People-centred strategies and technologies are needed to make ICT4D a model for people-centred development. (Hamel, 2010:60).

PMs have been used to explore well-being and QoL for decades and Chapter 2 presented agency and empowerment as important for individual pursuit of a better self-defined QoL, as well as an important part of the definition of a good QoL. Chapter 4 presented a concept of participation with the fundamental objectives of empowering the marginalised and challenging social injustice (based on individual and group agency), with the ultimate goal of improving self-defined well-being. This links QoL, PMs and empowerment (through agency).

In the last decade, PMs have been increasingly used to implement ICT4D interventions and research. Chapter 3 presented ICT use as enabling participation, information and communication, which directly link to Kleine's agency resources, namely information, educational and social resources (especially from the perspective of education, socialisation and communication as similar and intertwined concepts. Inner empowerment (e.g.

increased self-esteem, motivation and self-efficacy) directly linked Kleine's psychological resources, is critical to agency and to empowerment. Evidence (albeit limited) of psychological empowerment, as well as evidence of increases in other resources due to ICT use, links effective ICT use with agency and empowerment, as illustrated through the CF. With access to information, education, freedom of expression and freedom of opinion as human rights (UN, 1948) this places ICT use as a tool to realise human rights and improve QoL. Much of the recent articulation of a human development approach to ICT4D theory is mutually supportive and complementary. Eight core aspects of current ICT4D theory set out in section 3.4 (and mirrored in definitions of CI) are summarised in Table 4-6, illustrating shared aspects and concepts across the theory of QoL, PMs, empowerment (through agency) and ICT4D.

The range of unique combinations means that development outcomes that emerge are varied and unpredictable. Therefore, it is difficult to trace causality linking ICT use to socio-economic impact and development

outcomes. Due to this complexity, logic models are useful for planning and analysing ICT4D interventions.

Of the many current ICT4D logic models and frameworks, Kleine's CF is the most comprehensive, illustrating an iterative process linking the structures in the surrounding context, individual characteristics and agency resources with development outcomes, through a process of individual choice and action, which can be empowering. Like CI, Kleine's model is applicable to development in general, beyond ICTs. Kleine models centres on

**Table 4-6: Core aspects of ICT4D (and CI)**

1. Justice & Equality	The focus of ICTs provision, access and use is to decrease human inequality and promote social justice.
2. Context	The context of provision, access and use is most relevant.
3. Basic Needs	ICT use can facilitate human needs for information, socialisation and inclusion.
4. Tools	ICTs are tools for use as needed to address local needs, promoting agency and empowerment.
5. Resources	Effective ICT use recognizing the realities of poor people's lives requires a range of resources.
6. Skills	Different types of skills are required, for relevant, goal-focused use.
7. Complexity & Diversity	Participatory approaches and logic modeling assist with analyzing the multiple, complex and diverse links between ICT use and human development.
8. State & Human Rights	Government has a responsibility to deliver ICT access to marginalized groups, based on ICT use as a human right (or at least as central to accessing human rights).

empowerment with QoL reflected in development outcomes. Kleine's model also addresses, specifically, Hickey and Mohan (2005) criticism that participation does not take sufficient account of structure and agency.

Numerous aspects of the current ICT4D theory reflect a central place for a participatory approach to ICT4D interventions and research, and the active and creative engagement of ICT users beyond technology. PMs have processes and methods to accommodate complexity - a feature of QoL; agency and empowerment; and ICTs and ICT4D. Internationally recognised best practise reflects the synergy that can result from a human agency approach to promote pro-poor development inclusive of ICT use and participatory methodologies. The examples included in subsection 4.5.2, illustrate the concurrent application of ICT4D, QoL and human agency theory, where synergies arise because of the following shared perspectives:

- a] both a means to an end and an end in itself;
- b] characterised by diversity and complexity;
- c] adapt, reflect and evolve around the local context (and cannot be prescribed from outside);
- d] remain unique to the individual, even though many activities, goals, views and outcomes may be shared; and
- e] can result in pro-poor local development when used by the marginalised and excluded.

Chapters 2, 3 and 4 have thus set the theoretical basis for CLIQ as a *par* project that aimed to empower people through ICT use and to support them through interaction and reflection to improve their QoL. The scope of the theoretical review in Chapters 2, 3 and 4, does not allow for a review of findings regarding QoL, empowerment, ICT use and the practice of participatory methodologies in SA. Appendix C (p313) provides a brief insight into some findings in this regard, which indicate a] continuing gender and racial inequality with respect to QoL; b] a racial and gendered DD; and c] persistent problems national government's effort to facilitate with PAC in SA. The following chapter describes the design and implementation of CLIQ, after a brief view into the paradigms underlying the methodological approach. The chapter presents information on what was done, where it was done, when it was done, how it was done, and who was involved.

# CHAPTER FIVE:

## IMPLEMENTING CLIQ

People's experiences, beliefs and hopes are reflected in their daily activities, thoughts and behaviour (Bandura, 1989). This applies to people who are being researched – the participants, respondents, subjects, sample, etc. – as well as the people implementing the research (e.g. researchers, fieldworkers and translators). Thus information collected as data from participants encompasses their biases, and when analysing and linking data to existing theory, the search for a theory of 'best fit' is biased by the worldview of the researcher. Advancing strong objectivity, Sandra Harding (1993:69) argues that "...the subject of the knowledge be placed on the same critical, causal plane as the objects of knowledge" because the values of the researcher (subject) are reflected in the selection of questions, design of the research, analysis of data, and so on. Therefore, researchers need to identify and reflect on their own beliefs, values and desires, as these become integrated into the research (Harding, 1993:55-70). My worldview and experiences influenced the design of the CLIQ process, as well as the selection of theory for further analysis of findings. Below, I briefly outline aspects of critical theory and the constructivist paradigm, within and across which, the CLIQ approach is located.

Approaches to knowledge generation vary according to what can be known, how it can be known and the relationship between those that know and those that want to find out. An approach's conceptual stance on these questions of ontology, methodology and epistemology determine whether it falls within the positivist, post-positivist, critical theory (and close relations) or constructivism paradigm (Guba and Lincoln, 1994:108-109). Participatory inquiry, along with feminism, neo-Marxism and materialism, is part of the critical theory paradigm (ibid:109), which contests that what can be known about reality is

mediated by social, political, cultural, ethnic, economic and gender values.<sup>46</sup> Constructivism differs most from critical theory with regard to ontology and this is the specific aspect of constructivism that informs my approach. Constructivists assume “...multiple apprehendable and sometimes conflicting social realities that are products of human intellects, but that may change as their constructors become more informed and sophisticated” (Guba and Lincoln, 1994:111). This supports how a person can give two different answers to a similar question when asked at a different time or in a different context and still be confident that they are being true to what they know.

In terms of methodology and epistemology, critical theory and constructivism are similar. Both have a transactional/ subjectivist assumption regarding the role of the researchers, where the concept of an objective researcher is rejected. Rather researchers’ impact on the reality being researched is recognised. Both paradigms also imply a “...dialectic[al] methodology aimed at the reconstruction of previously held constructions” (Guba and Lincoln, 1994:112). In other words it is through a process of interaction between researcher and researched, that a particular version of past reality, is recalled and presented. Specifically with regard to the researcher’s role, critical theory’s “transformative intellectual” who facilitates change “...as individuals develop greater insight into the existing state of affairs ...and are stimulated to act on it” (Guba and Lincoln, 1994:115) best describes the role I played in CLIQ. While I might prefer to have been a “passionate participant” - a constructivist’s view of the role of the researcher – the socio-economic and historical context of the research did not allow for this. Just as researchers and fieldworkers influence the focus and findings of an inquiry, so too do the research methods and processes adopted, which become part of the research context:

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<sup>46</sup> Guba and Lincoln’s revision of inquiry paradigms (2005:192), adds “participatory” as a fifth paradigm, while their 1994 edition placed participatory under critical theory, where they recognise that distinct definitions of the various paradigms were still under debate (Guba and Lincoln, 1994:109). I found the four alternatives most useful in analysing where CLIQ fitted best, particularly with respect to epistemology. If I had first viewed the five alternatives (2005:195), I would probably not have thought much about CLIQ’s paradigm, as it would have fitted immediately under the fifth “participatory” paradigm. I am more comfortable with the four-way split, finding the debate on location of participatory practice between constructivist and critical theory very useful for interrogating the concepts underpinning an approach. Therefore, I do not use the updated 2005 version of five paradigms. Limitations of space do not allow me to pursue this issue further here.

Context is not the “bed” in which processes are embedded. Such a view would suggest that you can lift processes out of a given “local context” and replicate, scale-up, roll-out or whatever ... Processes themselves shape and frame context and in so doing, become part of “context” themselves. (Kleine, 2010a:5)

CLIQ employed a participatory approach, therefore the discussion in chapter 4 has already provided a sense of the ethos and principles that CLIQ aspired to when engaging with research partners, participants and other stakeholders. As the area-specific processes unfolded over a period of about two years, CLIQ became part of the research context, as is common with processes of engagement over time. This chapter proceeds with a description of the four areas where CLIQ was implemented, the design and implementation of the research process, and the groups of participants that took part. CLIQ methods, ethos and process are presented in some detail, because this thesis considers the impact of the practical implementation of the research, on the outcomes.

The national context of the CLIQ research was one of high racial and gender inequality with respect to QoL, based on a history of racial and gender discrimination and oppression (among other forms of oppression), which was entrenched in the legal, social, cultural, political and economic structures and institutions of South African society. The post-1994 period saw the steady destruction of formal laws and policies perpetuating discrimination and inequality, as well as some progress towards less discriminatory informal norms, behaviours and attitudes.

## 5.1 Research Areas and Participating Telecentres

In the design phase of CLIQ, consideration on how and where to implement CLIQ resulted in the selection of USAASA as an implementing partner for three reasons. Firstly, USAASA’s mandate, detailed in the Electronic Communications Act (ECA) No.36 of 2005, was: “...to promote the universal provision of electronic communications networks and electronic communications services and connectivity for all” (ECA, 2005:20) with specific mention of “under-serviced areas” under policy directives (ibid:24). Secondly, USAASA-supported telecentres existed in poorer rural and urban areas in KZN, as part of USAASA’s 154 telecentres countrywide (USAASA, 2009:18). Thirdly, the KZN representative of USAASA was enthusiastic about the project and felt that we would be able to agree on a Memorandum of Understanding with USAASA’s national head-office, because the ECA (2005) provided scope

for such collaboration. Together, these reasons indicated USAASA as a most suitable research partner. We envisaged that CLIQ would produce outcomes that closely approximated reality, because the research would take place at existing state-supported telecentres, in environments filled with everyday problems and possibilities. Furthermore, as part of national government's established structures for ICT delivery, research findings would have a ready-made audience given that USAASA was the appropriate state institution to consider and implement any policy related findings.<sup>47</sup>

Four research sites were chosen for the research under the guidance of USAASA's KwaZulu-Natal representative who was aware of the functionality, management and locale of all provincial USAASA-linked telecentres. The research sites were: eNyakatho, an urban township near Durban; eNingizimu, a peri-urban area near Amanzimtoti on the KZN south coast; eMpumalanga, a rural area near Mangusi in the northern KZN coastal area; and eNtshonalanga, a rural area near Richmond, inland of Durban (see Plate 5-1). The sites were purposively selected to ensure an equal spread between urban and rural areas; to locate the research at telecentres that were functional (or deemed soon-to-be functional); and to focus the research on the provision of ICTs within resource-poor communities. The descriptions of the research areas and telecentres that follow draw on my fieldwork experiences in each area and on participants' views and information about their area.<sup>48</sup>

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<sup>47</sup> While the KZN USAASA representative assisted at key times, CLIQ's partnership with USAASA fell well short of our minimum hopes and hardly touched on the possibilities opened up by the CLIQ process or findings.

<sup>48</sup> A socio-economic overview of each area is included in the CLIQ Community report (CLIQ-participants *et al.*, 2011:14-21), based on secondary research done by CLIQ research assistants.

Plate 5-1: Map of KwaZulu-Natal showing CLIQ sites



Source: Adapted from maps from [http://en.wikipedia.org/wiki/List\\_of\\_municipalities\\_in\\_KwaZulu-Natal](http://en.wikipedia.org/wiki/List_of_municipalities_in_KwaZulu-Natal) and [www.theodora.com/maps](http://www.theodora.com/maps)

### 5.1.1 eMpumalanga Area and Telecentre

eMpumalanga is located in the northern part of KZN, in the uMhlabuyalingana municipality (uMkhanyakude District) – see Plate 5-1. eMpumalanga residential area is located on both sides of the main road that links the town of Jozini to Manguzi and is four kilometres away from a game reserve which is marketed as an international tourist destination (see Figure 5-1). Many tourists pass through eMpumalanga to reach Manguzi,

which is the closest town to the tourist destination of Kosi Bay and a border crossing into Mozambique.

Except for a few brick houses and shops, most houses are built of traditional materials and do not have running water, electricity, sanitation or waste removal services (see Plate 5-2). Network coverage across eMpumalanga is very poor. To receive or send SMSs during the day, the closest

**Plate 5-2: Participant in front of her eMpumalanga home**



place for a reasonable chance *Photo: Jessie Knott*

of connectivity is on the road in front of the nearby game reserve. There was evidence to support entrepreneurship as a common livelihood. The desire to leave the area in order to progress in life was found among a number of younger people. Box 5-1 is an extract from a description of the area by one of the CLIQ participants.

**Box 5-1: “The area where I live” by MusaM21 (2009)**

[eMpumalanga] the area where I live, it is the place which doesn't have mountains and dams, it has a lot of forests and grass lands. At [eMpumalanga] we build our houses with small stones which are placed by small sticks and we use mud for plastering. Those who are in the middle classes, build normal houses which have four to six rooms - we don't have flats and mansions in our community.

Basically by 1984 the apartheid government dispersed our families from their lands and they built a game reserve which is full of elephants and other wild animals. Some community members get employed there.

In summer there is a lot of rain and it's too hot - we used to sleep under trees, listening to music. The young boys and girls used to go and swim in rivers and lakes, where maybe sometimes they fish for their families. Most of the people get money by selling different products to the community and others sell handwork locally and maybe they sell them to the tourists who visit the game reserves. Others, they are taken by tourists to go overseas for further education or employment.

Although I'm living in such a community which is full of challenges, I really enjoy to live here. I would be a light behind the darkness; I have to change that bad habit which says “there are no rewards on education”.

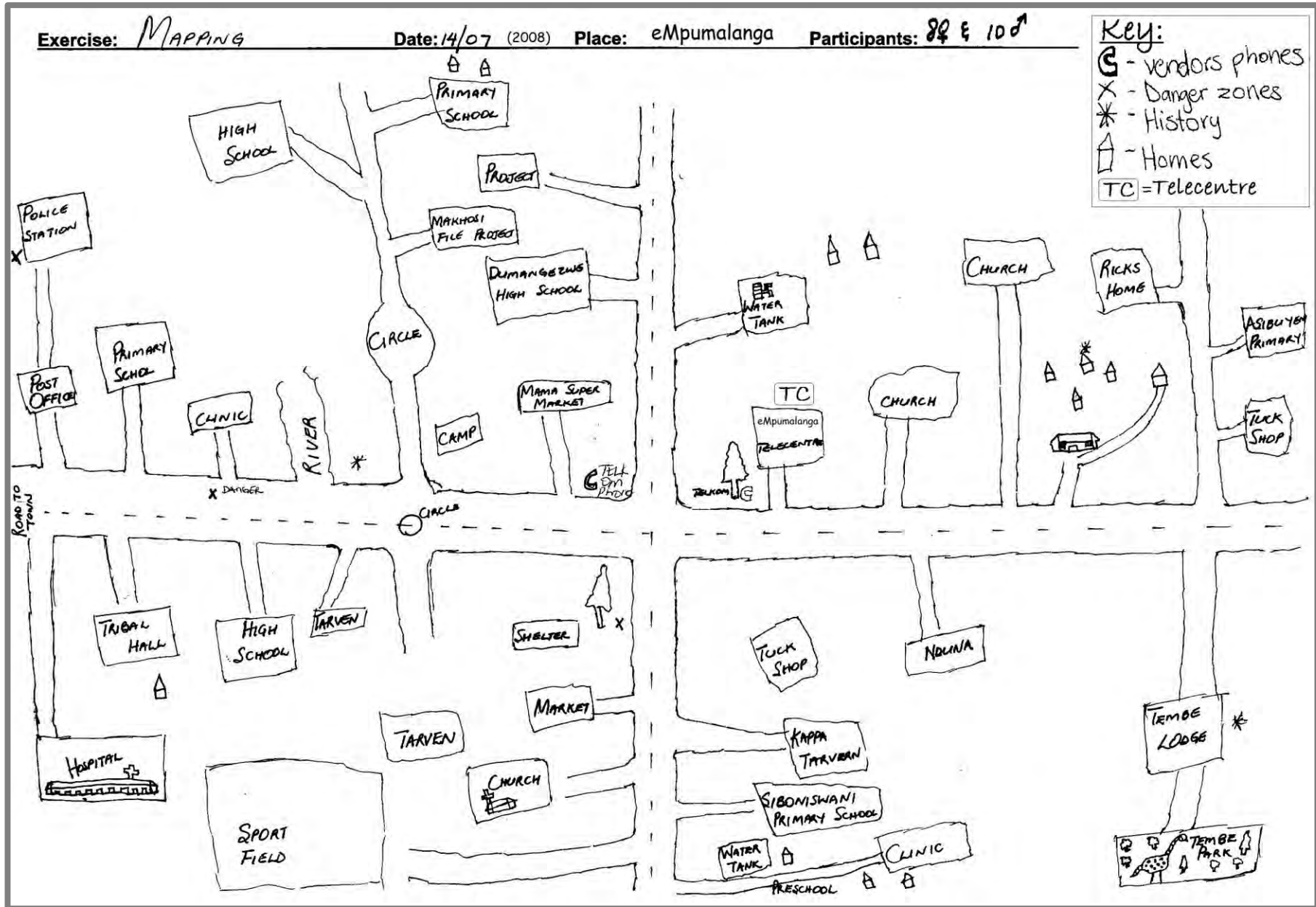
Local stakeholders in the eMpumalanga research process (aside from the 33 local CLIQ participants), included the eMpumalanga Development Centre non-profit organisation (MDCnpo), as well as P.E.A.C.E. Foundation (PF), an NGO based in Johannesburg, and Vuvuzela, a Durban-based IT company.<sup>49</sup> Up until the final dissemination workshop in 2011, we worked with five different MDCnpo chairpersons and two centre managers, as well as four telecentre facilitators. The telecentre was situated within the local development centre (LDC), which was run by the board of the MDCnpo. In 2008, the LDC included a community hall, catering co-operative, bakery, crafters' association, accommodation block, crèche, sewing co-operative, social welfare office, and the centre manager's office. The MDCnpo rented accommodation to the team during our stays, with catering by the catering cooperative located within the LDC. The telecentre, established in March 2008, occupied two adjoining air-conditioned rooms in the LDC, using one room as a reception area and the other for the ten computers, with desks and chairs.

The Department of Social Welfare and PF were involved in the set up of the LDC and the telecentre, although the telecentre equipment was provided by USAASA. In 2008, internet connectivity was via General Packet Radio Service (GPRS) satellite organised through PF, but the internet connection was changed to Telkom Satellite in 2009 due to the slow nature of the GPRS connection. The internet bill is paid for by the telecentre. The telecentre was open on week-days and sometimes on Saturday mornings. From 2008 to 2010, the cost of computer use was R20 per hour (and increased to R30 per hour in 2011). Two telecentre facilitators worked in the telecentre from 2008 until mid and late 2009 respectively. They were replaced by another local facilitator in late 2009 and a CLIQ participant in early 2010, respectively.

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<sup>49</sup> The names of community organisations running the four telecentres that took part in CLIQ have been changed. MDCnpo is a pseudonym.

Figure 5-1: Participants' map of eMpumalanga (2008)



### 5.1.2 eNingizimu Area and Telecentre

eNingizimu is situated in Ward 67 in the eThekweni Metropolitan municipality, just over 10 kilometres from the nearest large town of Amanzimtoti and about 30 minutes drive from Durban, via reasonably good roads (see Plate 5-1, p103). eNingizimu has a long history as an education hub, linked to the establishment of a mission station in the 1800s. The area appears typically peri-urban with a mix of brick housing, traditional housing (built from mud and wood), and more temporary structures made from corrugated iron and other materials commonly used within urban informal settlements. The history of eNingizimu as recalled by participants (see Table 5-1) reflects the political violence of the 1980s. From the 1990s onwards, the timelines shows regular development initiatives, the provision of service infrastructure and the relative political prominence of the area.

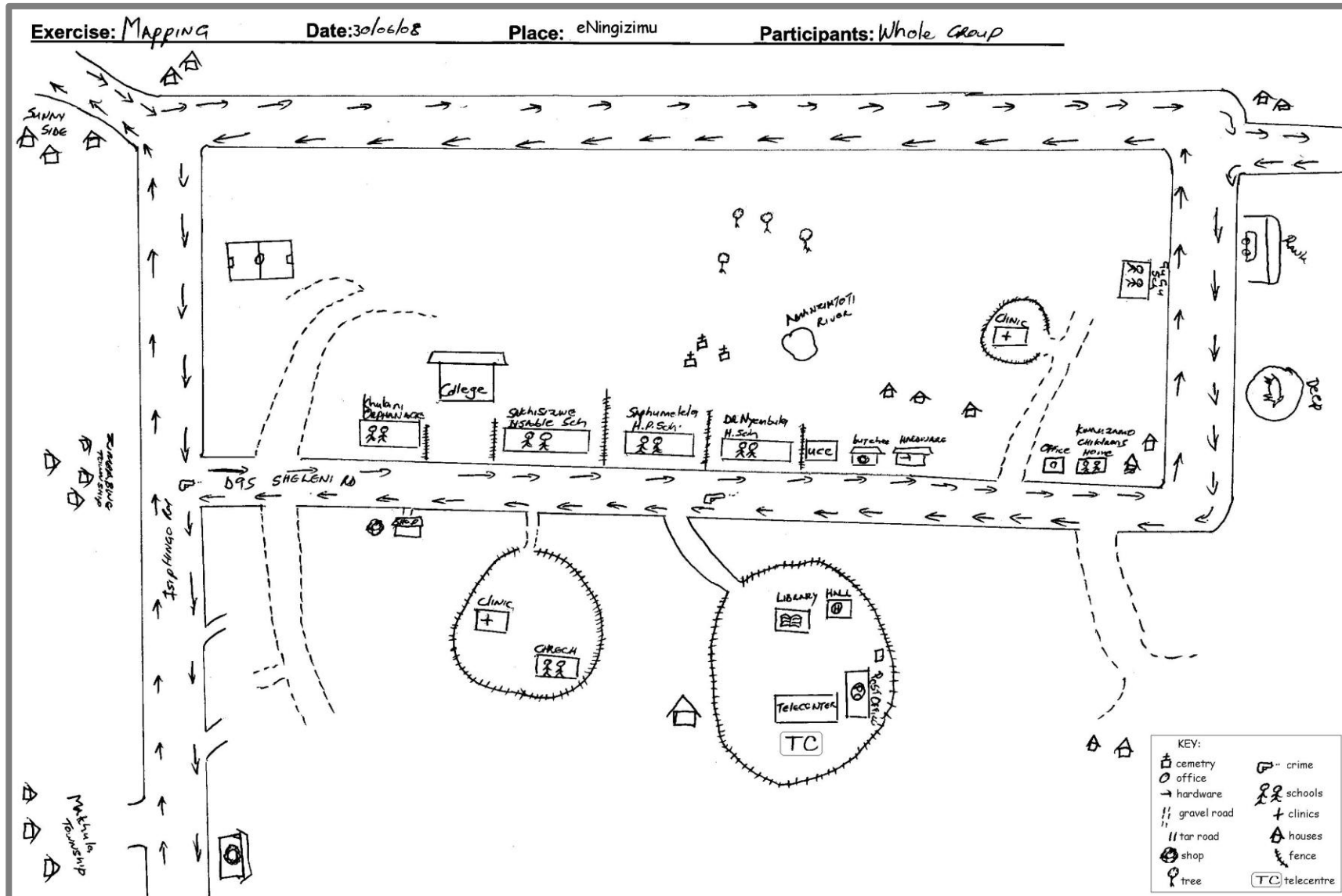
Participants drew maps of their area in two groups and then compared their maps with great interest (see Plate 5-3). This was helpful to participants who were new to the area, as well as to fieldworkers.

**Table 5-1: Timeline for eNingizimu (2008)**

Year	Events (updated in 2009)
1954	Oldest CLIQ participant was born.
1959	President Mugabe was schooling at [eNingizimu] College
1980	There was a fight between ANC and IFP
1982	Landline was installed in the area.
1983	Indian shops were vandalised because of violence in the area
1990	People started using cell-phones Igugu labanguni school was built
1991	Political member killed by KwaZulu police.
1992	There was a war in eNingizimu
1993	Electricity install in eNingizimu
1994	People vote for the first time for democracy
1996	Mandela & Jacob Zuma visited eNingizimu Tarred road was constructed Telecentre was built in the area.
1997	The new township was built
2001	Apostolic Church was built
2003	Drug abuse by youth The name of Amanzimtoti College was changed to [eNingizimu] College
2005	Community garden was started in area
2006	New school for disabled children was built
2007	Free tap water was installed in the area Clinic was built at KwaNomlando office Hardware store was built in the area Toilet was built in the area People were killed by the serial killer
2008	Foods destroyed the houses in eNingizimu Nursing school was opened called Promise Health Care People who were affected by floods received a grant/voucher
2009	There was a vitamin campaign They got internet in June or July

Source: eNingizimu participants, July 2008 (updated October, 2009)

Figure 5-2: Participants' map of eNingizimu (2008)



The eNingizimu telecentre is located within a Multi-Purpose Community Centre (MPCC) that houses a library, post office, community hall, sewing and catering co-operative and meeting rooms for various community groups. The MPCC is located near to [eNingizimu] College and on a busy road opposite schools, shops, a clinic, a crèche, and a children's home (see Figure 5-2).

The stakeholders in the eNingizimu research process were the 20 local participants and the eNingizimu Family Welfare Society (eFWS) which was the non-profit organisation (NPO) managing the telecentre and involved in the management of the MPCC.<sup>50</sup> CLIQ's main engagement was with the chair of eFWS, who was also the de-factor telecentre manager. The telecentre, set up by USAASA in 2002, was a fairly large room, with 10 computers networked to a server, desks and chairs, a fax machine, public phones and air-conditioning. The chair of the eFWS board oversaw the running of the telecentre and co-opted

<sup>50</sup> eFWS is a pseudonym.

**Plate 5-3: Comparing maps at eNingizimu**



*Note:* Older activists and self-employed participants eagerly explore the map drawn by youth participants during the initial-QLA, which continued up the wall.

*Photos:* Heidi Attwood (2008)

volunteers to work in the telecentre as facilitators. Internet connectivity was provided through Sentech, the government internet service provider and the internet bill was settled by government.<sup>51</sup> While in 2008 the telecentre charged R10 an hour for computer usage, this went up to R20 an hour in mid to late 2009. This is a pseudonym.

In 2008, the telecentre was used regularly by locals for photocopying, telephone calls, typing and faxing services, although service was not consistent as the fax and photocopier would often be without ink or paper. As found with some other USAASA-sponsored telecentres, the eNingizimu telecentre had a contract with the University of South Africa (UNISA), whereby UNISA students would use the computers for their studies and UNISA would pay the bill. School children from surrounding schools were also regular users.

In 2008, there were two facilitators, running the telecentre on a daily basis. Both had social links to the manager: the young man (who appeared most disinterested in things to do with the telecentre) was a family member of the telecentre manager, while the young woman (who was extremely interested in computers, telecentre users and the CLIQ project) rented a room in the manager's house. She took an active part in CLIQ visits and our intention was that she would work alongside the computer trainer, in order to improve her training skills. She died on 14 February 2009, due to complications from childbirth. Following the tragic loss of this motivated, effective, intelligent and helpful facilitator, a series of facilitators were co-opted or hired to work at the telecentre, however none of them remained in the position for very long.

### 5.1.3 eNyakatho Area and Telecentre

eNyakatho is in an urban part of the eThekweni metropolitan municipality, located approximately 30 kilometres from Durban city centre. eNyakatho has a rich political history and is the second largest township in SA. It is a well-established urban township, with a range of housing types including some upmarket dwellings, middle and lower income formal housing as well as informal settlements, and a matching range of service levels. A time-trend done by women in 2008 showed a steady increase in the number of people,

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<sup>51</sup> Sentech is a State-Owned Enterprise providing broadcasting and broadband infrastructure in SA, which includes internet connectivity to government departments, municipalities, and other institutions.

occurrence of disease and education levels, from 1940 to 2008. Crime, development and poverty were all noted as increasing from the 1970s onwards, with peaks of violence in the 1940s, 1980s and 1990s.

While many official maps of the area of eNyakatho are available, the map drawn by a group of seven male participants at the start of fieldwork (see Plate 5-4), gave a local view of the area, showing facilities and landmarks of importance to the participants, such as soccer playgrounds, schools, colleges, shops and taverns (see Figure 5-3). When reflecting on the CLIQ process, DuduzileF25's quote illustrates the map's local education value: "I got information about [eNyakatho] that I did not know before, even though I live in [eNyakatho]". The density of housing in this urban area is not reflected, but the map does show participants' houses in relation to the telecentre. The map also shows local areas of danger, which was of benefit to fieldworkers who later in the project, travelled around the area to interview participants at their homes.

In addition to CLIQ and USAASA (KZN), the local stakeholders in the eNyakatho research process were 23 local CLIQ participants and a locally-based national NGO, Nandi Community Development Trust (NCDT).<sup>52</sup> Most interaction and assistance was from the CEO of NCDT, who was also the de facto telecentre manager. The local library assisted CLIQ with free access to meeting rooms and catering was provided by the Kwase-Kwase co-operative (which was co-run by two CLIQ participants).

#### Plate 5-4: Mapping in progress at eNyakatho

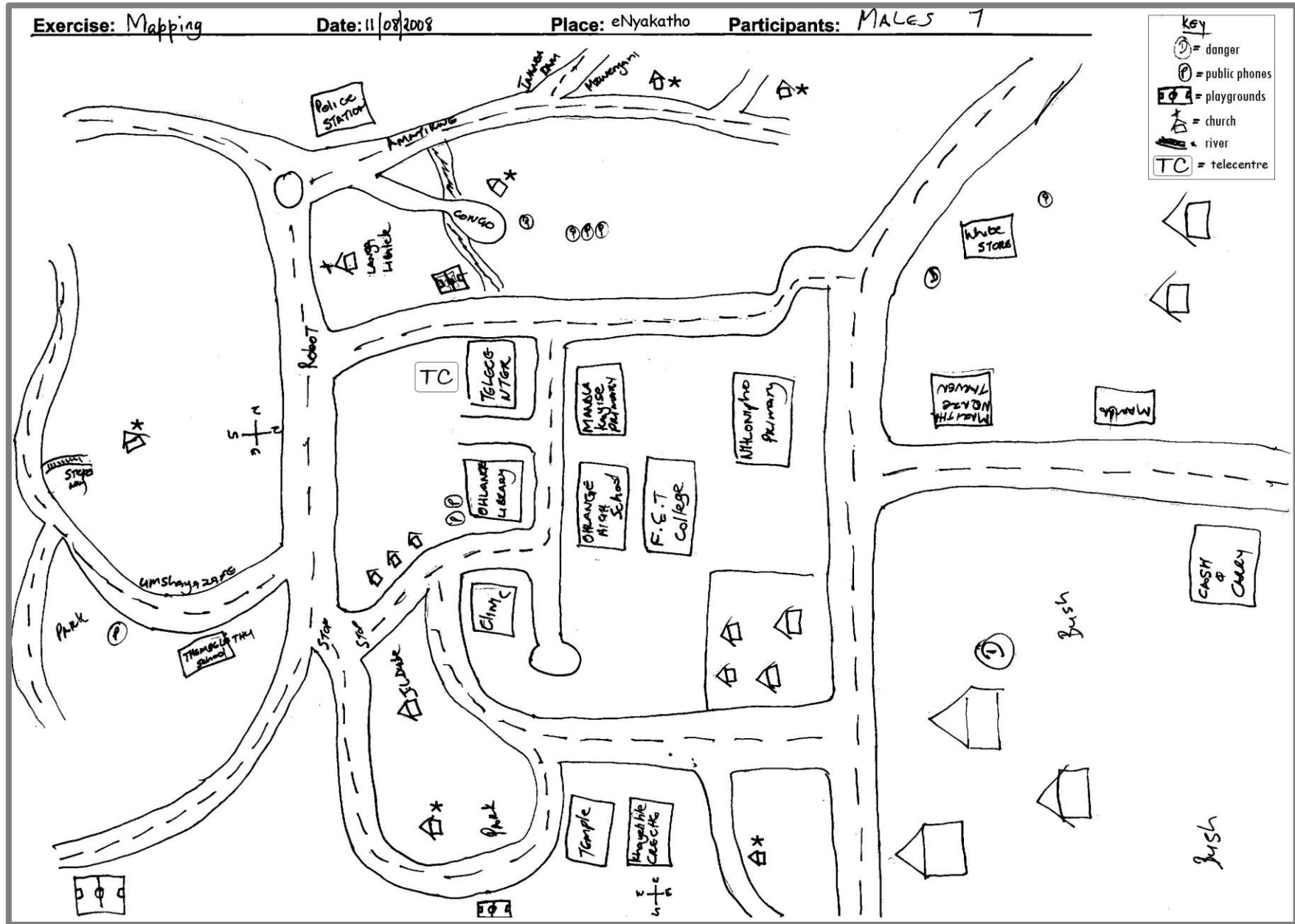


Photos: Elise Bjastad (2008)

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<sup>52</sup> NCDT is a pseudonym.

Figure 5-3: Participants' map of eNyakatho (2008)



The Community Digital Hub at eNyakatho was run by NCDT, a locally-based non-governmental training organisation, as a non-profit making operation. The telecentre was initiated by the CEO of NCDT who sought funding from USAASA. The eNyakatho Digital Hub was established in May 2006 (with USAASA funding), starting with 28 computers and is housed in a set of three containers used by NCDT (but owned by USAASA). In 2008, the digital hub consisted of a cyberlab (with 20 computers, a photocopier, fax machine and projection screen); a boardroom; and a computer refurbishment centre (where computers are fixed). The intention behind establishing a hub was that it would provide maintenance and other services to a “wheel” of telecentres and school cyberlabs in the vicinity. NCDT had 14 trainers in 2008, most of whom worked off-site as training consultants, with three staff members attached to the Hub. Internet connectivity was provided by government’s Sentech satellite and therefore the eNyakatho telecentre did not pay for internet usage. The cost of computer use was R10 per hour during CLIQ fieldwork, rising to R12.50 per hour, in 2011.

In 2008, all three components of the Hub were functional, with the cyberlab - an accredited ICDL assessment centre - fully booked providing computer training, except for Fridays when the public could use the cyberlab for free.<sup>53</sup> However, by the end of 2009 most of the computers had stopped working due to a leak in the roof that had not been fixed for reasons relating to the ownership of the structure and equipment (see Attwood *et al.* 2010). With few computers functional, training courses were cancelled and the telecentre was eventually closed towards the end of 2009 for safety reasons. The refurbishment centre was also closed due to staffing problems. By mid 2010, after CLIQ fieldwork was completed, the cyberlab had re-opened.

#### 5.1.4 eNtshonalanga Area and Telecentre

eNtshonalanga forms part of the Richmond local municipality, which is in the southern part of the uMgungundlovu district, approximately 38 kilometres south of Pietermaritzburg (see Plate 5-1, p103). This rural area of eNtshonalanga is located about 25 kilometres further south-east of Richmond along a gravel and sand road which winds through forest and through mountainous terrain. The area has many hills and mountains and the houses

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<sup>53</sup> International Computer Driving License (ICDL - the trademark of the European Computer Driving License Foundation Ltd.) is a computer skills certification programme which is internationally recognised.

are spread far apart (see Plate 5-5). A trip between eNtshonalanga and Richmond took anything from 40 minutes to over an hour, depending on the state of the road, the functionality of the vehicle and recent weather conditions.

**Plate 5-5: Thusong Service Centre at eNtshonalanga**



*Photos:* Heidi Attwood

Self-employed and unemployed participants recalled changes in different aspects of eNtshonalanga dating back to the 1980s, which they recorded in the form of a time-trend at the start of fieldwork. Figure 5-4 (a replica of the time-trend) shows that Aids (HIV), development and the availability of cell-phones and computers increased after 1980, while poverty, agriculture and livestock decreased. The population decreased towards the mid 1990s (due to political violence in the area) but started increasing again thereafter. As the population was decreasing, crime was increasing, peaking around the year 2000, before starting to fall again when people started returning to the area in the early 2000s. Cell-phones were first noticed locally in the mid 1990s, followed by computers and laptops around the year 2000.

A map of the area drawn by local activists shows the location of the eNtshonalanga Thusong Service Centre (TSC) relative to some participants' houses, local schools and shops (see Figure 5-5). The TSC (one of the national government's new-generation MPCCs) incorporated the eNtshonalanga telecentre.<sup>54</sup>

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<sup>54</sup> "Thusong Service Centres are access centres that were previously known as [MPCCs] whose purpose is to provide a block of services for Local Government including Government Social and Administrative Services,

**Figure 5-4: Time-trend (eNtshonalanga, 2008)**

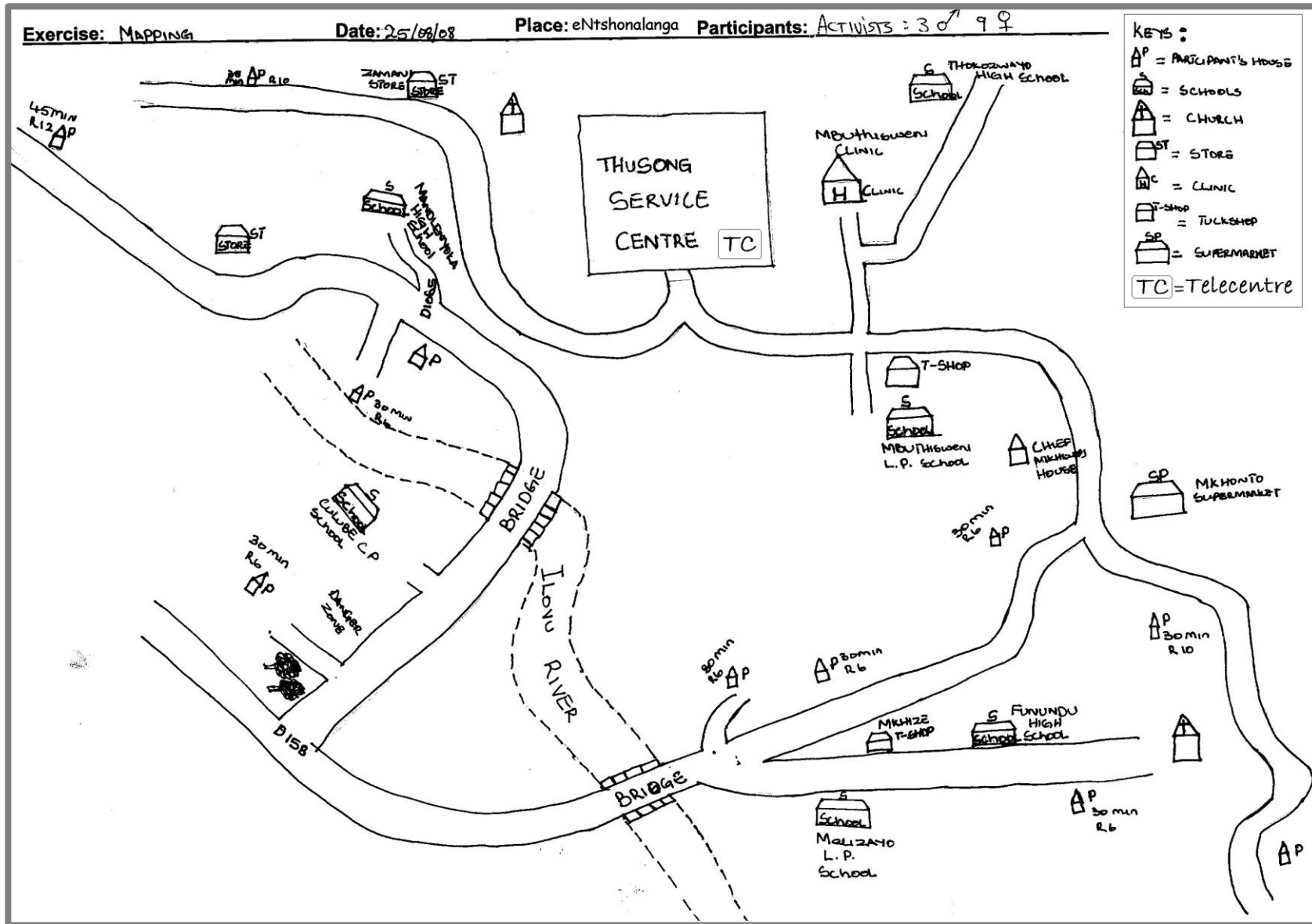
Year	No. of people	Crime	Poverty	Agriculture	Aids	Development	Livestock	Availability of ICTs:			Communication & information
								cell-phones	computers	laptops	
1980	●●●● ●●●●	●	-	●●●● ●●●●	-	-	●●●● ●●●●				-
1985	●●●● ●●●●	●●	-	●●●● ●●●●	-	●	●●●● ●●●●	-	-	-	-
1990	●● ●●	●● ●●	●● ●●	●●●● ●●●●	●	●●●	●●●● ●●●●	-	-	-	-
1995	●● ●●	●● ●●	●●●	●●●● ●●●●	●● ●●	●● ●●	●● ●●	●	-	-	Cell-phones were available
2000	●●●● ●●●●	●●●● ●●●●	●●	●● ●●	●●● ●●●	●●● ●●●	●● ●●	●● ●●	●	-	Schools have computers
2005	●●●● ●●●●	●● ●●	●●	●●● ●●●	●●●● ●●●●	●●●● ●●●●	●●● ●●●	●●●● ●●●●	●● ●●	-	Network available for everyone
2008	●●●● ●●●●	●●●	●	●●	●●●● ●●●●	●●●● ●●●●	●●	●●●● ●●●●	●●●● ●●●●	●● ●●	Thusong centre was opened

- Notes: 1. Participants used a scale of 1 to 10, where 10 = most and 1 = least.  
2. Time trend was done by unemployed youth and self-employed participants.

The main stakeholders in the eNtshonalanga research process were the participants; Xoxa Support Group (XSG), a national NGO with provincial branches; the Richmond municipality; and the eNtshonalanga TSC (administered by the municipality) in which the telecentre was located.<sup>55</sup> CLIQ interacted with four different TSC managers over the duration of CLIQ. The bulk of CLIQ's interaction however, was with the de facto telecentre manager who was both the provincial chair of XSG and the municipal official who dealt with the public regarding the telecentre. In order to understand the CLIQ findings with regard to QoL outcomes and PAC venue performance, a more detailed description of the context of the eNtshonalanga telecentre is needed (compared to the other areas). The eNtshonalanga telecentre was set up in 2005/2006 as part of a government TSC. The large and prominent TSC building also houses offices for the Departments of Labour, Home Affairs and Social Welfare, as well as a police station, a small library, a canteen, a post office, municipal office space, meeting rooms and a community hall that doubles as an indoor sports arena; all serviced by a reception area.

<sup>55</sup> XSG is a pseudonym.

Figure 5-5: Participants' map of eNtshonalanga (2008)



Rooms for accommodation are attached to the TSC, although these were in a poor state of repair in 2009 (and worse in 2010) and the centre struggles with access to drinking water. The telecentre occupies a large room on the ground floor, with computers and a fax machine provided by USAASA.

In June 2008, with an impending visit from the then President Mbeki, basic off-line computer functionality was achieved (and the telecentre was featured on SABC news as functional). However, the telecentre was not functional for most of the fieldwork period. A Sentech satellite provided internet connectivity for the entire Thusong centre, but full on-line computer functionality in the telecentre was only achieved in late April 2010. There was never a daily facilitator who would open the telecentre regularly (although CLIQ was informed about three different people who were 'appointed' to this position) and no computer training was planned or had been completed, nor were there any telecentre users during the brief periods when computers were working.<sup>56</sup>

Management of the telecentre was awarded to the provincial branch of XSG. In 2008, the chairperson of XSG in KZN was also employed by the Richmond Municipality as an assistant to the Mayor. In 2010, he became responsible for all community centres in the Richmond area (which included the eNtshonalanga TSC) and the fourth TSC manager (still under the Richmond municipality). From informal discussions with some of the previous TSC managers, centre staff and other local people, we understood that there was some unhappiness with the processes followed to appoint successive TSC managers, as well as the process to select an organisation to run the telecentre.

#### *5.1.5 Concluding Remarks on Participating Telecentres*

The nature of all the telecentres changed throughout the two year fieldwork period, due to the normal course of events, as well as their partnership with CLIQ. The third of three CLIQ objectives was to build the capacity of participating telecentres. This objective was added based on a request from the eNyakatho telecentre manager, who questioned upfront how their telecentre would benefit from taking part in the research. With hindsight,

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<sup>56</sup> The telecentre initiated some computer training in 2007 together with a Durban-based company, but this was never completed.

capacity building activities were integral to the implementation of CLIQ, because of the nature and extent of problems with maintaining functional telecentres and therefore providing participants with access to working computers - a vital element of the research design.

Capacity building activities undertaken at each telecentre differed in direct response to the local context and need. While a full analysis of the capacity building activities and process is beyond the scope of this thesis, an interesting insight emerged from reflecting on this set of ad-hoc activities. Capacity building activities to improve immediate and longer term functionality (listed in Appendix A, p310) were undertaken as and when the need arose, and accomplished to the extent that the resources available would allow, including the knowledge, motivation and energy of the CLIQ staff on hand. Not only did many of these activities build the skills and knowledge of telecentre staff, they also served to improve the implementation and results of CLIQ in four ways, namely by:

- a] providing CLIQ with firsthand experience of the range of telecentre problems and reasons for these problems;
- b] allowing further insight into participants' varied experiences of using the telecentres;
- c] assisting telecentres to resolve problems sooner than would probably have been the case, allowing computer training and participants' use of computers to continue; and
- d] facilitating a better relationship between CLIQ and telecentre staff through increased interaction.

While functionality was a selection criterion for the research sites, we found that eNtshonalanga was not functional by July 2008 as the USAASA official had predicted it would be and that eMpumalanga had very low functionality at the time of selection (partly because it was established only three months earlier). Each telecentre had unique operational dynamics related to local social norms and institutions and the practice of power, as well as the skills and personalities of the telecentre managers and facilitators. CLIQ impacted on telecentre functionality through assisting with problems and also through payments for computer time used by participants (boosting their financial resources). Similarly, telecentre functionality impacted on CLIQ implementation, as will be discussed in chapters 6 and 8. Table 5-2 summarises some of the basic features of the four research telecentres and compares overall functionality at the start of CLIQ in mid 2008, as well as in mid 2010.

**Table 5-2: Comparison summary of telecentres in research areas**

TC Aspect	Telecentre and year opened			
	eMpumalanga 2008	eNingizimu 2002	eNyakatho 2006	eNtshonalanga 2005/6
Location	A sparsely populated rural area (pop. 2020) 6 hours drive from Durban and 30 minutes drive from Mangusi (pop. 6560), with very poor roads and close to a national border.	A peri-urban area (pop. 1865) about 40 minutes drive from Durban (pop. 3.6mil) and about 10 minutes drive from Amanzimtoti (pop. 22575)	A densely populated urban 'township' (pop. 31786) about 30 minutes drive from Durban, accessible by tarred road.	A sparsely populated remote rural area, 2.5 hours drive from Durban and an hour drive out of Richmond (pop. 29209) on gravel roads.
NPO running TC	NPO responsible for the LDC housing the TC	NPO concerned with local development and management of the MPCC housing the TC	National training NGO based in the local township	Provincial branch of national NGO concerned with building a just and inclusive society
Staff over period of CLIQ research	A TC manager (the manager of the dev. centre) with 3 TC facilitators (with no more than 2 facilitators at a time)	A TC manager (the head of the CBO) with 7 TC facilitators (with no more than 2 facilitators at a time)	A TC manager (the CEO of the national NGO) with 4 TC facilitators (with no more than 2 facilitators at a time)	A TC manager (the provincial NGO head) with 4 consecutive TC facilitators
Equipment & Technology in mid 2008	11 computers, Vuvuzela GPRS satellite connectivity; air-conditioning; furniture; office telephone; fax; copier/ scanner	11 computers; Sentech satellite connectivity; air-conditioning; furniture; public and office telephones; printer; and fax.	20 computers; Sentech satellite connectivity; printer/fax/scanner/copier; additional printer; furniture; air-conditioning	10 computers; no connectivity; furniture; (unsure of telephone, fax, copier or scanner status).
Functionality mid 2008	Newly established and partially functional	Functional (with some computer training in past)	Highly functional (providing regular accredited computer training)	Non-functional
Changes impacting on functionality	Steady increase in functionality with removal of Vuvuzela software, a new internet connection, payment and empowerment of facilitators, and telecentre use by CLIQ	Fluctuating mostly due to technical computer or network failure. Loss of enthusiastic facilitator and lack adequate replacement. Inability to engage with service providers or acquire any technical competency.	Steady decline in functionality due to roof leak and damaged computers, with ownership issues hampering resolution. Some staffing problems	Mostly non-functional, until April 2010. Effectively, no facilitators. Computers stolen twice. No direction or adequate management.
Functionality mid 2010	Fully functional	Functional (but with continued spells of non-connectivity).	Functional (still recovering from complete shut-down at end of 2009)	Technically functional but without users as it was usually closed

## 5.2 The Design and Implementation of CLIQ

Making human development the goal of ICT4D is therefore a daunting challenge that requires participative and multidisciplinary reflection, continued research and evaluation, and meticulous preparation on the ground in order to enhance its potential for human flourishing. (Hamel, 2010:60).

CLIQ employed *par* to design and implement a process aimed at achieving its three goals. While the evolving nature of *par* processes is widely acknowledged (and expected) by practitioners, it remained important to have a detailed research design based on key principles of *par*, good research ethics and an understanding of a range of practical issues that may emerge during implementation. A good design based on clear goals, helped to guide decisions when the context indicated that adaptations are needed.

### 5.2.1 Research Design

When evaluating the impact of an intervention, the research design, implementation and analysis has to account for the continuous nature of life i.e. that participants, organisations and other stakeholders would continue with their regular endeavours alongside any project engagement. Thus, CLIQ would become one of a set of factors, opportunities, activities and situations that had the potential to influence QoL. Furthermore, new opportunities and unexpected events could also arise during the fieldwork period, as with the normal course of life.

The rationale underlying the design of CLIQ had four consecutive stages, namely to:

- a] establish groups of local people who were interested in learning to use computers and willing to participate in research;
- b] explore and record participants self-defined QoL;
- c] provide free computer training and the opportunity for computer use; and
- d] establish participants' perceived change in their QoL and project impact over the fieldwork period.

Details of the design, in particular the nature of training, project timing, and the nature of research methods, were influenced by a few key considerations, some of which emerged

during CLIQ's research design workshop held in May 2008.<sup>57</sup> Firstly, to isolate changes in participants' QoL that were due to the intervention, as opposed to changes that may have occurred as part of the normal course of life, a staggered approach to the introduction of computer training across the four areas was planned. By random assignment, eMpumalanga (rural) and eNingizimu (peri-urban) were designated as manje (meaning 'now' in isiZulu) sites, where computer training activity and participants' use of free hours would commence six to nine months earlier than in the designated maduzane (meaning 'later' in isiZulu) sites of eNtshonalanga (rural) and eNyakatho (urban). Conducting four planned participatory QLAs over the fieldwork period, would therefore allow the measurement of QoL change over about six months in the maduzane areas prior to participants' computer training and use, thereby getting an indication of what may be regarded as usual changes in QoL. In the manje areas, this design would allow for the measurement of QoL over a period of about one year, commencing after computer training, as well as further changes over another six months after prepaid computer access had ended (see Table 5-3). Using difference-in-difference analysis, changes in participants' well-being that occurred due to the intervention, as opposed to changes that would probably have occurred due to the normal course of life, would become apparent.<sup>58</sup>

**Table 5-3: CLIQ research design (May, 2008)**

			Computer use starts	(approx. 1 year)		Computer use ends		
Manje (Now) Sites	Initial field-day	Initial QLA	Computer training	Mid-QLA	No further ICT intervention	1 <sup>st</sup> Final-QLA	2 <sup>nd</sup> Final QLA	Dissemination
Approx. date	June '08	July '08	Sept '08	March '09	June '09	Oct '2009	June '10	Dec '10
Maduzane (Later) Sites	Initial field-day	1 <sup>st</sup> Initial QLA	No ICT intervention	2 <sup>nd</sup> Initial QLA	Computer training	Mid-QLA	Final QLA	Dissemination
					Computer use starts	(approx. 1 year)	Computer use ends	

<sup>57</sup> CLIQ's design workshop held in May 2008, was attended by a range of specialists in ICT training, ICT research, and community development, as well as representatives from leadership in each research area and the person(s) responsible for the local telecentre.

<sup>58</sup> Problems with multi-site analysis of the impact of complex interventions similar to those identified by Kubisch et al (1995) were acknowledged.

Secondly, given experiences and assertions that people learn best when they are busy with something they enjoy or they want to do, computer training would focus on participants' expressed needs, goals and interests, rather than follow a pre-determined programme or target any minimum set of skills. Thirdly, given that the environment in could also influence well-being, QLAs needed to take place at more or less the same time in each area, thus reducing the impact that changes in the provincial and national environment might have had (e.g. proximity to local government elections). Furthermore, cross-site comparisons would be more accurate if at each site, participants could use computers (after training and before the final-QLA) for a similar length of time. Therefore timing of activities across the areas needed to be closely co-ordinated. The initial design of the CLIQ research is shown in Table 5-3. Lastly, due to the empowering impact that action research can have, a participatory process using visual group and individual research methods was selected. This would potentially contribute to the goal of assisting people to improve their lives, as well as yielding quality data that accurately reflected changes in self-defined QoL and project impact.

The desired sample was 120 participants across the four research sites, using a quota sampling approach which aimed at an equal split of participants between the respective sexes and across occupation groups, namely community activists, self-employed people, and unemployed youth (aged up to 24 years).<sup>59</sup> Thus, we aimed for 30 participants per area, with five of each sex in each of the three occupation groups (i.e. 15 per sex per area). Participants would be informed of the opportunity through a process designed by those running the local telecentre, in accordance with local norms and procedures and invited to attend CLIQ's initial information and questionnaire field-day (hereafter *initial field-day*).

In June 2008, the CLIQ process started, guided by the research design detailed above. The subsections below describe the research process as it unfolded, providing detail on the nature of computer training, QLAs and the project ethos.

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<sup>59</sup> These occupation groups were chosen by CLIQ prior to fieldwork based on our perception that unemployed youth, entrepreneurs and community activists would be interested in and able to benefit from computer training and use.

### 5.2.2 Overview of Process Implemented

CLIQ fieldwork took place between June 2008 and May 2010, with the analysis, write-up and dissemination of findings occurring in 2010 and 2011. Fieldwork for QLAs was undertaken by a team of between five and seven fieldworkers (see Plate 5-6).<sup>60</sup> While all initial-QLAs took place in July and August 2008 and all final assessments took place between March and May 2010, the dates of most of the other activities varied widely, from those planned.

In each of the study areas, action and research orientated fieldwork activities comprised of five stages (as illustrated in Table 5-4). The *first stage* entailed the identification and recruitment of interested participants, in partnership with the staff of the four participating telecentres. On the whole, telecentre facilitators followed the process they designed during the May 2008 CLIQ workshop, to inform and invite local people to CLIQ's initial field-day. In the two urban areas, the telecentre managers, both very active in their area, relied on their existing networks and word-of-mouth and did not consult local leadership. In the rural areas, both telecentre managers opted to go through local leadership (being local traditional leaders in eMpumalanga and local municipal leaders in eNtshonalanga), in addition to word-of mouth. After an explanation of the project, those who were keen to take

**Plate 5-6: The CLIQ field team for initial-QLAs**



Photo: Heidi Attwood (2008)

From Left to Right: Sifiso Biyela, Mpume Mabhida, Phindi Xulu, Zweni Sibiya, Makhosi Mathaba, Thoko Ndarana and Xolani Ntsalazi

<sup>60</sup> I had hoped to retain the same team of fieldworkers for the duration of fieldwork, however, a number of fieldworkers secured permanent employment over the course of CLIQ, which meant that new fieldworkers had to be trained and introduced to participants. Of the original 2008 team, only 2 were still part of the team in 2010.

part completed a socio-economic questionnaire together with a fieldworker. Post-field, the selection process was guided by the sex, age and occupation quotas, as well as other parameters for selection such as previous experience of computer use, distance of household from telecentre and relative level of household income.

Initial-QLAs (the *second stage*) comprised of three field-days spread over a week. Initial methods were concerned with general area information, followed by exercises that focussed on local definitions of QoL, participants' relative QoL and general information on communication patterns and information usage. Importantly, this stage also involved participants setting their own life goals during individual interviews.<sup>61</sup>

The *third stage* with a planned focus on computer training and use, was expanded from one to two phases of computer training given participants' limited knowledge about what computers could be used for. Immediately after their first training session, participants could begin using the computers at their local telecentre. The first phase was aimed at skilling the participants with basic offline and online computer use. The second phase focussed on information, practical ideas and computer applications that could assist with participants' more common goals. The mid-QLA was done prior to phase 2 training, both to monitor changes in QoL and importantly to fine-tune the content of phase 2 training.

The *fourth stage* encompassed the final-QLAs, establishing changes in participants' perceived QoL over the fieldwork period, as well as the use and impact of ICT access, and the impact of the project as a whole. Information was gathered mainly through intensive individual in-depth interviews (IIDs) which were structured around visual methods. The nature and sequencing of methods and topics for each of the QLAs was detailed in a series of practical field guides. These have not been included due to their length. Appendix D (p317) provides a summary of QLA methods, topics and sequencing.<sup>62</sup>

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<sup>61</sup> For maduzane areas, this stage included two initial-QLAs.

<sup>62</sup> Nine field guides were produced and each is between 15 and 36 pages long. A guide for a particular assessment (initial, mid or final) was edited after some areas were completed, when warranted by the nature and extent of issues raised and decisions taken during field debriefing. Field guides were practical documents aimed to prompt facilitators about sequencing of steps for particular methods; questions for probing once the main part of the exercise was done; and advice on what actions to consider should things not progress according to plan.

**Table 5-4: Research stages, methods and topics**

Dates	Research stage		Focus of data collection
June 2008	First Stage	Recruitment & selection of participants (Initial field-day)	<ul style="list-style-type: none"> <li>▪ Baseline socio-economic data (through a questionnaire)<sup>iii</sup></li> <li>▪ Practical information and communication data for logistics</li> </ul>
July - August 2008	Second Stage	Initial-QLA	<ul style="list-style-type: none"> <li>▪ General area information</li> <li>▪ Local definitions of QoL, participants' level of QoL and recent QoL changes.</li> <li>▪ Information and communication patterns.</li> <li>▪ Participants' life goals.</li> </ul>
October 2008 to May 2010 (Dates varied extensively) <sup>i</sup>	Third Stage	Phase 1 computer training <sup>ii</sup>	Computer basics and word processing ( <i>Module 1</i> ): To help participants with skills and knowledge to use computers off-line (unconnected use). Internet and email ( <i>Module 2</i> ): To help participants with skills and knowledge to use computers on-line (connected use).
		Mid-QLA	<ul style="list-style-type: none"> <li>▪ Review of level of QoL, reasons for changes and review of life goals</li> <li>▪ Individual communication and information use patterns</li> <li>▪ Action planning to reach individual goals and additional aspects participants' wanted to learn using computers.</li> </ul>
		<b>NEW</b> Phase 2 computer training <sup>ii</sup>	Needs-based training: To help participants to think through issues related to common life goals (studying, finding a job, starting a small business) and to give targeted computer training to use different applications (including social networking tools) to support common goals.
March to May 2010	Fourth Stage	Final-QLA	<ul style="list-style-type: none"> <li>▪ In-depth review of QoL changes over past two years.</li> <li>▪ Reflection on life goals and use of computers.</li> <li>▪ Social views on computer usage and project impact</li> <li>▪ Basic socio-economic data for comparison with the 2008 data (through a questionnaire).<sup>iii</sup></li> </ul>
September 2011	Fifth Stage	<b>NEW</b> Dissemination Workshop <sup>iv</sup>	<ul style="list-style-type: none"> <li>▪ Presentation of CLIQ findings to participants and other local stakeholders.</li> <li>▪ Composition of messages to CLIQ, the telecentre and national government.</li> </ul>

**Notes:**

■ Shaded blocks indicate period over which participants could use computers at the telecentre at a time that suited them, without paying for use.

i. Appendix E (p320) contains process timelines for each area.

ii. Training sessions were held with groups of 8 to 12 participants, with most participants having access to their own computer. Further detail on computer training is provided in Appendix D (p317).

iii. During the initial field-day, potential participants were interviewed through a quantitative questionnaire. This data was used to select participants. During the final-QLA, fieldworkers administered another socio-economic quantitative questionnaire; however these data sets are not analysed in this thesis.

iv. CLIQ gave digital and hard copies of a Living Resources Guide, in an effort to support telecentre users (see Appendix F, p324).

The *fifth stage (local dissemination workshops)* took place in each area with participants as the prime audience, although other local stakeholders were also invited (some of whom took part). Each participant was presented with a copy of the CLIQ community report, as well as a certificate of attendance reflecting their training and their participation in QLAs; copies of their life goals; and copies of project photographs in which the participant featured. After listening to the findings and some group interaction, participants composed messages regarding the way forward. Messages were directed at CLIQ, their local telecentre, and national government, based on the findings presented to them and in light of their experiences of engaging in CLIQ. The telecentre (and any local leaders that were present) were also given a report and copy of the digital presentation. Participants were informed about the living resource pack which CLIQ compiled for the telecentre and its users, containing what we felt were relevant information and contacts, website addresses and templates (see Appendix F for a list of the contents of this pack, p324). There were differences in the research processes and activities between areas, given the unique dynamics of each telecentre and local area. These are discussed in chapter 6.

### 5.2.3 *Overview of Computer Training*

Based on interaction with participants during the initial-QLA, most participants could not readily envisage how computer use could assist them – other than attaining a certified qualification to assist them with getting a job. Thus the training needed to demonstrate the link between computer use and individuals' specific, yet diverse needs. The end goal of the training was that of fostering life skills - skills for the practical use of various computer applications within a local context that could directly assist participants with their individual life goals.

After the initial-QLAs, we recognised that two phases of computer training were needed. In order for participants to express which applications they wanted to learn to use, and for them to incorporate computer use in their planning to reach their goals; participants had to acquire a basic sense of what computer use was.<sup>63</sup> Phase 1 computer training covered basic computer use in two modules, namely off-line use (including word-processing)

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<sup>63</sup> This is aptly captured by Britz (2004) and Barrantes (2007).

followed by on-line use (internet and email). Modules one and two in Phase 1 were usually separated by about a week, while a six month gap was aimed at between Phase 1 and Phase 2 training (see Table 5-4). Phase 2 training was designed immediately after the mid-QLA and focussed on aspects of computer use and applications linked to common life goals, namely: finding a job; operating a small business; further study; and general internet use (including social networking).

**Plate 5-7: Phase 2 computer training at eNingizimu**



*Photo: Heidi Attwood (2009)*

After the first training session, participants were awarded 100 hours of computer use at their local telecentre, at no cost to themselves.<sup>64</sup> The telecentre facilitators were tasked with recording the number of hours each participant used per visit and the participants were expected to fill in a computer use form for each computer session. Participants could use their free hours up until the final-QLA, which was designed to be a period of about one year. However, the period of time between the first computer training and the final-QLA in each

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<sup>64</sup> Telecentres were reimbursed for the cost of the time used by participants at the end of each month, based on a monthly time sheet recording hours used per participant. The only usable data on participants' computer usage was from the eMpumalanga telecentre and as a result only one or two payments were made to the eNyakatho and eNingizimu telecentres, while eMpumalanga received regular payments.

area varied greatly. eNtshonalanga participants only had two weeks to use computers before the final-QLA, while participants at the other three sites had between 10 and 17 months to use computers prior to the final-QLA.<sup>65</sup> Thus the potential for impact from computer use on participant's lives in eNtshonalanga, was severely limited. This raised the option of allowing eNtshonalanga to be used as a control site, were it not for the extensive impact that the participatory QLAs had on participants.

Attendance at computer training sessions and the level of proficiency attained, varied widely among participants. Even amongst those who attended the same training sessions, the level of skill attained varied. Data on eMpumalanga participants' computer use, shows that younger men who lived closer to the telecentre made the most use of the opportunity provided by free computer use. Some eMpumalanga participants did not use many, if any, of their hours.<sup>66</sup>

#### 5.2.4 Overview of QLA Research Methods

QLAs used a variety of visual diagramming methods (commonly known as PRA methods), in conjunction with group or individual discussion (i.e. qualitative focus groups and IIDs respectively). The sequencing of methods and topics reflected the sensitivity of the information required; the relative complexity of the methods and a logical cognitive order that supported participants' goal-setting and pursuit of goals. Methods were matched with topics in the weeks prior to the upcoming QLA, thereby reflecting project activity, field realities and findings to date. Appendix D (p317) provides detail on which methods were combined with the different subjects investigated.

The initial-QLA started by exploring the history and geographical nature of the local area using timelines, time-trends and mapping exercises. Such methods built rapport, as they illustrated some of the knowledge held by participants. Fieldworkers gained a better understanding of the research area and participants became familiar with working visually

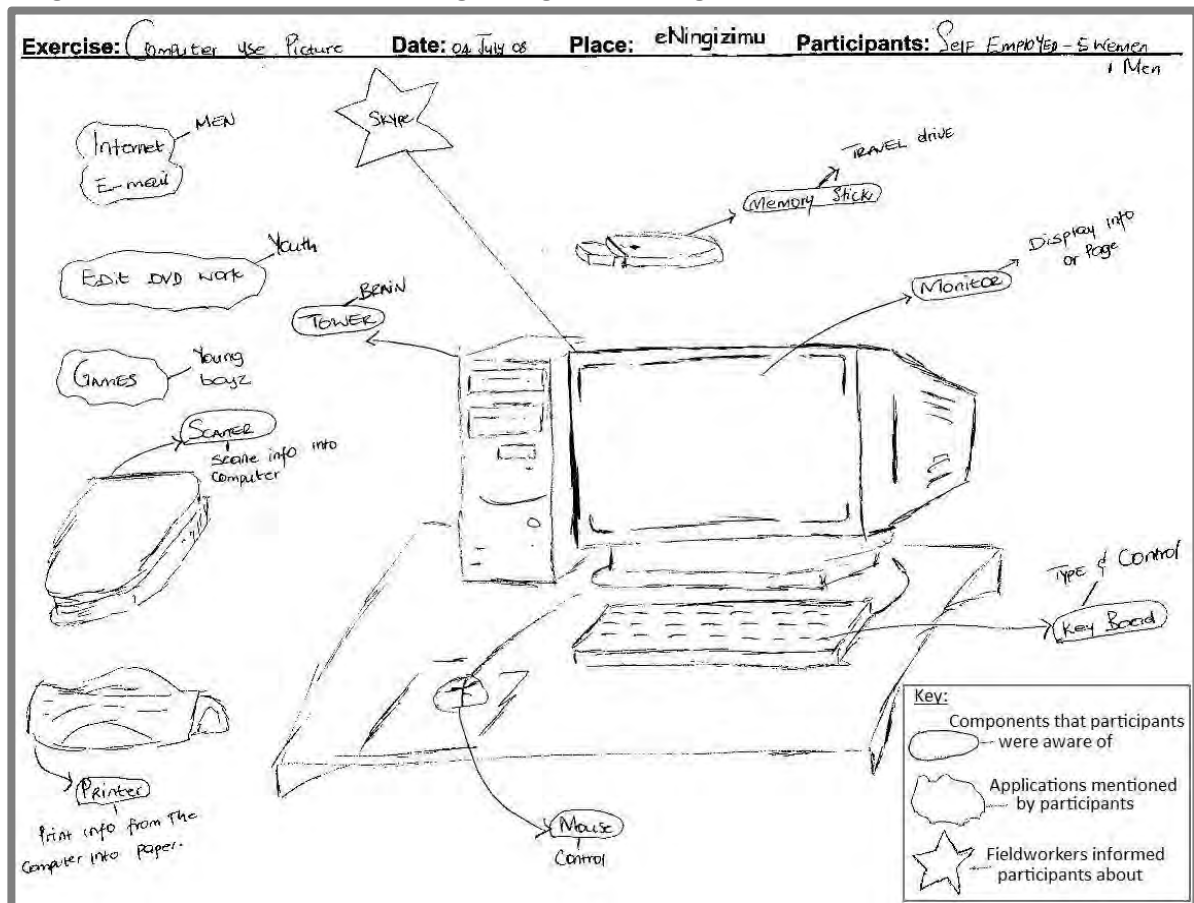
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<sup>65</sup> Where possible, CLIQ negotiated with telecentre managers to allow free computer use by CLIQ participants beyond May 2010, and we agreed to pay for hours used until the end of July 2010. At eNyakatho and eNtshonalanga, the telecentre managers agreed in principle to allow free use for a longer period, however it is doubtful that this occurred at eNtshonalanga.

<sup>66</sup> There is no data from eNyakatho or eNingizimu because the facilitators did not record the hours used by participants consistently, due mostly to lack of interest. Reasons for this are explored further in chapter 8.

and with sharing their own views and information. As fieldwork progressed, smaller groups of participants worked together on more focussed issues, in occupation groups. Methods specific to ICTs uncovered perceived advantages and disadvantages of current communication patterns, as well as participants' preferences for sources of information. These methods also served to orientate participants' thoughts to the role that information and communication played in their lives. An exercise exploring local knowledge of computer components, applications and use, as well as perceived advantages and disadvantages of computer use helped CLIQ understand the level of computer literacy within the group (which influenced the design of computer training). Figure 5-6 is an example of one visual output from this method.

**Figure 5-6: Computer knowledge diagram (eNingizimu, 2008)**



While peer-group education occurred naturally during these group methods (e.g. sharing a source of information on job opportunities), the computer diagram provided an appropriate opportunity for fieldworkers to inform participants about additional applications

and uses of computers that the group had not raised and to correct any factual errors, such as the nature of hardware components. This is an example of where outsiders' information was contributed in a way that did not influence the findings (e.g. about prior knowledge of computers), while contributing to participants' knowledge and supporting project action goals. It also allowed this input to be delivered informally, as part of a group discussion.

Most critical, were the methods that addressed QoL definitions, goals and changes and my realisation of the importance of goal-setting increased over the duration of the project. Three particular methods used at different stages in the initial-, mid- and final-QLAs produced information regarding individual and group perceptions of low and high QoL, as well as specific information on individual levels of (and changes in) QoL. These methods were QoL-lines, QoL mobility-lines; and card sorting of reasons for QoL changes. Table 5-5 shows the sequencing of methods relating to QoL and life goals that contributed to local definitions of QoL and that kept participants thinking about their own QoL.<sup>67</sup>

**Table 5-5: Sequencing of methods related to QoL**

QoL Stage Method	Initial-QLA (mid 2008)		Mid- QLA		Final-QLA (mid 2010)
Time	← 2008		2009		2010 →
QoL-line (yielding <i>descriptors</i> )	Group discussion on QoL indicators and participants' relative location on QoL continuum.	Phase 1 Computer training		Phase 2 Computer training	Individual discussion on QoL indicators and location on QoL continuum relative to 2008/ 09.
Goal-setting (yielding <i>goals</i> )	Individual recording of current life and goals for the future.		Individual goal revision opportunity.		Discussion on feelings about goal-setting activity.
Reasons for changed QoL (yielding <i>reasons</i> )	Group discussion on changes in QoL since 2006.		Group discussion on individual QoL changes		Individual reflection on QoL changes, with reasons.
<i>Note:</i> As reasons for QoL change from the mid-QLA were captured in less depth, this thesis focuses on reasons for change given in 2010.		Period of free computer use at local telecentre			

<sup>67</sup> An earlier version of this table appears in Attwood (2013:5).

Changes in QoL were reflected on QoL-lines in all three QLAs. These exercises gave participants an opportunity to individually visualise whether their life had improved, declined or stayed the same. Emphasis was placed on participants' analysis of the nature of and reasons for QoL change. On reaching the final-QLA, participants were familiar with expressing their thoughts on QoL issues and with using life lines; they had a defined period over which consider changes (with the start being marked by our first QLA with them); and they had a higher level of trust in the team and therefore were more willing to share personal information. In the final-QLA, most of the data was gathered through IIDIs with participants to avoid peer pressure and encourage open reflection. Plate 5-8 shows a fieldworker and participant discussing the participants' life goals on the last day of the initial-QLA. in eNyakatho. Final-QLA group work was limited to issues of possible CLIQ impact on the wider community and participants' views on project implementation. By exploring what high and low QoL meant for participants and by setting individual goals at the start of the project, participants' attention was focussed towards concept of QoL and action to achieve goals, with time in between QLAs during which participants could reflect further and pursue goals.

The primary role of goal-setting and review (as it evolved during project implementation) was to assist participants to identify specific achievements that would increase their QoL; to motivate and assist them to pursue these goals through planning; and to tailor the computer training to assist participants to meet these goals.

**Plate 5-8: IIDIs in progress at eNyakatho**



*Photo: Elise Bjastad (2008)*

### 5.2.5 *Project Ethos and Fieldwork Logistics*

Core *par* principles (see section 4.3, p80) guided implementation and informed decisions on unexpected issues. The appropriate attitudes and behaviour were emphasised during ongoing fieldworker training sessions, based on my fieldwork observations and fieldworkers' own reflections with respect to principles of *par* which were covered during initial fieldworker training. A variety of events and incidences from a total of 46 field trips (most of which lasted more than one day), illustrate how social, methodological, logistical, economic, political and personal aspects of implementing *par* impacted on the process and outcomes of CLIQ. I have discussed a few of these examples below, where the impact of an event adds insight into the practical implementation of *par* principles and depth of understanding to research findings.

**Sharing lunch:** On all fieldwork days, CLIQ provided lunch for the CLIQ team and participants using local caterers where possible, to contribute to the local economy. Fieldworkers (and participants) complained about the quality of the lunch regularly, however the practice was defended and maintained because it avoided a situation whereby either group may think that fieldworkers were somehow better than participants, if different food was provided for (or purchased by) the visiting fieldworkers.

**Gender biases and baby-sitting allowances:** Participants, who were responsible for the daily care of young children, were given a babysitting allowance to pay for the time of another person to care for the child, thereby freeing their time to attend CLIQ activities. This created extra work in field for the CLIQ team, and sometimes tension around the validity of the baby sitting claim (both in field and in office). During fieldworker training, this situation was used to explore the issue of difference and the impact that gendered domestic roles could have on fieldwork attendance. With fieldworkers' increased awareness of their own beliefs about gender, they were better equipped to keep their views from influencing the way they interacted with participants, when the focus was eliciting participants' views and values.

**Time, energy and boredom:** Participants sometimes experienced tiredness during longer exercises or requested to leave early due to waning interest in the research activities. This conflict was usually resolved in favour of the participant's choice regarding time-use,

considering that they also had their regular activities to attend to. Fieldworkers generally managed to negotiate a time when the participant could complete certain key exercises, which drew on the good rapport that had been built up. When this meant an extra day in field, it motivated fieldworkers to make the exercises more interesting or to heed signs of boredom and adapt the exercise accordingly, which overall promoted better quality field results.

**Transparency and accountability:** Honesty and clarity with regard to the scope and limitations of CLIQ was an important part of engagement with all stakeholders. When challenged to provide additional resources (such as the regular requests for more computer training or a cooked lunch), we explained our responsibility to spend money according to an approved budget and plan, so that we could offer participants needs-based computer training; a contribution to travel costs; and a very basic lunch. At times I was pushed so had to stress that we would be held accountable for all money disbursed in-field and for delivering adequate field results, illustrating that we did not have decision making authority over how CLIQ's money was spent. This seemed to convey a sense of common humanity to participants.<sup>68</sup>

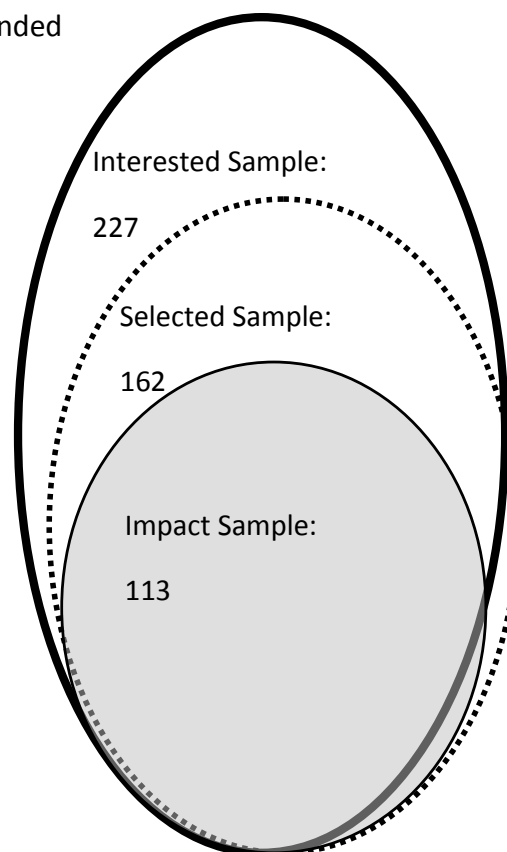
These examples illustrating the project ethos also reveal some of the challenges faced during fieldwork. Chapter 6 discusses further fieldwork challenges, after identifying how and why implementation deviated from the research design and differed between areas.

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<sup>68</sup> In response to a request for computer training in Durban from eMpumalanga participants, I explained how in general, funding of academic research worked with respect to the hierarchy of accountability from fieldworkers to project managers, principle investigators, university codes of ethics, and funders. This led to an interesting discussion about community members' rights with respect to their collaboration with researchers, in general.

### 5.3 CLIQ Participants

Across the four areas, a total of 227 people attended CLIQs initial field-day to find out what the project was about and to decide whether or not they were interested in taking part (referred to as the *interested sample*). Each person completed a questionnaire which focussed on socio-economic and ICT issues. During participant selection, we aimed for about 35 participants from each area, over-sampling to account for expected attrition. Based on completed questionnaires, 148 were selected (post-field) to take part in CLIQ. With the late selection of another 14 participants, the total *selected sample* was 162 participants.<sup>69</sup>



People from eMpumalanga were the most enthusiastic about the CLIQ project, with Mpumalanga participants (pictured in Plate 5-9) accounting for two fifths (88 out of 227) of all interested participants. In each area except for eNyakatho, more women than men showed an interest in CLIQ, resulting in an overall ratio of seven women for every three men. The selected sample was skewed towards eNtshonalanga participants (53) when compared to other areas (between 34 and 38). I was able to analyse changes in QoL for participants who attended at least two QLAs, as well as those who only attended the final assessment, because each QLA collected data on current perceptions of QoL and changes in QoL since mid 2008. From initial post-field analysis, QoL change data was available for 113 participants (the *impact sample*).

<sup>69</sup> Higher levels of expected attrition at eNyakatho and political advice from the telecentre manager at eNtshonalanga, led to the late acceptance of 14 participants in these areas.

**Plate 5-9: eMpumalanga participants and CLIQ fieldworkers***Photo: Phindi Xulu (2008)*

Comparing the selected sample to the impact sample, the overall attrition rate was 30%. Table 5-6 shows the attrition rate per area, as well as the selected and impact samples according to sex, per area. The urban areas experienced higher attrition (41% and 39%) than the rural areas (30% and 11%). While factors other than the nature of the area had an influence on the attrition rate, the area difference does provide some indication that the urban environment impacts negatively on medium term project participation (two years) in comparison to rural environments.

**Table 5-6: CLIQ selected and impact samples by area**

		Area	eMpumalanga		eNingizimu		eNyakatho		eNtshonalanga	
<b>Interested Sample</b>		227	88		47		36		56	
<b>Sex</b>	Total Sel'd	Total Impact	Sel'd	Impact	Sel'd	Impact	Sel'd	Impact	Sel'd	Impact
<b>Female</b>	66%	66%	51%	52%	74%	75%	53%	52%	81%	84%
<b>Male</b>	34%	34%	49%	48%	26%	25%	47%	48%	19%	16%
<b>Total</b>	<b>162</b>	113	<b>37</b>	33	<b>34</b>	20	<b>38</b>	23	<b>53</b>	37
Rate of Attrition		30%	11%		41%		39%		30%	
Area as % of total Impact Sample		100%	29%		18%		20%		33%	

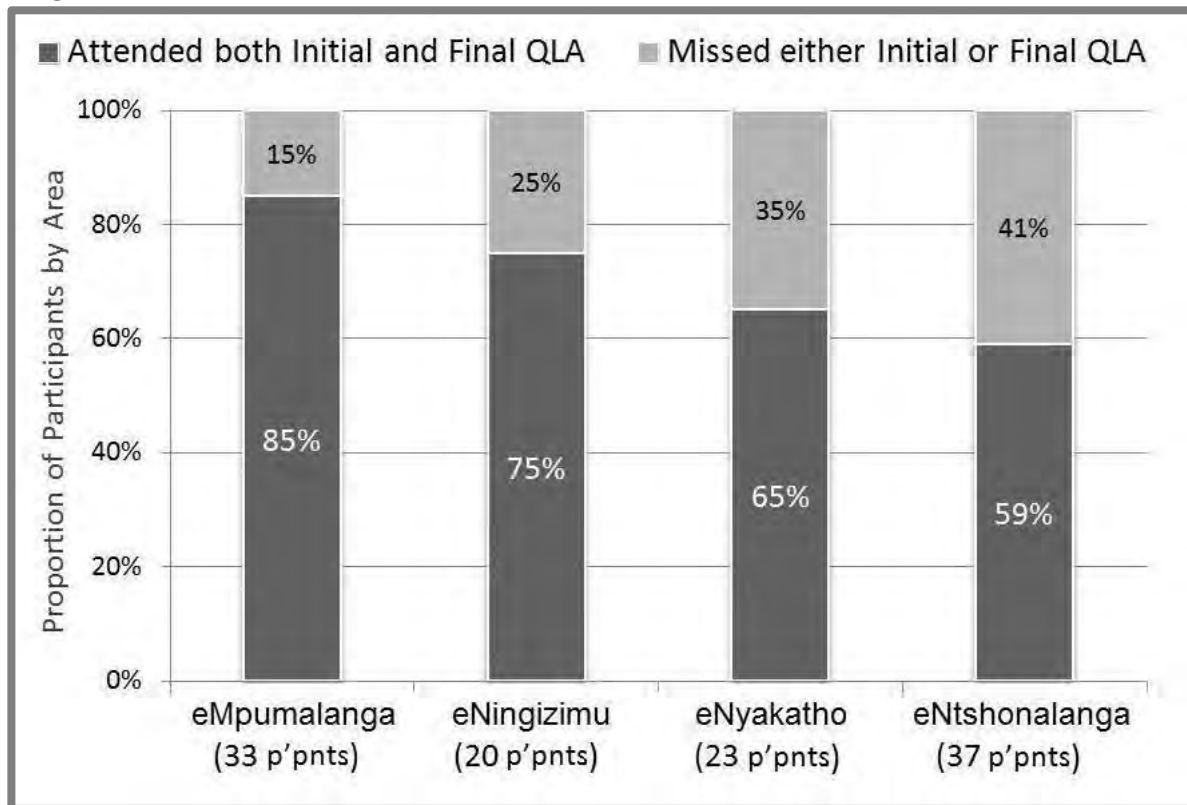
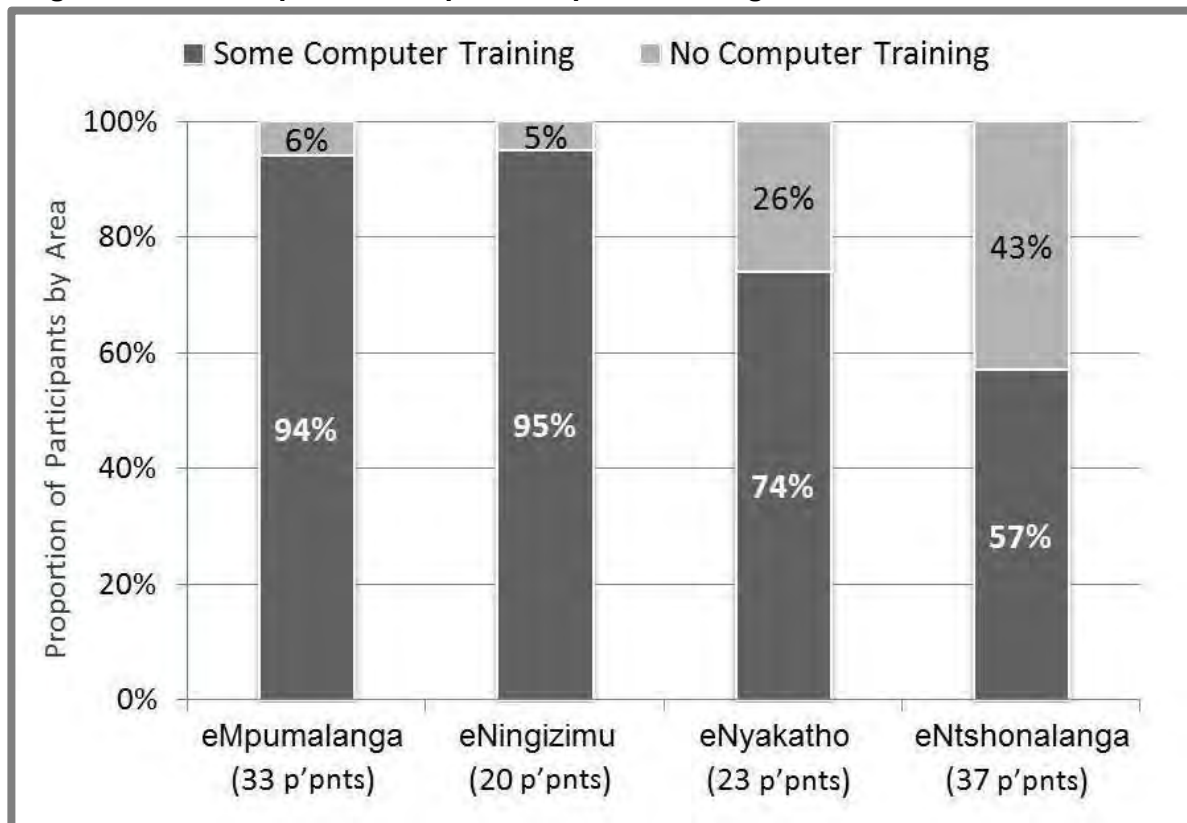
Generally, my sense from reading the IIDI transcripts was that in rural areas, there were fewer opportunities regarding training, education and jobs, which meant that selected participants were more likely to continue with the project. The results of the different rates of attrition by area were that the rural areas of eMpumalanga and eNtshonalanga each accounted for about one third of the total impact sample each, while the two urban areas (eNingizimu and eNyakatho) each accounted for about one fifth of the total sample (see Table 5-6).

In both the selected and impact samples, women made up two thirds of the sample, indicating an equal likelihood of women and men to drop out of the project. While we were able to include equal numbers of women and men in eNyakatho and eMpumalanga, this was not possible in eNingizimu and eNtshonalanga, where women made up 74% and 81% of the selected sample, respectively. However, the pattern of virtually no gender difference between the selected and impact sample held across all areas. In terms of age, the sample was skewed towards youth due partially to the selection criteria that a third of participants should be unemployed youth aged up to 24 years (with no age restrictions on community activists or the self-employed). Just over half the total sample (55%) were aged up to 24 years and the average age of the sample was 27 years, with ages ranging from 17 to 64. Overall, there were 10 older women and 2 older men in the impact sample, where older refers to those aged 40 years and above. This indicates a tendency for older women in the urban areas to be more willing and able to participate than older men in urban areas. There was limited interest from older people in rural areas.<sup>70</sup>

Based on participants' attendance at the initial- and final-QLAs (regardless of their participation in computer training), Figure 5-7 shows that the proportion of the impact sample attending both the initial- and final-QLAs was greatest in eMpumalanga (85%), followed by eNingizimu and then eNyakatho, with only 59% of eNtshonalanga participants attending both these critical QLAs. The pattern for attendance at computer training is similar, with 94% and 95% of those from eMpumalanga and eNingizimu attending some computer training, while these proportions drop to 74% for eNyakatho and 57% for eNtshonalanga (see Figure 5-8).

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<sup>70</sup> Appendix I (p327) tables 1 -3 include additional data regarding the CLIQ sample.

**Figure 5-7: Participation of impact sample in QLAs****Figure 5-8: Participation of impact sample in training**

Each area had a unique process, project culture and vibe. Along with issues of functionality, this impacted on the CLIQ's implementation of the project and on participant's involvement in the various scheduled and unscheduled CLIQ activities. The chapter that follows reflects on the CLIQ process in terms of participation and implementation, as well as on the *par* approach, to lay the basis for an analysis of CLIQ's findings on impact and telecentre functionality. Chapter 5 is summarised together with chapter 6, at the end of chapter 6.

# CHAPTER SIX:

## ANALYSIS & REFLECTION ON IMPLEMENTATION

The impact of the CLIQ's research methodology and process on findings is not relegated to a small paragraph headed *limitations of the research* as often found in research reports. Rather it is a core part of the findings. My research question focuses on whether a participatory approach to an ICT intervention aimed at improving QoL, fosters empowerment (see section 1.2, p8). Therefore documenting and reflecting on the implementation process targeting CLIQ's three objectives (see section 1.1, p4) is essential to the analysis which informs my findings and conclusions. Reflection on methods and process establishes how these may have affected the data and allows the analysis of data to account for such impact.

While *par* recognises the impact of outsiders' activity on local processes and people, it is desirable to limit unwanted impact (such as allowing personal biases to influence views expressed when the activity at hand is seeking local views). Limiting unwanted impact becomes more difficult when pursuing dual goals because some aspects of implementation can promote one goal before another, hence the need for trade-offs (Barahona *et al.*, 2007). However specific goals can also promote the achievement of other goals within the set. CLIQ's second goal of telecentre capacity building assisted the telecentres to become more functional which improved participants' opportunity to make use of computers (action goal), thereby improving conditions for data collection (research goal).

In this chapter, I consider which aspects of implementation differed from the research design and reasons for this difference. Based on post-field analysis and reflection, challenges faced during fieldwork and other aspects of implementation, as well as the suitability of a participatory approach to the objectives of CLIQ, are also discussed. The final section uses process data on individual participation in scheduled CLIQ activities to establish a variable indicating level of participation per participant. Based on my experience and analysis of implementation, I use six indicators to establish a ranking of areas in terms of the

quality of implementation. These two variables (level of participation and level of implementation) are used for the quantitative analysis of impact in chapter 7.

## 6.1 Deviations and Adaptations

Differences between the process as implemented and the research design were either: area specific or project wide; targeted and desired or unavoidable; and planned or spontaneous. Changes can also be considered according to whether the overall effect was positive or negative, although in practice (especially with dual goals) changes are rarely completely on one or the other side of these types of alternatives. Table 6-1 summarises deviations in the process. Appendix E (p320) presents the area-specific research processes in the form of a project timeline, as discusses some of the area-specific deviations from the initial CLIQ design.

Some planned project-wide changes became apparent during the initial-QLAs, such as the inclusion of an additional phase of computer training in-between the mid- and final-QLAs (*Dev\_1* in Table 6-1). Another targeted project-wide change made after fieldwork, was changing the orientation of the dissemination of project findings to focus on local feedback, given what was perceived at the time as general USAASA inefficacy and disinterest in the results of CLIQ (see *Dev\_2*). Goal-setting, planning and review were not part of the initial set of topics for consideration by participants. However, after experimenting with visualisations of current life and life goals during the initial-QLA in eMpumalanga and eNingizimu, this became one of the key exercises contributing to both empowerment and findings. Fieldworkers experienced difficulty with facilitating goal-setting mainly because this exercise required a higher degree of facilitation skills and more careful interaction as guided by principles of *par* (see *Dev\_3*). The exercise was therefore repeated in these first two areas where it was done (eMpumalanga and eNingizimu).

Telecentre staff made us aware of less interest from men and from self-employed people when staff informed the community about CLIQ. Despite efforts to address this, the selected sample was skewed away from men and entrepreneurs (see *Dev\_4* in Table 6-1). Furthermore, CLIQ's pre-determined occupation categories did not prove to be useful in the local contexts - which reinforces why the use of pre-determined categories is not usually

recommended within *par*. Aiming for equal samples per area, transport allowances were added to secure participation of those who were interested but lived further away (*Dev\_5*).

**Table 6-1: Deviations from design**

Deviation or Adaptation		Emerging Reasons
Dev_1	Added a second computer training event	Initial findings on general level of computer knowledge and perceived limited ability of participants to employ computer use to pursue goals.
Dev_2	Changed dissemination process to focus on participants and local area presentations and not USAASA.	Limited interest and action from USAASA regarding CLIQ, and high enthusiasm from participants.
Dev_3	Increased importance of goal-setting, requiring extra fieldworker training and fieldwork in two areas to adequately facilitate goal-setting.	Reflection on participants' engagement with goal-setting during initial-QLA together with emerging thoughts on subsequent research process on how best to support participants to improve their QoL.
Dev_4	Unable to attain the desired sample quotas with respect to sex and occupation.	Less interest from men and from self-employed people. Occupation categories were not appropriate, given multiple livelihoods, frequent occupation changes and alternate definitions in operation locally.
Dev_5	Added transport allowance for each day of scheduled CLIQ activity	The dispersed nature of homesteads and interest from people who resided about two hours walk from telecentres.
Dev_6	Unable to adhere to computer training schedules, resulting in different time periods for computer use between areas.	Ongoing and varying problems with functionality of telecentres in all four areas.
Dev_7	QLA dates differed from the coordinated and regular intervals indicated in the design.	Delays in computer training and additional time in field had a knock-on effect. Process in each area needed to unfold according to the local context.
Dev_8	Longer time needed in-field and for post-field data collation	Underestimation of time required for range of topics investigated; oversampling increased the work load; managing a field-team of six fieldworkers made logistics more time-consuming.
Dev_9	Dropped second final-QLA in manje areas.	Uncoordinated timing of QLAs and computer training, and contextual differences among areas had already resulted in substantial implementation differences and therefore the logic behind the difference-in-difference approach had faded.

The greatest change in design resulted from problems with the functionality of the computing equipment and connectivity (see *Dev\_6* in Table 6-1), which was experienced to some degree at all sites. ICT equipment at telecentres functioned poorly (e.g. very slow internet at eMpumalanga); intermittently (e.g. periods of no connectivity at eNingizimu, and

an unpredictable electricity supply at eNyakatho); or not at all (e.g. at eNtshonalanga where the computers were stolen twice during fieldwork).<sup>71</sup> The worst impact was on eNtshonalanga participants, where the telecentre was non-functional from the start of the project until April 2010. This meant eNtshonalanga participants only received phase 1 training, followed two weeks later by the final-QLA, thus skipping the mid-QLA and phase two training all together (see Appendix E- Figure 4, p323).<sup>72</sup>

Computer training delays had a knock-on effect on the timing of the local QLA to follow training. It also affected the scheduling of training and QLAs in other areas, because CLIQ had one fieldwork team (and we had initially attempted to use one computer trainer for all sites (see *Dev\_7* in Table 6-1). Adding to this, the need to spend more time in-field and post-field than originally anticipated (see *Dev\_8*), meant fieldwork could not progress according to CLIQ's relatively tight co-ordinated timeframe. Consequently, the validity of cross-site comparisons was reduced because participants at different sites had different periods of time over which to use computers as well as a different quality of access.

As a result, we decided not to conduct a second final assessment (or 4<sup>th</sup> QLA) in the two manje areas (*Dev\_9* in Table 6-1), included in the design to allow for difference-in-difference analysis (see subsection 5.2.1, p120). Two other reasons for this decision were that the final-QLAs in the manje areas were intensive, yielding sufficient information; and that it would have been difficult to justify using more of participants' time for a follow-up final-QLA, without providing more computer training (as constantly requested by them). The difference-in-difference approach based on co-ordinated timing of field activities was dropped in favour of a more holistic approach to analysis, which accounted for variations in implementation and participation, with respect to telecentre functionality and other aspects of context.

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<sup>71</sup> Initial project findings on PAC venue performance are discussed in Attwood *et al.* (2010) and summarised in section 8.4.

<sup>72</sup> The project had run out of time and money for fieldwork, which was the part of reason for not continuing with the process in eNtshonalanga in order to conduct a mid-QLA and phase 2 training. While we did consider completing the full CLIQ process, poor telecentre management indicated that it was unlikely that participants would have access to the computers in the telecentre (even if technical computer functionality was maintained).

The research process was allowed to adapt to the specifics at each, reflecting the *par* principles of a flexible and evolving process in response to the local context, emerging findings, and the expressed needs of stakeholders and participants. Our inability to implement CLIQ according to our planned time-frames was not surprising. The flexible and evolving nature of complex community initiatives (CCIs) is one of six features of CCIs which complicate multi-site comparative evaluations (Kubisch *et al.*, 1995:3-5).<sup>73</sup>

These deviations created methodological and fieldwork opportunities, as well as challenges. For example, the change to a local dissemination process (*Dev\_2* in Table 6-1) and increased focus on goal-setting (see *Dev-3*), both benefitted the action goal of assisting participants to improve their lives, and the research goal in terms of richer data. The addition of a transport allowance for participants (see *Dev\_5*) and the second phase of computer training (see *Dev-1*) created a further administrative burden, which was exacerbated by changes to the scheduling of field trips (see *Dev\_6* & *Dev\_7*) with regard to project finances. The section below discusses a selection of methodological and practical challenges faced during the implementation of CLIQ.

## 6.2 Methodological and Fieldwork Challenges

I believe that the risk of disempowering and alienating vulnerable people through the bad use of participatory approaches is high when these processes are adapted for research that fulfils the information needs of external stakeholders. (Barahona *et al.*, 2007:175)

A number of fieldwork challenges inherent in *par* are due to a dual focus on research and action. Below I have discussed selected challenges faced by CLIQ because of its multiple goals and the realities of striving towards these goals through a process guided by *par* principles. The subsections below explore challenges relating to the limited time in-field; language differences; the use of pre-set categories for data comparability across sites; and aspects of the challenge relating to the implementation of *par* through formal institutions of development research.<sup>74</sup>

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<sup>73</sup> Appendix H (p326) highlights how the experience of implementing CLIQ reflected each of the six features that make CCIs difficult to evaluate, as presented by Kubisch and colleagues (1995:3-5).

<sup>74</sup> Other methodological and logistical challenges are not discussed due to space limitations.

### 6.2.1 Data Comparability and Action Processes

Limitations on CLIQ's time, money and capacity; and limitations to participants' motivation, energy and time to engage in discussion; meant trade-offs needed to be made regarding which activities we pursued during fieldwork. For example, the establishment of a common local definition of QoL at each site (and furthermore across all four sites) would have produced findings of academic interest and could have allowed for the standardised external determination of individual changes in QoL. However, time was not spent pursuing a common definition due to an ethical concern regarding the use of participants' time for our purposes, rather than methods which contributed more to their agency (e.g. more time discussing goals). In retrospect, a fair balance was struck between methods and process yielding information primarily of value to the research agenda, and those primarily supporting participants' agency. While participants had signed a learning contract, it seemed inappropriate to use it in any way to request fuller participation.<sup>75</sup>

This is a practical example of a trade-off that was made in-field, reflecting Brock and Pettit's (2007:6-13) challenges relating to dual goals, namely competing external and local needs, and a competing focus between information and learning (see Table 4-2, p77 and subsection 4.3.2, p81). Despite not generating common local definitions of QoL, participants' engagement with QoL definitions and consideration of personal changes in QoL on at least three occasions over the fieldwork period, meant conclusions on perceived change in QoL were more accurate. Furthermore, by repeatedly having to consider what constituted a good life and setting personal goals, participants' ability to improve their QoL was enhanced, as will be shown later.

Brock and Pettit's (2007) challenge regarding standardisation versus adaptation across research sites, was experienced in many forms during CLIQ. In 2010, group work on changes in QoL at eMpumalanga (the first area to do the final-QLA) revealed that doing this exercise individually, would benefit both data quality and empowerment. For the remaining three areas it was incorporated into the IIDIs. However this meant there was no comparable data

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<sup>75</sup> During the first assessment participants were presented with a learning contract (see Appendix G, p325) which detailed CLIQ's expectations of participants and undertook to provide participants with computer training, keep their information confidential, and so on.

on individual definitions of well-being from eMpumalanga participants in mid 2010. Another example was deciding to provide phase 2 training for eNyakatho participants at the UKZN computer lab, when the eNyakatho telecentre was non-functional. This decision was based on the view that fulfilling our obligations of computer training to participants was more important than trying to maintain comparability by insisting all training is done through the local telecentre.

These are practical examples of how the tension between goals of local change and external research needs, manifests itself during fieldwork. Decisions made in field when these goals are in conflict, reflect the underlying motivation and worldview driving project implementation.

### 6.2.2 *Language, Translation and Meaning*

Guidelines for the role, behaviour and input of researchers recognise the shared humanity of all who engage in the process – but also their differences. Wray (2004:28) raised “...methodological issues about the meanings attached to language and concepts and how they change across geographic and cultural boundaries” with respect to her research with minority women in the United Kingdom. This was also an issue within CLIQ. Fieldworkers remarked on the different versions of isiZulu spoken between the urban and rural sites, and even the differences between the deep isiZulu spoken in the two rural areas.<sup>76</sup> Fieldworkers remarked that sometimes they “*couldn’t get their meaning*” and had to confer with one another and probe further to record meaning as accurately as possible.

Another limitation was that data was captured by taking notes during group discussions and individual interviews, rather than opting for audio recording, thus some of the richness from the discussion was probably lost. This limitation is recognised by others who avoid audio recording and transcription, for various reasons including time and cost (see for example Wray, 2004:28). With group work, audio recording does not work, because many people are often talking at once and movement in order to draw on the ground or shift tokens around creates too much background noise for recordings to be audible.

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<sup>76</sup> This was due in part to eMpumalanga’s proximity to SA’s border with Mozambique and associated migration of people from different language groups.

Inaudible recordings leave the researcher who does not take notes, solely reliant on memory. To account for discussion points that may not have been recorded fully, the group facilitator and note taker went through the notes together after each days' fieldwork, to clarify and fill in details from memory. In addition to checks by fieldworkers, by checking all field notes (particularly those for the final IIDs), I was also able to identify where a fieldworker needed to clarify meaning or resolve an inconsistency directly with the respondent.

### 6.2.3 *Truth, Lies and Data*

Detail from CLIQ's example of using pre-set occupation categories illustrates why local definitions are important (see *Dev\_4*, Table 6-1, p141). There were three problems with the use of our pre-set occupation categories as a variable for selection and analysis. Firstly, through the course of fieldwork we realised our pre-set definitions did not reflect local understandings of livelihood activities (or occupations). For example, NdodaM20's explained that although he used to cut and sell grass (regarded as self-employment by CLIQ pre-field), he did not regard it as self-employment because the income was so low it was "just about surviving".

Secondly, through qualitative fieldwork we discovered some participants had selectively shared information (or were economical with the truth) to increase their chances of being selected. Again using Ndoda's example, he was selected in the unemployed youth category because he indicated in 2008 he was unemployed. In 2010, when we questioned why his QoL had gone down because he had lost his job, he revealed he had misled us in 2008 in order to be accepted onto the project: in 2008 he had a fixed term job but knew he would be unemployed in six months time. We also discovered some participants had lied about their age, to be included in the unemployed youth group – they were unemployed, but older than 24 years. In retrospect, participants' willingness to reveal these untruths in 2010, illustrates the level of trust established between them and the fieldworkers, as well as participants' increased understanding of the nature and purpose of the project, because they no longer seemed to fear being excluded from the project due to their earlier untruths. This, I believe, is a good indication of data quality.

Thirdly, the selection questionnaire did not cater for multiple livelihoods. Selection was done based on the single livelihood participants chose to mention during the selection interview. For example, SamkeF53 presented herself as self-employed in 2008. From subsequent interviews, it was evident that in 2008 she was part of a sewing co-operative (self-employment); had a formal job at a hospice in a nearby town; and sold funeral policies for a company on an ad-hoc basis. We did not know the basis on which participants selected which occupation to present during their initial interview, when faced with a questionnaire that erroneously only catered for one occupation. Thus, classification of those who had more than one occupation was of little use without sufficient accompanying information regarding the basis for participants' decisions. Participants were no longer grouped by occupation after the mid-QLA (for group work or analysis), when questions of data validity regarding occupation started arising.

Changes in occupation group over the period of fieldwork would also have meant that analysis by occupation would have been complicated, if occupation classification was retained. Over the fieldwork period SamkeF53 resigned from her job when her co-operative business began to grow. Her choice to represent herself as self-employed in 2008, was based on the way she wanted to be seen (as evident from her negative feelings towards her hospice job, shared with us in 2010).

These examples illustrate why terms, options and definitions set outside of a particular context often do not yield accurate results and why local definitions of categories are important. It also illustrates how processes fostering transparency, trust and genuine humanity can, with time, lead to better quality information.

#### *6.2.4 Implementing Institutions, Evolving Process and Insecure Employment*

Just as the people who implement research affect the research process, so too do the institutions housing researchers and administering funding. Protocols of the institutions behind the research limited our ability to implement CLIQ according to some *par* principles. For example, unpredictable issues that arose from unfolding area processes could have been addressed differently. Extending the time period for computer use between phase 2 computer training and the final-QLA in maduzane areas, would have yielded research processes and data that were more comparable with the manje sites. However, the funder's

deadlines prevented this, creating an example of how research goals trump action goals. Recognising that *par* is time consuming and evolves according to the local context, it is difficult to accurately plan for the amount of time that will be needed for *par* fieldwork. Thus, a key challenge for CLIQ was implementing *par* through an institution with systems designed to accommodate more controlled and regulated research practices - in particular, research plans and methodologies that generally proceed according to schedule.

Financial control regulations by UKZN regarding petty cash disbursement did not facilitate a flexible fieldwork timetable either. As experienced more than once, an extended fieldtrip in one area did not leave enough time back at the office to reconcile and return petty cash received, and then request a new petty cash disbursement in time for the next field trip which had already been scheduled. Furthermore, when fieldworkers were waiting to be paid but had to leave on another field trip, a serious problem arose for them, especially if the upcoming trip covered a month-end. Many did not have cash reserves to cover month-end bills before payday or even to purchase items needed for the trip and we were not permitted to use and then replace petty cash for this purpose. Thus rules of UKZN regarding cash disbursements negatively affected our ability to follow an evolving *par* process, although where possible, those controlling the funds demonstrated flexibility and understanding. This is a challenge generic to the interface between process-directed development work and funding institutions guided by standardised protocols (see Chambers (2008:183-186).

Insufficient reflection and attention is given to the practical problems and challenges of conducting participatory research from within formal learning institutions or as supported by large-scale funding organisations.

### 6.3 Justification for Methodological Choice

The literature supports the use of PMs for evaluating complex community interventions, for ICT4D practice and research, and for QoL research (see sections 2.1, 3.4, and 4.5). This section links aspects of CLIQ implementation with principles and challenges of PMs to illustrate why *par* was an appropriate methodology to select.

### 6.3.1 *Rooted in Reality, Conceptually and Practically*

As with other life experiences, all research that respondents take part in or are aware of (including observation), impacts on their thoughts and behaviour. By providing free computer training and use and asking participants to set goals for their future, CLIQ was clearly impacting on participants' lives. A participatory approach was therefore appropriate as it recognises that no research or development work is value free and that engagement between outsider researchers and local participants, impacts on all people involved. PMs account for this impact through guiding principles with respect to socio-economic status, cultural differences and relations of power, by requiring personal awareness and reflection on the part of researchers.

### 6.3.2 *Multiple Stakeholders with Multiple Goals*

Along with some other PMs, *par* accommodates the simultaneous pursuit of action and research goals, by recognising: a) differences between various stakeholders' goals; b) differences in the power, resources and experience; and c) challenges caused by dual goals. Particular *par* methods, processes and principles can assist when these goals clash in practice. CLIQ recognised participants would most likely not be motivated to contribute to the knowledge base underpinning ICT4D theory and practice. By designing a process to support participants to pursue a broad goal shared by most humans (improving well-being) that would also generate data for the research goal, the process had in-built motivators for researchers and participants.

Dual action and goals can reinforce each other, when *par* is implemented as a means as well as an end. For example, individual life goals which were part of the first QLA were used to design the upcoming computer training so that it would address participants' expressed needs. In addition, collation of these life goals contributed to an understanding of local definitions of QoL. The reinforcing nature of CLIQ's dual goals is well-captured in the following extract:

[T]hrough using participatory action research (a 'subjective' research methodology), researchers benefit from the analysis of actual change (with respect to better findings) and participants benefit from the analysis of information (with respect to a more insightful approach to improving their quality-of-life). In other words, researchers benefit from what is of primary importance to

participants (changes in quality-of-life) and participants benefit from what is of primary importance to researchers (analysis of information). (Attwood, 2013:17)

### 6.3.3 *Methods Facilitate Empowerment*

Many PMs include visual participatory methods and process guidelines to facilitate the local investigation and analysis of conditions, concepts, customs, issues and solutions. Large visual representations of discussions and information being shared, facilitates the participation of those who are less socially confident. Less confident participants can add their views directly to the diagram, thereby contributing to the content of the debate without talking. Particularly for complex issues like the causes of QoL change, flexible visual methods promote both individual and group analysis that generates in-depth insight and reveals unique links between local issues; or facilitates the emergence of underlying causes or values. For example, when reviewing QoL during the mid-QLA, groups plotted changes in QoL and recorded their reasons for these changes on cards, individually. Participants then sorted cards into groups according to themes they observed when viewing all participants' reasons together, regardless of the change it led to. By placing reasons individually on cards, it allowed different participants to take turns shifting the cards around to explore different options for grouping reasons into themes. In addition to the themes that emerged, the debate leading to the groups' choice of how to group reasons for QoL, provided insight into the perceptions and values underlying their choice. This process was also empowering, as participants acquired analytic skills.

Thus, because the *par* process involved analysis by participants, they gained skills, knowledge and confidence. This was evident particularly amongst eMpumalanga participants during the CLIQ dissemination workshop: they confidently proceeded with facilitating and recording group discussions on their responses to the CLIQ findings, after indicating that no explanation was needed about what to do with the colour cards and koki pens.

### 6.3.4 *Complexity and Diversity*

Chambers (2008:50) contends that in social sciences "...complexity and diversity are under-perceived, and consequently undervalued". With QoL and ICT use recognised as multi-dimensional, a suitable methodology for CLIQ had to be able to accommodate this

diversity and complexity. White and Pettit's (2004) international review of the use of participatory research focussing on well-being, notes the ability of participatory methods to uncover the complex and inter-related causalities underlying poverty. Similarly, Kleine (2010b:684) advocates a participatory approach to ICT4D research, recognising that it offers "... the chance to recognise the diversity of the contributions ICTs can make to the social, cultural, environmental and economic aspirations individuals may have for their lives." Furthermore, while the CLIQ intervention was mainly focussed at an individual and not community level, it has a number of similarities with CCIs, which Rogers (2008) regards as illustrative of complex interventions. Appendix H (p326) highlights how the experience of implementing CLIQ reflected each of the six features that make CCIs difficult to evaluate, as presented by Kubisch and colleagues (1995:3-5). With CLIQ matching elements of complex interventions, Chambers (2008:50-53) assertion that PMs are well suited to complex interventions, supports the use of *par* for CLIQ.

### 6.3.5 *The Moral Imperative*

The ethical reason for using a participatory approach is based on the vast inequalities and extensive poverty in SA, together with evidence of PMs as transformative. However, recognising the caution against the practice of participation akin to that of a religious experience (Henkel and Stirrat, 2001), a belief that PMs are morally and ethically valid, is not enough. Constant reflection on the actual effect of participatory processes is critical, because with dual-goal processes there is also the potential for participants to be disempowered (Barahona *et al.*, 2007:173). Unlike post-positivist methodologies, PMs strive for actual positive local change, in addition to good information that may inform better policy.

[M]orally it is the right thing to do to engage the people themselves in the decisions that will affect their lives. (Kleine, 2010b:683)

In addition to the ethical argument, Kleine (2010b:683) notes other reasons for using PMs for ICT4D, including the local relevance of priorities, context-appropriate implementation and more sustainable institutions, that lead to more successful initiatives. Furthermore, Kleine (*ibid*) asserts that development priorities are likely to be broader, reflecting people's development needs more closely; and the range of possibilities offered by ICTs expand, when options are considered from a local perspective.

## 6.4 Project variables for sample definition and analysis

When researching whether smoking is bad for people's health, it is vital to consider health outcomes in light of the number and quality of cigarettes smoked over a particular time period. Health outcomes of those who smoke one high quality cigarette a month are expected to be different from the health outcomes of those who smoke 20 poor quality cigarettes a day. Similarly, when considering whether and how QoL changed, it is critical to consider the quantity and quality of the CLIQ intervention that participants engaged with. Level of individual participation is a proxy for the quantity of CLIQ received by each participant. The relative success of implementation in each area is a proxy for the quality of CLIQ delivered.

As discussed in section 5.3, inclusion in the impact sample was determined by participation in the QLAs. Data on the number of scheduled CLIQ activities (both QLAs and training sessions) that participants took part in, also represents an outcome of the intervention. The discussion below builds on section 5.3 (p134) and draws on the analysis of implementation presented in this chapter, to establish participation and implementation variables. These variables are both findings on participation and implementation (as outcomes of the CLIQ intervention) and variables for the analysis of findings, thus bridging my discussion of methodology (chapters 5 and 6) and findings (chapters 7, 8 and 9). This section ends by reflecting on the definition of the impact sample and establishing a sub-sample (the core sample) as a basis for empowerment analysis.

### 6.4.1 *Participation and Implementation Analysis Variables*

The level of individual participation of those included in the impact sample has been classified as good, average or poor, as defined in Table 6-2, based on individual attendance data from QLAs and computer training sessions. Overall, participation by almost three fifths of the sample was good, with one fifth displaying average participation and another one fifth displaying poor participation. On an area basis, eMpumalanga stands out with almost three quarters of participants falling into the good participation category, whereas this proportion was around half for the other areas. In eNingizimu, the proportion of participants with poor participation was lower than eNtshonalanga and eNyakatho, and about the same as eMpumalanga, resulting in eNingizimu being second best. eNtshonalanga displays the worst

scenario with poor participation at 43% (followed by eNyakatho at 26%). The areas can therefore be ranked in terms of participation from the best (eMpumalanga) to the worst (eNtshonalanga) as shown in Table 6-2.

**Table 6-2: Nature of individual participation per area**

Nature of individual participation	Total	eMpuma- langa	eNingi- zimu	eNya- katho	eNtshona -langa
<b>Good:</b> Attended all CLIQ activities or skipped only one activity	57%	73%	50%	52%	49%
<b>Average:</b> Skipped more than one activity but did attend some training	21%	21%	45%	22%	8%
<b>Poor:</b> Did not attend any training but did attend sufficient QLAs to establish QoL change.	22%	6%	5%	26%	43%
<b>Impact sample</b>	<b>113</b>	<b>33</b>	<b>20</b>	<b>23</b>	<b>37</b>
<b>Participation ranking</b>		<b>1<sup>st</sup></b>	<b>2<sup>nd</sup></b>	<b>3<sup>rd</sup></b>	<b>4<sup>th</sup></b>
		(where 1 <sup>st</sup> = best and 4 <sup>th</sup> = worst)			

By adapting to the local context, implementation differed across the four areas and these differences together with the context meant that the quality and nature of the CLIQ intervention varied between areas. Detail on the differences in the implementation between the four areas, together with a timeline of implementation is presented in Appendix E (p320). In order for the analysis of individual outcomes to take account of the quality of the CLIQ process in the relevant area, a single variable representing the success of implementation was needed to reduce the complex experience and findings regarding implementation, into a usable form for cross analysis. Six indicators of implementation were identified by reflecting on important aspects of the *par* process. Each area was assessed on these indicators and a summary of the results are presented in Table 6-3.

When computer training was delayed, this often affected the project negatively. Rows 1, 2 and 3 (Table 6-3) show that eMpumalanga enjoyed the best computer training schedule overall. The long delay between modules 1 and 2 in eNingizimu had a detrimental effect on participants' learning processes, despite timing between later activities being good. The delivery of computer training was the worst in eNtshonalanga, with participants only receiving phase 1 training (which was severely delayed).

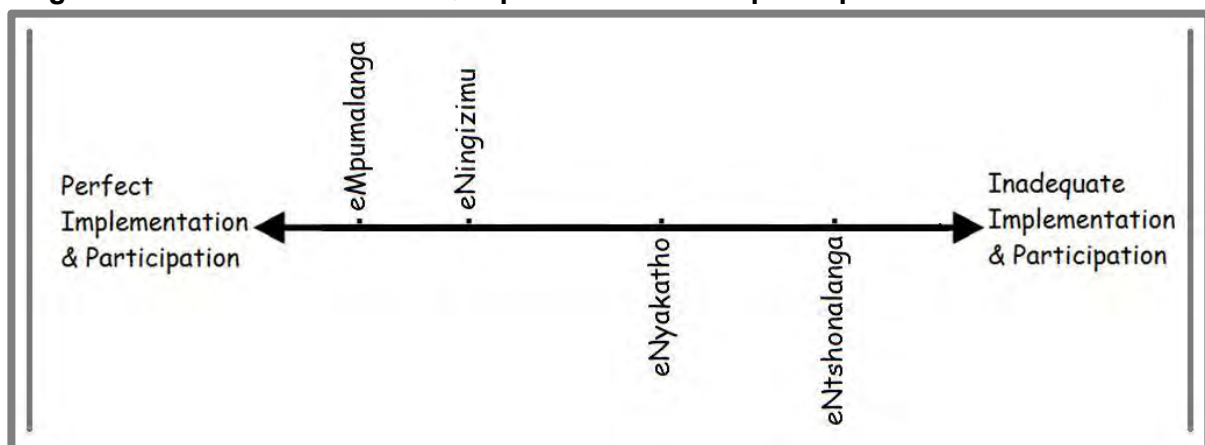
**Table 6-3: Indicators of success of CLIQ implementation**

Process Indicator	Manje Sites		Maduzane Sites	
	eMpumalanga	eNingizimu	eNyakatho	eNtshonalanga
1] Months between initial-QLA and phase 1 training (desired: 1-2 months for manje, and 1 month after 2 <sup>nd</sup> initial-QLA for maduzane)	<b>Acceptable-Good:</b> 3 months, slight delay due to software problem on computers.	<b>Problematic:</b> 10 months till completion of phase 1 module 2 training: mod1 and mod2 training were separated by 8 months due to lack of TC connectivity.	<b>Problematic:</b> 3 months after 2 <sup>nd</sup> initial-QLA (and 10 months after 1 <sup>st</sup> initial-QLA) due to scheduling problems with trainer.	<b>Problematic:</b> 13 months after 2 <sup>nd</sup> initial-QLA (and 20 months after 1 <sup>st</sup> initial-QLA) due to non-functional TC
2] Months between phase 1 and phase 2 training (desired: 6 months)	<b>Acceptable:</b> 11 months, delayed by problems accessing trainer	<b>Good:</b> 4 months	<b>Acceptable:</b> 8 months, but delayed due to TC non-functionality	<b>Problematic:</b> No phase 2 training due to delayed phase 1.
3] Months between phase 2 training and final-QLA (desired: 5 to 6 months)	<b>Acceptable:</b> 2 and 3 months	<b>Good:</b> 4 months	<b>Problematic:</b> 2 weeks, due to knock-on effect of initial delays and subsequent TC non-functionality	<b>Problematic:</b> 2 weeks between phase 1 training and final-QLA
4] Access to free computer hours at local TC	<b>Good:</b> access to TC was reasonable regarding supply side issues	<b>Acceptable:</b> some problems relating to non-connectivity, opening hours of TC and business of TC	<b>Problematic:</b> hours of use per visit were restricted and TC often too full to use, CLIQ free use was discouraged	<b>Problematic:</b> During 2 weeks between training and final-QLA, access to TC was severely restricted.
5] TC facilitator on hand and generally willing to help participants	<b>Good:</b> TC facilitators kept good participant-use records and assisted them with computer use most of the time	<b>Problematic:</b> high turnover of TC facilitators and lack of motivation and interest from some facilitators	<b>Problematic:</b> disinterested TC facilitator	<b>Problematic:</b> No TC facilitator with access to TC
6] Relationship between fieldworkers and participants	<b>Good:</b> excellent rapport and many friendships made	<b>Acceptable:</b>	<b>Acceptable-Good:</b> fieldworkers were comfortable and made some friends	<b>Acceptable:</b>
<b>Implementation Ranking</b>	<b>1<sup>st</sup></b>	<b>2<sup>nd</sup></b>	<b>3<sup>rd</sup></b>	<b>4<sup>th</sup></b>
	(where 1 <sup>st</sup> =best & 4 <sup>th</sup> =worst)			

Area differences in the functionality of computers and the internet reduced comparability across sites (see row 4), because participants' experiences of attempted computer use was affected by whether the computers and internet were working when they reached the telecentre. The attitude of the telecentre facilitator also affected participants' experience of using the telecentre in terms of whether or not participants felt welcomed and entitled to use the computers, and whether they were assisted when needed. Access to the telecentre to use free hours and assistance from the telecentre facilitator placed eMpumalanga as the best, and eNtshonalanga and eNyakatho, both as the worst (see rows 4 and 5, Table 6-3). The personal relationships established between fieldworkers and participants from each area, was an indicator of the level of rapport established between the two groups, influencing the quality of information (see row 6, Table 6-3).

Reflecting on the entire process within the four areas, my subjective ranking of implementation places eMpumalanga first, followed by eNingizimu and then eNyakatho, with eNtshonalanga last. The implementation ranking and participation ranking therefore placed the areas in the same order. To cross check the ranking of areas, participation statistics were analysed on an activity basis by area (rather than on the total number of activities per participant). The result of this analysis confirms the participation and implementation rankings shown above in Table 6-2 and Table 6-3 (see Appendix I-Table 1, p327). CLIQ participation and implementation can therefore be viewed as a continuum, as illustrated in Figure 6-1.

**Figure 6-1: Continuum of CLIQ implementation and participation**



*Note:* The position of the four areas on this continuum is a guesstimate, guided by the area's rank and my subjective perception of implementation in each area.

The level of implementation in the area, together with an individuals' level of participation can be construed as varying levels of a CLIQ dose, representing the intensity of the intervention.<sup>77</sup> For example, those from eMpumalanga who participated in all activities *got more of a better CLIQ*, while those from eMpumalanga who participated in half the activities *got less of a better CLIQ*. Those from eNyakatho who participated in all activities, *got more but of a lower quality CLIQ*, and so on.

With a sample of over 100 participants, some quantitative analyses of the results were possible. Individual levels of participation (as good-average-poor) from Table 6-2 and area-based implementation ranking from Table 6-3 were used to quantitatively analyse results with respect to QoL change and CLIQ impact. A quantitative analysis of reasons for QoL change and the nature of CLIQ impact was based on codes that resulted from an intensive process of coding 113 participants' IIDs. I used Grounded Theory (GT) techniques to explore the outputs from fieldwork, attempting as far as possible to create categories for analysis which emerged from the IID notes. GT is regarded as suitable for use within participatory research:

[GT] sets out to find what theory accounts for the research situation as it is. In this respect, it is like action research: the aim is to understand the research situation. The aim ... is to discover the theory implicit in the data. (Dick, 2005:3)

GT was also suitable because it does not seek to impose theory on findings in order to make sense of them: "Grounded theory is a qualitative approach that generates theory from observation. It provides the structure often lacking in other qualitative approaches without sacrificing flexibility or rigor" (Calloway and Knapp, n.d.:1). Following the quantitative analysis of results in chapter 7, a qualitative analysis is presented based on participants' experiences in conjunction with my insight and analysis of project implementation, as presented in this chapter.

#### 6.4.2 *The Core Sample*

Iterative and cyclical processes are most useful. Similar to the action reflection cycle (see subsection 4.3.5, p83), I engaged in an unplanned, non-linear and iterative process of

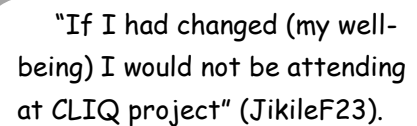
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<sup>77</sup> The analogy of medicinal dosage was suggested by Julian May (principle investigator for CLIQ), who at the time was also my supervisor.

analysis that has included stages of fieldwork, reading, reflection, writing and debate. One benefit of this is that assumptions and decisions can be revisited based on new insights arising from intermediate findings. This has occurred a few times within the process of analysing CLIQ outcomes, which was possible due to the length of time I have been engaged with the analysis and write up of different aspects of the project.

In early 2011, I had to decide which participants' data would be included in the analysis of impact and which would be excluded. Selecting those from whom we had data regarding their perceived level of QoL in mid 2008 and again at another point up to mid 2010 (i.e. from the second initial-QLA, the mid-QLA or the final-QLA) allowed for the identification of change in QoL and seemed a logical, implementable and defensible rule. Implementing this rule led to the demarcation of an impact sample of participants.

With the benefit of greater insight into individual experiences and a better understanding of how different area processes affected local outcomes, I reviewed this decision in early 2013 for the purposes of analysing empowerment outcomes for this thesis. With eNtshonalanga participants not having the experience of the mid-QLA, phase 2 training or computer use (beyond a week) and with the extensive delay in their phase 1 training, this rule no longer seemed appropriate. Of the 37 eNtshonalanga participants in the impact sample, 14 (or 38%) did not participate beyond the second initial-QLA in early 2009. QoL change data for these 14 participants and another seven from other areas, was limited to the direction of change and did not include any detail on reasons for change or CLIQ impact.



"If I had changed (my well-being) I would not be attending at CLIQ project" (JikileF23).

In order to determine extent of impact, it seemed more reasonable to base calculations on a sample for whom we had information on CLIQ impact, which I refer to as the core sample. Table 6-4 shows the spread of the core sample of 92 participants across the four areas. The process at eNtshonalanga was substantially different to the processes in the other three areas. A delay of about one year between the second initial-QLA and phase 1 training (April 2010) contributed to attrition which was 30%, compared to 11% at the other rural area (eMpumalanga). The impact of CLIQ is discussed with respect to either the impact sample (113 participants) or the core sample (92 participants) in chapter 7, as appropriate.

**Table 6-4: CLIQ's core sample**

Samples reflecting process	Total	eMpuma- langa	eNingi- zimu	eNya- katho	eNtshona- langa
<b>Selected Sample</b>	162	37	34	38	53
<b>Impact Sample</b>	113	33	20	23	37
<b>Core Sample</b>	<b>92</b>	<b>33</b>	<b>18</b>	<b>18</b>	<b>23</b>
Participants in <i>impact</i> sample, but excluded from the <i>core</i> sample	21	0	2	5	14

*Note:* All but one of these 21 participants did not attend the final-QLA in 2010, as shown in Appendix J, p330 (Tables 1 to 4). Another 5 who also did not attend the final-QLA are included in the core sample, because they spontaneously discussed the impact of CLIQ in their mid-QLA.

## 6.5 Summary of Fieldwork Implementation, Analysis and Reflection

A selection of people from two rural and two (peri-)urban areas in KwaZulu-Natal, who were interested in learning to use computers, participated in a *par* process which took place between mid 2008 and mid 2010. The four areas were selected by the KZN USAASA representative as areas with a functional USAASA-supported telecentre. After an initial QoL assessment (QLA), CLIQ provided two phases of computer training focussing on computer use aimed at supporting participants' self-identified goals, with a mid-QLA in between the training phases. A final-QLA focussed on participants' perceived changes in their QoL and other CLIQ impacts. From the first computer training until the final-QLA, each participant was entitled to use 100 free hours on computers at their local telecentre (paid for by CLIQ). Out of a total of 227 interested people, 162 were selected as participants, and 113 took part in sufficient scheduled activities to be included in the impact sample. Two thirds of both the selected and impact samples were women and half the impact sample were aged between 17 and 24 years, with only 12 participants aged 40 years and above.

In each area, the research process was adapted to the local context and capacity building activities were undertaken with telecentre facilitators as the need arose. From a variety of contextual factors that challenged the implementation of CLIQ, non- or poorly functioning telecentres had the most serious impact. Recognising differences in the processes over the four areas, an individual participation variable was established as a proxy for the quantity of the intervention that people got, allowing the areas to be ranked in terms

of participation. The areas were also ranked based on indicators of implementation success, as a proxy for the quality of implementation. Both the participation ranking and the implementation ranking placed eMpumalanga as the best area, followed by eNingizimu and then eNyakatho, with eNtshonalanga as the worst of the four areas. Together the participation and implementation ranking can be viewed as indicating the *intensity* of the intervention. Categorisation of individuals according levels of participation established a variable for analysis based on individual participant's engagement with CLIQ, regardless of research area.

Fundamental aspects of *par* (presented in section 4.3, p80) are reflected in the design and subsequent adaptation of the local CLIQ processes. From an analysis of implementation, fieldwork challenges identified across the four research areas, indicate how the fundamental principles of *par* guided decisions regarding changes to the research design. With reference to theory on QoL, ICT4D and PMs (chapters 2, 3, and 4), post-field analysis of implementation illustrates that *par* was an appropriate choice of methodology for the intervention, particularly given that *par*: a] includes dual goals of action and research; b] accommodates complexity and diversity; and c] facilitates empowerment.

Chapter 7 (THE IMPACT OF CLIQ) presents the findings from CLIQ fieldwork. The area-based implementation ranking and the individual participation variable established in this chapter is used to analyse the extent and nature of participants' changes in QoL, as well as reported impact from CLIQ on their lives.

# CHAPTER SEVEN:

## THE IMPACT OF CLIQ

Due to the continuous and dynamic nature of the lived experience, establishing causality between ICT use and changes in well-being is a difficult task. Nevertheless, it was important to attempt to establish whether and how CLIQ impacted on participant lives and contributed to changes in QoL, and distinguish these from changes in QoL due primarily to factors unrelated to CLIQ. This chapter presents findings and analysis to support conclusions on the overall nature of CLIQ impact, and specifically on impact of CLIQ on participants' social resources, information, education, community participation and empowerment.

The chapter starts with an overview of local QoL indicators and moves on to summarise overall changes in QoL and other CLIQ impact, in quantitative form. A flow diagram illustrates the correlation between the area-based intensity ranking of the intervention (established in section 6.4) and quantitative findings on impact. The third section explores a selection of non-material outcomes from participants' engagement in CLIQ. Chapters 7 and 8 make use of speech bubbles to present translated quotes from participants that provide a unique perspective, illustrate the variety of experiences or poignantly summarise the topic being discussed. The translated quotes in speech bubbles are intended to add depth to the discussion because as they reflect participants' perspectives and perceptions. I have also used quotes from participants within the main discussion, when the point I make is well captured by the words of a participant. All quotes from participants are from the final IIDI in 2010, unless otherwise indicated (where 2008 refers to interviews from the initial-QLA and 2009 refers to the mid-QLA).

Plate 7-1 pictures 88 of the 113 participants included in the impact sample, whose experiences form the bases of chapters 7 and 8.

**Plate 7-1: CLIQ participants**

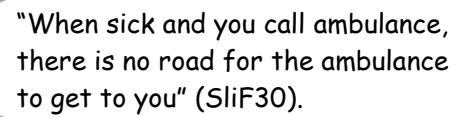
Source: CLIQ participants *et al.* (2011:13).

Layout: Jessica Nicholson

Original Photos: Heidi Attwood; Sifiso Biyela; Elise Bjastad; Jessie Knott

## 7.1 Local Indicators of Quality-of-Life

Local definitions of QoL facilitate improvement in QoL, because the indicators produced are contextually relevant and more



"When sick and you call ambulance, there is no road for the ambulance to get to you" (Slif30).

appropriate for use by and with those whose lives are in focus. Insight into local indicators of QoL was gained from three sources (see Table 5-5, p130). Firstly, the individual *goals* that participants set during the initial-QLA indicated potential achievements that they felt would improve, or represented a state of improved well-being, for them. Secondly, QoL-lines from 2008 produced sets of well-being categories, supported by *group descriptors* of the different levels of well-being (see for example, Figure 7-1). Individual QoL-lines included within the final IIDl in 2010, provided an opportunity for participants to re(de)fine their definitions of the extremes of well-being - a good life and a bad life - yielding *personal descriptors* (e.g. Figure 7-2 and Figure 7-3).

Figure 7-1: QoL-line for unemployed youth (eNyakatho, 2008)

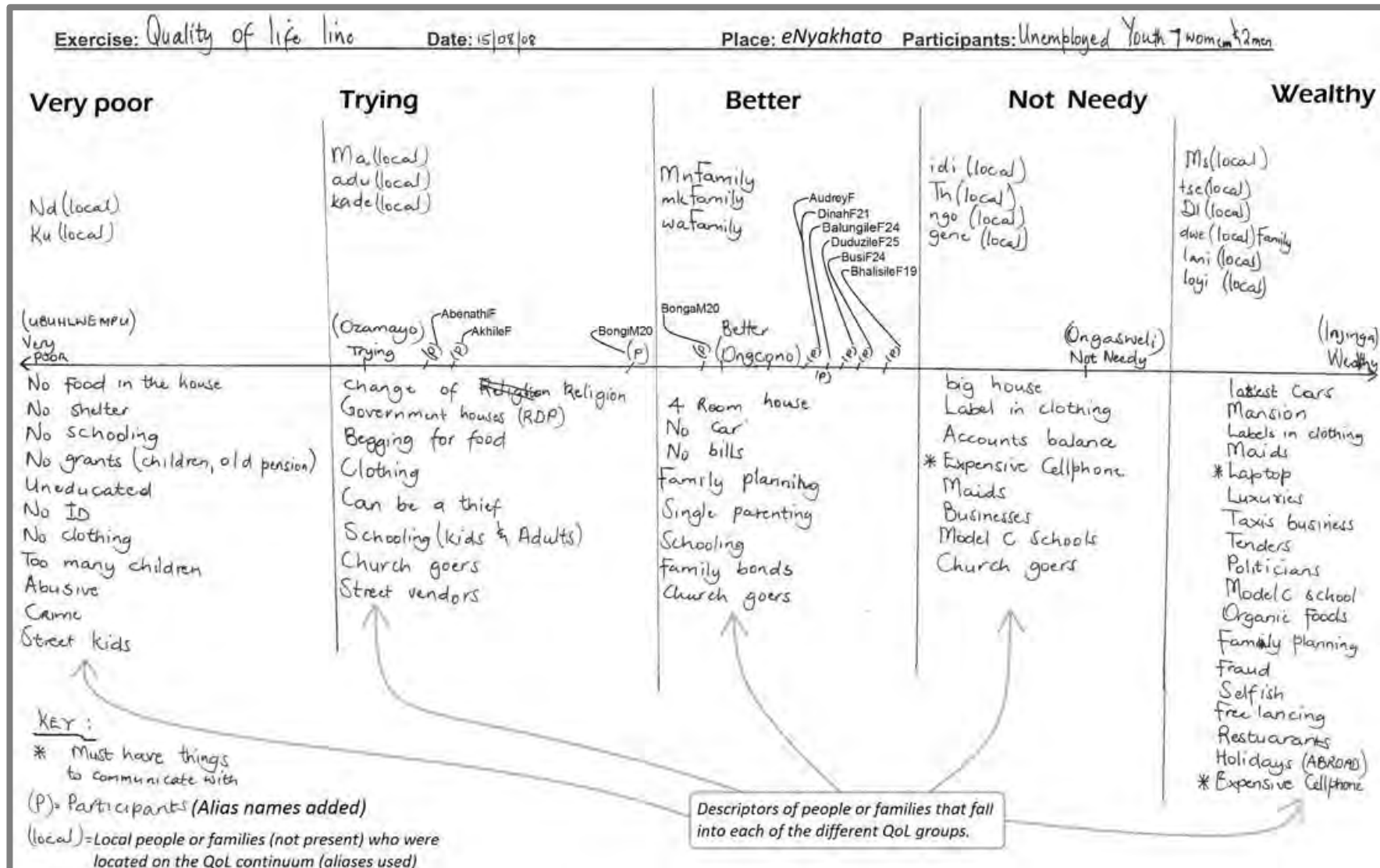
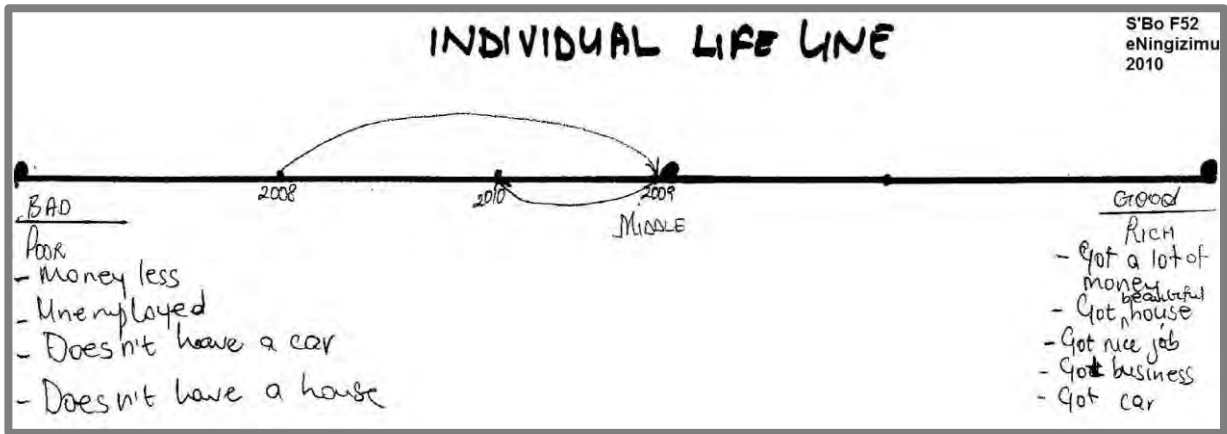
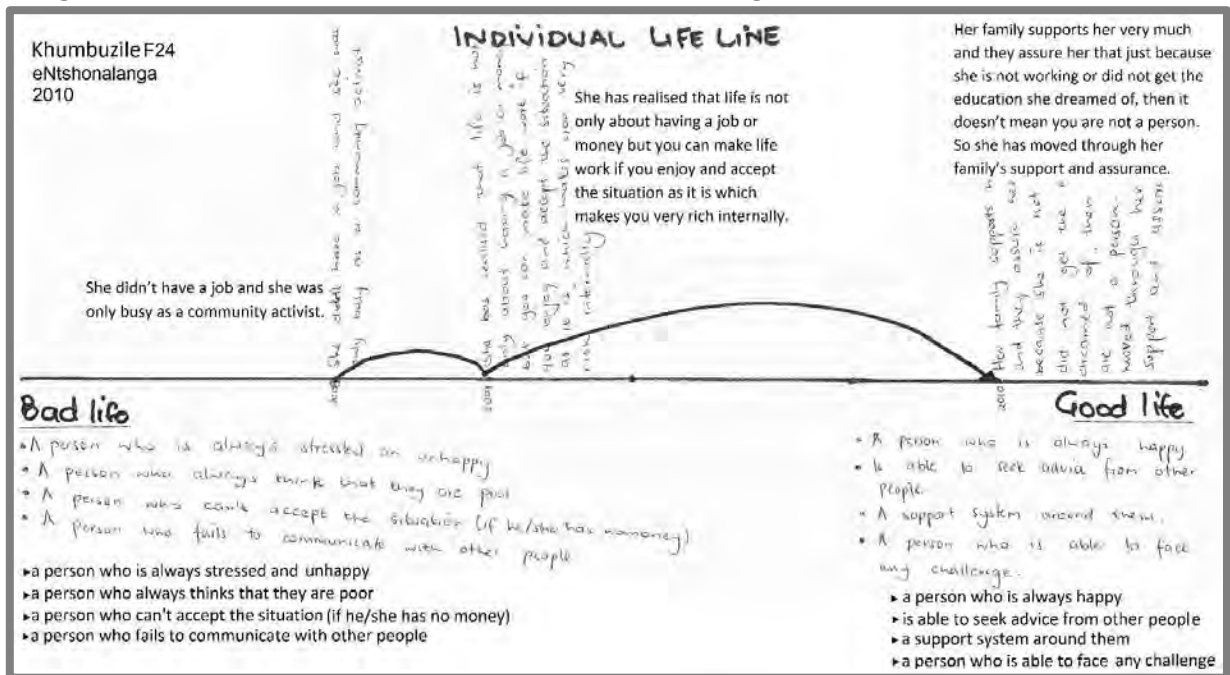


Figure 7-2: S'boF52's QoL-line (eNingizimu, 2010)



Thirdly, diagramming and discussion about perceived changes in QoL (also during the final IID) allowed participants to reflect on how and why their well-being had or had not changed. These *reasons* for well-being change provided insight into what participants retrospectively regarded as impacting on their QoL. A comparison between S'boF52's lifeline (Figure 7-2) showing only material indicators and Khumbizile's lifeline (Figure 7-3) showing only non-material indicators, illustrates some of the variance between participants' conceptions of QoL.

Figure 7-3: KhumbizileF24's QoL-line (eNtshonalanga, 2010)



The way in which participants expressed some indicators was similar across all three exercises (such as jobs) while for other indicators it differed. The detail of the different ways that participants expressed some indicators provides a much richer insight into meaning than any coded terms (e.g. more friends, socialising and networks) that were generated post-field, and participants' words illustrate linkages across indicators.

An example of the enrichment provided by using three perspectives on indicators of well-being is provided by the young man whose own business concerned the provision of illegal electricity connections for others in the area. One of his goals was to have a legal electricity connection .... Therefore when considering access to basic services as an indicator, the nature of access is important. While attitudes, behaviour, and states-of-being were not in the group of the most common indicators, they were mentioned across all three methods. Expressions of this indicator as a goal included 'work hard' and 'become an independent woman'; as a descriptor of low QoL included 'can't even think' and 'selfish' for high QoL; and as a reason for change included various expressions of feelings of empowerment, self-confidence, hope and direction. (Attwood, 2013:11-12)

The various indicators arising from these three exercises were compared alongside each other post-field, creating a common list of indicators. A copy of the comparative table of descriptors, goals and reasons as presented in Attwood (2013:10) is included in Appendix K (p334). Table 7-1 lists the six most common, and the next seven less common indicators from a total of 21. Ideally, such a

universal list of local indicators of well-being would have been generated through iterative debate among participants from all the areas, however project resources did not allow for this.<sup>78</sup> Nevertheless, post-field compilation of common indicators remains useful because it provides a broad view of local understandings of well-being which all participants subscribed to, at least in

**Table 7-1: Local indicators of QoL**

Common indicators	Less common indicators
1. Housing	7. Friends and networks
2. Study/ Education (for self)	8. Attitude, behaviour & state-of-being
3. Jobs	9. Community / voluntary activity & participation
4. Small Business	10. Basic services
5. Money (access & affordability)	11. Family
	12. Education (for family)
6. Car/ Travel	13. Other assets (e.g.laptop)

<sup>78</sup> This is an example of a trade-off discussed under *par* principles in section 4.3 and fieldwork challenges in subsection 6.2.1.

part. It also serves as a useful background to the impact that CLIQ had on participants' lives, as presented in this chapter.

Differences found in references to money, quality of food or clothing and livelihood status across the three sources of indicators of well-being (see Attwood, 2013:11&13), suggest that goals targeting a particular livelihood status (like getting a job) or financial resources were often regarded as a means to an end. The primary ends were lifestyle goals related to basic needs, like type of housing. However from the many different sequences of activities that participants undertook, there were examples where an achievement like increased social networks was a means for further achievements (e.g. getting a job); and where the same achievement of increased networks was the result of a previous achievement (e.g. getting a job). Thus no clear distinction between specific goals (e.g. getting a job) as means or ends emerged from the data. Rather, over time, goals reached became the means with which to achieve new goals. This is an example of circular and multi-directional causality – often complicating efforts to understand the impact of an intervention.

The importance of local engagement with the concept of well-being was the potential that the process of thinking and reflecting on QoL would assist participants in their effort to improve their lives - this is taken forward in subsection 7.3.6 on inner empowerment. Having computer skills and increased world knowledge both emerged mainly as reasons for QoL change in 2010, but not as goals or descriptors in 2008. This illustrates they were not initially regarded as indicators of QoL, suggesting that engagement with ICTs together with repeated discussion on the nature of 'a good life', changed participants' conceptions of well-being and ill-being.

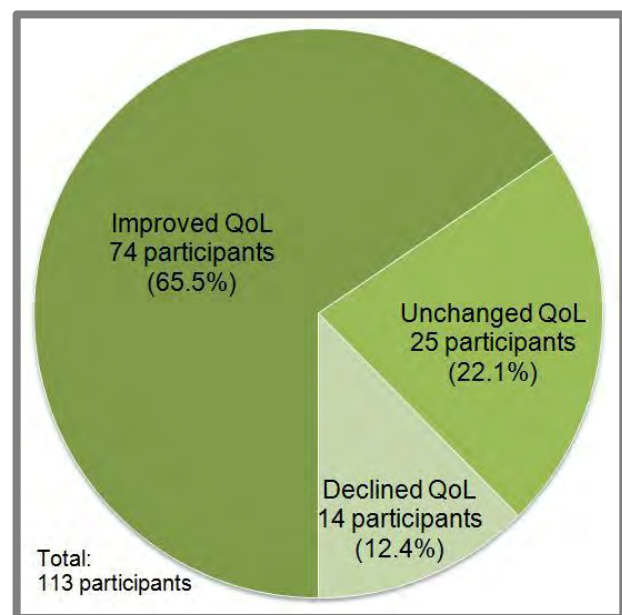
## 7.2 Changes in QoL and CLIQ Impact

Participants considered whether their QoL had changed during the second initial-, mid- and final-QLAs. Two thirds of the impact sample (74 participants) reported to have improved their QoL, while about a fifth (25 participants) noted no change, and 14 participants (12%) felt that their QoL had declined (see Figure 7-4).

Causality is difficult to establish given the variety of influences on human being and human doing and the complexity of QoL (see subsections 2.1.2, p21 and 3.3.1, p50). Nevertheless, the challenge was to distinguish between changes that would probably have occurred in participants' lives regardless of CLIQ and those that were influenced by their project engagement. Through a series of questions applied post-field to data from IIDIs (see Attwood *et al.*, 2014:191), participants were grouped for the purposes of analysis into three groups:

- a) *CLIQ affect on QoL* (those who linked CLIQ impact to at least one of their reasons for QoL change);
- b) *CLIQ impact* (those who noted an impact of CLIQ on their life but did not link the impact to any of their reasons for QoL change); and
- c) *No or unclear CLIQ impact* (those who did not indicate any impact from CLIQ on their lives or for whom the nature of CLIQ impact was unclear).

**Figure 7-4: Changes in participants' QoL**



Just over a third of participants (36%) noted an impact from CLIQ that directly contributed to one of their reasons for QoL change. Another two fifths (41%) mentioned CLIQ impact on their life, although they did not associate the impact directly with any of their reasons for QoL change. Five participants indicated that CLIQ did not impact on their QoL at all over the two years and for the remaining 21 participants (19%), CLIQ impact was unclear.

Table 7-2 cross tabulates participants' QoL-change group and their CLIQ-impact group, showing that 85% of participants who noted a CLIQ affect directly on their QoL, experienced an improvement in their QoL and 70% of those reporting some impact from CLIQ, improved their QoL, while only 27% of those with no or unclear impact, experienced an improvement in their QoL. Combining those with declined or unchanged QoL, almost three quarters of those noting no or unclear impact (73%), experienced a decline or no change in their QoL. This figure drops to 30% and 15% respectively for those in the CLIQ impact and CLIQ affect

on QoL groups. Appendix J (p330) includes four area tables that indicate for each participant, the nature of change in their QoL and the nature of CLIQ impact (according to the categories used in Table 7-2).

**Table 7-2: Change in QoL according to CLIQ impact**

Changes in QoL	Impact Sample								Core Sample	
	Total		CLIQ Affect on QoL		CLIQ Impact		No or Unclear Impact			
Improved QoL	74	65%	35	85%	32	70%	7	27%	70	76%
Unchanged QoL	25	22%	2	5%	6	13%	17	65%	8	9%
Declined QoL	14	12%	4	10%	8	17%	2	8%	14	15%
No. of Participants (Impact Sample %)	<b>113</b> (100%)		<b>41</b> (36%)		<b>46</b> (41%)		<b>26</b> (23%)		<b>92</b> (81%)	

Using the core sample as a base (which excludes those with whom we lost contact - see Table 6-4, p158), three quarters of participants improved their QoL and 15% experienced a decline in QoL (see Table 7-2). In most cases (92%) where CLIQ impacted on the lives of participants, the impact was positive, although 17% of the core sample mentioned negative impacts (see Appendix I-Table 8, p329).<sup>79</sup> Considering six specific cases where CLIQ directly affected a reason for QoL change and the person's QoL remained unchanged or declined (see Table 7-2), the impact from CLIQ was positive and other factors were responsible for a decline in QoL. Multiple counteractive reasons for changing QoL were found in these cases, illustrating the complexity of life and therefore well-being. Table 7-3 provides examples of cases that fit within each of the various combinations of QoL change outcomes and CLIQ impact.

Analysis variables based on level of individual participation and level of area implementation presented in subsection 6.4.1 (p152), established an intensity ranking of the four research areas. Using this ranking, the relationships between participation, implementation, QoL change and CLIQ impact were explored in order to gain a quantitative indication of the extent to which CLIQ *did* make a difference. Table 7-4 shows a clear

<sup>79</sup> These are discussed in subsection 7.3.5.

correlation between the intensity rank and the proportion of participants with improved QoL. eMpumalanga and eNingizimu recorded higher proportions of participants with improved QoL (73% and 70% respectively), when compared to eNyakatho and eNtshonalanga (65% and 57% respectively), where the intervention intensity rank was lower.

**Table 7-3: Participants' stories illustrating QoL change and CLIQ impact**

		CLIQ Impact Group		
		a] CLIQ Affect on QoL (41 participants)	b] CLIQ Impact (46 participants)	c] No / Unclear CLIQ Impact (26 participants)
QoL Change Group	Impact from CLIQ → Change in QoL ↓	<i>CLIQ impact linked to at least one reason for person's QoL change.</i>	<i>CLIQ impact not linked by participant to reason for QoL change.</i>	<i>QoL change is unrelated to CLIQ. Insufficient data on impact: 21 p'pnts. No impact: 5 p'pnts.</i>
		<b>35 participants, e.g.:</b> MabasoM23 said his life improved because he got a job using a CV that he typed on computer, using his free hours, after learning about making CV's with CLIQ.	<b>32 participants, e.g.:</b> MilliF19 improved her life, mainly through having a baby and moving in with her boyfriend. Although CLIQ did have a positive impact on her this was not linked to her reasons for improved life.	<b>7 participants, e.g.:</b> JojoM31 improved his life by getting a job through a contact unrelated to the CLIQ process. He did not return for the final-QLA, so CLIQ impact (if any) is unclear.
	<b>ii. Unchanged QoL</b> (25 p'pnts)	<b>2 participants, e.g.:</b> SafarF35 made progress with business plans for her co-operative business using new knowledge from CLIQ, but the project stalled because they were waiting for government for approval. Her QoL did not change because her co-op was not progressing.	<b>6 participants, e.g.:</b> DinahF21's QoL did not change. She mentioned positive impacts from CLIQ as empowerment from learning to use computers, socialising, and internet use to help her studies. She felt good from goal-setting activities.	<b>17 participants, e.g.:</b> Bongim20 learnt computer skills but his QoL did not change and he felt that CLIQ had no impact on his life.
	<b>iii. Lower QoL</b> (14 p'pnts)	<b>4 participants, e.g.:</b> SallyF24 felt that her life declined because her father died, even though she got job at a local car wash as a supervisor because she had computer skills.	<b>8 participants, e.g.:</b> KwaziM20's QoL declined because both his air-time business and his father's taxi business were making less money than usual. Kwazi benefitted from CLIQ in terms of knowledge and typing and printing his CV.	<b>2 participants, e.g.:</b> SaneF50 could not attend CLIQ activities because she had the option of temporary work each time there was a CLIQ activity. Her well-being went down because in 2010 there was less temporary work available.

**Table 7-4: Change in QoL by area**

All Areas			eMpuma- langa		eNingi- zimu		eNya- katho		eNtshona- langa	
CLIQ Intensity Ranking			1 <sup>st</sup>		2 <sup>nd</sup>		3 <sup>rd</sup>		4 <sup>th</sup>	
Improved QoL	74	65%	24	73%	14	70%	15	65%	21	57%
Unchanged / Declined QoL	39	35%	9	27%	6	30%	8	35%	16	43%
Impact Sample (Sample %)	113 (100%)		33 (29%)		20 (18%)		23 (20%)		37 (33%)	

Further correlations between level of participation, level of implementation, QoL change and CLIQ impact were tested through a series of cross tabulations using alternate combinations of these four variables. This led to a number of findings.<sup>80</sup>

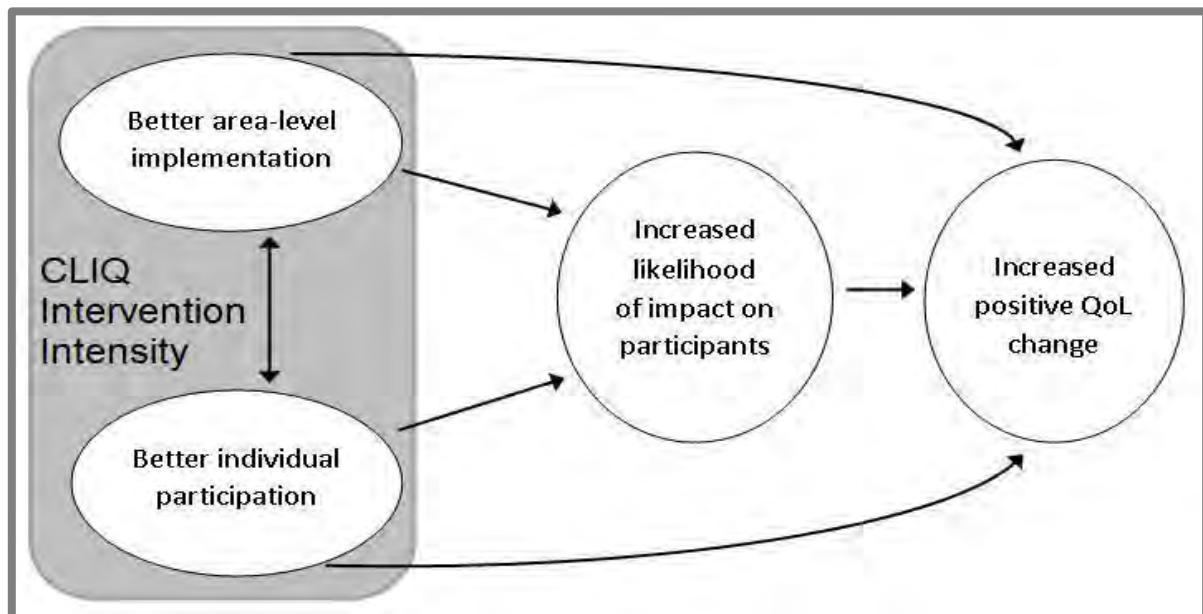
- a] As shown in Table 7-4, areas with better implementation (eMpumalanga and eNingizimu) recorded higher proportions of participants with improved QoL, than areas with poorer implementation (eNyakatho and eNtshonalanga).
- b] A direct CLIQ impact on participants' lives was more common among participants from eMpumalanga and eNingizimu; than participants from eNyakatho and eNtshonalanga, where implementation was less successful (see Appendix I-Table 5, p328).
- c] Those with improved QoL, were more likely to have participated well in CLIQ; than those with unchanged or declined QoL (see Appendix I-Table 6, p329).
- d] Virtually all participants with good individual participation noted an impact from CLIQ on their lives (whether or not they attributed any change in QoL to this impact), while the bulk of those who participated poorly, did not indicate any impact (see Appendix I-Table 7, p329).
- e] Lastly, better individual participation overall was found in areas where implementation was better (see Table 6-2, p153).

These findings are visually combined in the form of a causal flow diagram (see Figure 7-5).<sup>81</sup>

<sup>80</sup> Attwood *et al.* (2014: 192-195) presents an analysis of the tables referred to.

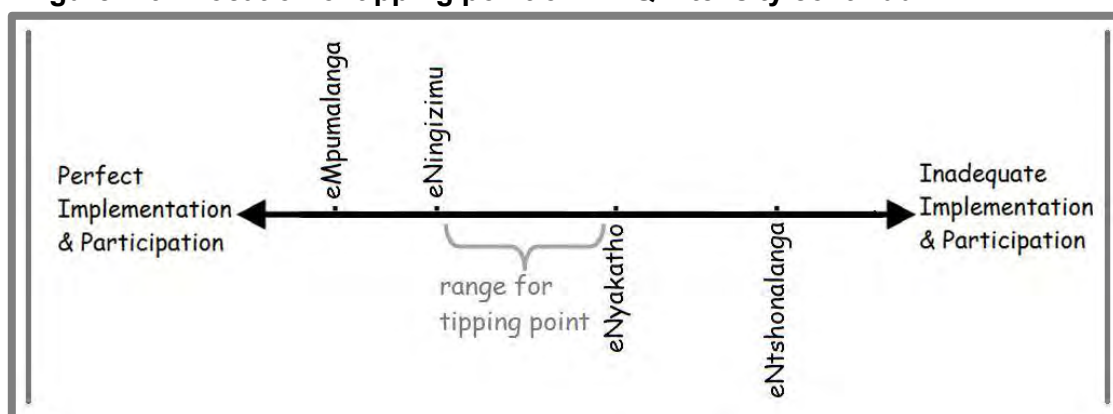
<sup>81</sup> This diagram first appeared in Attwood *et al.* (2011:16).

**Figure 7-5: CLIQ intervention intensity, impact and changes in QoL**



A greater proportion of participants from eMpumalanga and eNingizimu with increased QoL, when compared to participants from eNyakatho and eNtshonalanga, suggests there is a point on the continuum of intervention intensity beyond which participants' engagement in the process is associated with a greater positive effect. This is described in relation to complex interventions as a tipping point (Rogers, 2008). With the intensity of the intervention higher in eNingizimu than eNyakatho, the tipping point lies between what was achieved in these two areas, as illustrated in Figure 7-6.

**Figure 7-6: Location of tipping point on CLIQ intensity continuum**



The causality suggested through the flow diagram in Figure 7-5 is indicated when considering the correlations found in the quantitative data as discussed above. However,

directional causality from the CLIQ intervention to increased QoL cannot be concluded based on this evidence. To further investigate causality between CLIQ and level of QoL, it is important to consider participants' perceptions of the reasons for any change in QoL, whether or not these reasons were linked to CLIQ, and the context of implementation and participation.

### 7.3 Factors Affecting Participants' Lives

Reasons for QoL change or CLIQ impact were not pre-determined; rather they emerged from data analysis through a coding process guided by principles of GT (see Strauss and Corbin, 1998). This method of data analysis is consistent with the concept of emergence within complex programme theory (Rogers, 2008), as well as the principles of participatory research (see section 4.3, p80); and results more accurately reflect participants' assessment of their changing situation. The different factors listed in Table 7-5 each encompass a few reasons for QoL change or project impacts. For example, getting a job, getting a promotion, losing a job and resigning are all included in the job status factor (as well as community activist work that pays a stipend).

**Table 7-5: Factors affecting participants' lives**

Discussed in detail in subsections 7.3.2 through to 7.3.6	Overview provided in subsection 7.3.1
1: Friends and social networks	6: Job status
2: Information, knowledge and further study	7: State of own business
3: ICT skills and use	8: Family member's access to money
4: Community activity and participation	9: Getting or losing government grants or Identity Documents (IDs)
5: Inner empowerment	10: Housing and household composition

*Note:* The list differs from the list of ten main reasons for changes in QoL presented in the CLIQ community report (2011:29) due to further analysis of data with a focus on impact, causality and empowerment.

Both positive and negative outcomes have been grouped under a single factor, because the nature of impact depended on specific individual circumstances and experiences. For example, SamkeF53 quit her job to spend more time on her co-operative business, which for her was a good thing, while for NdodaM20, the loss of his job meant a decline in QoL. Multiple reasons affecting QoL would either have a compounding or

counteractive affect on QoL. KhaboF25's story illustrates that when a participant experienced a number of negative factors, the combined impact was severe (see Box 7-1). There were also examples of positive compounding effects. For example, BhalisileF19 and her sister each got a job and another sister got a promotion, which allowed the sisters to buy a four-roomed house together.

The seven factors encompassing the most common reasons for QoL change are shown in Table 7-6. The top three factors (changes in job status, small business or family members' income) relate to access to money, while the last three relate to ICT skills, education, information and knowledge; and housing and household composition. When comparing reasons given by those whose QoL improved to those whose QoL stayed the same or declined, differences are expected. The top three reasons for improved QoL, related to increased access to money by getting a job, starting or improving a small business or increased income of family members.

#### **Box 7-1: KhaboF25 (eNtshonalanga)**

Khabo's well-being declined. In 2008, she lost two of her brothers, one in April and one in August. One was working away from home as a security guard and the other had a learnership to study at a technikon. Both were sending money to the household. However, in 2009, she was able to secure a part-time job at the LDC and was able to provide for her family. By 2010, things got worse because her father was ill and could not work. He had applied for a pension but was still waiting for approval. Khabo lost her job and the only money coming into the household was from her child's grant.

**Table 7-6: Common factors underlying QoL change**

<b>No. of p'pnts</b>	<b>Top seven factors affecting QoL (mentioned by more than 10% of impact sample)</b>	<b>% of p'pnts</b>
63	Getting, improving, loosing , getting and losing, or resigning from a job	56%
35	Starting, improving, declining or ending a small business	31%
24	Changes in level of family members' income from jobs or small business	21%
18	No change in opportunities	16%
16	Acquired computer skills, computer use or did other training	14%
16	Increased knowledge and information or started to study or advanced with drivers/ learners' license	14%
12	Changes in housing, including improvements to current home, building new home or moving home	11%
<b>Impact Sample</b>	Participants mentioned two reasons on average for QoL change	<b>113</b>

The most common reason for unchanged or declined QoL was ‘no change in opportunities’, while the next three related to job loss, deterioration or cessation of own business, or declined income from family members. This places access to money as a key determinant of well-being, which was also found by Tiwari (2009:134) in her work comparing local and academic perspectives on poverty: “Consistently the respondents demonstrated a greater concern with livelihood security and basic needs”. This does not equate to experiences of low well-being as mainly economic, but rather that financial resources are critical in order to access essential items to sustain human life (e.g. water, food, shelter).

The nature of CLIQ impact was analysed on the sample base of those from whom we collected sufficient impact data - the core sample. Table 7-7 presents the six most frequently mentioned CLIQ impacts, disregarding whether or not the impact was also a reason for QoL change. Some form of inner empowerment was mentioned by three quarters of participants. The second and third most common impacts were more friends and networks and the acquisition of computer skills. These top three impacts were the same regardless of direction of QoL change. Empowerment, friends and computer skills each form part of personally held resources, namely psychological, social and education resources.

**Table 7-7: Common CLIQ impacts**

No. of p'pnts	Top six CLIQ impacts (mentioned by more than 25% of core sample)	% of p'pnts
71	Felt empowered or increased self-esteem, hope, direction, motivation, happiness and/or confidence	77%
51	More friends, networks and social interaction	55%
49	Acquired computer skills or attended computer training	53%
41	Computer use or free computer use	45%
39	Greater world knowledge, increased access to information, or an open mind	42%
24	Increased cell-phone use or expanded ways of using cell-phones	26%
<b>Core Sample</b>	Participants mentioned between five and six impacts on average	<b>92</b>

The greatest difference in impact between those with improved QoL and those with unchanged or declined QoL, was that negative feelings from CLIQ engagement were more common for the latter group. However, more friends, social interaction and networks (17% more) and improved cell-phone use (14% more), were also more common among those with

declined or unchanged QoL. This is counter-intuitive, because these are both positive impacts, illustrating that understanding the impact of ICT access and use on QoL, is not promoted by a quantitative analysis of disaggregated data alone. A more comprehensive understanding of the impact of a complex intervention can be gained when considering a participant's experience holistically. The tables above have been included to indicate the relative prevalence of the different reasons for QoL change and CLIQ impact. The subsections below provide a contextual understanding of the different factors impacting on participants' lives.

### *7.3.1 QoL Change versus CLIQ Impact*

The key to understanding participants' reasons for QoL change and project impact was found in their real-life stories. It was only in the context of other life activities, external events, personal views and community context that, for example, getting a better-than-expected job was part of a story ending with a decline in QoL. While my focus is on aspects of CLIQ affecting participants' lives (and not all reasons for changes in QoL during the fieldwork period), it is important that case stories are inclusive of other experiences that participants discussed in relation to their changing QoL in order to understand the compounding or counteractive effect of CLIQ impacts in the context of people's unique situations.

Reasons given for QoL change or CLIQ impact can often be classified under at least two factors, because participants' experiences were not one-dimensional. For example, happiness from making new friends online due to newly acquired internet skills could be discussed under ICT skills and use, friends and social networks, or feelings of empowerment. The complexity of lived experience does not fit neatly into hierarchical information categories, again illustrating an aspect of the difficulty in establishing causality. Of the factors listed in Table 7-5, I have elected to discuss factors 1 through to 5, which are more interesting or more relevant to the empowerment focus of my thesis. A brief overview of the remaining factors (see Table 7-5, factors 6-10) is provided first though, because these

reasons do feature in stories used to illustrate factors 1 to 5 (in subsections 7.3.2 through to 7.3.6).<sup>82</sup>

Changes in *job status* (factor 6 in Table 7-5) which includes getting a job, job promotion, losing a job, getting and losing a job, the end of a job contract and resigning from a job, affected the QoL of more than half of participants. Various aspects of CLIQ engagement (email communication, information from the web, and typing a Curriculum Vitae (CV), as well contacts made and ideas shared in person) directly contributed towards nine people getting a job. Starting or ending a small business, as well as an improvement or deterioration in a participant's business, combined under *status of own business* (factor 7), was another common reason for changed QoL overall. Various aspects of the project process contributed towards 16 people starting or improving their business(es) - which in most cases improved their QoL. CLIQ impact on small business status included: email communication with clients, government and fellow business people; information from the internet; networking and sharing ideas face-to-face and online; training input on cost calculation and concepts of marketing, business plans and competition; and typing, layout and spreadsheet skills to produce business cards and reports.

CLIQ impact on family members' job or business status (access to money) was limited to one case where a participant found a job for a family member online. Overall however, there was minimal direct project influence on changes in access to cash, whether due to changes in *family members' access to money* (factor 8 in Table 7-5) or from *getting or losing government grants or IDs* (factor 9). Family births and deaths; moving house; and house renovations are included under *housing and household composition* (factor 10 in Table 7-5). These events and activities are readily understood as influencing QoL. Changes in where people lived (which were imposed in a few cases) affected the ability to participate in CLIQ. In some cases, improvements in existing housing or the building of a new house resulted directly from a participant's increased access to money, which in turn was due to their improved job status or small business, which some attributed to CLIQ.

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<sup>82</sup> A full discussion of factors 6 to 10 (Table 7-5) has also been excluded due to space limitations.

### 7.3.2 'Socialising for Progress': Friends and Social Networks

Plate 7-2 shows a participant from eMpumalanga socialising with others, while she takes a break. Friends and social interaction are an important part of well-being (see subsection 2.1.2, p21). DinahF21 used the term "socialising for progress" to describe meeting new people through CLIQ, who had a positive impact on her life.

**Plate 7-2: Relaxing in the shade at eMpumalanga**



Photo: Jessie Knot

Quantitative results show 55% of the core sample felt that through engaging in CLIQ, they had made new friends, communicated more often or otherwise increased their social networks. Three aspects of social interaction facilitated through CLIQ were identified as contributing to participants' social resources, namely socialising with peers, interacting with fieldworkers and social networking via ICTs.

**Peer interaction:** The CLIQ process involved the same group of people meeting and discussing issues together on a number of occasions over a period of about two years. Participants who took part in three QLAs and two training phases engaged with each other on about 15 different days, for most of the day. This was in addition to other chance interactions or self-arranged meetings to practise computer skills in-between scheduled sessions.

Over lunch and in between structured time (such as group discussions), participants would socialise with each other, with the fieldworkers and with other local people who were in the vicinity. Some participants provided insight into these casual interactions: KwaziM20 (who wanted to be a musician) spoke about the future with his friends and about ways they could make money. Friends are resourceful, providing advice, support and new ideas: "my friends are supportive to me because they give advice about how I must behave myself, issues related to crime activities and about respect" (SiphoM21, 2008). KhombisileF28

increased her networks when she got a job and her networks decreased after she lost the job. Just as a new job can lead to new friends; new friends also led to getting a job. MakhoM28 found a job in a major urban centre from social interaction with fellow participants. He also cited increased connectedness, hope and self-esteem from participating in CLIQ. This illustrates the circularity of causality when combining different participants' experiences.

"I'm happy because I know I'm out of poverty" (MakhoM28).

From new friends and more socialising, participants received emotional support, gained ideas for income generation and found solidarity in sharing difficult aspects of their lives (see

"CLIQ had an impact in my communicating skills because most of the people I met here are still my friends and we groom each other to become great people" (BathaF21).

BathaF21's quote). DuduzileF25 was empowered by engaging with people outside of her home and her story illustrates why friends can be considered as part of social resources which support agency (see Box 7-2). The friends and networks that Duduzile made through CLIQ helped her to break out of the isolation her husband imposed on her. While increased friendship and community networking often had positive impacts on QoL, this was not always the case. A few examples of negative social capital (see Urquhart *et al.*, 2008) are noted in subsection 7.3.5.

#### **Box 7-2: DuduzileF25 (eNyakatho)**

"I was engaged as a young girl and my husband did not let me network with other people – but towards August 2008 I started making it for myself and started networking and getting to know other people. CLIQ came and I met more people that were attending with me and the same year I found a job and met even more people.

In 2010 it feels like I have started living life for the first time because I have left my husband and I am free and can now go wherever I feel like going." Duduzile found a job in 2009 and her siblings also managed to get work during the two years of fieldwork. "The most exciting thing is that we are building a home for our family".

**Interaction with fieldworkers:** In participatory research, fieldworkers (or change agents) are acknowledged as being subjective (see section 4.3, p87). In order to gain quality information, it was important for fieldworkers to show interest and empathy with participants when discussing issues relating to their lives and to engage with participants as

fellow human beings, and not as objects of research. This style of fieldwork was achieved with the greatest success in eMpumalanga, where participants initially regarded fieldworkers as role models and later as friends, as illustrated by NdodaM20's quotes.

Asking participants about progress in their lives was part of the research. However, this topic of conversation extended beyond the fieldwork period and beyond the roles of fieldworker and participant. The friendships and pleasant research environment at eMpumalanga, was evident from fieldworkers attitudes: they were always more enthusiastic about fieldwork in eMpumalanga, despite the fact that it was very hot; the furthest area from Durban; and our accommodation did not always have electricity or running water. Fieldworkers shared aspects of their lives with participants and the IIDI's sometimes resembled

counselling sessions. Fieldworkers spontaneously assisted participants with small things, like giving clothes they no longer needed. Furthermore, fieldworkers would their share general knowledge, like what it was like to live in Durban, study at a tertiary institution, and so on.

While the best rapport was established with eMpumalanga participants, there was plenty of evidence of the supportive and empowering nature of interaction between participants and fieldworkers in the other three areas, as illustrated by BalungileF24's recollection of the message she gained from fieldworkers, to illustrate her claim that advice from CLIQ people directly assisted her.

"CLIQ also came to my area and we spent lots of time with them and they also gave us advice especially on applying to university, jobs and CV. We communicate with them till this day."

"CLIQ was very helpful to me because they always asked me how far I was with my applications and other things I was doing in life. They sent everyone here bursary forms."

"What made me continue participating in CLIQ activities was that I will have a bright future with them and after them. I wanted to learn computers and even the time I spent with the team was great, I learnt a lot of things from them." (NdodaM20)

"...we should not and wait for things to come to use, but we have to try harder to succeed" (BalungileF24).

On the whole, fieldworkers embodied the purpose and spirit of CLIQ, improvising and going beyond their fieldwork duties at times. This style of fieldwork was discussed and encouraged during field debriefings sessions, which occurred after each field trip and was an

essential part of the motivating effect that CLIQ had on many participants.<sup>83</sup> This illustrates that CLIQ fieldworkers were change agents and that their behaviour and attitude played a support role in local action to change QoL.

**Social interaction through ICT use:** New ICT use contributed to increased social interaction for participants. As participants made new friends in person, their cell-phone use increased. “I use my phone differently now that I have lots of people to network with”, but KateF19 regretted that she could not buy a new model: “I own an old fashioned model of a cell-phone so I cannot access email and internet (over the phone)”. Others interacted with fellow participants by accessing the internet through their cell-phones (see Box 7-3), and many were excited to learn to use and commented on their new on-line friends. MlamuliM28 learnt about a job opportunity in Johannesburg (as a security guard) through email contact with a friend of his, which contributed to his improved QoL.

**Box 7-3: NoziphoF26 (eMpumalanga)**

Nozipho learnt to use Excel prior to CLIQ at a local FET college, but through CLIQ she learnt to email and joined Facebook. “I am able use Facebook on my phone and don’t have to go to the telecentre to access internet, because sometimes I just want to say or comment on something which is not serious and going to the telecentre takes time so I use my phone as the central engine of my communication.

I have friends that I have not seen in person but I know what they look like because I joined Facebook. I send emails and chat on Google chat.” Now if she runs out of airtime, she uses the computer to communicate with people through email.

Continued interaction between some participants was still visible on the social networking website, FaceBook, in mid 2012. I was able to view these interactions because some of the participants and fieldworkers were my FaceBook Friends. Through FaceBook, I have seen a number of examples where participants have used this social networking site to express their views. An example I particularly like is shown in Plate 7-3: this is what Vengerfeldt (2003) refers to as participation through ICTs (one of three reasons for using ICTs).

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<sup>83</sup> These debriefing sessions were also the basis for revising the field guide (prior to the next QLA) to build on process learnings and clarify any areas of confusion. It also served to motivate fieldworkers through recognising their experiences and insights, and adjusting the fieldplan where appropriate.

During 2011 and 2012, I was in contact with a number of participants, mostly initiated by them. In mid 2010, DinahF21's QoL had not changed, although she noted some positive impacts from CLIQ. Plate 7-6 is an extract from my Facebook interaction with Dinah, initiated by her in May 2012, where she tells me that her life has improved. Her messages also indicate that the impact of goal-setting and interaction with fieldworkers have remained. From ongoing interaction between fieldworkers and participants, it was also evident that some friendships – as well as of the participants' new ICT skills - were maintained well beyond the fieldwork period.

Thus, CLIQ led to increased social interaction, both face-to-face and through ICTs, which had

**Plate 7-3: BongaM20 on Facebook (eNyakatho, 2012)**



Source: [https://www.facebook.com/\[BongaM20\]?fref=pb&hc\\_location=friends\\_tab](https://www.facebook.com/[BongaM20]?fref=pb&hc_location=friends_tab) (Retrieved 11 June 2014)

**Plate 7-4: DinahF21 on Facebook (eNyakatho, 2012)**



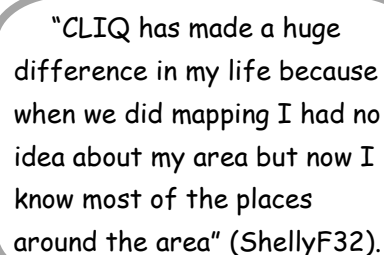
Source: <https://www.facebook.com/#1/messages>

positive effects on economic, material, social and psychological resources. The feelings of increased self-efficacy that resulted from direct interaction with fieldworkers who encouraged participants, illustrates that the behaviour and attitude of fieldworkers is critical for empowerment from PMs.

### 7.3.3 Information, Education and Knowledge

The constant seeking of opportunities for knowledge, education and livelihoods in a variety of ways showed that participants continuously attempted to improve their lives - a behaviour which Archer (2004) recognizes as part of being human. Already covered above, is information gained from social interaction with fellow participants and from interacting with CLIQ fieldworkers. This subsection expands on information gained from participating in QLA exercises; from computer training (other than ICT-related information or skills); and further education and training (FET). Information from internet use is covered in subsection 7.3.4, on ICT skills and use.<sup>84</sup>

**Information from peers through research methods:** Participants across all four areas remarked on how they acquired useful information from fellow participants during QLA group work using visual methods. Some participants found the mapping exercises particularly useful (see ShellyF32's quote), learning new things about their area. Examples of this were found for participants who were relatively new to their area, as well as those that had been living there for a long time {e.g. DuduzileF25, p111}. Self-employed participants found the matrix analyses methods on sources of information and on the relative advantages of different types of communication, particularly useful (see Plate 7-5). This illustrates how participatory methods can have immediate value for participants. The knowledge and insight gained forms part of the resource base of those doing the exercise without having to be captured, analysed or presented by anyone outside of the



"CLIQ has made a huge difference in my life because when we did mapping I had no idea about my area but now I know most of the places around the area" (ShellyF32).

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<sup>84</sup> An increase in information as a resource therefore overlaps with socialising (shown to increase social resources in subsection 7.3.2) and with education, as discussed in this subsection with regard to FET and in subsection 7.3.4 with regard to ICT skills. This reflects the inter-linkages in the data and multiple options when classifying life experiences within a linear system.

group. Furthermore, by visually capturing their discussion and analysis, a summary of the information was also available for other participants and non-participants to learn from, when the outputs from methods were shared. An empowering aspect of this process was when participants recognised that the information they held and shared had value for others, as well as how their joint analysis of collective information can create new knowledge and insight.

**Plate 7-5: Entrepreneurs debate sources of information at eNingizimu**



*Photo:* Heidi Attwood (2008)

**Needs-based information and training:** While PMs stress the importance of local knowledge, the process often exposes the need for specific information that is not available or accessible locally. Phase 2 training focussed on small business development, finding jobs, and the pursuit of FET; reflecting common goals. Prior to introducing useful computer applications, the trainer shared and workshopped relevant information with participants (e.g. elements within a business plan or how to behave in a job interview).

During the final IID1, participants who managed to start or improve their small business noted how inputs on small business during phase 2 training,

"The business is where it is now because of CLIQ" (NkuluF24).

helped them. NkuluF24 saved money by starting to do her cooperative's monthly reports herself, instead of paying someone else to do it. She felt that CLIQ's business training also "opened her mind for her business" because she learnt about managing and marketing her business. Inputs and discussion guided by the trainer on competition and choice of business, together with goal-setting activities led MankeM24 to change his business goal from starting a lodge, to starting a construction company, after he reflected on services already available locally. Box 7-4 details how small business training helped MthembeniM28 to transform his tiling business.

#### **Box 7-4: MthembeniM28 (eMpumalanga)**

Mthembeni had a tiling business when he joined CLIQ. He used to wait outside tiling stores and follow customers to their car to ask for work. "(The trainer) gave us the skill of running the business by providing skills for typing pamphlets, emailing clients. My business 'grew up' because of the skill I received. I am always thinking about CLIQ because in these days many things of life is linked to the computer, if you not using cell-phone, emails, business will not be running smoothly."

Mthembeni explained how he applied CLIQ's training on costing: "If I buy the tiles for a customer, I have to calculate the money I used, and my time, before I charge that customer, I can't charge without calculating". He also applied business training to the calculation of payment for workers. He has expanded his customer base to include people outside of his area, as he is able to keep in contact with them through email. Because of CLIQ, he made pamphlets with all his information on it, which he would leave near the cashier at tile stores. By 2010, he employed six people and bought tiling equipment.

NonkuF26 ran a small business selling cool-drink and vegetables from home. With the money she got from temporary work in the community (partly accessed because she was a CLIQ participant) she managed to expand her business, to sell a wider range of foodstuffs.

Nonku's quote illustrates CLIQ intervention provided more than just an opportunity to learn ICT skills; it made the ICT skills that they did learn, relevant to their lives i.e. ICTs as tools to assist human development.

"I learn the knowledge about how to run a business. They were not providing us only with the knowledge of the computer" (NonkuF26).

**Information from the internet:**

As expected, participants who learnt to use computers and the internet in particular, accessed

"If you don't know something, ask the computer!" (NganeM24).

specific information that was useful to them. NikiweM34, a member of the local policing forum and self-described family-man, searched for information that fitted with his sense of self and role in the community. "I learnt more about our area and find the latest news, development and job opportunities" (NikiweM34). While ShellyF32 used computers to search for job opportunities, she also used it for reading the newspaper as she liked to know what was happening around the world. In particular, she enjoyed viewing images of art and people.

A number of eMpumalanga participants noted that to get a newspaper, they have to travel to Manguzi, costing R60 return. Many participants started reading Isolezwe (a popular SA newspaper) on-line, which saved them money and travel time. In eNingizimu, where newspapers were readily available, many participants opted to read newspapers online, also citing reasons of saving money and travel time. Only one case (from eNingizimu) was found where CLIQ contributed to a family member's income, namely that of S'boF52, who found a job opportunity for her daughter on the internet. SonkeF22 found a job for herself volunteering at a local hospital (which paid a stipend) through information searches on the internet. MinenhleF33's life improved mainly because she was able secure funding to start an orphan project. CLIQ did not contribute to setting up the project, but she did use the internet to search for information on orphan care which assisted her project. She notes that her access to money has not increased but that she is happier doing the orphan project.

Participants who become comfortable using the internet, accessed a wide range of information relating to their personal circumstances, such as SliF30 who used it to look for jobs, for information for her sewing

"Internet helped me to look at clothes at Foshini and look for lower prices at Shoprite trading stores" (SliF30).

co-operative, to investigate and register for tertiary education, and for more shopping. By searching the internet participants found out about different aspects of the world beyond their geographical area, bringing new ideas and happiness.

Some did not find the information they were looking for. MabasoM23 was despondent after searching for jobs on-line. He found that he did not qualify for the advertised jobs. However, this is not limited to job searching via the internet as DarshinM25 also noted discouragement from searching for jobs in newspapers, also because he did not qualify for the posts advertised.

"...the information I got from the internet was not useful at all because the websites had jobs for educated people. It was hard for me to find a website that suited me and had the kind of job that I qualified for" (MabasoM23).

**An open mind:** The experience of searching for information on the web in the context of the project process, led to participants gaining more than information.

MbonaM22, who was a soccer player and wanted his own club one day, searched for soccer information on the web. His comment from 2010 reflects his access to information as empowering and contributing to his questioning of the way poorer people experience the world, compared to richer people. JabuF20 (who wants to study nature conservation) regarded the internet as the most important thing to learn on the computer "because you can read about what is happening around the world". Khetha's quote provides a sense of how a number of participants conceptualised their increased general knowledge as an opening of the mind.

"I never imagined that a small thing like a computer can make a world look so small. Before CLIQ I only knew that computers were not for people like me who are from a poor family. I did not have a positive thing about computers - they were only for people who studied at tertiary places or for richer people, so I never bothered myself about computers. I didn't know what it could do... Now I see it as something that can change the life of a person as long as he is given the relevant information" (MbonaM22).

Together, changes in self-perception; knowledge alternative sources of information; the extent of information available; and skills to use digital sources of information as a result of CLIQ engagement, empowered some participants in a manner akin to conscientisation and a rights-based approach to ICT.

"I was always at home doing nothing - didn't know much about life in general, but when CLIQ came along it opened another world in my life and I gained more knowledge about things that I never thought I would know, in the computer" (KhethaF21).

### FET and hunger for knowledge and skills:

It was common for participants to include further study as part of their goals. Participants appeared hungry for further knowledge, but most (like Jabulisiwe, see Box 7-5) did not have the money to further their studies. JikileF23's story is similar – she reads her siblings' schoolbooks for knowledge, but wanted to study catering. Jikile had to return home from Durban where she was looking for work, because her mother was too ill to look after Jikile's child. Both Jikile and Jabulisiwe did not return for the much-delayed phase 1 training or

the final-QLA. These examples of young women from the very rural area of eNtshonalanga, give insight into how under-resourced, yet motivated some participants were (and here I refer to reading the dictionary) to be educated. The feeling from MusaM21's story is quite different (see Box 7-6). He found numerous avenues to further his well-being, through engaging with CLIQ and visibly grew in confidence over the two years.

#### Box 7-5: JabulisiweF22 (eNtshonalanga, 2009)

Jabulisiwe noted no change in her well-being. Her time was spent doing domestic chores, including fetching water from the river and playing netball. After her chores and sport, she would read the dictionary to learn new words. She did not have money for further study and had applied for jobs using her CV but was not successful. In 2009, she had hope for a better life: "After having the computer certificate I will be empowered with different information." Unfortunately Jabulisiwe did not attend CLIQ computer training, and we were unable to contact her for the final-QLA.

#### Box 7-6: MusaM21 (eMpumalanga)

Computer use was vital in facilitating Musa's study. He searched the internet for information on Durban to see if it was a place where he wanted to stay while studying, as this would influence which institution he chose to study through.

Persevering with efforts to find a scholarship (after no initial success), his use of the internet between the mid and final-QLAs, helped him secure a bursary. Musa also made use of his free hours to type his assignments and to communicate with lecturers and students via email. When away from eMpumalanga, he used internet cafés.

Differences to note though, between the stories of Jikile and Jabulisiwe, and Musa's story are that their different genders, and the different quality of the CLIQ process in eMpumalanga compared to eNtshonalanga (see Table 6-3, p154). The example of SynthiaF21 (see Box 7-8) from eNingizimu also contrasts that of Jikile and Jabulisiwe (from eNtshonalanga). Differences in the density of human settlement, available infrastructure (including transport and satellite coverage), and the social norms between rural

eNtshonalanga and peri-urban eNingizimu seem to account for some of the difference in outcomes. This discussion is taken forward in chapter 8 (GATES TO ENGAGEMENT).

Other examples concerning education from eMpumalanga, eNingizimu and eNyakatho (presented below) illustrate how CLIQ computer use assisted either with securing an opportunity to study (e.g. for registration or background information) or how new ICT skills were used in the process of studying (e.g. communication with lecturers or skills to type assignments).

#### 7.3.4 ICT Skills and Use

The subsections above have documented how both the research process and ICT aspects of CLIQ impacted on participants with respect to socialising, gaining access to information, increasing knowledge, and further study. The following subsection looks at other impacts due to participants newly acquired ICT skills and use.

**Benefit from computer skills:** Many of those who attended computer training felt that simply having this new skill improved their QoL (see BathaF21's quote). Part of KhweziF20's definition of a good life (in 2010)

"I see myself better than someone who has never used a computer before" (BhataF21).

was "a person who is able to make things for themselves, whenever they want, they don't need to have a lot of money". This supports her claim that her new computer skills led to improvement in her QoL. Muna felt that in 2008 "there was nothing much happening that could improve my life", but CLIQ had a huge impact was on his confidence "If I can use a computer then nothing can come in my way of trying new things" (MunaM25). Thus, new computer skills boosted confidence, independence, self-esteem and hope for many participants (see also NeneF27's quote), illustrating how an increase in skills can translate to an increase in psychological resources, such as self-efficacy.

"It was my dream to know how to use computer... This skill we have might open for us other doors of job because computer is very important ...I was wanting to learn computer because everything need the computer... CLIQ make my hope to be back or better because I hope I will do something better to my family" (NeneF27).

The computer training provided by CLIQ was brief, but the free hours of computer use provided an opportunity for participants to entrench their skills. Informal groups of participants engaged in peer group learning: “Nothing stops me because even if there is no-one around to teach us, then we do it on our own” (MlamuliM28). This peer learning (most common at eMpumalanga) benefitted and empowered participants. By teaching themselves through practice, they learnt that computers were not beyond their reach and they could further their skills *without* the help of outsiders, fostering self-reliance and self-confidence.

By assisting fellow participants with computer use, those who had mastered some computer skills (like NdodaM20), were recognised and they were actively sought out by other participants. By meeting at the telecentre in groups, participants also entrenched new friendships. This illustrates how the physical space of a telecentre facilitates social and educational development. By late 2011, Ndoda was appointed as a telecentre facilitator and benefited from USAASA training (and a trip to Pretoria). Together with others, Ndoda managed to establish the telecentre as a training venue in 2012, offering some computing courses.<sup>85</sup> As a motivated, helpful and relatively skilled local telecentre facilitator, people like Ndoda become a community resource - whether paid or voluntarily.

Not all participants acquired computer skills through the CLIQ intervention. Some did not manage to attend more than one (or any) computer training sessions, nor did they consolidate their skills through practice and therefore were not able to use computers at the end of the fieldwork period. Reasons for this are discussed in chapter 8.

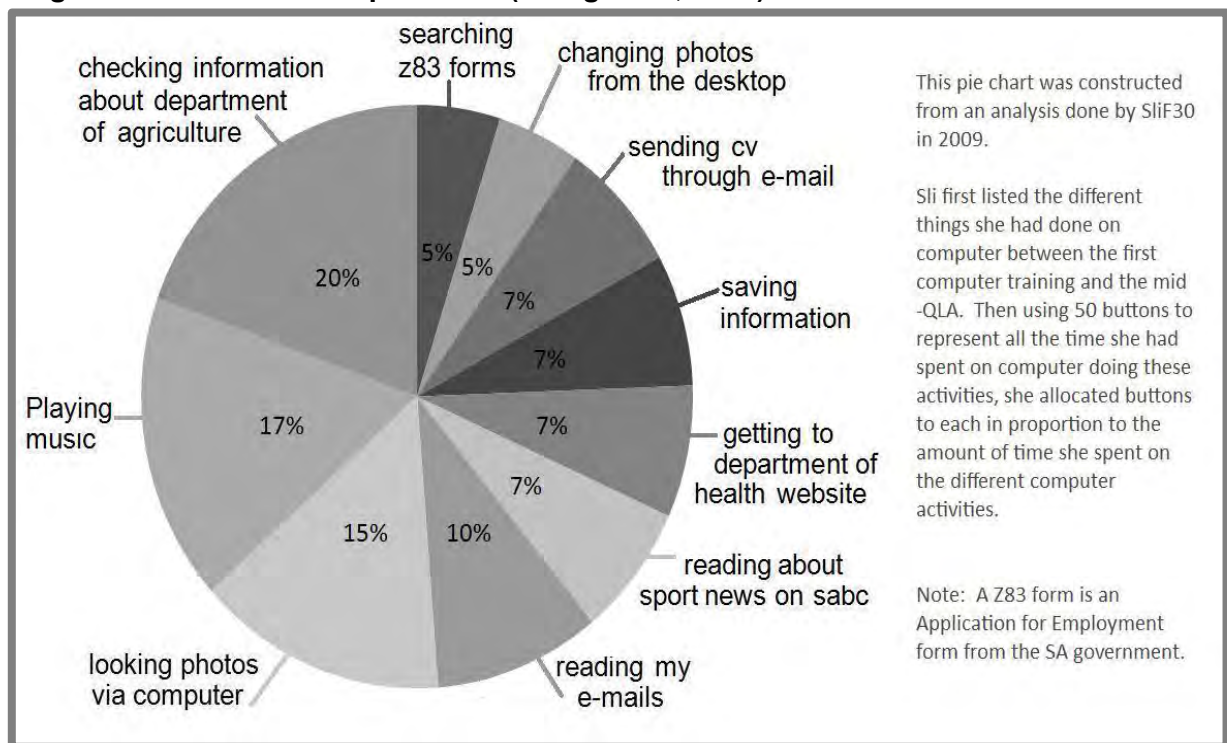
**Benefit from computer use:** Participants differed according to how they applied their computer skills, depending on their needs and interest, aptitude for ICTs, level of skills attained and other issues of access. Figure 7-7 shows that prior to phase 2 computer training, SliF30 had already made use of the computer for communication, leisure, access to information, job applications and to practice her new ICT skills. The way NeneF27 applied her new skills through cell-phone and computer use, is a good illustration of example of what the literature refers to as the use-value of ICTs (see section 3.3, p50). Nene used email and the internet to overcome hurdles related to time and distance with respect to her goals

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<sup>85</sup> This information is based on my facebook interaction with Ndoda in 2011 and 2012.

and needs, such as applying for jobs and maintaining social networks with those far away, as well as for study purposes (see Box 7-7). Both Nene and Sli's use of computers reflected their context, goals and agency.

**Figure 7-7: SliF30's computer use (eNingizimu, 2009)**



Computer skills also contributed to a few participants getting jobs by enhancing their application because they typed their CV (drawing on CLIQ's computer training sessions focussed on 'finding a job'). MankeM24 believes his *typed* CV helped him get a job at a local supermarket. This was the start of his improvement in QoL - he went on to apply new skills from CLIQ's business-focussed computer training to start his own construction business.

**Box 7-7: NeneF27 (eMpumalanga)**

NeneF27 started learning the computer with CLIQ and continued her learning at college in the Eastern Cape where she studied tourism. Her computer skills assisted her with communication and information searches related to her studies. In 2010, when back in eMpumalanga, Nene was strategic in the way she used email. She felt it is a "waste of hours" to email people living in the same area and mostly emailed people who lived in other areas, such as "friends who were together with me at college" and friends she had in Zimbabwe.

Nene also used email to manage her time: "if I see the post advertised and the closing date is nearby I'm not worried about the date, I use to come to telecentre and email all my details to that place, not going to post office to post application". She also used her phone to send emails: "I was not aware that my phone got internet and after CLIQ taught us, I am able to do email through my phone."

Sally was the only person who got a job during the fieldwork period, directly because she could use a computer – her story is taken up in chapter 8 (see Figure 8-3, p237). MabasoM23 commented that his

"CLIQ was just helping everybody in this community. Other friends come with their CV's to me. CLIQ impact was positive to everybody. The skill I got is shared with other people" (MabasoM23).

neighbour discouraged his CLIQ participation, saying that: "those people are not going to help you to find job but are wasting your time." But after Mabaso had attended computer training, he made invitation cards for an upcoming wedding in his neighbour's family, on the computer. Furthermore, while Mabaso did not find a job opportunity on-line, his newly-typed CV helped him secure a construction job by mid 2009. Other computer use that improved QoL were mentioned by MbonaM22, who created DVDs and CDs for sale; and BongaM20, who was able to get a new ID relatively quickly, after contacting the Department of Home Affairs via the internet.

**Improved cell-phone use:** Cell-phone use was not the focus of the research, but fieldworkers and computer trainers spent time showing some participants how to access and use the internet through their cell-phones.

They also informed participants about data bundles as a cheaper way to use the internet through a cell-phone. A number of participants (like ZiphoF30) noted that they used their cell-phones differently in 2010 compared to 2008, because they had learnt this new skill through CLIQ.

"In fact I did not know that cell-phones can work like a computer until CLIQ came and trained me on computers and told me that I can also use my cell-phone as a computer (2009-2010). I now can use a computer to access internet and I can now make my own CV; I don't have to pay. I use my phone differently now because I even Google the net on my phone" (ZiphoF30).

While some participants had phones that were capable of accessing the internet, others did not. New information and skills from CLIQ regarding mobile internet use motivated some participants to purchase an internet-capable phone. This not only assisted in terms of saving time, but also in saving transport money. "Since I started using computers I saw the need to buy a new phone that works similarly to a computer, so that I don't need to come to the telecentre if I need to get some information, especially information on where to get cheaper fruits or anything because I live far ... so my cell-phone helps me a lot"

(NomaF27). Noma, who resided in Manguzi, would also email her new CLIQ friends, many of whom lived in eMpumalanga close to the telecentre, through her cell-phone.

Besides internet use via cell-phones, normal cell-phone use also increased due to more friends to communicate with and more activities in general. Both SiyaF53 and NelliF37 did not manage to acquire any computer skills and both did not use their cell-phone regularly at the start of CLIQ. However, both made increasing use of their cell-phone during the fieldwork period and both also experienced an increase in work and community activity (see Nelli's quote). Siya noted that in 2008 and 2009 "I used to go to places in order to connect with people, I didn't believe in cell-phones that much. In 2010 when I need people to give me a report about their daily work and when I need them to come work, I call them." Siya achieved many goals over the two years: "I would not have done it without a cell-phone". They both experienced dual causality, with increased community activity leading to more frequent cell-phone use - and more frequent cell-phone use fostering more community activity.<sup>86</sup> A number of other CLIQ impacts also related to community activity and general participation in community life.

"In 2009 I started voluntary work and people started calling me and CLIQ also SMSed me on my phone so that is when I started realizing that the phone is important" (NelliF37).

### 7.3.5 Community Activity and Project Participation

Like volunteering, people recognised that participation in community projects brought benefits. Community definitions of well-being included references to engagement in a variety of community activities. Being dependant on hand-outs or charity from community members was regarded as an indicator of low well-being, while playing an active role or being recognised in the community was regarded as indicating high well-being (see Table 7-1, p165; Figure 7-1, p163; and Figure 7-3, p164; Appendix J, p330). Apart from the easily recognisable impacts (like finding a job through information gained at a community meeting), it is important to also look at some of the smaller less tangible impacts, unexpected consequences and counter-intuitive effects.

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<sup>86</sup> More detail on Siya and Nelli is included in Box 7-10 and Box 8-3, respectively.

Many of the impacts noted in this subsection, also fit in some of the subsections above (like information or socialising). However, what ‘community activity and project participation’ captures, is the aspect of something new to do, to think about, to be part of, to talk about or a different place to go to. In areas with fewer resources, low service levels, limited employment opportunities, low personal disposable income and so, there is often not much to do. Recognising ‘community participation’ as a separate factor captures this important aspect of a new or different opportunity or reason for action. This aspect is particularly valuable to who are constrained through social and cultural norms, as it provides a valid reason for mobility - for some (as discussed in section 8.1).

**Something different to do:** Some joined the project to see what it had to offer and not primarily to gain computer skills. For example, as discovered during fieldwork, SihleM27 had fairly good computer skills before he joined the project and it became evident through interaction with him, that he wanted to explore what was on offer.<sup>87</sup> SihleM27 assisted other participants during phase 1 training and the email refresher day at eNingizimu. When opportunities are limited, participation in a local project offers the potential of a chance at something, as illustrated by some unexpected and unanticipated benefits. For example, NonkuF26 got a temporary job in construction at a local game lodge, because she was a CLIQ participant. The Induna, who regulates the distribution of local job opportunities, called for people who had knowledge of computers to attend the community meeting where the available jobs were to be allocated. So, while computer skills had nothing to do with the job, the Induna (for reasons unknown to CLIQ) wanted the opportunities to be given to CLIQ participants. JomoM22 noted that people could get learnerships if they did community activist work: "...like right now, we will get computer knowledge". Jomo is correct in his analysis because he was selected because he was a community activist, fitting within CLIQ's selection criteria.

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<sup>87</sup> SihleM27 (a self-employed male) was selected despite his computer skills because there were very few males and very few self-employed people in eNingizimu who showed an interest in CLIQ.

For SynthiaF21 {like NdodaM20, p189} participation in CLIQ led to volunteering at the telecentre (see Box 7-8). Synthia commented that being part of CLIQ gave her more life experiences, such as running the telecentre as an assistant when the regular facilitator was away.

#### **Box 7-8: SynthiaF21 (eMpumalanga)**

In 2010, Synthia felt that her life was on track. Now that she had a baby, the next goal was to get married. Synthia appeared to be well-supported by her boyfriend. He would accompany her when she was assisting the telecentre (when the facilitator was not able to be there) and in 2010, after the birth of their child, he was paying for her study. Synthia used almost all 100 of her free hours because she would use the computers when she assisted at the telecentre. Synthia also found a temporary job promoting shampoo through the internet.

**A reason to leave the house:** Participation in CLIQ represented a new activity in the area. It was something else to do in a place (particularly the rural areas) where often there were not many options. A couple of participants, like NonhleF24 (see Box 7-9), mentioned simply being selected for CLIQ as a source of happiness. MimiF21 also benefited from an additional reason to leave the house and more social interaction: "I was a bit of a loner. I didn't want to meet with people. My problem was that I was so depressed because I didn't have a job and I didn't have a cell-phone because most of the people I know stay far. I would need a phone to stay in contact with them"

#### **Box 7-9: NonhleF24 (eMpumalanga)**

In 2008, Nonhle felt she could not network because she did not have a phone and "only met people when I went to fetch water at the well". She bought a cell-phone when she got paid for her ABET work. After computer training she would combine trips to teach ABET, with a visit to the telecentre to use her computer hours. She would email friends and has learnt how to send free SMS's from the Vodacom site. She is very confident now that she is able to use a computer and a cell-phone through CLIQ. Even before she learnt anything, simply being selected was a source of happiness for her. Participation in CLIQ raised her confidence and increased her social networks.

(MimiF21, 2008). CLIQ affected her in a good way, especially the free hours and: "it gave me an opportunity to do other things like coming to the telecentre and spend time there" (MimiF21, 2010).

Some participants, like NkuluF24, found a sense of solidarity through meeting others in her community who were in the same position as she was. Although she did not mention it, her involvement in the catering co-operative which started just before CLIQ, probably contributed to her escape from seclusion, illustrating how different events can be mutually reinforcing.

"In CLIQ meeting, I saw many people who were with me at home. I noticed that I was not alone with that problem of staying at home" (NkuluF24).

**Using new skills to engage with others:** CLIQ was also something different to engage about, with other people. Participants, particularly from eMpumalanga, were proud to show their skills to others in the community through assisting them. A number of participants used their new computer skills and free time on computers to help others. This increased their visibility and social standing. NkuluF24 used her time and skill on the computer to type CV's for her friends and to type church notices for her father who was a pastor (in addition to using the computer to benefit her co-operative). Also in eMpumalanga, the Induna asked a participant to find some information for him, which they did using the internet. Thus by helping others and sharing the benefit of their skills, participants gained recognition and their personal status within the community was elevated.

**Negative aspects of project participation:** Negative impacts were mentioned by 17% of core participants, although 14 of the 16 people who noted negative CLIQ impacts, also noted positive impacts. Negative comments were more common among those whose QoL did not improve. Two participants experienced only negative feelings from CLIQ. Both were unable to participate in CLIQ activities, except for the final-QLA and this caused them great disappointment. Immediately after selection, NathanM22 had to choose between staying in eMpumalanga and or going to Durban to study nursing which was his dream – he chose to go study. SaneF50 relied on temporary work for an income. Unfortunately, scheduled CLIQ activities coincided with times when temporary work was available which is why she never attended any computer training or QLAs, other than the final-QLA.

Negative impacts also related to interaction with people with other community members; one of the CLIQ trainers; two of the telecentre facilitators; and some participants' business partners. NkuluF24 experienced some jealousy from fellow catering company workers who had attended CLIQ's initial field-day but were not selected. "They put so much pressure on me that I have enough workload so that I can't spend time on computers. I do not understand why they are like that because most of the things that I do at the telecentre are things that benefit their business" (NkuluF24). This is an example of negative social capital as discussed by Urquhart and colleagues (2008: 204)

From a limited number of interviews in 2010 with people from eMpumalanga who showed interest in CLIQ but were not selected, it was evident that some felt a sense of failure due to non-selection. Further explanation of the selection process clarified that non-

selection was random and not due to any failure on the part of those who were interested in CLIQ, but not selected. However, their general disappointment of not being part of the project remained. With corruption rife in South African society and limited opportunities in resource poor areas, non-selection raised suspicions and jealousy, particularly in the two rural communities. In eNtshonalanga, negative comments from fellow community members towards participants centred on nepotism. KhanyoF20 and KhanyaF22 were accused of being selected for CLIQ because they shared a surname with a well-known local political figure, while KhosiF21 was accused of hiding information regarding the CLIQ opportunity.

"Some people said that those that were selected was because they shared the information among themselves and did not tell others" (KhosiF21).

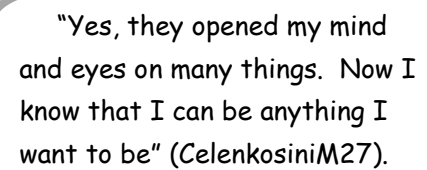
NduduzoF34 and NelliF37 felt disempowered through their interactions with the CLIQ trainer during the first module of phase 1 training. "He was very impatient so it was not easy at all for me" explained N'duduzo. Because of this, she never came back for further training, but she still felt that "my love for the computer hasn't changed and I still have hope that I can still learn computers and if another opportunity comes, I will take it." Nelli said the trainer "did not speak to me in a proper manner and then I was so disappointed". Nelli also never returned for computer training, but she did take part in the final-QLA. Other eMpumalanga participants (all aged 30 years or less) were happy with the trainer. Self-perception and beliefs regarding appropriate communication between age cohorts appeared to underlie Nelli and N'duduzo's reaction to the trainer. The impact of age, personality and personal disposition on participation are discussed further in chapter 8.

### 7.3.6 Inner Empowerment

Although only six participants attributed improvement in QoL directly to feelings of inner empowerment from their engagement in CLIQ, a further 65 participants cited some form of inner empowerment as a CLIQ impact.<sup>88</sup> It is most likely that the inner empowerment recognised by all these participants contributed to any achievements they made over the fieldwork period. This is based on assertions by Mruk (2006), Bandura (1994) and Rowlands (1997) relating to psychological resources, inner empowerment, agency and

<sup>88</sup> Some form of inner empowerment from engaging with CLIQ was one of the reasons given by MbonaM22, SarahF50, KhonzaphiF20, KiraF21, KhumbuzileF24, and KhethaF21 for their improved QoL.

development (see subsection 2.2.2, p28), namely that an increase in confidence, hope and sense of self-efficacy, increases the likelihood of success when striving for goals. Appendix K (p334) presents some local indicators of QoL relating to psychological resources, such as the description of those who had a low QoL, as people who “*can’t even think*”. This illustrates that at least some participants linked cognitive ability to well-being. CelenkosiniM27’s expression of feelings of inner empowerment reflects his increased belief of self-efficacy. In this subsection, inner empowerment encompasses a variety of terms and concepts used spontaneously by participants, including self-esteem, self-confidence, happiness, direction, hope, help and motivation which signify power from within (see section 2.3, p32).



“Yes, they opened my mind and eyes on many things. Now I know that I can be anything I want to be” (CelenkosiniM27).

Evidence of inner empowerment has already been presented in the subsections above, for example: happiness from making new friends; an ‘open mind’ from access to information through the internet; self-esteem and hope from the acquisition of computer skills; solidarity and decreased isolation from meeting others locally and sharing life problems; and increased mobility and participation due to a new activity to engage in. The discussion below provides evidence of how particular aspects of the design and implementation of CLIQ, promoted inner empowerment.

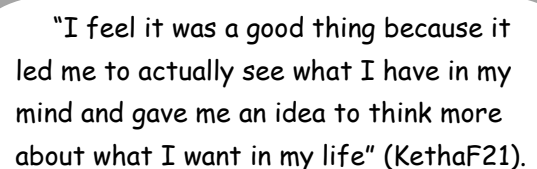
**Empowerment from needs-based flexible computer training:** Besides communicating through ICTs, acquiring computer skills and accessing information related to personal needs and goals, needs-based computer training had a number of other advantages, when compared to preset training targeting certification. Firstly, people learn more effectively when they are engaged with an activity they enjoy, of interest to them or that otherwise results in some kind of outcome change they desire. Secondly, the absence of a test or measurement of the level of computer skill attained (resulting in an absolute ‘pass or fail’ outcome), allowed multiple and variable definitions of success to be concluded. In other words, many could succeed, either at different things (like typing versus internet skills); or by attaining different levels of a specific skill, and still conclude success. Different abilities and experience reflect different starting points, and different goals and values reflect different targets or end points. Therefore, variable levels of proficiency achieved could all be regarded as success, in relation to the individual’s characteristics, resources and goals - as opposed to

applying a universal standard for success. Thirdly, the absence of having to undergo a formal test at a regulated standard which would produce a 'pass or fail' may have eased the decision to participate, particularly for those who were less confident and those who never intended to make use of the ICT aspect of the intervention. In other words, a less challenging approach encouraged broader participation. However, on the negative side, it meant participants did not receive formal certification, which many had enquired about.

CLIQ findings reflect a variety of different reasons for improved QoL that reflected individual characteristics, context, interests and goals. This is a point of synergy between needs-based computer training targeting practical skills and the principles of an empowering participatory process. They both encompass local, context specific definitions, allowing individual difference and alternate paths and processes aimed at self-defined goals. In other words, the combination of needs-based training with no universally-determined pass or fail outcome, and a process supporting people to reflect on and pursue their own life goals, was mutually reinforcing. It allowed participants to engage with and benefit from CLIQ in different ways, despite (or rather because of) diversity in personality, resources, goals, aptitude, and so on.

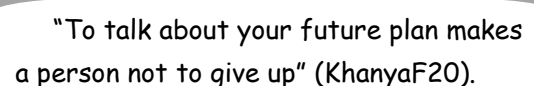
**Empowerment from a focus on individual goals:** Numerous studies verify the positive contribution of goal-setting to achievements (Bandura and Locke, 2003:91) and this was confirmed by the CLIQ experience. Goal-setting, review and reflection on achievements were key exercises that resulted in some form of inner empowerment for many participants. Participants' goals were the subject of exercises in the initial-, mid- and final-QLAs (see Table 5-5, p130). In 2010, most participants felt that the process of considering their life goals was beneficial to them, because the process gave

them a sense of inner empowerment, like direction, motivation, hope, self-confidence and so on, as illustrated by KethaF21's quote.



"I feel it was a good thing because it led me to actually see what I have in my mind and gave me an idea to think more about what I want in my life" (KethaF21).

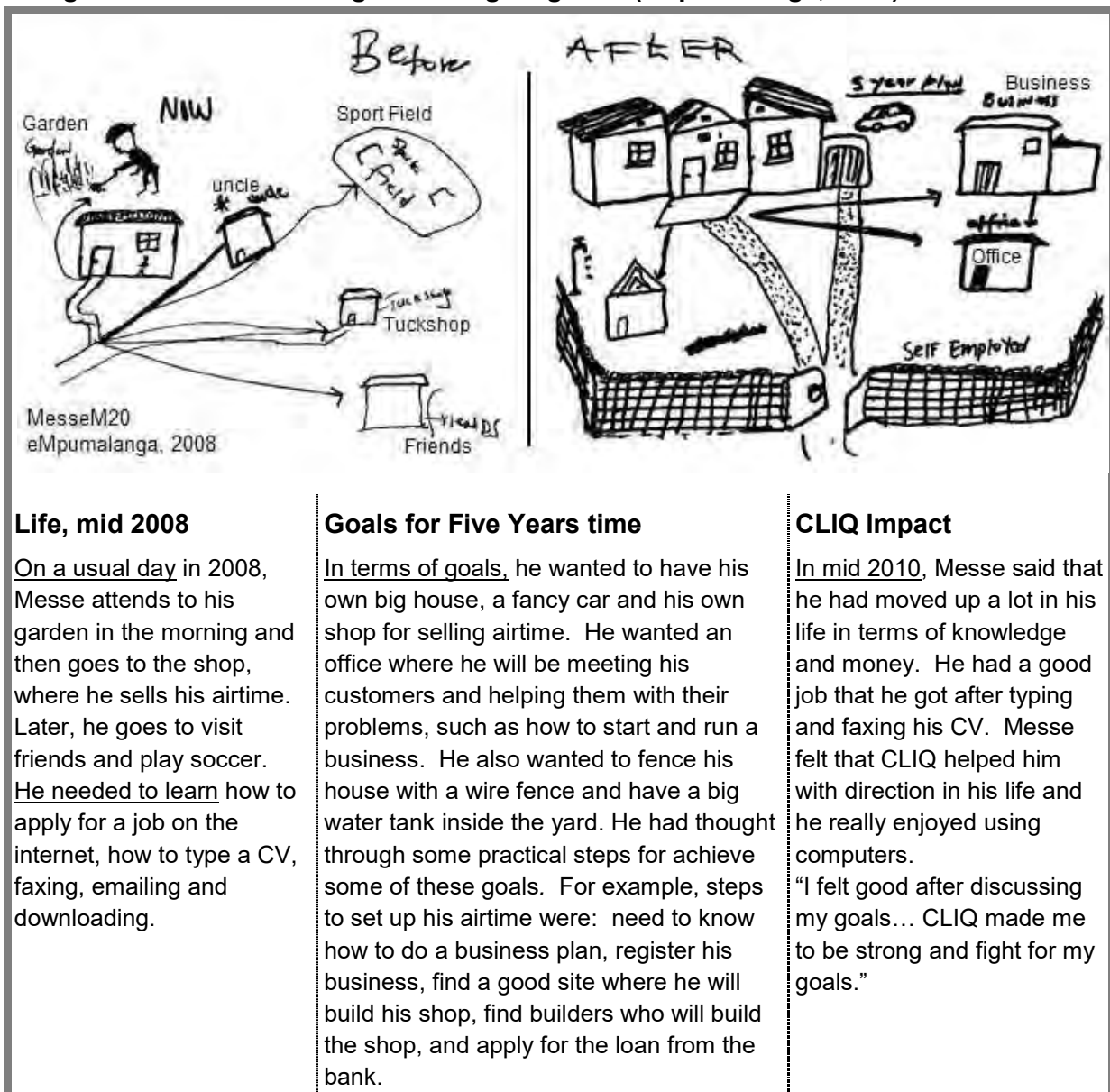
Some participants had never set personal goals before, while others had done goal-setting before "in their heads" and found that recording



"To talk about your future plan makes a person not to give up" (KhanyaF20).

it on paper and discussing it with an outsider was beneficial. Figure 7-8 and the accompanying text details MesseM20's goals, achievements and views on goal-setting.

Figure 7-8: MesseM20's goal-setting diagrams (eMpumalanga, 2008)



### Life, mid 2008

On a usual day in 2008, Messe attends to his garden in the morning and then goes to the shop, where he sells his airtime. Later, he goes to visit friends and play soccer. He needed to learn how to apply for a job on the internet, how to type a CV, faxing, emailing and downloading.

### Goals for Five Years time

In terms of goals, he wanted to have his own big house, a fancy car and his own shop for selling airtime. He wanted an office where he will be meeting his customers and helping them with their problems, such as how to start and run a business. He also wanted to fence his house with a wire fence and have a big water tank inside the yard. He had thought through some practical steps for achieve some of these goals. For example, steps to set up his airtime were: need to know how to do a business plan, register his business, find a good site where he will build his shop, find builders who will build the shop, and apply for the loan from the bank.

### CLIQ Impact

In mid 2010, Messe said that he had moved up a lot in his life in terms of knowledge and money. He had a good job that he got after typing and faxing his CV. Messe felt that CLIQ helped him with direction in his life and he really enjoyed using computers.

"I felt good after discussing my goals... CLIQ made me to be strong and fight for my goals."

Some older participants were reluctant to do goal-setting, such as Dohba who said she was already doing what she wanted to do - Dohba ran a catering business with her sister (BerylF64) and she had a spaza shop. However, this was not the case for all older people, as illustrated by Siya's story (see Box 7-10).

During the mid-QLA (six to ten months after the initial-QLA) a few participants took the opportunity to change their goals, indicating that they had reflected on their life and goals set in mid 2008. In 2009, SonkeF22 deleted her initial goal of having an office five years after 2008, because she said it was too little time bearing in mind the others things she wanted to

**Box 7-10: SiyaF53 (eNingizimu)**

Siya in particular was clear that goal setting was the key reason for her achievements: "(CLIQ) helped me plan my goals and made me realize that I can try and reach my goals. I also told myself that I want CLIQ to come back and ask me about my goals and be proud to say I have started reaching my goals. Some of the things I do because I want CLIQ to be proud of me."

Over the two years, she secured contracts for unpaid community health workers; improved her business; and secured a site for her charitable soup kitchen. It was the first time she did goal setting and when reviewing her goals, felt that she was going in the right direction. *"If I was not this old, I was going to go for it (goal setting) again."*

achieve (see SonkeF22's quote). For others like ZiphoF30, revising goals was a chance to reflect on changed circumstances (see Box 7-11). Bringing goal diagrams back in 2009 and 2010 also showed participants that we took their work and their goals seriously and it made them take their goals more seriously.

"I don't think that I will have two kids in four years time because there are lots of things I need to do and I also have to convince my boyfriend to do an HIV/AIDS test so that we can start having sex. At the moment we are abstaining until we do a test. This will take some time for the both of us" (SonkeF22).

Goal-setting had the potential for joy and heartbreak - the joy of working towards something and achieving it, alongside the fear of having a goal that may never materialise. In 2010, ShellyF32 said she was happy setting goals for herself because she had something to work towards and although she had achieved some of her goals, she would not change them. Even though many did not reach their goals, they still found it useful and motivating. Some who did not reach their goals were able to recognise partial achievement or some form of progress in relation to their goals, and many said that they would do goal-setting again.

"CLIQ played a huge role because by talking on the IIDIs makes one realise that there are things that you need to change or do in order to improve your life" (KhumbuzileF24).

Setting, revising and reflecting on goals were important parts of the process. Revisiting perceptions of participants' current QoL; their understanding of what high and low QoL was; and what their goals were over a period of almost two years, facilitated the research process by allowing time for reflection. This led to better quality information for CLIQ research goal, and promoted participants' empowerment.

**Box 7-11: ZiphoF30 (eNingizimu)**

Zipho F30 had not done goal setting before CLIQ. She altered her 2008 goals due to the loss of her husband and from general observations around other people's occupational hazards. With the unexpected money from her husbands' will, she planned to start a salon. "I added beauty salon. I have removed a taxi-business because I have realised that it is very dangerous. My next door neighbour, Mr X, had the same business and they shot him."

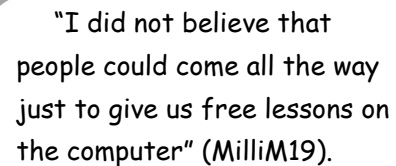
Overall Zipho's well-being improved over the two years, despite the loss of her husband and the fact that her in-laws kicked her out the house after his death. Besides money from the will, she cited income from her new found ABET job, computer skills and money saved through computer use, as reasons for her improved well-being. She said she would do it again because "when you are a person you must have goals to follow".

Participants also gained inner empowerment from other methods, as already mentioned, such as confidence from discovering their ability to map their area, or recognition from peers regarding their knowledge of components of a computer. Plate 7-6 shows participants eagerly reviewing our copies of the maps they drew during the initial-QLA in eMpumalanga.

**Plate 7-6: Participants review their maps of eMpumalanga**

*Photo: Heidi Attwood (2008)*

**Empowerment from project ethos:** The action aspect of this research was as much linked to the provision of computer training and use, as it was to the research process. The principles and ethos of the project described in subsection 5.2.5 (p132) were reflected in many decisions, actions and activities, as well as through the behaviour of most of the fieldworkers. While the above subsections detail specific aspects of CLIQ that participants found empowering, the overall approach and "...the 'social life'" (White and Pettit, 2004:24) of CLIQ enhanced these empowering aspects and defined a new social space for interaction between participants and with CLIQ staff. What may seem like minor detail regarding process and behaviour (e.g. sharing lunch or not fieldworkers not displaying their iPod even when relaxing after hours, conveyed a message to participants about our common humanity and that they were valued by the CLIQ team. I believe that our attempts to treat participants with dignity and respect, which is often not the experience of poorer people, did play a significant part in the trust and friendships built and contributed to the empowering or otherwise positive outcomes that many experienced.



"I did not believe that people could come all the way just to give us free lessons on the computer" (MilliM19).

#### 7.4 Summary of Impact

Setting, reviewing and reflecting on local QoL indicators through different methods and concepts (definitions, goals and reasons for change) led to greater insight into local views of well-being, and confirmed QoL as multi-dimensional, complex and peculiar to both individuals and context. Of greater significance though, the process of considering what makes a life good or bad, setting goals, and reviewing progress over two years, proved vital to many participants' benefit from the project as a whole. This reflects assertions of goals and self-reflection as key aspects of agency (see Bandura and Locke, 2003). Considering QoL indicators overtime (particularly after engaging in activity aimed at improving QoL), not only promoted improvement in QoL, but also yielded more considered and therefore more accurate information on QoL change, for research purposes.

The most common local indicators of well-being were economic or material indicators. However there were also numerous non-material, non-economic indicators, illustrating that participants also valued social resources, psychological well-being, inclusion, information,

and so on. Goals and achievements relating to livelihood status and financial resources appeared to be a means to an end for many, however the various sequences of achievements (or causal path) among participants indicates no clear distinction between particular QoL outcomes (e.g. getting a job or making new friends) as either means or ends. Two thirds of participants improved their QoL over the two year fieldwork period. Better individual participation and better CLIQ implementation at an area level, was associated with a greater likelihood of improved QoL and with a greater likelihood of CLIQ impact. There appears to be a tipping point beyond which greater project intensity is associated with a larger proportion of participants with improved QoL and project impact.

Table 7-8 summarises the impact findings presented in this chapter, according to the two broad aspects of the CLIQ intervention, namely computer training, access and use (the ICT aspect) and the participatory action research process (the process aspect). The table lists the main material and non-material development outcomes (or CLIQ impacts) and summarises the most common examples of how both the ICT aspect and the process aspect of the project contributed to the different impacts. The table also shows the proportion of participants who cited the different impacts, regardless of perceived links to QoL change. Kleine's CF (2010b) was identified in section 3.3 (p64) as a useful framework through which to analyse the impact of ICT access and use on development. In the last column, Table 7-8 names the agency resources most affected by the respective CLIQ impacts, according to Kleine's set of ten agency resources (see Table 2-1, p26).

**Table 7-8: Summary of material and non-material CLIQ impacts**

CLIQ Impact <sup>i</sup>		Aspect of CLIQ intervention		CLIQ Impact on Core Sample (92 participants)	Kleine's C'sponding Resources
		Computer Training, Access and Use	Action Research Process		
Material Impacts <sup>ii</sup>	Job status	Got a job or information leading to a job through connected computer use. Typed CV with new computer skills that assisted with getting a job.	Met new people and shared information and ideas with others that assisted with finding a job.	10%-Got a job	Information Financial
	Status of own business	Started or improved own small business due to computer use for the purposes of marketing, information, pricing, communication, database listing and administration.	Met new people and shared information and ideas with others that assisted with starting or improving own small business.	17%-Started or improved small business	Information Financial
	Money	Found job opportunity for family member through computer use.	Used CLIQ travel money for other non-CLIQ related expenses.	2%-Helped family member get a job 5%-Used CLIQ travel money	Financial
Non-material Impacts	Friends & social networks	Made new friends and socialised more through on-line computer use. Developed social networks at TC when using computers, practicing in groups, and assisting other users.	Travel to and from TC boosted social networks. Made new friends and interacted with more people.	55%-More friends and or more communication and networks	Psycho'l <sup>iii</sup> Social Geograph'l
	Information, education & knowledge	Access to and use of information, via internet: - on news, general world knowledge, sports and interests, and for study assignments - for own business and to support job searches. - on learning institutions, bursaries and courses, including on-line application for courses and bursaries.	Identified and analysed own information through QLA methods. Gained information, local knowledge and new perspectives from methods; fellow participants and fieldworkers; and from general social interaction. Developed a more open mind and new views.	42%-Increased knowledge, information and an open mind	Information Education Psycho'l

CLIQ Impact <sup>i</sup>	Aspect of CLIQ intervention		CLIQ Impact on Core Sample (92 participants)	Kleine's C'sponding Resources
	Computer Training, Access and Use	Action Research Process		
ICT skills & use	Acquired on-line and off-line computer skills from computer training. Used computers through free access in between QLAs.	Logistical SMSs from CLIQ stimulated more cell-phone use. Learnt new ways to use cell-phones and skills to alternate between cell-phone and computer use.	53%-Got computer skills 45%-Used computers 26%-Increased cell-phone skills and use	Education Psycho'l Social
Community activity & participation	ICT use represented a new activity; opportunity to leave the house; area of interest; opportunity to socialise and chance to experience community life. ICT skills and access provided the opportunity to assist others in the community, as ICT intermediaries and as informal computer trainers.	CLIQ activities created a new opportunity and social space facilitating different experiences, activities and interactions, and promoting mobility and participation.	10%-Helped others with or through ICT skills 7%-More activities and experiences	Psycho'l Social Geograph'l
Inner Empow'mnt	Happiness, empowerment, hope, self-efficacy and confidence from: - using and being able to use computers - accessing needed information and news - gaining a broader perspective of the world - improved social status as ICT intermediaries Perceptions of slower learning generated negative feelings.	Motivation, direction, goals, self-confidence, happiness, hope, and self-esteem from: being part of CLIQ; support and advice from fellow participants and fieldworkers; goal-setting activity; engaging with other participants on local and personal issues through visual methods. Accusations naivety, nepotism and selfishness, as well as perceptions of jealousy from community members generated negative feelings.	77%-Inner empowerment 17%-Negative feelings	Psycho'l
<p><i>Notes:</i></p> <p>i. Uncommon impacts like 'acquired assets (laptop)' and 'assisted with obtaining an ID' are excluded due to space limitations.</p> <p>ii. Material impacts do not include second level material \impacts such as installing electricity, buying a computer, or extending a home, which were due to increased money from first level CLIQ impacts, such as 'got a job'.</p> <p>iii. Abbreviations (this table only): Empowerment= Empow'mnt      Psychological= Psycho'l Corresponding= C'sponding      Geographical= Geograph'l</p>				

The examples of impact and improved QoL provided in this chapter illustrate that both computer training and use, and the ethos, principles and methods of the *par* process fostered empowerment. With the benefit of access to the full story of many different cases, together with added insight from interaction with some participants, I think that those who benefitted most were participants who were able to fully engage with computer training and use *as embedded within* a process that acknowledged diversity and complexity and were able to reflect on and analyse their own well-being.

Engagement in CLIQ resulted in outcomes that were empowering in the broader sense – where empowerment is an increase in one or more resources and/ or an increase in ability to use resources, as mediated by contextual structures. Individual development outcomes represented increases in social, financial, geographical, education and information resources. The most common impact from engagement with CLIQ though, was an increase in psychological resources (or inner empowerment), which is regarded as most critical to personal agency and well-being (Bandura, 1994; Mruk, 2006). This is similar to Gigler's (2004:32) assertion that psychological empowerment was the most immediate and direct impact of ICT programs.

The usefulness of Kleine's framework for analysing CLIQ results can only be discussed fully with reference to the surrounding context of the action research process, at an individual, group and area level. Chapter 8 provides insight into the context within which participants operated, identifying factors that either promoted or hindered their participation in CLIQ (and other activities), as well as CLIQ implementation.

# CHAPTER EIGHT:

## GATES TO ENGAGEMENT

Chapters 2, 3 and 4 noted that local indicators of QoL; ICT provision, access and use; and the nature of participatory development processes, must account for the surrounding context in order to be relevant and effective. Chapter 6 detailed how and why the research processes unfolded differently in each area and concluded with data revealing different levels of individual participation and different levels of implementation per area.

Analysis of quantitative data on QoL change, CLIQ impact, participation and implementation (in section 7.2, p166) revealed a correlation between a greater likelihood of CLIQ impact (and QoL change); and better individual participation and area-level implementation. Chapter 7 also showed that participants made use of different aspects of the CLIQ intervention in a variety of different ways, resulting in a range of material and non-material CLIQ impacts (which represented increases in corresponding agency resources as categorised in Kleine's CF). However differences in participation and implementation were insufficient to explain differences in outcomes. In this chapter I consider the main reasons behind differences in participation and implementation. These reasons identify factors that influenced not only CLIQ participation and implementation, but the nature of CLIQ impact on different people. These factors shaped how CLIQ was implemented; what participants did (including the nature of their engagement with CLIQ *and* of their other activities); and the range and diversity of development outcomes (i.e. CLIQ impacts and changes in QoL).

All human doing and human being is influenced by their individuality, the resources they command and the context within which they operate (Archer, 2004; Sen, 1999), as reflected through Kleine's CF (2010b). Humans operate in and across different contextual spaces or domains and at different levels (Aslop and Heinsohn, 2005:11-12). This chapter looks at aspects of participants' differing environments and their individuality which directly impacted on their participation in and benefit from CLIQ, when combined with the resources they had access to.

The provision of group computer training through CLIQ was similar in many ways to free local non-accredited computer training at a community telecentre. The periods in-between group training and scheduled QLAs, where participants could decide if, when, how and why they would use computers, mimics the situation faced by would-be telecentre users outside of any project structure, except that computer use was free. Due to these similarities, literature on telecentre functionality and use outside of an ICT4D intervention presented in chapter 3 is relevant.

In order to implement CLIQ, we required a functional telecentre for the provision of computer training and for participants' use of computers. Telecentre functionality includes not only a physically and technically functional space (e.g. a room with connected computers, a stable power supply, chairs and tables, and so on) but also a human interface to facilitate use (e.g. staff to open the doors, interact with users, apply rules and norms, and so on). These can be regarded as supply side issues: the provision of a functional telecentre. In addition, a telecentre requires users because without users, a telecentre cannot fulfil any meaningful vision, whether it has a business, community-service or other focus. Telecentre access and use represents demand side issues: telecentre access and use. From a review of research done on public access to ICTs, Sey (2008:5-6) suggests that *venue performance* combines aspects of provision (supply) with access and use (demand), considering the context within which telecentres operate. Besides combining provision, access and use, the term *venue performance* seems importantly to capture the interaction between and around these telecentre aspects, as the life of the telecentre unfolds in relation to the local population and context.

A number of issues affected participants' attendance at computer training, their use of telecentres in-between training, and their participation in the QLAs. These issues have been grouped into four *gates to engagement*, which served to either promote or hinder participation and CLIQ implementation (see Table 8-1).<sup>89</sup>

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<sup>89</sup> I use the term *gates*, not only because it is a useful metaphor as something that can permit or deny access and use, but also simply because 'gates' distinguishes this discussion from other sets of 'aspects', 'factors', 'reasons' or 'issues'.

Reasons for varying levels of participation and implementation were derived from a number of sources. Firstly, during the final-QLA, participants indicated whether any of a pre-set list of issues had

**Table 8-1: Gates to CLIQ engagement**

1	Social norms, perceptions and experiences
2	Personal disposition and health
3	Opportunity cost: time, money and energy
4	Telecentre functionality

affected or prevented their participation. Secondly, informal discussions with participants, as well as issues arising spontaneously during the IIDIs, revealed reasons why participants did not attend scheduled CLIQ activities. Thirdly, my analysis and reflection on CLIQ's capacity building activities; the nature and extent of deviation from the planned CLIQ process; and the experience of implementing the project over two years, revealed further reasons why some people may not have participated in selected activities and why implementation difficulties arose (as documented in chapter 6). Information and insights on gates to engagement were also gained from numerous informal discussions with telecentre staff; the KZN USAASA representative; and CLIQ fieldworkers in the course of managing project implementation.<sup>90</sup>

The chapter starts with gates that mainly affected participation in the ICT aspects of CLIQ (similar to demand for PAC), as well as the QLAs (gates 1 to 3); followed by a summary of the set of supply-side factors affecting the provision of a functional telecentre (gate 4). The chapter concludes by considering interactions between these gates to engagement, as well as changing contexts over time.

## 8.1 Social Norms, Perceptions and Experiences

A gendered divide in ICT access and use is widely reported in the literature (see subsection 3.1.2, p40). CLIQ data contains quantitative and qualitative evidence of a gendered impact of ICTs on QoL. Similarly, differential access and use according to age is also reported in the literature. CLIQ also found evidence of an age divide, although it was not as prevalent as the gender divide.

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<sup>90</sup> This information is from direct face-to-face or telephonic discussion and email exchange between myself and these stakeholders. It also includes information relayed to me by fieldworkers concerning their interactions with these stakeholders and their perception of the context of telecentres.

### 8.1.1 Gender Norms: Gendered Impact

Two thirds of the selected sample and impact samples were women, and two thirds of those with improved QoL (from within the impact sample) were women, suggesting no gender difference with regard to attrition or QoL outcomes (see Table 8-2).

**Table 8-2: QoL change by gender**

Gender	Selected Sample		Impact Sample					
			Total		Improved QoL		Unchanged or Declined QoL	
Female	107	66%	75	66%	48	65%	27	69%
Male	55	34%	38	34%	26	35%	12	31%
<b>Total (Sample %)</b>	<b>162</b>	<b>-</b>	<b>113</b>	<b>(100%)</b>	<b>74</b>	<b>(65%)</b>	<b>39</b>	<b>(35%)</b>

However, data from eMpumalanga on computer usage, and a gendered analysis of participation and implementation data indicate that there is indeed a gender difference. Table 8-3 shows that good participation was more common among women (60%) than men (50%). Considering that better participation was associated with a greater likelihood of increased QoL (from section 6.4), women should have accounted for more than two thirds of those with improved QoL, due to better participation when compared to men. However, this was not the case: the proportion of women in the improved QoL group was 65%, and their proportion in the overall sample was 66% (see Table 8-2).

**Table 8-3: Nature of individual participation by gender**

Nature of Participation	Impact Sample		Female		Male	
	Good	64	57%	45	60%	19
Average	24	21%	14	19%	10	26%
Poor	25	22%	16	21%	9	24%
<b>Total (Sample %)</b>	<b>113</b>	<b>(100%)</b>	<b>75</b>	<b>(66%)</b>	<b>38</b>	<b>(34%)</b>

Furthermore, analysis of data collected by the telecentre facilitators on eMpumalanga participants' use of their free computer time over four months in 2009 indicates a gender and an age divide. Those interested and able to make use of free computer and internet

access were more likely to be male; younger; unemployed or have free time; and/or be within walking distance of the telecentre.

The sample sizes are extremely small for statistical comparison (75 women and 38 men) and therefore no statistically significant conclusions can be drawn based on this numeric data alone. However, the same gender pattern emerges when considering implementation and QoL change, by gender. Just less than three quarters of eNingizimu and eMpumalanga participants improved their QoL, which is greater than the proportion for all four areas of 65% (see Table 8-4). However, when splitting by gender, only 66% of women (compared to 81% of men) in areas with better implementation improved their QoL. This suggests that men were more likely than women, to benefit from CLIQ when well implemented. Table 8-4 also shows that men were less likely to improve their QoL (53%), than women (63%), in areas with poorer implementation.

**Table 8-4: Changes in QoL, level of CLIQ implementation and gender**

QoL Change	Impact Sample	More successful implementation: eMpumalanga and eNingizimu						Less successful implementation: eNyakatho and eNtshonalanga					
		Female		Male		Total		Female		Male		Total	
Improved QoL	<b>65%</b>	21	66%	17	81%	38	<b>72%</b>	27	63%	9	53%	36	<b>60%</b>
Unchanged or Declined QoL	<b>35%</b>	11	34%	4	19%	15	<b>28%</b>	16	37%	8	47%	24	<b>40%</b>
Total (Sample %)	<b>113</b> (100%)	32 (28%)		21 (19%)		<b>53</b> (47%)		43 (38%)		17 (15%)		<b>60</b> (53%)	

Considering the gender groups separately, men from areas with lower implementation were much less likely to improve their QoL (53%), than men from areas with better implementation (81%). For women, the proportion from areas with better implementation who improved their QoL (66%), is only marginally greater than the proportion from lower implementation areas (63%). Thus, better implementation did not result in more women improving their QoL than those from areas with poor implementation, to same extent that it did for men. An analysis of qualitative information, particularly from the 2010 IIDIs, provided insight into why women as a group did not appear to benefit proportionately from better participation and implementation.

Evidence of gender norms impacting negatively on men's participation was found in only one case, while from the analysis of women's stories, almost one out of every four women (24%) were negatively affected by gender issues in relation to their participation in CLIQ (although not necessarily recognised as such by them). A case search for participants with unchanged or declined QoL, but that either claimed a significant positive influence from CLIQ or who participated well in the project, yielded a group of 13 participants (nine women and four men).<sup>91</sup> The reasons for unchanged or declined QoL given by these four men (all with good CLIQ participation) were primarily financial (e.g. lost a job, decline in small business) or no change in job opportunities. These financial reasons were also present for four of the nine women, however in two of these four cases, financial reasons were coupled with other non-financial negative reasons. In the remaining five cases, only non-financial reasons were given for declined or unchanged QoL. These reasons included the death of a loved one; being forced to move to another homestead; being forced to stop income-earning and other activity outside of the home; lost ID; no time for computer training; and starting to study.

**Gender norms and control over time use:**

When questioning participants' understanding of commonly held local perceptions regarding age, gender and computer use, many participants noted that men (particularly older men) in their community that thought women should not use computers (see MankeM24's quote).

"All men don't want their partners to learn computers. Man has belief that a woman must always learn less than the man so they don't allow their partners to learn computers" (MankeM24).

It was not only men that supported and perpetuated these gender norms regarding domestic labour. Some women limited their own behaviour or that of other women in their household, in accordance with these norms. MinenhleF33's mother did not want her to attend computer training at the telecentre because she felt that "the lady must always be cleaning the house and cooking". In 2008, Minenhle did not enjoy her catering work and during the fieldwork period she accessed funding for, and established an orphan project.

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<sup>91</sup> This group included DivaF32, DinahF21, BathaF21, ManeseF20, NomaF27, NeneF27, SafarF35, NoziphoF26, KhaboF25, BenguM21, NdodaM20, KwaziM20 and MunaM20.

Minenhle searched for information on orphan care to support her work using her free hours. Although her access to money (as income) did not improve, she felt her QoL improved because she was able to set up her project. While Minenhle was able to side-step local gender norms, MilliF19 was not. Milli could not use her free hours after her baby was born because “there was no-one to take care of the baby”, even though she had recently moved in with her boyfriend and mother-in-law and had a number of siblings as potential babysitters (all of whom were unemployed and lived nearby). This indicates that the norm that mothers take care of young babies was strong, not permitting Milli to make use of female family babysitters in order to continue with her efforts to improve herself.

“Boys are usually considered as people who have a lot of spare time than girls because girls have more chores than boys and some of the girls are not allowed by either their parents or their partners to participate in other activities” (MunaM25).

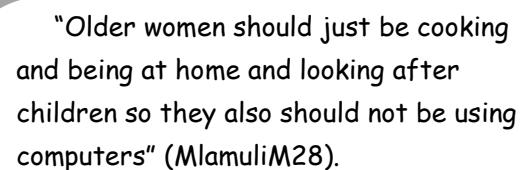
Patriarchal norms which keep women at home doing domestic work were particularly strong in the rural areas, but also present in the urban areas, as illustrated through Sipho’s quote.<sup>92</sup> ShellyF32 noted having to look after children and that her family discouraged her participation in CLIQ, as two reasons for her non-attendance. SafarF35, whose husband had a computer at home and whose son could use computers, only learnt to use them when the CLIQ opportunity presented itself. Only after computer training from CLIQ did her son help her with internet use. In this case, while the opportunity was there, dynamics within the home environment prevented Safar from learning to use the computer prior to CLIQ. Safar herself claimed that women do not “have time to learn computers because they are busy with house chores” (SafarF35).

“...it is mostly men who do not like their partners to learn computers because there is a lot of naughtiness in the computers” (SiphoM21).

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<sup>92</sup> This comment is not surprising, because when searching the internet at eNingizimu, a pornographic site would often pop up without warning (probably due to cookies and other markers placed during the telecentre facilitator’s frequent use of these sites).

Among younger male participants, bias against women using computers (especially for younger women) was not strongly articulated. However, when probing further it appears that while younger male participants did not explicitly express that women should not use computers, their beliefs and practices concerning gender roles and the division of labour effectively inhibited women's use of computers. MesseM20 was clear that "Young men and young women, they both doing things equally now because everyone has rights", while for older women, "they should not use computers due to their roles in society, because they are always busy in the gardens, fetching water and stokvels. They don't have time for computers. They must look after children at home and don't have time to study." This view implies that only while women do not have children and a family to take care of, can they learn computers. MlamuliM28's comment also supports the view that women can use computers as long as this does not impinge on their domestic role. So, while some women may not be directly prevented from using ICTs in particular, the prevailing norms and accepted gendered division of labour, severely limits the time that women have available for activities outside of the home, even if these are ultimately aimed at securing more income for the household.

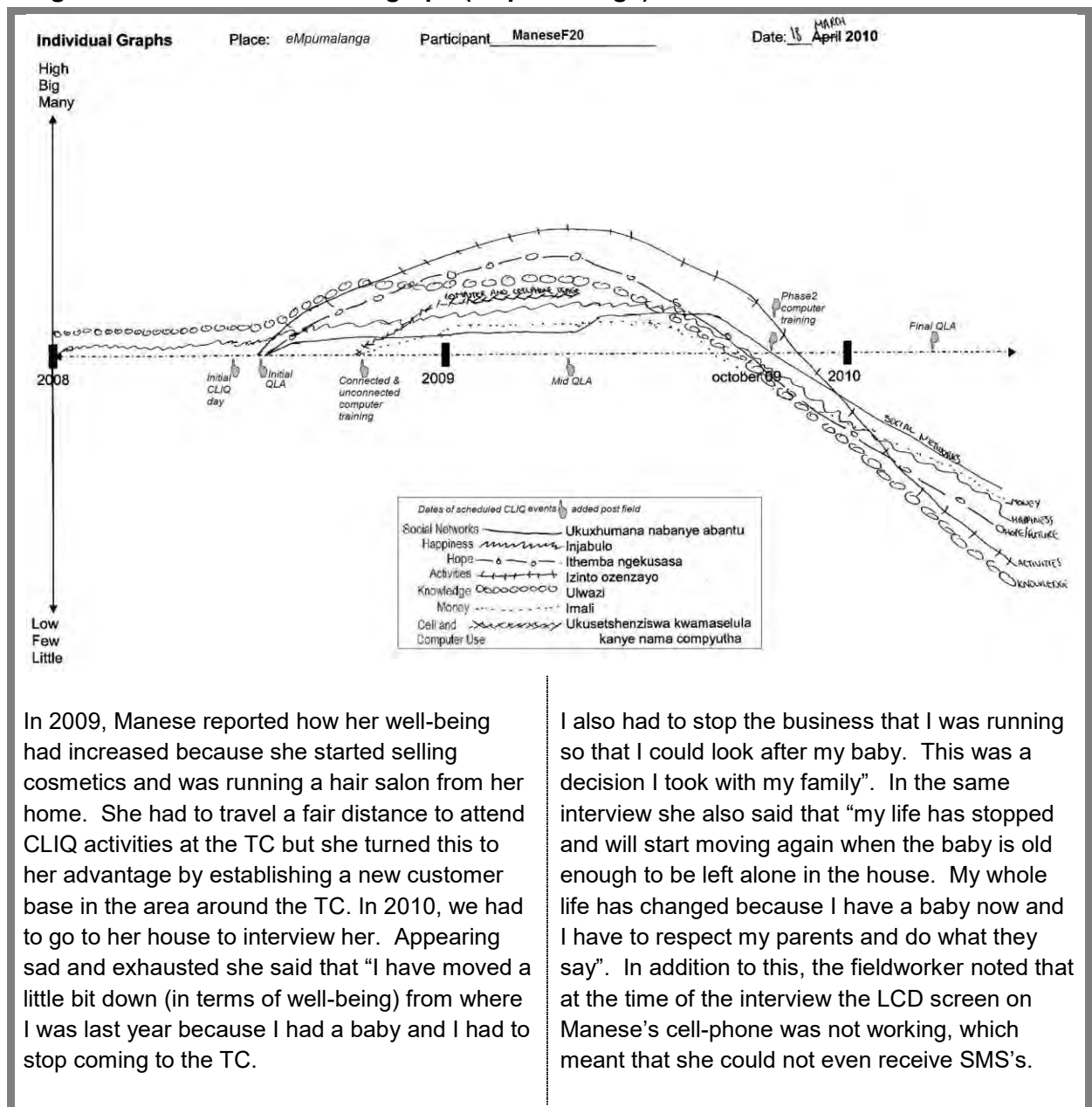


"Older women should just be cooking and being at home and looking after children so they also should not be using computers" (MlamuliM28).

Evidence of gender norms and beliefs restricting women's ICT access and use were common. "My partner didn't want me to come because he felt like I am neglecting the child and I was creating financial problems because now he has to find someone to take care of the child when I'm here (at the telecentre). He is fine with me learning computer, he just doesn't like the idea of me leaving the child at home" (MimiF21). Mimi's QoL did improve over the two year period because she found a job (unrelated to CLIQ) and she also attributed some of her QoL improvement to her acquisition of computer skills. However in the case of ManeseF20, her family's value system ended her participation in CLIQ.

**Gendered control over mobility and place of residence:** ManeseF20 had to stop her business activity of selling cosmetics and her hair styling business on her parents' insistence when they realised that Manese was pregnant, which led to a huge decrease in her QoL. Manese's life-graph shows changes in seven pre-determined aspects of her life (see Figure 8-1).

Figure 8-1: ManeseF20's life-graph (eMpumalanga)



None of the male participants indicated that family members had directed them as to where they should reside. However, this occurred in the stories of eleven women. Male family elders exercised control over younger women’s mobility. Men who fathered children during the two years did not move house, while this was common for women. Even if women did not move house, the responsibility of caring for children rested on their shoulders and often restricted a woman’s movement and activity.

Chazile’s story (Box 8-1) illustrates how her family decided where she should live, based on their need for someone to care for family members. Her story also illustrates how

forced changes to her living arrangements affected her work outside of the home, her self-esteem and her well-being.

**Box 8-1: ChazileF23 (eNtshonalanga)**

Chazile was dependant on hand-outs in 2008. She was living with her aunt and uncle as her mother died in 2002 and he father deserted the household in 2008. "I was a reserved person afraid to talk to people because I thought people would laugh at me because my father had left me for city girls". She was volunteering (without a stipend) on the local water steering committee. She went to live with another uncle where she also got a job and this improved her self-esteem.

However the first uncle insisted that she return to his household (where she lived in 2008), where she had to again care for the family. The move resulted in the loss of her job, which lowered her happiness. Her aunt also died which made things worse. Fortunately she was able to get another job in 2009, working as a clerk for a water project and she still had this job in 2010, which again increased her well-being as well as her social networks.

Table 8-5 refers to examples of gendered control over mobility and place of residence that were linked to either a death in the family; changing needs for domestic labour and care for the aged; childcare norms for young mothers; domestic abuse; or male control over women's social activities.

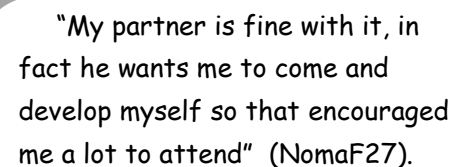
**Table 8-5: Forced and restricted mobility imposed on younger women**

Area	Participant's experience
eMpumalanga	ManeseF20's parents insisted she end activities outside the home to prepare for motherhood (see Figure 8-1).
	MimiM21's husband did not want her to leave home without the child and would not pay for childcare {p214}.
	MakhosiF22 gave birth to twins and MilliF19 {p213} gave birth to her first child in 2009. Both moved to their respective fiancé's homes, where ongoing childcare obligations restricted their movement.
eNingizimu	ZiphoF30 was kicked out of her in-laws' house when her husband died (see Box 7-11, p201).
eNyakatho	BathaF21 {p236} was forced to live with her nuclear family instead of her uncle where she was more comfortable.
	Demmi F17 had to move home because her father physically abused her.
	DudzileF25's husband did not allow her to network (see Box 7-2, p178).
eNtshonalanga	ChazileF23 had to return to an uncles' household to care for family members and do domestic work (see Box 8-1).
	JikileF23 {p187} had to stop searching for work to return home and care for family.

Thus, we see how patriarchal views and gendered practices of childcare, domestic labour, and decision making (regarding living arrangements and women's activity outside of the home) direct, restrict or otherwise control women's activity, often impacting negatively especially on younger women. These same patriarchal views and practices allowed younger men to continue pursuing activities of their choice (such as learning to use computers), regardless of the family's care-needs, fathering children or the need for domestic labour.

**Alternate gender stories:** Despite clear evidence of strong gender roles, the research also documented cases where the usual patriarchal norms and gender roles were not followed. There were cases of younger women being supported by their family or boyfriends in their new ICT use. For example, SallyF24, who got a job because she could use computers, was given a laptop by her boyfriend for her personal use. N'duduzoF34 remarked that her family and friends supported her CLIQ activity because "they know that if I get some sort of development skills, it could also help them as well." KholiweF21's parents and partner were supportive of her computer training. She got an advanced cell-phone from her partner because she was learning computers.

NomaF27 was also not restricted by her parents or partner regarding her computer training. Due to the distance to the telecentre, she bought a cell-phone with internet capability. She recognised the restrictions put on some women in the area and suggested that young women use the internet on their cell-phone as a way of connecting to the world, given that they are sometimes prevented from going out and from visiting friends. While this does not address the underlying problem, it does represent one way in which women can temporarily overcome some of the restrictions imposed on them.



"My partner is fine with it, in fact he wants me to come and develop myself so that encouraged me a lot to attend" (NomaF27).

In urban eNyakatho, there appeared to be less gender bias against women using computers and gender roles were less clearly defined. References to men doing domestic work were only encountered in eNyakatho. DwayneM41, is a rare example of a man whose daily activities involved taking the children to crèche, attending to his small business and volunteering his time to teach children soccer, before he returned home to clean and cook. DumiM29 also recalled verbal abuse from his aunt. After a day with CLIQ his aunt shouted at

him: “You spent the whole day in the telecentre while the household work is waiting for you”.

Given the prevalence of sexist social norms, gendered division of labour and restrictions of women’s mobility, it is important to reflect on how these factors affected the selection of female CLIQ participants. Women, who experienced greater restrictions or faced severe consequences when disregarding gender norms, would probably not have come to CLIQ’s initial field-day in the first place. Thus through our selection methodology, the female participants were already biased away from those women who generally played a less active part in community activity. A random sample of women is likely to reveal a higher frequency of gender discrimination against the participation of women in ICT programs.

The unsurprising conclusion is that life is more difficult for women. Women try harder (e.g. better CLIQ participation) and face more barriers (e.g. discriminatory gender norms), than men. Domestic and childcare workloads leave women with less time and energy to pursue activities aimed at bettering themselves and their situation. In summary, the message to women emerging from the many stories of women and men involved in CLIQ, appears to be: *You may use the computers if you’re not busy. Just make sure all the housework is done, food is ready, and children are cared for - preferably by you and certainly at no extra cost - and if there’s no income coming into the house, then make sure you earn some cash first. Of course, if you get pregnant, all your activities will have to be limited. Oh, and we might tell you to go live somewhere else for a while, if a relative’s household needs some domestic labour or elderly care, so be prepared to drop everything and move.*

### 8.1.2 Age Norms, Perceptions and Experiences

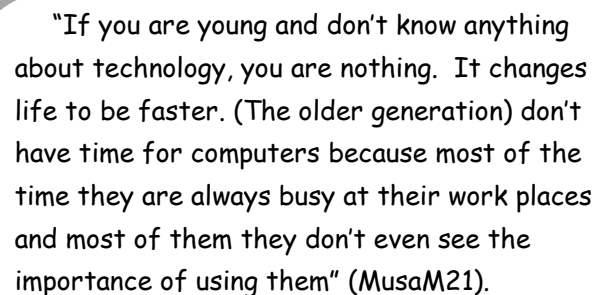
Bias against the use of modern ICTs by the older generation was found across the four sites. Fairly common reasons given for older people not using ICTs, were that they were illiterate; had poor eyesight; or did not have the ability or desire to learn new things (see NonkuF26’s

“they (older people) are supposed to watch the house because they are old; they are old and there is no future for them, they are waiting to die ...it’s difficult for them to learn when they are old” (NonkuF26).

quote). NomaF27 noted that the “younger generation can learn faster because most of them use technical things... They love going to mxit and twitter to talk to each other

especially if they stay far from each other and it costs less to chat via these sites.” (NomaF27).

Like gendered restriction on mobility, bias against older people learning and using ICTs found its way into the selection process. While we aimed for one third youth (18-24yrs), no age limit was put on potential self-employed or activist participants. Nevertheless, over half of those who participated sufficiently to be in the impact sample of 113 were aged up to 24 years and 77% were aged 29 years or less, while only 7% were aged 50 years and above. The age distribution was similar for the selected sample of 162, indicating that there was low initial interest or ability to attend the information day amongst older people (see Appendix I- Table 3, p328).



“If you are young and don’t know anything about technology, you are nothing. It changes life to be faster. (The older generation) don’t have time for computers because most of the time they are always busy at their work places and most of them they don’t even see the importance of using them” (MusaM21).

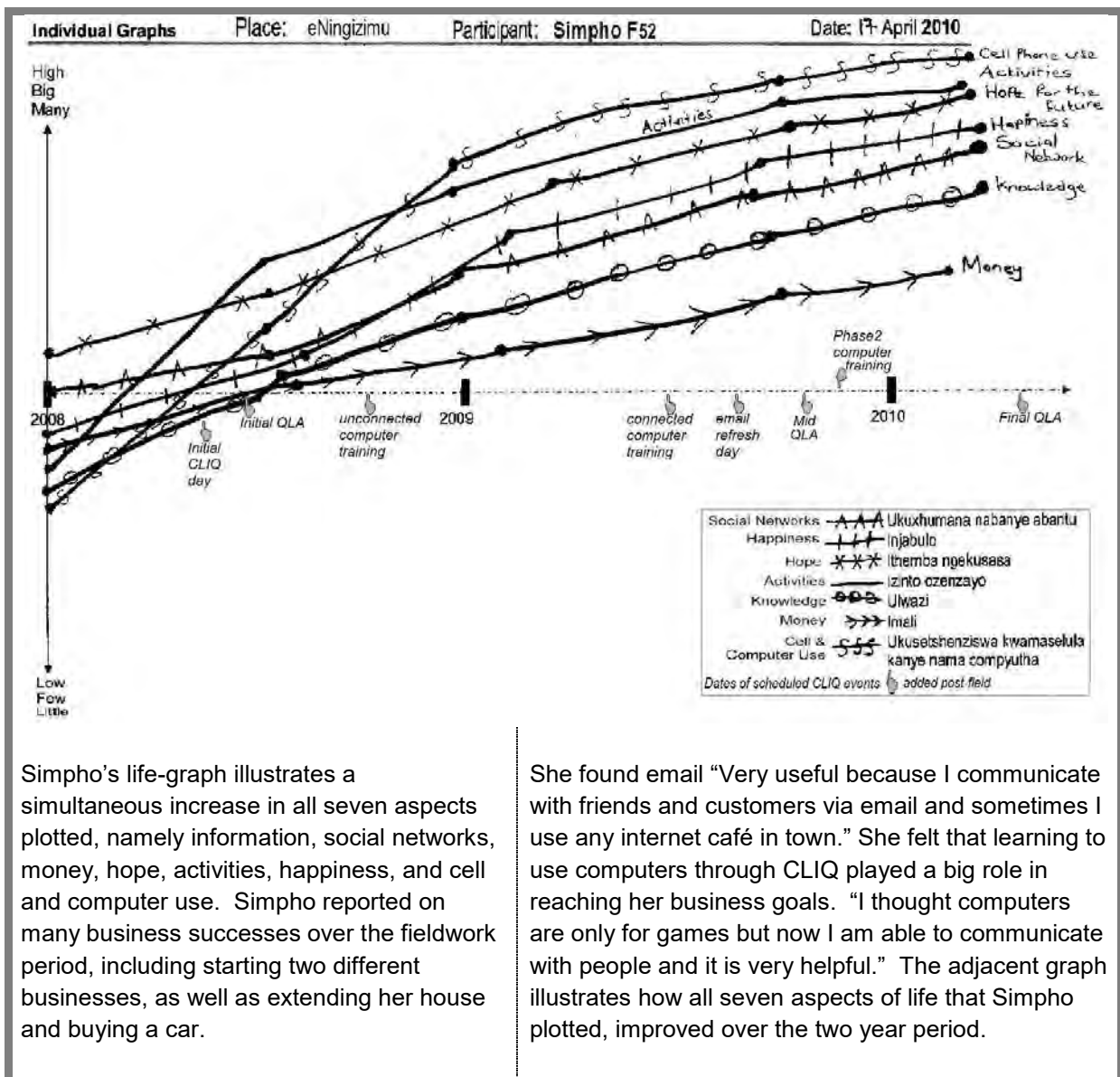
While ICTs were thought to be more for the younger generation across the four sites, a couple of participants from eNingizimu (the peri-urban area) illustrated how older people can make productive use of ICTs. Six of the eight participants aged 50 years and above were from eNingizimu.<sup>93</sup> S’boF52 recalls: “My children were just laughing – it was a joke for me to learn the computer at this stage”. However S’bo did learn to use computers: she found a job opportunity for her daughter on the internet and she improved her small business, using the proceeds to build a new house for the family. In 2010, S’bo’s children were helping her with new ways to use her cell-phone.

Another three older women from eNingizimu (SiyaF53, SamkeF53, and SimphoF52) also used their new ICT skills improve their businesses. SamkeF53 used the computer for a variety business and personal needs and SimphoF52 found email so useful for her businesses that she would pay to use internet cafes in town (see Figure 8-2). Simpho attributed her increased QoL directly to CLIQ.

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<sup>93</sup> A possible influencing factor here was the age of the TC manager (around 60). Word of mouth was the most common method of spreading the news of the CLIQ opportunity and therefore, being older than the other three TC managers, it is possible that people within the networks used by the eNingizimu manager were older on average.

Figure 8-2: SimphoF52's life-graph (eNingizimu)



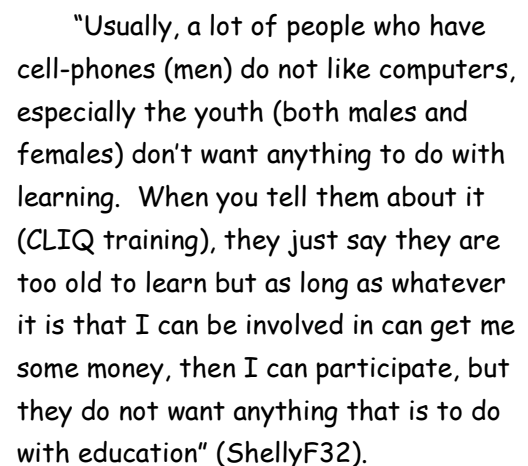
SiyaF53's story initially appears to reinforce the view that older people cannot or do not want to learn to use modern ICTs: Siya attended computer training but by 2010 she had not used any of her free hours. In addition, in 2008 Siya did not think that cell-phones were useful. Over the two years, her cell-phone use increased dramatically to facilitate her various activities, including setting up an orphan feeding project, running her existing business, and securing payment for local health workers. She felt she would not have

achieved what she did if not for her increased cell-phone use which saved her time. With time, it is possible that Siya would change her attitude towards computer use.<sup>94</sup>

In SarahF50's case, it was not the use of new computer skills that directly contributed to her improved well-being, but rather her increase in confidence from being able to learn computer skills. Sarah was one of the slower learners, and had the lowest proficiency in English, in the group. Nevertheless she persevered and by 2010 was functional at using the internet. She also attributed her improved QoL to her increased cell-phone use, new knowledge and hope, which resulted from her engagement with CLIQ (as well as increased household income, unrelated to CLIQ).

A bias against the digital ability of older people was not supported by findings from the peri-urban area of eNingizimu. Aside from problems with eyesight (and other health issues) and livelihood commitments, where older people had the motivation to learn to use computers, the research has shown that it can be very beneficial. However, social norms values and beliefs with respect to age and use of newer ICTs, as well as the limited representation of older people among participants, does support the general consensus in the literature of a bias away from older people with respect to use of newer ICTs (see section 3.1, p38).<sup>95</sup>

ShellyF32 did not believe that it was the age of older people that prevented them from learning and using computers but rather their attitude, as illustrated by her quote. Personal attitudes and values are discussed in the following section together with other personal characteristics that influence project engagement.



"Usually, a lot of people who have cell-phones (men) do not like computers, especially the youth (both males and females) don't want anything to do with learning. When you tell them about it (CLIQ training), they just say they are too old to learn but as long as whatever it is that I can be involved in can get me some money, then I can participate, but they do not want anything that is to do with education" (ShellyF32).

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<sup>94</sup> See also **Box 7-10**.

<sup>95</sup> More research is needed for evidence-based insight into the use of ICTs by older people at telecentres in South Africa.

## 8.2 Personal Disposition and Health

This section explores how personal disposition (including worldview, personality, aptitude, cognitive perception, mental well-being and physical health) accounts for some of the variation in and complexity of the nature of CLIQ participation and outcomes.

### 8.2.1 *Physical Health*

Poor physical health prevented some from attending CLIQ activities, which in the case of training sessions negatively affected the level of skill they attained. Those who were more enthusiastic about computers or had more creative agency, seemed to find a way to make up for what they had missed. For example, MunaM25 {p188} was sent home from training because he was so ill, but driven by enthusiasm and new-found confidence, he found a way to catch up on what he had missed. On the other hand, NoziphoF26 did not manage to make up the time lost, after illness limited her participation. On recovery, general tiredness, having to care for her sick child, and her bakery work prevented her from regular computer use - and not a lack of enthusiasm. Certainly her tiredness is linked to her dual role as income earner and caregiver, and possibly her health as well. Besides acute illnesses, some older participants struggled with their eyesight which hampered their ability to learn computing skills.

### 8.2.2 *Mental Health: Self-Confidence, Depression and Hope*

NganeM24 gave many reasons for not using his computer hours. However, some time into his final IID, he revealed that it was mainly his emotional state that prevented him from using his free computer hours. Withdrawal, increased dependency and lack of will are motivational manifestations of depression and low self-esteem, indecisiveness and a negative outlook, including "...rejecting the possibility of any improvement" are cognitive manifestations of depression (Beck and Alford, 2009:22,24,27). Luyten and Blatt name loss of hope, lack of drive, and exhaustion as features of depression (2012:114); which clearly illustrate the negative influence that depression has on personal agency. Box 8-2 illustrates that despite BenjiM19's ability to use computers, his lack of belief in the potential for this to improve his life, together with his despondent mental state, led him to give up on trying to improve his life through using computers. While it is not possible to determine from the

data whether or not some participants were clinically depressed, it appears to be the case for participants like Ngane and Benji.

**Box 8-2: BenjiM19 (eNyakatho)**

During the two years of fieldwork, Benji got a security job, but it ended. His father had a stroke, his girlfriend had a miscarriage and his mother was unemployed. Benji was open about his sexual practices. "I have many girlfriends and I do not use a condom. I don't think it is important because AIDS is now a common disease and when I get it, I will live on ARV's". He went to Limpopo and therefore missed the entire period of CLIQ training and computer use. Nevertheless, his sister taught him to use the computer as there was one at home, but Benji did not think that it could help him with his goal to start a business.

"I enjoyed everything I learnt about computers but I do not regard this knowledge as something I can use in order to grow or to start my own business or even to partner with my sister. I used to have my own email address but I am no longer interested in using the computer, as I am not employed." From his lack of enthusiasm, as well as his risky sexual behaviour, it is possible that Benji is depressed, which is supported by his own comments on his state of mind. He noted that he "sometimes gets discouraged". He was hopeful that he would get a job, but added that this may happen "(if I) do not get discouraged by the fact that I am not employed."

NelliF34 {p196} experienced the trainer's communication style as disrespectful to her. However she also recounted previous experiences of communicating in public that were humiliating for her and that she generally limited her social interaction outside of the home. This suggests that lack of self-confidence and low social skills contributed to Nelli's inability to assert her space as a trainee needing additional explanation. Nelli's comment that CLIQ helped her to be able to communicate with people, which improved her well-being, suggests that she had indeed reflected on the nature of her life (see Box 8-3). Her story specifically supports social and psychological resources as a key part of well-being, and further, that improved QoL attributed in part to CLIQ, was in some cases related only to the process aspect of CLIQ.

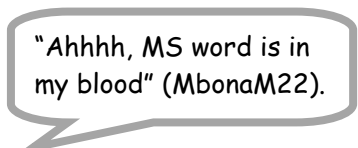
**Box 8-3: NelliF37 (eMpumalanga)**

In 2008, Nelli did not interact much with the community, but through a need to take care of her ailing mother-in-law her interaction with the community increased. "(In 2008) I only knew that a wife must be at the kitchen and I did not know much. In 2009 I started mixing with other people to ask about how to look after people (so that I can take care of my family). In 2010 I know how to make mats and I know how to take care of sick people."

Nelli met the people who taught her to make mats, through attending CLIQ activities. "CLIQ has helped me because now I can talk with people that I meet and talk about how to sell my grass mats. Even though I have never come for my hours I can say that CLIQ contributed to my well-being because of that."

### 8.2.3 Personal Disposition: Aptitude, Passion and Laziness

As within any group of people, some participants simply displayed less aptitude or motivation to use computers, while others had an innate ability and passion for new ICTs. Of the 63 participants who received some computer training at eNingizimu, eNyakatho and eMpumalanga, 60 succeeded in acquiring an email address and sending an email to the CLIQ office (many of them with attachments). In eMpumalanga, a couple of participants (all young males), latched on to computers very quickly and became super-users, with some going beyond their free 100 hours and doing computer-based exercises set by CLIQ in order to qualify for additional free hours.<sup>96</sup> People like MbonaM22 were passionate about ICTs, as illustrated by his quote. Both Mbona and MlamuliM28 were very animated when talking about their computer use as part of their final interview. They spent extra time discussing examples of what they did on computers with excitement, backed by a clear understanding of the technology they were discussing.



"Ahhhh, MS word is in my blood" (MbonaM22).

In eNingizimu, many participants took longer than eMpumalanga participants to learn computer skills and appeared less interested or motivated. CLIQ added in an extra email refresher day for eNingizimu participants to remind participants how to use their email, as many had forgotten their passwords and some did not have a record of their email address. While some appeared to give up, others persevered, like SeanM40 who needed repeated individual coaching to learn how to use email. By 2010, Sean was finally able to do it by himself and really enjoyed communicating with others over email (including a CLIQ participant from another area). The eight month delay between phase 1 and 2 training in eNingizimu contributed to lower motivation and slower learning. The enthusiasm generated and skills learnt during the first computer training session were not built on two weeks later, as was the case in eMpumalanga. Doubts about CLIQ's promise to return with additional computer training, could also have contributed to lower enthusiasm. Furthermore, the average age of eNingizimu participants (35 years) was higher than the other three areas

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<sup>96</sup> This was done firstly, to ensure that the participants did have the skills to use the computer and were not selling their hours to others; secondly, so that CLIQ could obtain evidence of their computer skills, and thirdly, so that CLIQ could obtain additional information about participants or the local context, as we set the exercises on topic's relevant to CLIQ (see for example, Box 5-1).

(around 26 years) and it was evident through observation that some older participants were reticent to explore new ICT use. Thus, in comparison to eMpumalanga, the age factor did appear to contribute to the lower ability and enthusiasm in general, apparent among older eNingizimu participants.

Laziness was mentioned by a few eNingizimu participants in response to why they had not used their free computer hours. Considering these participants' unique circumstances, what was labelled by them as laziness could also be explained by lack of time due to gendered roles (see section 8.1) and low self-esteem or limited belief that they had the ability to acquire basic computer skills (discussed above). Case analysis also revealed that the need to engage in activity that would yield immediate financial reward and a lack of foresight or belief as to the future benefits that computer use may hold for them, also contributed to lower enthusiasm, ability or motivation to use computers.

#### 8.2.4 *Locating mental health and personal disposition within the CF*

Kleine lists health and psychological resources as separate agency resources (see Figure 3-7, p65) and specifies that “[p]sychological assets may include self-confidence, tenacity, optimism, creativity and resilience” (Kleine, 2010b:681). Kleine does not specify whether mental health should be regarded as part of health or psychological resources.

Mental health does not receive sufficient attention with regard to its role in development and poverty reduction, given that it affects progress towards the achievement of several Millennium Development Goals, such as promotion of gender equality and empowerment of women, reduction of child mortality, improvement of maternal health, and reversal of the spread of HIV/AIDS (Prince *et al.*, 2007:859). Furthermore, mental health is a critical component of agency, given the chronically disabling nature of depression and other common mental disorders (ibid). Depression, for example, reduces motivation and energy, and brings with it a dejected mood, poor self-esteem, negative expectations and social withdrawal (Beck and Alford, 2009:18-35). Given the extensive impact that mental illness has on a person's psychological assets, it seems logical to include mental health under psychological resources, and not health.

Aside from mental health or illness, a person may be born with a positive disposition, being naturally confident, motivated and happy or they may develop a negative outlook over

time. Some people are more outgoing, while others are introverted; some people are consistently more likely to try new things, while others stick to things that are proven to be safe and effective; and so on. This can generally be regarded as personal disposition – a person's general character traits. Personal disposition therefore also seems to fit within psychological resources, because some manifestations of personal disposition are the same as those of mental health and mental illness (e.g. confidence, reticence, resilience, pessimism, and so on).

Thus, for the purposes of this thesis, Kleine's *psychological resources* are regarded as inclusive of mental health as well as cognitive, emotional and other types of mental abilities and personality traits; and Kleine's *health* is regarded as referring to physical health.<sup>97</sup>

### 8.3 Opportunity Cost: Time, Money and Energy

When considering whether or not to engage in an activity, the nature of the activity and resource required are weighed against the expected outcomes. Therefore information and perceptions of inputs required and likely benefits influence the decision and result in perceived opportunity cost. This section considers participants' time, information, energy and the location of their homestead with respect to their livelihood strategies and considers how these interact with each other (given prevailing gender norms) to influence participants' decision regarding which activities to pursue with respect to their needs and goals.

#### 8.3.1 Awareness of ICT Benefits

Awareness of the existence of ICT facilities and the potential benefits of ICT use are critical in the promotion of ICT use (Barrantes, 2007; Hudson, 2001). CLIQ found limited awareness of the benefits of computer use among many (but not all) participants at each site. In 2008, many participants in eNingizimu, eNtshonalanga and eMpumalanga expressed surprise at some of the different uses of computers, and a couple were not even aware of

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<sup>97</sup> Further discussion on the boundary between a mental illness (like depression) and the level of a psychological resource (like degree of pessimism or optimism) is beyond the scope of this thesis. However, the origins of mental illness and personal disposition are relevant. These issues are taken forward in section 9.3.

the existence of their local telecentre.<sup>98</sup> In each area though, there were a couple of participants with a reasonable understanding of the relevance of computer use to daily life. In urban eNyakatho, there was generally a greater awareness of ICT benefits among participants, than other areas. Supporting this finding, the telecentre had waiting lists of local people willing to pay to attend computer training. Figure 5-6 (p129) illustrates the level of knowledge about computer applications, among self-employed participants from eNingizimu in mid 2008. It also illustrates additional applications that they were made aware of at the end of the exercise by the fieldworker.<sup>99</sup>

Analysis of awareness of benefits is complicated due to continuous innovation, not only by those in the ICT sector but also by everyday users who experiment and adapt technology to their needs. Further to the need for general awareness of the relevance of ICTs, a person's aptitude, creativity, knowledge and cognitive ability also affects their perception of the costs and benefits of computer use. People perceive different options for use according to their unique combinations of capability, history, goals, personality, context, and so on. For example, MlamuliM28 had used the internet prior to CLIQ, through a cell-phone. He was most eager to use a computer because he was aware of its potential use-value: he managed to acquire a laptop through the Adult Basic Education and Training (ABET) organisation he volunteered for and applied his new skills to his work by typing up lists to manage local ABET volunteers and write reports. SiyaF53 {p221} on the other hand, was not motivated to pursue computer use, despite learning about computer applications that were useful for businesses. CLIQ did however, help her to make productive use of her cell-phone.

Different prior knowledge about ICT benefits, abilities and perceptions led Siya and Mlamuli to take advantage of CLIQ in very different ways, even though in both cases, increased ICT use contributed to achieving their goals. Participants were encouraged to explore ICT use through an increased awareness of ICT-use benefits and the opportunity to

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<sup>98</sup> For example, some participants thought that computers were "only for games" or only for "learned white people"; while others were surprised that computers "allow you to talk to someone overseas as if they were close to you".

<sup>99</sup> This was the beginning of promoting computer use among our participants. It also represented the principle of sharing knowledge in the interest of general empowerment, which is indicated by the role of the agent in *par*.

learn ICT skills while engaging in activities they had reason to value. Across the sites and between individuals, fieldworkers adapted the ICT information shared to match participants' different characteristics, disposition, circumstances and goals, illustrating how the *par* principles of a flexible approach and a focus on locally defined needs (see section 4.3, p80), support the action goal of *par*.

Participants required resources to accommodate the additional activity of participating in CLIQ while still engaging in their usual tasks to provide for basic needs, continue to cover their responsibilities towards their families, and maintain existing resources.

### 8.3.2 *Livelihoods and Food Security*

Participants employed a variety of livelihood strategies, often relying on more than one activity over a period of time in order to support themselves and their family. There were a couple of participants with full-time and part-time jobs, although temporary and volunteer jobs (with a stipend) were more common. A few, who had permanent part-time or full-time work, were able to negotiate a few hours of a day off work to attend a CLIQ activity. Some participants operated small businesses (e.g. selling cool drinks and sweets) or relied on subsistence business activity (e.g. cutting and selling grass) and subsistence farming. N'duduzoF34 supported her family through making and selling crafts, while continuing to volunteer as a community health worker in the hope of getting a job in healthcare. While she did not have fixed work hours; the long and time consuming walk to the telecentre, together with her negative experience of the CLIQ trainer {see p196} led her to spend her available time doing subsistence craft work rather than attending computer training. Her reasoning for this was that her craft work "was going to put a plate on the table for her and her family". N'duduzo was not convinced that she should invest her time and energy in ICT skills because of lack of surety about the outcome.

Regardless of participants' awareness and belief in the potential of ICT use to secure a better future for them and their families, some missed part of a CLIQ session, a full session or an entire training or QLA activity due to engagement in livelihood activities. This affected those with the least secure sources of income or reserves of food, the most. MbonaM22 and MlamuliM28 missed the phase 2 computer training in eMpumalanga, because they were away from eMpumalanga doing a three month painting job. However, they were able to

continue with CLIQ because their temporary work did not prevent them being present at the start of the project and they were able to catch up on training sessions missed. This was not the case with SaneF50. From her 2010 interview, Sane had a clear sense of the potential that computer use held for her (as did Mbona and Mlamuli in 2008). SaneF50 was reliant on ad-hoc temporary work to such an extent that she was unable to attend any CLIQ activity, except for the final-QLA. Her life improved slightly between 2008 and 2009, but an overall decline in the availability of temporary work in eNingizimu left her with a lower QoL in mid 2010.

For others, the choice was not about conflicting options regarding participation on a particular day but participation in CLIQ as a whole. Both NathanM22 and NeneF27 had options to study over the same period as the CLIQ intervention. Nene managed to take part in some CLIQ activities before leaving to study in another province (see Box 7-7, p190). Nathan chose to follow his dream of becoming a nurse by doing an ancillary nursing course in Durban. As a result he was not able to participate in any CLIQ activities. Unfortunately, Nathan was not able to find nursing work on return to eMpumalanga, despite his completion of the nursing course.

For CLIQ participants, most of whom were new computer users and still unsure about their ability to learn and use computers skills; the choice to spend time pursuing computer skills (which would not result in certification) was risky. This was particularly the case for those with insecure livelihoods and those unsure about the usefulness of this skill with respect to achieving their goals. The need to work; attempt to secure work; attend to businesses, gardens and cattle; or engage in other ad-hoc activities to maintain or enhance livelihood strategies caused many participants to miss some part of a CLIQ activity. Choices between competing options for the use of time, energy and other resources use are difficult to make, illustrating the importance of information on the applications and benefits of computer use.

The issue of time as a resource is also linked to available transport and the distance of a participant's homestead from the physical place(s) where they engage in their livelihood activity(ies).

### 8.3.3 *Distance and Transport*

Travel costs had the potential to mitigate against telecentre use, even before the cost of computer use was considered, as encountered with unsponsored or regular computer use at telecentres. Many participants could not make adequate use of the free hours offered by CLIQ due to the distance between their homes and the telecentre. While most could attend CLIQ activities because they would receive a R20 travel allowance, there was no allowance for trips to the telecentre to use their free hours in-between scheduled activities.

A few of those whose transport cost was not fully covered by the travel stipend, or who chose to spend money on transport to use computers in between scheduled CLIQ activities, were able to offset this cost through combining different activities. NonhleF24 from eNingizimu used her free hours whenever she came to teach ABET at the LDC housing the telecentre, resulting in no extra travel costs (see Box 7-9, p194). ManeseF20, who was a sales representative for a company selling cosmetics and cleaning products, used the opportunity of travelling to eMpumalanga (costing R60 return) to expand her customer base and social network. Her sales (along with her well-being and happiness) increased as a result - although this was before her parents forced her to stop this work, her salon business, and her participation in CLIQ (see Figure 8-1, p215). Manese's story provides an excellent example both of how creative cognitive ability can turn a challenge (cost of travel) into an advantage (new markets for own business) and how the imposition of discriminatory gender norms within a culture of parental authority can decimate individual progress, livelihood and mental well-being.

In eNyakatho public transport was readily available, however the cost prohibited regular trips to the telecentre for some participants. In the dispersed settlement hills of eNtshonalanga, participants did not have the option of taking public transport to the telecentre, because it did not exist (except for one bus at dawn destined for Richmond town, returning at dusk). A few reported walking for around three hours to reach the telecentre. This represents a substantial expenditure in terms of time and physical effort, in addition to other factors such as wear and tear of shoes and exposure of skin to the elements. As noted in section 8.1 when analysing the number of hours used by eMpumalanga participants, most of those with high usage, lived within walking distance of the telecentre. Living within close proximity to the local telecentre can therefore be regarded as a geographical resource. For

those who lived further away, the geographical distance inhibited regular use of the telecentre, even when there were no competing choices for time use, because of the financial, time and other costs incurred through travel.

Furthermore, gender norms and personal disposition also interact with opportunity cost discussed above. Prevailing gender norms meant that women were mostly responsible for domestic work (located within the home), leaving them with less options than men (who were more likely to engage in activity outside of the home), to combine daily activities with telecentre use. Those who were less confident and socially insecure were less motivated than others to engage in activity outside of the home.

Thus, choices between engaging in activities related to livelihoods, domestic work, leisure, self-development or improving livelihood prospects (e.g. computer training), and so on, were impacted on by:

- a] the flexibility of working hours and relative location of work activities;
- b] availability of local options for and security of livelihoods;
- c] information, perception and assessment of relative benefit from different activities, and
- d] options for local travel and associated costs (time, money and energy), as well as
- e] gender norms and personal disposition.

This section highlighted the need for an awareness-building of the potential positive contribution of ICT use to well-being to enable people to make more informed choice when deciding between options for different activities (with associated resource costs). It also illustrated the influence of psychological well-being on decisions regarding choice of activities. While the three gates to engagement discussed above (social norms, personal disposition and opportunity cost) relate mainly to demand for ICT use, the discussion also illustrates why ICT provision and access needs to take account of the local context for use, inclusive of social norms, livelihood strategies and levels of infrastructure. Supply side factors regarding telecentre functionality represent another vital gate that either hindered or facilitated CLIQ implementation (mainly provision of training) and participation (mainly telecentre use in between scheduled CLIQ activities).

## 8.4 Telecentre Functionality

Common areas of concern and recommendations for telecentre functionality and PAC venue performance in SA and globally, are summarised in Table 3-3 (see p46). This section provides an overview of six aspects which emerged as critical to the relative functionality the four CLIQ telecentres (see Table 8-6), based on the experience of implementing CLIQ as well as comments from some participants regarding their use of the telecentres. Each aspect (discussed below) affecting functionality is represented within one or more of the ten common issues found in literature on PAC venue performance and telecentre sustainability (see Table 3-3, p46). A more detailed discussion of the issues raised below is presented in Attwood *et al.* (2010).<sup>100</sup> It is particularly disheartening to note with respect to USAASA-supported telecentres in SA, that a study by Benjamin (2001) found virtually the same challenges to the provision and maintenance of a functional telecentre, as CLIQ found 10 years later.

**Table 8-6: Aspects of telecentre functionality**

1.	Initiation and origin
2.	Vision and purpose
3.	Governance and driving force
4.	Technology and equipment
5.	Facilitators' motivation and skills
6.	State support

**Initiation and origin:** When the need for a telecentre arose and was pursued locally, such as in eNyakatho, the local relevance and use of the telecentre was much higher than when a telecentre was donated or identified as a need from outside the area (as found in eNingizimu, eMpumalanga and eNtshonalanga). This relates to aspects 1 and 2 in Table 3-3 {p46} listing common aspects of PAC venues affecting performance and sustainability.

**Vision and purpose:** eNyakatho telecentre had a community service orientation, with their services and procedures reflecting recognition of limited local affordability for computer training and use, as well as low ICT skills. Local telecentre use was cross-subsidised through a profit making entity linked to the telecentre, allowing the organisation running the telecentre to remain financially viable and enjoy the support of the local

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<sup>100</sup> Telecentre functionality was not part of CLIQ's initial research agenda. However given the volume of information and insight gained on this topic through implementing CLIQ, it was important to analyse it because it could assist USAASA with implementation and contribute to future ICT4D policy. A revised version of Attwood *et al.* (2010) is included in Attwood *et al.* (2013).

community. Telecentres with a business orientation (like eMpumalanga) or a semi-business orientation (like eNingizimu) struggled with low local demand due to limited awareness of their existence; low awareness of benefits of ICT use; lack of local ICT capacity; and an inability to afford telecentre services.<sup>101</sup> This relates to the third aspect in Table 3-3 (p46).

**Governance and driving force:** The leadership, motivation and vision provided by an ICT champion emerged as critical to telecentre functionality. Lack of clarity regarding ownership, reporting procedures and organizational structure at eMpumalanga (as well as limited guidelines for telecentre use) impacted negatively on telecentre operation. At eNtshonalanga, the absence of a driving force, vision or governance structures rendered it non-functional. In contrast, the eNyakatho manager adopted a developmental perspective on the role of ICTs in poorer communities; provided clear and decisive leadership; was passionate about ICTs; and managed the telecentre according to principles of good governance. This relates to aspects 4, 7 and 8 in Table 3-3 (p46).

**Technology and equipment:** A basic technical understanding of the operation and maintenance of hardware, software, networks and connectivity is needed, to maintain functional equipment and for the efficient resolution of technical problems. While this was found at eNyakatho until mid 2009, staff from the other three telecentres lacked an adequate understanding of ICT equipment and networks; the capacity to identify and convey the nature of a technical problem; and sufficient knowledge about which types of service providers addressed various technical problems related to connectivity, software and hardware. This exposed the latter three telecentres to unscrupulous service providers; long periods of partial or complete non-functionality; and the need to replace equipment far more frequently than would otherwise be required.<sup>102</sup> Furthermore, frequent cuts in the supply of electricity and technically-poor connectivity resulted in periods of low or no functionality. This relates to the sixth aspect in Table 3-3 (p46).

**Facilitators' motivation and skills:** CLIQ found no general task lists, work procedures, training opportunities or structure for facilitators to input into telecentre management or direction. Many telecentre facilitators did not possess the required technical and

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<sup>101</sup> eNtshonalanga TC had no discernible vision and was not used for the bulk of the fieldwork period.

<sup>102</sup> Detailed examples are included in Attwood *et al.* (2010).

administrative skills and knowledge or have the authority to interact with service providers to maintain telecentre functionality. Furthermore, there was an absence of regular stipend payments to facilitators at all telecentres, except for eNyakatho (although this was rectified at eMpumalanga in mid 2009). Staff motivation and morale was understandably low. All telecentres experienced high staff turnover, although a staff-handover program at eNyakatho limited the negative effects of staff changes. The worst situation was found at eNtshonalanga, where neither the mid 2008 nor the mid 2010 facilitator, had the authority to unlock the telecentre. This relates to the eighth aspect in Table 3-3 (p46).

**State support:** All four telecentres received limited support from USAASA's KZN office, due to the provincial office's inadequate staff complement; the head office's centralized approach to equipment maintenance; and no regular procedures for telecentre to report on performance and governance issues. USAASA did provide some training on an ad-hoc basis to telecentre facilitators and was able to replace stolen equipment (twice) at eNtshonalanga, albeit after a couple of months. However, USAASA's head office appeared generally incapable of effectively addressing technical problems, leaving telecentres semi- or non-functional for months on end. As recognised by USAASA, they were unable to address issues relating to local governance and ownership or provide direction regarding the role of telecentres in society, and had initiated a process to hand-over telecentres to a local entity. Appendix C (p313) provides detail on the history of USAASA with regard to telecentres, including the proposed hand over of telecentres. This relates to aspects 4 and 9 in Table 3-3 (p46).

The CLIQ project did not plan to research telecentre functionality and the six issues referred to above is not exhaustive of the issues affecting the functionality of the four participating telecentres. Rather, these issues emerged from analysis of and reflection on the experience of implementing CLIQ. With the benefit analyses contained in literature about telecentre functionality, sustainability and PAC venue performance, other problematic issues could be identified when reflecting on the experience of implementing CLIQ. However, for the purposes of this thesis, the six issues noted above sufficiently illustrate many of the barriers encountered by CLIQ when attempting to engage with USAASA head office, the KZN representative and telecentres as CLIQ partners or collaborators. They also reflect the structural barriers encountered by participants when they attempted to use the

telecentres. For example, some participants were unaware of the existence of a local telecentre or unaware of their option to use the telecentre. Participants complained about the poor attitude of facilitators; the telecentre being closed during regular office hours; and the computers or internet not working. In eNtshonalanga, participants also complained about the telecentre managers' lack of skill and ability to run the telecentre, as well as his lack of ethics.

These aspects affecting telecentre functionality are represented within Kleine's CF as structural elements. This will be taken forward in chapter 9. The last section of this chapter considers the interaction between aspects of telecentre functionality, social norms, personal disposition and opportunity cost; and the combined impact these had on CLIQ participation and outcomes.

## 8.5 Complexity, Multi-causality and Continuity

The issue of time has arisen in the analysis already: participants had to find time to participate in CLIQ amidst ongoing demands on their time to engage in their usual productive and reproductive activities (see section 8.3). Below I present further aspects of CLIQ analysis relating to time and the compounding or counteractive effects of multiple gates to engagement.

### 8.5.1 *With the Passing of Time*

The time period over which the impact of an intervention is measured affects the findings because effort, change and impact are ongoing, as people continue with their day-to-day reality. The point at which CLIQ measured impact was determined by project logistics and funding requirements, but impact continues beyond the measurement period. MlamuliM28 invited the CLIQ research assistant and myself to his wedding. Plate 8-1 indicates that he and others were continuing to make progress with their lives, as opportunities and resources became available over time, which allowed eMpumalanga participants to make further use of their CLIQ experience. With less than one month between the Phase 2 training and the final-QLAs in eNyakatho and eNtshonalanga, there was limited time for participants to apply their new skills and knowledge, when compared to

eNingizimu and eMpumalanga where participants had between two and four months to use their free hours after phase 2 training and prior to the final-QLA (see Table 6-3, p154).

BathaF21 reported making new friends as a positive impact of CLIQ {see p178} and that having computer skills improved her QoL {see p188}. However, her QoL went down overall during the fieldwork period because she had to return to living with her nuclear family, despite irreconcilable lifestyle differences. About a year later, Batha contacted CLIQ via FaceBook to tell us that things were improving for her (see Plate 8-2).

MlamuliM28's message (see Plate 8-1) also illustrates the friendly relationships that some participants had established with CLIQ staff. White and Pettit contend that "[T]he 'social life' of any research project - its principles, conduct and relationships established with respondents - is in fact central not only to its mortality, but also to the quality of information it can yield" (2004:24).

The good relations established between CLIQ and a number of participants set up lines of communication which participants like DinahF21 (see Plate 7-4, p181), MlamuliM28 and BathaF21 used to relay further CLIQ impact beyond the final-QLA and even beyond the 2011

**Plate 8-1: MlamuliM28 on FaceBook (eMpumalanga, 2011)**



Source: [https://www.facebook.com/messages/\[Mla\]...](https://www.facebook.com/messages/[Mla]...) (Retrieved 11 June 2014)

**Plate 8-2: BathaF21 on FaceBook (eNyakatho, 2011)**

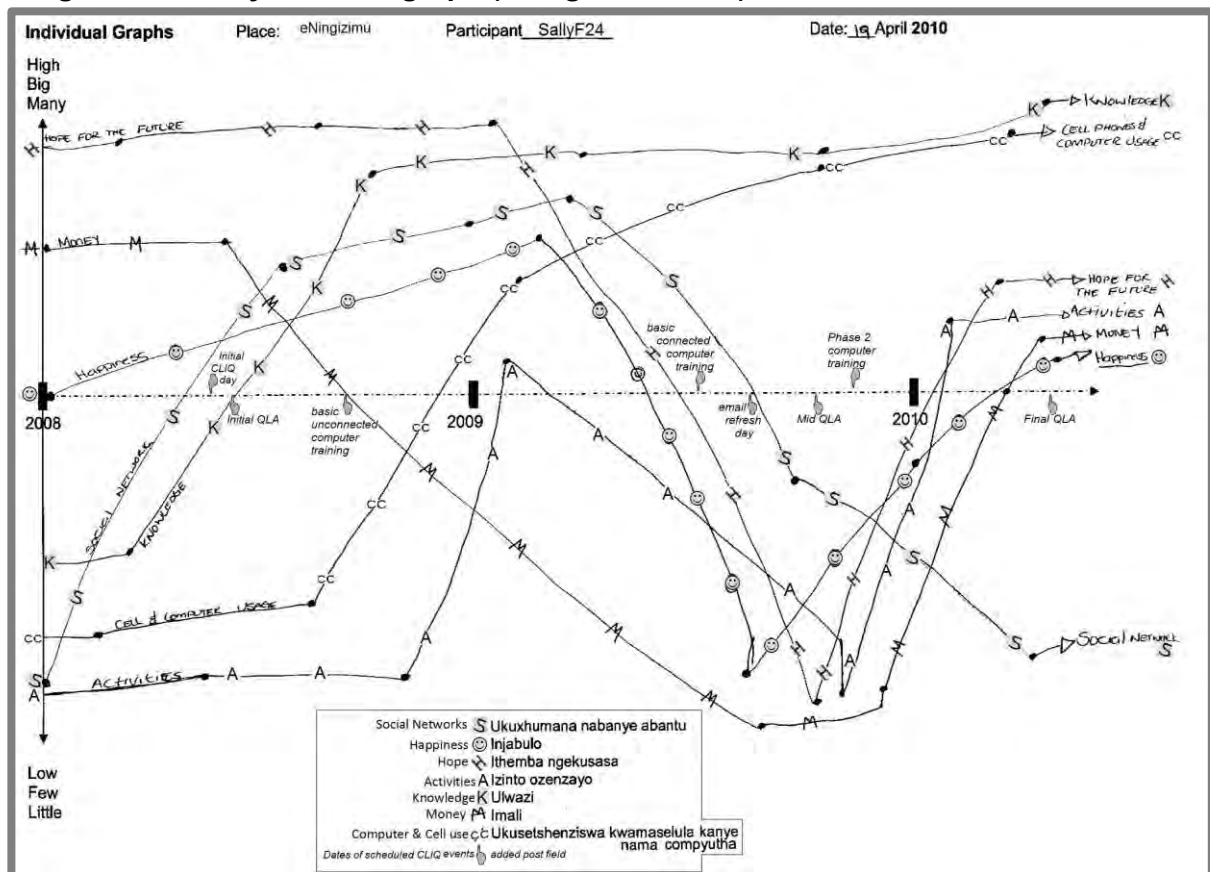


Source: <https://www.facebook.com/messages/100001686107390> (Retrieved 11 June 2014)

dissemination workshop.<sup>103</sup> The additional flow of information on impact beyond the fieldwork period is a research benefit due in part to the project ethos.

Another aspect of time relates to participants' changing perceptions of impact over time. SallyF24 got a job as a supervisor at a car wash, because she had computer skills. This is the only example of a person applying for and getting a job that required computer skills. However, Sally's father died in 2009 and as a result, her overall QoL declined. Figure 8-3 shows changes in her life over the two years of fieldwork. As Sally comes to terms with the death of her father, she may reflect back to mid 2010 and conclude differently about her overall QoL at the time. In other words, the passing of time allows for a more measured assessment.

**Figure 8-3: SallyF24's life-graph (eNingizimu, 2010)**



<sup>103</sup>

It would be fascinating to research the nature and impact of contact between fieldworkers and participants beyond the final CLIQ dissemination workshops.

Lastly, concerning time and skills, it is commonly acknowledged that without practice, computer skills decline. Participants who used computers after training were generally able to maintain or improve their skills. The eight month gap between the first and second module of phase 1 training in eNingizimu (rather than two or three weeks), meant that new skills were not entrenched soon after the first training session, as occurred in eMpumalanga (see subsection 8.2.3). It is most likely that this delay contributed to the lower levels of confidence and motivation observed among eNingizimu participants.

In summary, time frames for implementation and measurement of impact were outlined through project design and adjusted to account for the realities of implementation. These time frames affected the measured outcomes in 2010, and arguably also the actual outcomes. However, the *par* process (particularly the nature of relationships established) and the focus on ICT skills and use (the skills and free time to use computers including email and social networking sites if desired) resulted in some evidence of impact beyond the measurement period. Further action research with CLIQ participants at least five years after the final-QLAs would yield much insight into the longer term impacts of both the ICT and process aspects of the intervention. Returning to limitations of the research process, the discussion above also illustrates a clash between institutional rules regarding research funding expenditure and participatory research processes, discussed in subsection 6.2.4 (p147). The research findings would have benefitted from a delay in conducting the final-QLAs, in eNtshonalanga and eNyakatho, as this would have allowed a more comparable time period for computer use (and application of other knowledge), between the last computer training and the final-QLAs.<sup>104</sup>

### 8.5.2 *Multiple Gates and Other Interactions*

Gates to engagement served to either promote or hinder a participant's use of the CLIQ opportunity. Some gates affected all area participants (e.g. no connectivity at eNingizimu for 8 months). Other gates, like social norms, interacted with personal characteristics to affect only women and older participants; or interacted with selected participants based on the resources, such financial resources and livelihood security – the

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<sup>104</sup> Further achievements by participants due to extending the time prior to the final-QLA in the maduzane sites, would most likely have had the additional impact of greater increases in empowerment.

opportunity cost of participating in CLIQ rather than spending time on livelihood activities was higher for those with lower financial resources and less secure livelihoods.

Regarding distance and travel, only those who lived further away were negatively affected. When combining the high financial or time cost of travelling to the telecentre, together with the possibility that the telecentre was not functional at the time (e.g. it was closed, had no power or no connectivity); deciding to travel to the telecentre to search for a job through the internet - instead of engaging in usual livelihood activities - was a high risk option. The perceived risk was heightened if previous attempts to search the internet for jobs had not been successful. For example, NelliF37 (see Box 8-3, p223) was responsible for earning household income, as well as the usual gender roles of caring for children, the ill and the elderly in her home. Nelli decided not to continue with computer training after the first day due to her disposition (linked to self-perception regarding age) and the distance between her homestead and the telecentre. Her less-risky alternative was staying home and weaving mats which she knew would earn her some income, while still being able to monitor her children and ill mother-in-law.

Gates related to social norms and customs generally favoured young men, while they actively served to prevent or frustrate women's ability to harness the CLIQ opportunity. The example of MbonaM22 illustrates how gates interact with the characteristics of a person and their circumstances. The close proximity of Mbona's house to the telecentre, together with his enthusiasm and aptitude for new technologies, meant the gates to CLIQ participation were open for him. The negative impact of finding the telecentre closed was lower for him, because he did not have to spend money or much time and effort to walk to the telecentre. Furthermore, social norms dictated that although he had recently fathered a child, he did not have to spend most of his hours caring for the infant; he only had to pay damages. In contrast, NelliF34's characteristics and circumstances interacted negatively with social norms, personal disposition and the location of the telecentre, to increase the cost and risk associated with telecentre use when she considered how she would interact with the CLIQ opportunity.

Participants continually had to assess the costs and benefits of competing options for the use of their time, money and effort given the particular set of gates they faced and how these interacted with their characteristics and resources. Benefits and drawbacks were

often not clear, meaning that participants made choices based on their level of awareness, experience and beliefs about the likely outcomes of competing options for the use of their scarce resources.

## 8.6 Summary of Gates to Engagement

Initial quantitative analysis of individual development outcomes, indicated that positive QoL change and CLIQ impact was linked to better levels of participation and implementation. However a gendered analysis showed that levels of participation and implementation (which were also project outcomes) were insufficient to explain variation in QoL change and CLIQ impact. Analysis in this chapter shows that the reasons underlying different levels of participation and implementation were also the reasons for variation in individual outcomes. It is also probable that these reasons explain why 49 of the selected 162 participants did not take part in sufficient CLIQ activities for inclusion in the impact sample.

Chapter 8 grouped these reasons within four gates to engagement, namely: social norms; personal disposition and health; telecentre functionality; and opportunity cost with respect to livelihoods and individual resources. These gates to engagement reflect development lessons from the past. Heeks (2005a) and others working on theories to underpin ICT4D point out that ICT use reflects society: “The divides observed are related to age-old demographics of income, education, age, sex and ethnicity” (van Dijk, 2006:230). As noted in subsection 3.1.2, the factors that promote and constrain development effort in other sectors (e.g. health, education), also affect ICT4D.

Problems with the functional operation of telecentres that relate to *things*, like no power supply, a closed telecentre, or dysfunctional computers, are easily identified as hampering computer training and use. The impact of social, political, personal and organisational problems are often more difficult to identify, and interact in a more complex manner, with people and their resources. Gates to engagement can be positive or negative depending on how they interact with the unique characteristics and circumstances of different individuals. Analysis of CLIQ results show that aspects of telecentre (non-) functionality and distance from the telecentre, alongside the need to provide for basic needs and the nature of livelihoods, combine to attach a substantial opportunity cost to telecentre

use, especially when awareness of or belief in the likelihood of computer use leading to increased income, or a better life, is low. Further compounding deterrents include negative effects on self-esteem from uncomfortable social interactions or a sense of failure if computer use does not produce the desired results (linked to personal disposition) and domestic consequences for women who go against local norms by pursuing self-development through learning and using computers.

Multiple gates combine to increase or decrease the costs and benefits associated with different options for the use of scarce personal resources (e.g. time, money, energy). People weigh up perceived costs and benefits to choose which option to act on. This illustrates the importance of information, not only about options and benefits of ICT use, but for a wide range of information (including people's legal and constitutional rights), to enable poorer people to make more informed choices regarding the options they have to improve their QoL. Britz (2004) provides an extensive analysis of information poverty as a serious moral concern and a matter of social justice because people need information to make decisions and solve problems.<sup>105</sup>

The multiple and interactive nature of factors shown to facilitate or hinder efforts to improve QoL, also illustrates how the provision of ICT needs to take account of the context for access and use. ICT provision needs to be relevant to the local economic conditions (e.g. levels of unemployment and common local livelihood strategies); the social and cultural context (e.g. gender norms); and the physical and infrastructural context (e.g. local transport options and topography) in order to tailor ICT provision to ensure equitable access and promote local use of ICTs.

The four gates to engagement include elements of structure and personal agency resources. Gender, age and other social norms (section 8.1) are aspects of structure and fit within Kleine's Formal and Informal Laws, as one for her five sub-elements of structure (Figure 3-7, p65) and section 8.2 argued that mental health and personal disposition both fit within Kleine's psychological resources, while Kleine's health resources refer to physical

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<sup>105</sup> "Information poverty is that situation in which individuals and communities, within a given context, do not have the requisite skills, abilities or material means to obtain efficient access to information, interpret it and apply it appropriately. It is further characterized by a lack of essential information and a poorly developed information infrastructure" (Britz, 2004:194).

health. The issues discussed above under telecentre functionality (section 8.4) relate to all five of Kleine's sub-elements under structure, while section 8.3 on opportunity cost discusses aspects of structure as well as agency resources.

Chapter 9 discusses the fit between Kleine's CF and my analysis of the CLIQ findings from the perspective of participants' individual stories. It considers whether and how the CF could explain the different activities participants engaged in and the various outcomes achieved, by providing a framework through which to view interaction and linkages between gates to engagement; participants' innate characteristics; individually held resources; and the variety of development outcomes achieved across the four areas.

# CHAPTER NINE:

## EMPOWERMENT, CAUSALITY & MODELLING

CLIQ impacts and development outcomes are presented in chapter 7, along with a discussion of the most common non-material impacts, namely: inner empowerment; friends and social networks; ICT skills and use; information, education and knowledge; and community activity and participation. Table 7-8 summarises impact, indicating the main participant-held resources that were affected. From an analysis of participants' experiences Chapter 8 revealed reasons or factors that influenced not only levels of individual participation and area-level implementation, but also accounted for the diversity of individual CLIQ impact and changes in QoL. These factors were grouped into four *gates to engagement*, namely: social norms; personal disposition and health; telecentre functionality; and opportunity cost with respect to individual resources and livelihoods. Interaction between these gates to engagement affected participants differently, depending on their innate personal characteristics (e.g. age) and their set of personal resources (e.g. money). This chapter builds on analysis from chapter 7 and 8 and uses logic modelling to explain how the CLIQ intervention worked, showing an endless array of interactions between participants' innate characteristics; their resources; and factors influencing individual development outcomes.

Inherent in the research goal of CLIQ is the question of causality. Logic models are useful to visually illustrate how the theory of an intervention works, indicating causal paths. With many aspects at play within a complex intervention, causal paths are usually non-linear i.e. recursive, multi-directional, alternate, circular and so on (Rogers, 2008). The chapter starts by giving an overview of the initial logic model which emerged from CLIQ findings.

Drawing on current ICT4D theory, literature on logic modelling (or programme theory) and my analysis of CLIQ's *par* processes in the four research areas, I then illustrate how the variety of individual outcomes and the factors that hindered or promoted participants efforts to improve their QoL, are more accurately explained through applying Kleine's CF

(2010b). The compatibility between the CF and CLIQ findings, demonstrates the validity of the CF because it assists with understanding and analysing a reality that emerged from the CLIQ research, without the design of the research or the initial analysis of raw field data being overtly or consciously influenced by the CF.

The third section of this chapter considers aspects of CLIQ findings that are not fully accounted for within the CF. In this regard I draw again on current ICT4D theory and attempts to link ICT use with development outcomes; broad development theory (particularly Sen's [1999] *Development as Freedom*); and literature presenting findings and theory relating to empowerment, agency and psychology. The third section proceeds to suggest some minor alterations to the CF presenting an adapted version of Kleine's CF, which enhances the model's ability to reflect CLIQ findings, and which I hope may be of use to others.

## 9.1 Framing CLIQ Processes and Findings: the Initial CLIQ Model

Initial stages of causality analysis were frustrating as with each additional participant's information analysed, a different path would emerge linking reasons for QoL change and other impacts with different actions or aspects of project process, revealing alternative combinations of resources and gates that played a role.

With the extensive variety of causal paths underlying different participants' experiences, initial attempts at an analytic flow diagram always ended when the diagram could no longer accommodate yet another set of arrows, showing multi-directional links between most of the outcomes and resources through various actions and processes. I could not figure out how to represent outcomes that were reasons for QoL change for some, but only CLIQ impacts not affecting QoL, for others. With hindsight, this reflects QoL and human development theory that recognises choice with respect to individual definitions of QoL (see Alkire, 2008; Sen, 1999). It also reflects what Sey and Fellow's (2011:191) refer to as the blurry line between end outcomes and impacts with reference to their "Public Access ICT Inputs-to-Impacts Logic Model" (see subsection 3.3.1, p50). Furthermore, as I was placing reasons for QoL change and CLIQ impacts on the diagram, I was challenged as to how to reflect cases where what were outcomes for some, were pre-existing resources for others (e.g. self-confidence or connected cell-phone use skills). Adding gates to project

participation - like gender norms which hindered mainly women and did not negatively affect participation by men - yielded the diagram almost useless. As Rogers (2008:30) points out, attempts to explain the logic inherent in complex programmes “do not involve creating messier logic models with everything connected to everything”. This complexity was a manifestation of the circular nature of empowerment processes and reflects the difficulty that Rowlands also found in differentiating between cause and effect (1997:110). A number of authors note the difficulty in attributing causality, particularly in relation to ICT use (as discussed in section 3.2, p44) and is most succinctly described by Ng’ambi and Brown (2004:38): “No single factor is a necessary and sufficient cause for any other factor”.

Nevertheless, by grouping sets of factors, a useful diagram did emerge (Figure 9-1) that linked sets of environmental aids and inhibitors with participant actions and individual outcomes, illustrating recursive and multi-directional causality, as well as allowing for multiple passes through the model.<sup>106</sup>

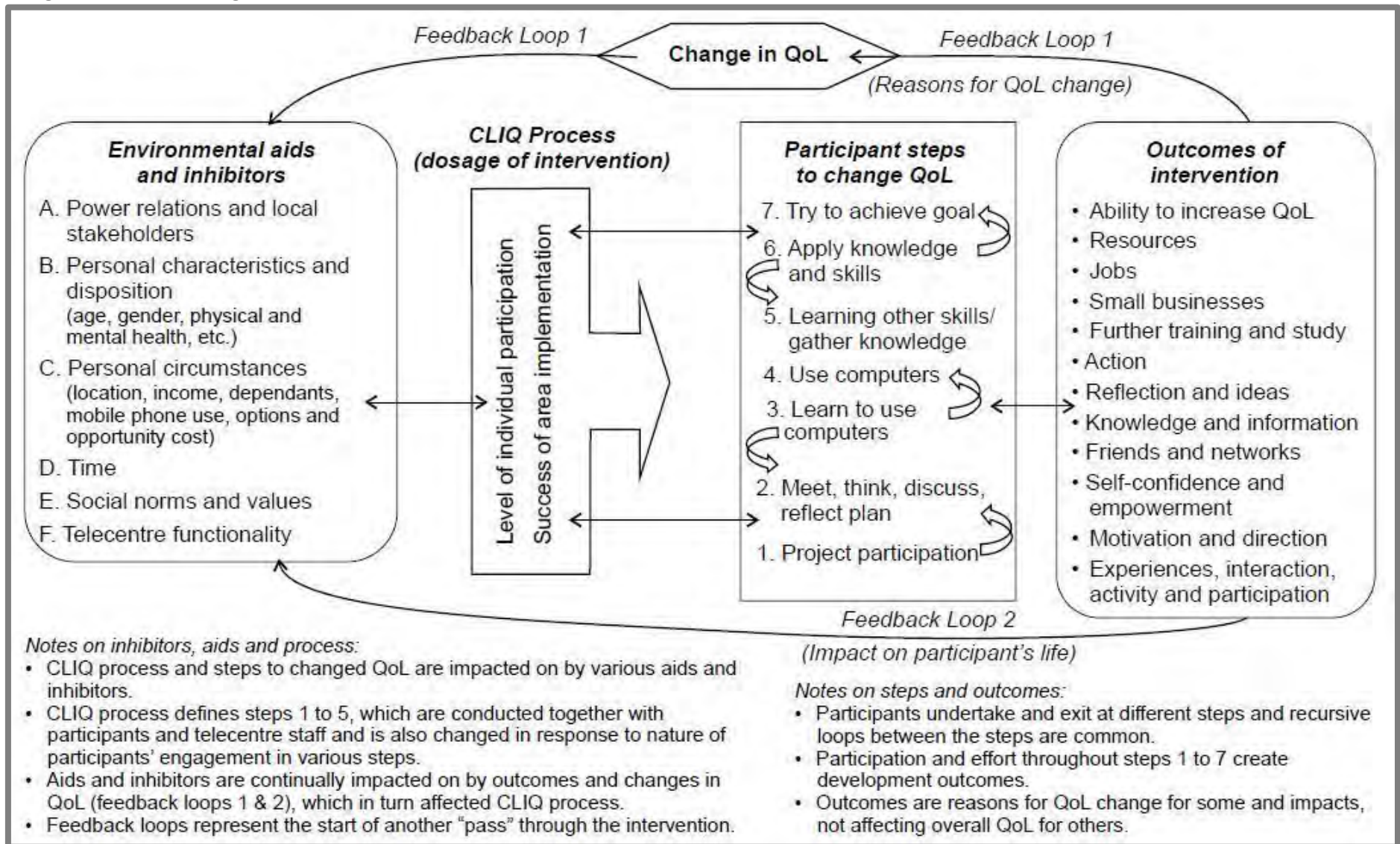
The initial logic model of CLIQ impact (Figure 9-1) illustrates that *environmental aids and inhibitors* influenced the nature of the intervention, which in turn influenced the steps participants undertook. Participants engaged with the intervention through different combinations and sequences of activities, named *participant steps to change QoL*, leading to *outcomes of intervention* (in Figure 9-1).<sup>107</sup> Both *participant steps* and *environmental aids and inhibitors* affected the *CLIQ process* and in turn, the *CLIQ process* altered some environmental factors, illustrating recursive causality. *Outcomes of intervention* represented changed QoL for some (*Feedback Loop 1*) while for others similar outcomes represented an impact on their life but did not change their perceived QoL (*Feedback Loop 2*). For example, attaining a drivers’ licence led to improved QoL for MakhosiF22 and merely starting driving lessons increased SliF30’s QoL, but for N’jabuF23, attaining a drivers licence did not improve her QoL. This supports Sen’s aversion to defining QoL and his frequent reference to ‘what people value and have reason to value’ (see section 4.3, p80).

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<sup>106</sup> The first version of this model was presented at a conference in 2011 (see Attwood *et al.*, 2011:18). Figure 9-1 has been published in Attwood *et al.* (2014:197).

<sup>107</sup> All terms in italics in section 9.1 refer to labels on Figure 9-1, as indicated by the convention noted in subsection 1.4 (p14).

Figure 9-1: Initial logic model of CLIQ impact



Both QoL change (*Feedback Loop 1*) and impact (*Feedback Loop 2*) changed *environmental aids and inhibitors*, for example, by either changing resources (e.g. less free time for participants – *D:Time*), or an aspect of the context of the research (e.g. more telecentre income – *F: Telecentre functionality*).

Figure 9-1 is relevant because it represents the initial analysis of findings prior to the search for a theoretical model. In other words, I was not imposing a pre-existing model or academic concepts such as opportunity structure to analyse the results, but rather the diagram represented my interpretation of the inherent logic in the findings, based on my analysis of field data guided by GT and the principles of *par*.<sup>108</sup> Due to subsequent reading of theory and further analysis, the grouping and labelling of findings has changed over time. Appendix L (p335) links elements of the initial CLIQ model with subheadings in this thesis reflecting current analysis of issues.

## 9.2 CLIQ Findings through the Choice Framework

...[A]ction research is committed to developing an understanding which derives from action and which informs action. To my mind, that understanding is theory at its most useful. (Wildman and Dick, 1998:5)

Kleine's CF centring on degrees of empowerment, was developed in relation to ICTs, although it is applicable to development more widely. The compatibility of the CLIQ findings with Klein's model became evident through a process of exploring whether participants' experiences could be explained through the CF, without reducing, altering or discarding aspects of their stories. Recognising aspects of structure and agency within the CLIQ factors I had grouped under six subheadings within *environmental aids and facilitators*, was critical to my adoption of the CF as appropriate for the analysis of CLIQ results. This was consistent with a personal and methodological view that theories must assist with the understanding of reality, rather than discarding or selecting parts of reality to fit a theory. Kleine's clear separation of agency resources from opportunity structure reflects a general understanding

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<sup>108</sup> This is to the extent possible, given that theories underlie the way we see the world - whether or not we are conscious of them. At the time the initial CLIQ model was created, I had not engaged with literature on empowerment and development models incorporating agency and structure. The diagram emerged due to my long-established preference to think, plan, record, and analyse visually, strongly influenced by my experience with PRA methods like systems and flow diagrams, Venn diagramming, mapping and so on.

of these concepts (see Archer, 2004; Aslop and Heinsohn, 2005; Luttrell and Quiroz, 2009). Dividing *environmental aids and inhibitors* into aspects of structure and resources clarified parts of my analysis and proved to be practical for further analyses of why individuals chose particular courses of action, while still retaining the complexity of individual CLIQ cases. For example, using part of SiyaF53's story {see Box 7-10, p192, p220 and p227}, Box 9-1 below lists the aspects of structure, personal characteristics, and individually-held resources that played a part in her unique development outcomes.

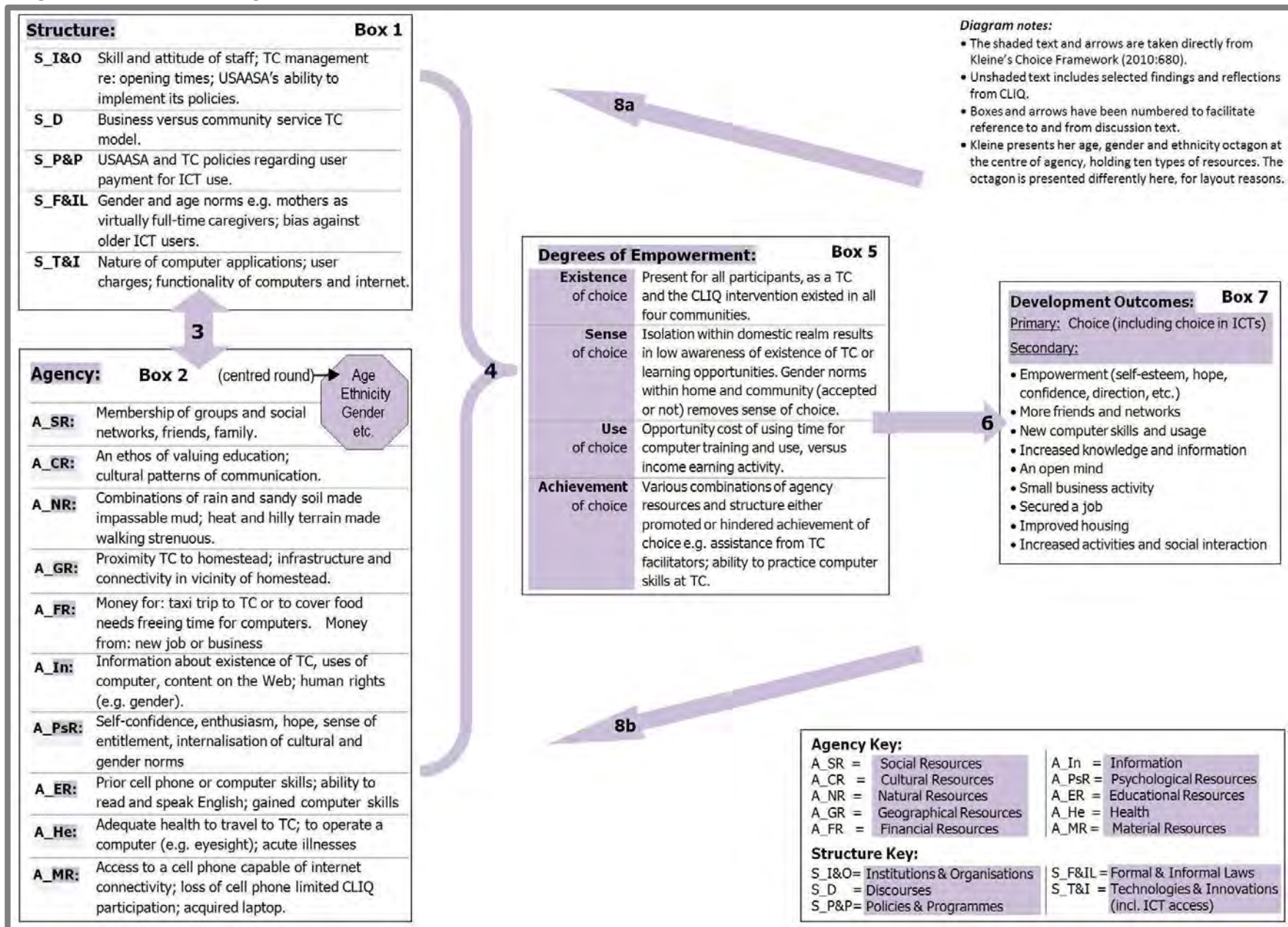
### Box 9-1: Analysis of SiyaF53's experience through CF sub-elements

SiyaF53 was averse to using <u>new technologies</u> ,	(structure: technology & innovation)
partially due to <u>poorer eyesight</u> . However,	(health resources)
having an <u>established income</u> from an existing business	(financial resources)
and <u>clear goals</u> - including setting up a feeding scheme -	(psychological resources)
together with being an <u>older women</u>	(age and gender)
and therefore freer from <u>gender stereotypes</u> ,	(structure: formal & informal laws)
Siya found the process of <u>repeat visits</u> from CLIQ,	(nature of intervention*)
<u>motivated her</u> to reach her goals	(psychological resources)
and assisted her to <u>learn</u> to use her cell-phone.	(educational resources)
Cell-phone use <u>saved time</u> allowing expansion of her activities,	(time*)
including <u>starting a soup kitchen</u> , thus achieving her goal.	(development outcomes)

\*Note: Time and the nature of the intervention are not part of Kleine's CF (2010b:680). They are discussed below in subsections 9.3.4 & 9.3.5.

Figure 9-2 is a copy of Kleine's model, framing her four main elements of *structure*, *agency*, *degrees of empowerment* and *development outcomes* (each with sub-elements). For each sub-element, I have inserted an aspect of CLIQ findings and analysis, drawn from the set of 113 participants' various experiences and different paths to specific development outcomes, as well as my analysis of the process of implementation. In the discussion that follows, I refer to sub-elements within Kleine's CF through abbreviations, which are expanded in Table 9-1.

**Figure 9-2: CLIQ through Kleine’s Choice Framework**



### 9.2.1 Structure

As illustrated in Figure 9-2, Kleine's five aspects of *structure* (shaded text: **box1**) can each be illustrated with examples found through CLIQ (unshaded text: **box1**). For example, the poor capacity of USAASA to effectively implement their procedural guidelines, stipulating that all computer repairs or replacement needed to be facilitated through the national office were examples of poor policy (*S\_P&P*) and an ineffective organisation (*S\_I&O*) - both structural hindrances. Other aspects of TELECENTRE FUNCTIONALITY (Section 8.4) are also examples of structures that either facilitated or hindered CLIQ participation and implementation. The selection of inappropriate software at eMpumalanga, which delayed CLIQ training and otherwise discouraged users by preventing them from accessing a normal user-interface, fits under *S\_T&I*. Low awareness of the potential of computer use to improve QoL was also a structural barrier (*S\_T&I*), found particularly in the two rural communities. eNyakatho's community-service orientation is an example of a facilitating structure (*S\_D*), as opposed to the business model adopted by eNingizimu and eMpumalanga.

The discussion on SOCIAL NORMS, PERCEPTIONS AND EXPERIENCES (section 8.1) provides examples of how informal norms prevented women from participating in CLIQ. Manese's experience (see Figure 8-1, p215) emerges as the most severe example of the negative impact of gender norms, embedded in cultural approaches to issues of family structure, reproduction and the relative rights of family members as determined by a combination of age and gender. This is represented in the CF as *Formal and Informal Laws* (*S\_F&IL*), as well as under *cultural resources* (*A\_CR*). Of the remaining two gates, PERSONAL DISPOSITION AND HEALTH (section 8.2, p222) is represented under *psychological resources* and *health*, while OPPORTUNITY COST (section 8.3, p226) is reflected in Kleine's model through various

**Table 9-1: Abbreviations for sub-elements within the CF**

Abbrev.	Agency Resources
A_CR	Cultural Resources
A_ER	Educational Resources
A_FR	Financial Resources
A_GR	Geographical Resource
A_He	Health
A_In	Information
A_MR	Material Resources
A_NR	Natural Resources
A_PsR	Psychological Resources
A_SR	Social Resources
Abbrev.	Aspects of Structure
S_D	Discourses
S_F&IL	Formal & Informal Laws
S_I&O	Institutions & Organisations
S_P&P	Policies & Programmes
S_T&I	Technologies & Innovations (incl. ICT access)

interactions primarily between a persons' *financial, material, educational and geographical resources*, with respect to choices over time-use.

### 9.2.2 Agency

The CLIQ data also contain examples of how all ten types of *agency* resources (unshaded text: **box2** in Figure 9-2) affected an individual's level of participation and subsequently, their degree of empowerment (**arrow4**) and/or were affected by development outcomes (**arrow8b**).<sup>109</sup> Common resources that emerged as important to foster agency initially, were financial, geographic, psychological, educational, information and health resources.

Section 8.2 (Personal Disposition and Health) brought together a variety of examples of how a person's mental well-being or illness impacted on their ability to make use of the intervention. Aspects of BenjiM19 and NganeM24's stories {p223} suggest that they were both depressed, which could explain their limited participation in CLIQ. Episodes of poor physical health among participants also reduced participation {e.g. NoziphoF26, p222}.

Social norms fit under *formal and informal laws (S\_F&IL)* and the way a person acts in the face of those norms is mostly determined by *psychological resources (A\_PsR)*. A person will have an outlook on life that either mostly conforms to norms {e.g. ShellyF32, p213} - whether aware of, or agreeing with them or not, or resists these norms {e.g. MinenhleF33, p213}. Working against social norms, especially ones as entrenched and pervasive as gender norms requires strength of character, self-esteem, and direction (*A\_PsR*), as well as social resources (*A\_SR*), as illustrated by DuduzileF25's experience {p178}. The different impact that gendered norms regarding childcare had on women {e.g. MilliF19, p213} as opposed to men {e.g. MbonaM22, p239}, is an example of how *structure* interacts (**arrow3** in Figure 9-2) with personal characteristics (represented by Kleine's Octagon of *age, gender, ethnicity, etc.*) to either facilitate or hinder agency. In this example, the combined impact of a person's gender with gender norms (*S\_F&IL*) and their ability to deal with those norms (*A\_PsR*), disempowered women but not men by limiting women's *sense of choice*. Section 8.3 on

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<sup>109</sup> Detailed analysis to distinguish more precisely between a participant's pre-existing resources; resources 'given' by CLIQ at the start of the project; and resources affected by a participant's engagement with CLIQ; is beyond the scope of this thesis.

OPPORTUNITY COST, provides examples of how various combinations of distance (*geographical resource*), lack of *financial resources*, and the need to use time for livelihood activities and unpaid domestic work, prevented participation in CLIQ activities. For some agency resources, effect on participation was either rare or very specific. For example, *natural resources* limited participation in the two rural areas for some participants: in eMpumalanga a combination of sandy soil and heavy rains prevented participants from walking to the telecentre for the first computer training session due to the muddy paths; and in eNtshonalanga, the numerous hills made walking to the telecentre tiring and time-consuming, especially in the heat.

Development outcomes that impacted on participants' resources (**arrow8b** in Figure 9-2) were numerous. Examples of impact on *psychological resources* were expressed as feelings of empowerment, including motivation {e.g. BalungileF24, p179}; increased direction {e.g. Ziphof30, p201} and hope {e.g. KhumbizileF24, p200} from goal-setting; increased motivation or sense of self-worth from repeat visits by the fieldworkers {e.g. SiyaF53, p199}; increased self-esteem from interacting with fieldworkers {e.g. NdodaM20, p179}; increased sense of self-efficacy (e.g. DinahF21, p181); increased belief in own ability {e.g. MlamuliM28, p189}; and increased self-confidence from acquiring new skills {e.g. MunaM25, p188}. In addition to this, an increased sense of solidarity from sharing a similar reality {e.g. NkuluF24, p194} and happiness from being a part of something {e.g. NonhleF24, p194} also improved *psychological resources*.

Some participants acted as intermediaries for community members and/or teachers to other participants who needed assistance with ICT use {e.g. NdodaM20, p189} or used the web and social networking sites for self-expression {BongaM20, p 181}, increasing their social status and networks affecting *social resources*. *Financial resources* were boosted by new jobs {e.g. SallyF24, p237; NonkuF26, p184} and increased business activity due to participants' new use of computers and the internet {e.g. MthembeniM28, p184; Simphof52, p219}. *Geographical resources* were altered by giving participants a reason to go to another social space countering their restrictions on mobility due to gender norms {e.g. DuduzileF25, p178} or creating new opportunities {e.g. Manese, p230}. Having a different activity to go to, also increased social interaction {e.g. MimiF21, p194}.

*Social resources* were boosted by meeting other local participants and fieldworkers during project activities {e.g. BathaF21, p178} and through meeting or communicating with friends online {e.g. NoziphoF26, p180}. *Educational resources* were improved directly through skills training {e.g. KhweziF21, p188}. The pursuit of FET was facilitated by access to information to secure a bursary {e.g. MusaM, p187}; and to secure information for assignments {e.g. NeneF27, p189}. *Information resources* were boosted through internet access to current news {e.g. JabuF20, p186} and information on specific interests {e.g. ShellyF32, p185}; and from face-to-face interaction during methods concerning the local area {e.g. NikiweM34, p185} and non-ICT focussed training inputs by CLIQ on business, jobs and FET {e.g. NonkuF26, p184}. The empowering nature of increased access to information was reflected as the ability to get any information required {e.g. NganeM24, p185} and an open mind {e.g. MbonaM22, p186; KhethaM21, p186}. The variety of different causes and effects illustrates the diversity of life and the multiple-directional interlinked causes and effects.

A set of examples where unique outcomes emerged within a group with similar demographics, is found among women from Mpumalanga aged between 19 and 35 years. Due to resource constraints, four women achieved average participation: N'duduzoF34 {p228} had insufficient financial resources to forgo income-earning activity to participate in training; MpumeF23 had insufficient time and money to travel to the telecentre to practice skills; NgekeF22 moved to Durban to study and so a change in geographical resources meant participation was no longer possible; and NelliF34 {p196} lacked the confidence to continue computer training.

Another four eMpumalanga women achieved good participation, due in part to their use of resources. NkuluF24 {p195} used her psychological resources to overcome jealousy from work mates who hampered her participation in CLIQ; MinenhleF33 {p213} disregarded social norms regarding a woman's place in society and pursued her orphan project aided by computer use; NomaF27 {p192} used the internet through her cell phone to access information to avoid the cost of travelling to the telecentre; and ManeseF20 {p215} made creative use of the costly trip to the telecentre to increase her customer base for her business thereby maintaining her participation in CLIQ (albeit temporarily). Thus, with minimal differences in aspects of structure and personal characteristics, differences in agency resources accounted for most of the variation in cause and effect for these five women. The addition of differences in personal characteristics and aspects of structure sketches the almost infinite variety that an ICT4D model needs to accommodate, and does in the case of the CF.

### 9.2.3 Choice, decisions and actions

The interaction of structure with individual resources directly influenced the nature and implementation of choice (**arrow4** in Figure 9-2). For example, when considering

whether or not to use unscheduled free computer hours, those living within walking distance of the telecentre (*A\_GR*) were less affected by the lack of certainty that telecentres would be open during normal operating hours or whether the internet would be functioning (*S\_T&I*), than those who lived further away. This was due to the negative impact of increased resources (*A\_FR* or *A\_He*) that the latter had to commit (i.e. the time, energy or money required for the trip) in order to check whether the telecentre was open or not (see section 8.3, p226).<sup>110</sup> Kleine's *degrees of empowerment* (shaded text: **box5** in Figure 9-2) represents a participant's process of considering, deciding and acting on choices, based on different perceived options (as influenced consciously or unconsciously by aspects of structure and access to resources). CLIQ results included numerous examples of the different *degrees of empowerment* reached by participants (unshaded text: **box5**) beyond *existence of choice*.<sup>111</sup> However these are more difficult to extract succinctly from the data, because the cognitive and perceptive processes involved in this were not a focus of the fieldwork.

"For any piece of research focused on a technology which is new to the respondents, the dimension of *sense of choice* will play a significant role" (Kleine, 2010b:680). Many participants at eNtshonalanga had never seen a computer prior to CLIQ and were unaware of emailing as a means of communication prior to CLIQ. They had no *sense of choice* (see Figure 9-2) regarding email communication. Others, who were aware of email communication had a *sense of choice* but no *use of choice* because they were unable to access or use a device with email capability. Changes in social factors and circumstance also affected *sense of choice*. MilliF19 {p213} and ManeseF20 {p214} were both aware of the CLIQ opportunity (therefore having *sense of choice*) and decided to participate in CLIQ (exercising *use of choice*). They both made good use of the opportunity (with some *achievement of choice*), but both later stopped attending computer training or using computers at the telecentre on entering motherhood. Their *use of choice* was reversed, when - despite both having family and friends who could care for their child - they decided (or conceded) to operate within community gender norms and end their CLIQ involvement.

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<sup>110</sup> Given the poor satellite connectivity, calling the telecentre facilitator was not an option.

<sup>111</sup> All participants had the 'existence of choice' given that their community had a telecentre and CLIQ facilitated an intervention at their telecentre, selecting them as a participant.

In these two cases, gender norms (*S\_F&IL*) enacted through their social network (*A\_SR*), reversed progression up the *degrees of empowerment*.

#### 9.2.4 Inputs, Outputs, Impacts and Outcomes

The *degrees of empowerment* reached impacted (**arrow6** in Figure 9-2) on the nature and extent of *development outcomes* as identified by participants. For some, taking part in computer training (*use of choice*) and acquiring computing skills (*achievement of choice*) improved their QoL due to new skills and improved self-esteem (unshaded text: **box7**). This represents one pass through the intervention, which for BathaF21 {p188} had a positive impact on her QoL, increasing her *education and psychological resources*. A combination of her personal circumstances and the timing of the CLIQ process meant that she was unable to put these skills to use prior to the final-QLA. For others, like MankeM24, new computer skills (*development outcomes*) boosted his self-esteem and skills, increasing agency (*A\_Ed* and *A\_PsR*), but Manke did not regard this as impacting on his QoL. Manke {p190} went on to use his enhanced resources by typing his CV and applying for jobs (*use of choice*). By getting the job he applied for, he reached his goal (*achievement of choice*). This outcome meant an increase in QoL for Manke and represents a second pass through the model, illustrating the need for models of complex interventions to allow for multiple passes (Rogers, 2008) and reflects the dynamic and cyclical nature of the CF.

The example of Manke also illustrates the compatibility between the CF and Sen's capability theory, which stresses that personal goals define what constitutes improvements in individual well-being. Personal goals set during the initial-QLA were reflected as *development outcomes* (see Figure 9-2) for participants who reached *achievement of choice*. Except for natural resources, CLIQ found examples where all nine resources changed over the two years of fieldwork, or were impacted on by participants' *development outcomes* (**arrow8b**) – representing a feedback loop or recursive causality.

Besides the effect on individual resources, *development outcomes* also influenced *structure* (**arrow8a** in Figure 9-2)). After the first computer training in eMpumalanga (when the telecentre was full of people for most of its opening hours for the first time), the facilitator rearranged the furniture, resulting in a significantly more practical and pleasant social environment (*S\_I&O*). This illustrates the potential for common or collective action to

influence aspects of *structure*. Another example common to eNingizimu and eMpumalanga, was the impact that CLIQ had on the availability of local telecentre facilitators. Computer-proficient participants in 2010 were a resource which telecentre management drew on as telecentre facilitators or assistants. In eNingizimu, SynthiaF21 {p194} volunteered as an assistant facilitator and in eMpumalanga, NdodaM20 {p189} became a paid telecentre facilitator in 2012 and was still in this position in mid 2013. Further to this, the eMpumalanga telecentre also began to offer computer training in recognition of the local need for it, based in part on requests from CLIQ participants for further training and on Ndoda's work as telecentre facilitator.

In the case of eMpumalanga (where CLIQ generated the most enthusiasm) other structural impacts also occurred. Local awareness of the telecentre and of benefits from computer use increased through general social interaction. By illustrating the practical value of telecentre use to neighbours, friends, family and others in the community, NkhuluF24 {p195} and MabasoM23 {p191} were effectively marketing the telecentre. Visible, substantial and material achievements by participants due to CLIQ participation, such as MusaM21's {p187} acquisition of a bursary and MthembeniM28's {p184} business expansion would serve to raise local awareness of the benefits of using computers. SallyF24's {p237} success in getting a job due to computer skills; SonkeF22's {p185} job found via the internet; and S'boF52's {p219} business expansion due to her computer proficiency would also indicate to others that women can acquire computing skills and effectively use computers.

Awareness of the benefits of computer use is critical to encourage new users (Barrantes, 2007), which could increase telecentre use or demand for training. This in turn, should improve telecentre sustainability, thereby improving local access to ICTs (*S\_T&I*). CLIQ participants also facilitated increased demand for telecentre services, by acting as intermediaries for those aware of the telecentre and potential uses {such as the Induna requesting information, p195}, but without the skill to use computers. This intermediary use is regarded by Heeks (2009) as an important interim step towards more widespread use, within communities or groups of people. Examples of participants' actions and development outcomes affecting structure are limited however this is partly due to the limited time allowed between the start of the intervention and the measurement of impact. With time, it is foreseeable that the CF could explain more changes in structure from group activity,

because we worked with a specific group of people and used a specific community organisation and social space. However application of the entire model at group or community level is not readily apparent – a limitation recognised by Kleine (2010b:688).<sup>112</sup>

To assess the application of the CF to a group of people would require further research and conceptualisation of the model based on an understanding of power, empowerment and the various CF elements from a group perspective.

### 9.2.5 *The CF: both holistic and limited*

The myriad of interactions within and between various aspects of agency and structure is endless. The potential for empowerment lies in the unique way, in which the individual actively or unknowingly considers, selects and pursues alternate courses of action, based on their set of resources, under the influence of prevailing structures as reflected by their personal characteristics. This ongoing process of life can be empowering or disempowering, leading to desired, unanticipated and undesired outcomes, illustrating the key feature of emergence in programme theory and complex logic models (Rogers, 2008).

The usefulness of the CF includes its ability to account for the wide variety of links and interactions between personal resources of agency, personal characteristics, and aspects of structure that provide or block opportunity, as well as the multiple causes and unpredictability of human action. The model accommodates the continuous nature of life (also conceivable as continuous cycles of action, results, reflection, and planning) and the multi-directional impact of decisions, activity and outcomes on a person's own resources and on aspects of structure. The holistic nature of the model provides a practical tool to plan, track and evaluate a development intervention (whether ICT-focused or not) because it accounts for most aspects of life, and does not assume away complicating realities or disregard other concurrent activity. This vital aspect though, is also partly a drawback.

Because of its holistic nature, the various sub-elements of the CF are each themselves a field of study - noted by Kleine (2010b:688) as a limitation. For example, social and gender norms (under *formal and informal laws* or *cultural resources*, in Figure 9-2) are studied

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<sup>112</sup> Group and community level impact was also not the focus of CLIQ, although some information on this was attained from group exercises during the final assessment at Mpumalanga. This information is not analysed in this thesis.

within Anthropology; the role of social capital as a resource or element of well-being is studied within Sociology; the relationship between development and health (physical and mental) is studied within Health Sciences, and so on.<sup>113</sup> Kleine recognises that almost everything about development is relevant to the theoretical basis for and practical implementation of the CF: “[T]he Choice Framework aims to be comprehensive in its modelling of the complex relationships between agency, structure, degree of empowerment and outcomes, and this automatically entails a trade-off with the depth of theorisation of each element” (2010b:688). Indeed, this is at the heart of the complexity of development. People experience and engage with life differently in pursuit of personal well-being, amidst the ongoing and sometimes unpredictable influence of aspects of structure and the action of others. This indicates the need for a holistic analysis of the impact of ICT on development outcomes. On a daily basis, people deal with issues of education, racism, social networks, water access, happiness, crime, institutional access, information on opportunities, and so on as they occur in real life - interacting with and impinging on each other. This is the justification for calling for integrated development, moving away from sector-focused projects and calling for sector-related policies to adopt a people-centred perspective when researching, designing and implementing policies. It is also part of the basis for the motivation for PA to development, as people-centred views and experiences reflect the manifestations of interactions between development sectors, levels, policy, theories and practice.

Given the multi-dimensional nature of ICTs, QoL, empowerment and development itself, a simple model does not suffice. Kleine’s CF draws together established and relevant aspects of QoL, participation, ICT4D, empowerment and development theory, following Sen’s “well-known heterodox alternative to orthodox, growth-focused and often economic conceptualizations of development” (Kleine, 2010b:687). The CF (developed through participatory research focussing on ICT4D) proved to be most useful and applicable for the further analysis of CLIQ findings. It helped refine the initial CLIQ model (Figure 9-1, p246) and accounts for virtually all CLIQ findings.

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<sup>113</sup> The relevance of multiple fields of study to the CF is largely the reason the literature review occupying three chapters in this thesis.

While I could leave the discussion of the CF at this point, my analysis has identified some aspects of the model that could be revisited. This is supported by Kleine's recognition that the CF is a living-tool requiring further work (2010b:688).

### 9.3 Additions and Adaptations to the Choice Framework

Based on the analysis of participants' experiences through the CF, five aspects warrant further discussion based on evidence from CLIQ, namely: a] the nature and relevance of psychological resources; b] the delineation of means versus ends with respect outcomes; c] the representation of action and effort; d] the representation of development (or ICT4D) interventions; and e] the elements of time and chance. Amendments suggested with regard to these aspects are illustrated at the end of this section in the Amended CF (see Figure 9-3, p272).

#### 9.3.1 *Psychological Resources within Agency*

Subsection 3.3.8 (p64) argued that Kleine's personal characteristics octagon (see Figure 9-2) are genetically inherited characteristics and section 8.2 (p222) argued why this thesis works from the understanding that mental health falls under Kleine's (2010b:680) *psychological resources*, while *health* as a resource is regarded as physical health. In this subsection I propose that the location of psychological resources in the CF be altered, to reflect its greater significance in influencing agency and empowerment and the different nature of interaction between psychological resources and the other nine resources. Below, I present four arguments to support locating psychological resources as a ring around the personal characteristics octagon.

My first point concerns the source of these resources. Over time, different life experiences shape a person's conception of self and of reality, which manifest in their values, beliefs and personality (Archer, 2004). This is reflected in Rowlands' personal empowerment model (see Figure 2-2, p31) which shows history and past experience as impacting on the core of individuals. While psychological assets are often learnt personality traits i.e. developed over time in response to context; recent research indicates that genetics play a role as well:

[G]enetic influences account for 30-40% of the variance among self-esteem levels in siblings. Non-shared environmental factors... account for the largest portion of the remaining variance... [and furthermore] ...biology appears to bring with it certain predispositions such as energy level, basic temperament, and certain physical, social, and cognitive abilities (or lack of them). (Mruk, 2006:64).

Therefore, the source of mental illnesses (like depression), personality traits (like optimism) and mental abilities (like creativity) can be either genetic (i.e. innate) or contextual (i.e. learnt). For example, a person can be genetically predisposed toward developing depression or depression can result from experiencing a traumatic event or the death of a loved-one. Furthermore, personal effort can reduce depression (e.g. through psychotherapy) or increase psychological skills and resources (e.g. through personal growth workshops or life-coaching). The level of a person's psychological resources is influenced by both innate and contextual or environmental factors, as they interact with the world around them – an outcome of the "...self-world relationship..." where "[b]ehaviour is represented by the hyphen...[in self-world]" (Mruk, 2006:181). Therefore, in the CF, psychological resources could be located partly within the central octagon (representing genetic origins), as well as alongside other resources (for learnt personality traits and abilities from circumstance and effort – or lack of it).

Secondly, the nature of psychological resources means that it directly affects all action and non-action. For example, a mental illness like depression reduces a person's ability to function socially, at work and domestically (Beck and Alford, 2009) – where functioning refers to perceiving options, making choices and behaviour. In recent years there has been greater global recognition of mental health problems (World Health Organisation, 2009). Linkages between mental health and general health have been underestimated (Prince *et al.*, 2007:859) and multi-directional causality between mental health and poorer living conditions (see Prince *et al.*, 2007) has also been established. Izutsu and colleagues (2006:1477) link gender, area-specific mental health difficulties and poorer physical environments, with low QoL. "Addressing young people's mental-health needs is crucial if they are to fulfil their potential and contribute fully to the development of their communities" (Patel, *et al.*, 2007:1302). More generally, mental health has been recognised as affecting progress towards the Millennium Development Goals (Prince *et al.*, 2007:859).

Specific to SA, Chopra and colleagues (2009:1023) discuss health challenges (including mental health) which need to be addressed in order for SA to attain their MDGs.

Furthermore, within the field of psychology, the importance of psychological resources like personal goals and self-efficacy to agency, is noted and regarded as a development phenomenon, critical to QoL (see Bandura, 1989 and Mruk, 2006). The central importance of psychological resources is also reflected in the development work of Rowlands (1997), who placed psychological resources at the core of her empowerment model (see Figure 2-2, p31). Rowlands emphasises inner empowerment (an increase in psychological resources) as most critical to empowerment. There is much similarity between the CLIQ findings and Rowlands' findings. Appendix M (p336) matches selected CLIQ findings to those of Rowlands. Thus, theory and research in the fields of health and psychology (including empowerment but unrelated to ICT4D) asserts a central role for psychological resources with respect to development and human agency.

Thirdly, reflecting the constructivist paradigm's stance on multiple realities, some resources only exist or become visible with a minimal level of psychological health. For example, as a symptom of depression, a negative outlook can result in a person viewing most opportunities as doomed. BenjiM19 who appeared depressed {p223}, learnt to use computers but dismissed ideas to go into business with his sister or even that computer use could assist him with his goals. A person's worldview affects their perceptions, as described by Nussbaum and Sen (1993:5): "...it is difficult to desire what one cannot imagine as a possibility". From a psychological analysis, Mruk refers to meaning-making factors (which include self-esteem, social background, personal identity and sense of agency) where "... each person faces the world and its situations... on the basis of the meanings that the individual brings to them" (Mruk, 2006:181). MbonaM22 {p186} previously thought that computers were not for someone like him, but the realisation that he was capable of using computers opened the path for building his confidence and the use of computers to pursue his life goals.

Rowlands includes *sense of 'self' in wider context* as part of the core of her empowerment model (see Figure 2-2, p31). CLIQ participants who were relatively isolated, but through CLIQ ventured beyond the homestead, met local people who had similar problems or goals to their own. This changed their sense-of-self and provided a source of

solidarity and hope {e.g. MimiF21, p194}. However, to realise this source of solidarity and hope, a participant needed to be able to take the initial step of participating in CLIQ activities. NganeM24's {p222} participation was limited because at times, he did not feel good enough to leave the house. This suggests that a minimum set of positive psychological resources are needed to be able to recognise and use other resources or take up structural opportunities, like CLIQ. This is especially true when such action – like using free computer hours – also involves social interaction. Thus, the third reason for placing psychological resources more centrally within agency is that some positive psychological resources are needed in order to access other personal resources.

Lastly, evidence from CLIQ and common sense suggests that psychological resources interact differently with the other resources, when compared to interactions between the other nine resources. The influence of personality traits, mental abilities, and mental health was evident among the experiences of numerous CLIQ participants, some of which have been reported above. MilliF19's {p213} psychological resources were not strong enough to overcome the imposition of prevailing social and gender norms, resulting in this structural barrier limiting her agency to pursue goals linked to computer training and use. NelliF34 {p196} also did not have the self-confidence to pursue computer training, after an embarrassing incident, but S'boF52 {p219} was able to disregard ridicule from her children due to her age and continued with computer training. SamkeF53 {p219} and SarahF50 {p221} had the confidence to persevere, even though they were 'slower' to learn computing skills. NomaF27 {p192} who lived relatively far from the telecentre, applied her new ICT skills to access the internet on her phone at home, in order to get updated prices for her vegetable business and communicate via email to avoid the monetary cost of travelling to the telecentre. Thus, the ability to think clearly and creatively enables a person to make a plan to compensate for lack of another needed resource and a strong sense of self enabled some participants to overlook negative social interactions. The other respective resources that these women could command, would also have played a part in these differing outcomes, however psychological resources played a pivotal role.

For these reasons, I propose placing psychological resources as a ring around the core of the individual's innate characteristics, as illustrated in the amended CF (see Figure 9-3, p272). By placing psychological resources between personal characteristics and other

resources, it also reflects the dual source of psychological resources (genetic and experiential) and indicates that psychological resources act as a conduit or enabler through which a person perceives, creates, evaluates and decides on options for action and on the use of their other nine resources.

It can be argued that a lack of any other single resource can also be a critical obstacle or enabler to accessing other resources - physical health is a good example here. However, because psychological resources encompass the ability to think, conceive, decide, persevere, withstand and so on, it affects other resources more readily. For instance, a positive outlook can help a person cope with severe illness. Central to my argument to elevate the importance of psychological resources, is that creative thinking, self-confidence and resilience may, for example, be able to circumvent lack of money, distant geographical location, opposing cultural norms, and so on while the reverse is not generally true. Money, material resources or information cannot overcome or compensate for a lack of required psychological resources, because the human mind is the centre of an individual's will and ability to act.<sup>114</sup> The importance of psychological resources to development indicates that the nature of development interventions needs to somehow account for the impact of development activity on psychological well-being or that development interventions need to include an additional focus on inner empowerment, in order to improve the likelihood of success.

### 9.3.2 *Development Outcomes: 'Means' versus 'Ends'*

This subsection draws on Sey and Fellows' model (see Figure 3-1, p54), the initial CLIQ model (see Figure 9-1, p246), and literature recognising QoL, participation, empowerment, and development (individually) as both means to an end, and end-goals in themselves (see subsection 2.2.3, p32); to suggest altering the representation of development outcomes within Kleine's CF. Table 9-2 compares elements within Kleine's CF, Sey and Fellow's model

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<sup>114</sup> While the greater importance of psychological resources over other physical or physically-related resources (finance, natural, material and geographical) is clear, the relative place of the remaining five less tangible resources (social, cultural, and educational resources; health and information), appears to be less clear. Further research is required in order to consider whether there should be further differentiation between the representations of the remaining physical as opposed to human resources.

and the initial CLIQ model. The far right shaded column indicates how each element is represented in the amended CF.

**Table 9-2: Comparison of outcomes and impacts across ICT4D models**

	<b>Kleine's (2010b) CF</b> (Figure 3-7, p65)	<b>Initial CLIQ Model</b> (Figure 9-1, p246)	<b>Sey and Fellows' (2011) ICT4D Model</b> (Figure 3-1, p54)	<b>Amended CF</b> (Figure 9-3, p273)
<b>Row 1</b>	"Degrees of empowerment: existence, sense, use and achievement of choice"	"Participants steps to change QoL" being what they did as part of their CLIQ participation	"Intermediate outcomes" are "people's interactions with ICTs at the venue"	Options, Decisions and Actions
<b>Row 2</b>	"Secondary development outcomes" for e.g. "easier communication, more income, increased knowledge or time saved" result from degrees of empowerment.	"Impact on participant's life" from "outcomes of intervention" including "information and ideas, jobs, motivation, reflection, friends and networks" (regardless of impact on QoL).	"End outcomes" are the "results of people's interactions with ICTs" including "changes in user behavior, skills, knowledge or attitudes", "secure employment" or "build social networks"	Secondary Development Impacts
<b>Row 3</b>	The "Principal development outcome" is presented as "choice (including choice in ICTs)" within the same element as "Secondary development outcomes".	"Impact on QoL" from "outcomes of intervention" as "reasons for QoL change" including the same examples as in the cell above.	"Impacts" being "socio-economic impact as a result of the changes that occur at the end-outcome" are "consequences of outcomes as they relate to development goals" such as "reduction in unemployment" or "people are happier"	(Principal) Development Outcomes/ Improved QoL

*Notes:*

1. Text in inverted commas are quotes taken directly from the respective model or author's supporting text as referenced in the header row.
2. The meaning attached to the terms *impact* and *outcome* differs between the three models and therefore can be confusing.

The elements in the second row are the same across all three existing models. Elements in row three are similar for the CF and initial CLIQ model, viewing development as an increase in choice, where choice reflects self-defined QoL. However, in Sey and Fellow's model, the element in row three differs: *impacts* are collective *end-outcomes* at group or

community level.<sup>115</sup> Despite this difference, a useful contribution from Sey and Fellow's (2011) model is their differentiation between levels or types of outcomes and particularly their recognition of the blurry line between what they classify as impacts and end-outcomes (see subsection 3.3.2, p54). This is exactly the difficulty encountered when analysing the CLIQ findings, where a specific outcome that changed one participant's QoL, represented an impact for another not affecting QoL. This issue is at the heart of the debate over 'means' versus 'ends'. For some participants, getting a job was a means to get enough money in order to pursue starting a small business {e.g. MankeM24, p190}, while for others getting the job was their end goal - the state of being employed (as found with Siphom21).

Furthermore, in addition to the act of using computers representing a principle outcome for some (*Row3*), but only a secondary outcome for others (*Row2* in Table 9-2), it was also neither for a couple of participants who already had some computer skills. For them computer use fitted in row one, representing their action and interaction with ICTs. This suggests that the line between Sey and Fellow's intermediate- and end-outcomes is also blurry. The blurry lines are not a problem: in fact, they add to the flexibility and applicability of logic models. Blurry lines between categories or sub-elements in a model allow for the model to accommodate reality, particularly people's different goals, values and definitions of well-being.

The corresponding adjustment to the CF separating secondary and principal development outcomes is perhaps minor, but it highlights that there are differences in the nature of people's goals reflecting whether goals are means or ends, as well as differences in the nature of outcomes of agency. It also allows for multiple passes through the model to be reflected more easily where a series of successive secondary impacts are required, in order to attain choice in a particular life-domain (or an impact on QoL) as indicated in the initial CLIQ model (Figure 9-1, p272). The clearer separation of Kleine's outcomes in the amended CF (Figure 9-3, p246) reflects the CLIQ findings more accurately, by allowing for a distinction between different types of goals or outcomes, regardless of whether the actual outcome (e.g. getting a job) is the same.

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<sup>115</sup> The element compared in row 1 is dealt with in subsection 9.3.3.

### 9.3.3 Clarifying the Action Component

Table 9-2 (Row1) above refers to Kleine's degrees of empowerment, being the existence, sense, use and achievement of choice. Kleine's presentation of 'what people did' in terms of a series of questions regarding 'choice' is useful because it highlights the process of decision-making that people go through prior to acting (whether consciously or not). By considering the process generating agency, structural factors and resources that influence perception of options and affect decisions and actions, are more easily identified. Most valuable, though is that together, these four degrees of empowerment reflect psychological processes. For example, the perception of attending computer training as an option (even though societal norms indicate that with a young baby, a mother is not supposed to pursue any activity aimed primarily at her own development), relates to *sense of choice*. The confidence to attempt to organise a baby sitter and attend computer training, relates to *use of choice*.

Except for *existence of choice*, these *degrees of empowerment* refer to action (whether mental action, like thinking or deciding, or physical action like talking or doing). This is the focal point of the model, as it is where the different elements come together to be enacted by the individual. A person's ability to perceive options, make decisions and act in pursuit of goals, is highly dependent on their psychological resources. A person will perceive more options with better mental health: they will make better decisions if they are able to reflect on past actions and the actions of others, and they will act with more determination if they are motivated to achieve self-defined goals. The affect of psychological resources on this central CF element (the process of perceiving options, making decisions, and implementing actions) reinforces the argument that the representation of psychological resources in the model should reflect its mediating role with respect to other resources and structure.

Kleine's degrees of empowerment correspond to CLIQ's *participant steps to change QoL* (Figure 9-1), and to Sey and Fellow's *intermediate outcomes* (Figure 3-1) although limited to ICT use for the latter. This element of Kleine's model was difficult to work with. One reason for this, is that the terms are relatively abstract. With the application of these four dimensions of choice to numerous CLIQ examples, I found alternative terms to be more practical. From the initial CLIQ model, engagement in any of the participant steps depended on each participant's perception, choice and action. For example, participants were given

the option to use computers free-of-charge in their free time, but their decision to use computers and their ability to carry out the decision was dependant on their own resources, within their particular context. ManeseF20 (see Figure 8-1, p215) did not have a sense of choice to continue using computers after her parents knew she was pregnant and she did not have the psychological and social resources to change this. My suggested amendment to the CF merely addresses the language used to represent this element, and not the content of the element. In Figure 9-3, I have presented Kleine's *degrees of empowerment* as 'participant options, decisions and actions', as I think these words adequately cover Kleine's intention and in addition, they make the model more usable as the words are more easily understood and applied in practice.

The addition of circular dotted arrows within options, decisions, and actions in Figure 9-3, indicates that a person may take many non-linear steps in this part of the model, depending on initial activities and outcomes. Progression between participant steps to change QoL was not linear (see Figure 9-1, p246) and similarly, movement between degrees of empowerment is also not linear. Using Kleine's terms, a person may sense choice and use their choice, but be unable to achieve it or it may be reversed, due to structural constraints {e.g. MilliF19 and ManeseF20, p254}. In such cases, they may return to their original options and make another choice.

#### 9.3.4 *Representation of the Intervention*

An ICT intervention would logically fall under *Policies and Programmes* – an aspect of structure in Kleine's CF. However, when evaluating a specific project or intervention, particularly when it is not ongoing in nature, it is useful to represent the intervention as a separate element. This differentiates it from other ongoing policies and programmes regarding ICT4D and development in general, and assists with tracing the role that existing policies and programme play, as opposed to the role played by the intervention under evaluation. More importantly though, it illustrates different areas of impact with respect to structure, agency and action.

In the case of CLIQ, the intervention directly affected all three elements of the CF, and in turn, the nature of CLIQ evolved in response to all three over time<sup>116</sup>. In the Figure 9-3, the intervention under focus (represented by the shaded triangle) is shown as overlapping with structure, agency and participant options, decisions and actions. Existing structures influenced the project in numerous ways, most notably the non-functionality of computers and internet connectivity (see sections 6.1, p140 and 8.4, p232). In turn, *structure* was altered through CLIQ's assistance with aspects of telecentre management and computer maintenance – as part of the capacity building objective and by providing the telecentre with (more) users together with (more) income, as payment for this usage. A regular flow of users allowed facilitators to learn new skills in assisting users and generally gain experience with customer relations. Besides contributing to telecentre income, CLIQ's payment for hours used by participants allowed facilitators to gain administrative skills and experience. This is in addition to increased awareness among the local community of the existence of the telecentre and benefits of computer use, which spread through word of mouth {as discussed on p256}.

Different types of participants' resources were directly altered by their participation in the project. For all selected participants, the opportunity for social interaction from the initial CLIQ meeting affected social resources and through the payment of transport allowances, financial resources were affected. Other resources that were directly affected, depended on further individual participation in the QLAs, computer training and computer use. Impact on agency resources is summarised in Table 7-8. It is difficult to accurately distinguish between CLIQ affect on resources that was 'given' and those that were due to 'outcomes of engagement'. On the one end of a continuum of CLIQ affect on resources, are resources that were 'provided' such as travel money and opportunities for social interaction, where all who attended received these. On the other end are resources that were highly dependent on individual engagement with the project (i.e. their agency), such as level of computer skills attained, increased knowledge from searching the web, and more friends from interaction with peers and fieldworkers. The latter depended on the effort they put in.

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<sup>116</sup> This reflects the participatory principle of adapting to the local context and involving key stakeholders in project decisions or at least accounting for stakeholders' expressed needs by adapting the design.

The former depended on selection as a participant, which for some was a matter of chance (discussed further in the section below). In turn, participants' resources affected the project in a few ways. For example, their level of financial and geographical resources led to the addition of a travel allowance (see Table 6-1, p141). The number of hours they could make available for CLIQ work influenced the timing and duration of scheduled group activities.

*Degrees of empowerment* were directly affected by the intervention. Together, increased telecentre functionality (improved *S\_T&I*) and new social opportunities created more options for participants. CLIQ encouraged action, communication and reflection in a number of ways, for example, by requesting participants to define QoL through group interaction; discuss life events during IIDIs; and decide on personal goals. For some who may not usually have been allowed to visit the development centre, CLIQ provided an acceptable reason to leave the house and for those without sufficient money for travel, CLIQ provided travel money. For those wanting to use computers but with no skills, CLIQ provided the opportunity to learn skills, and therefore computer use became a choice that was previously not perceived to be an option.

Once underway, the combined and individual actions of various stakeholders impacted on CLIQ and the process was adapted to accommodate locally unfolding events. For example, participants' low use of email in eNingizimu compared to eMpumalanga, resulted in an additional fieldtrip to find out why usage was low and to encourage participants. This quickly became an email training "refresher" day based on our finding that many participants had forgotten passwords or the process to use email. Participants' decisions and actions (such as use of computer hours or partial attendance at some QLAs) altered project process. CLIQ presented participants with options to take part in a series of activities. CLIQ also created a space where participants had to define their own options in relation to their goals, beliefs and values. For example, participants had to consider and decide if and how they would engage with the opportunity to use 100 hours of free computer time.

Thus the nature of interaction between these three elements and CLIQ was dynamic and multi-directional. Adding 'the intervention' as a separate element to the CF facilitates the applicability of the model for planning (e.g. how a proposed intervention could impact on the local context); to monitor and adapt processes (e.g. identifying and modifying process

elements that do not suit the context); and to analyse and evaluate the intervention (e.g. tracing linkages between project process and outcomes).

### 9.3.5 Time, Luck and Chancy Causation

**Time as a resource:** Kleine (2010b:680) does not include time in her set of resources.<sup>117</sup> Drawing on CLIQ findings and a review of theory, time should be added as the eleventh agency resource within the CF. Costanza and colleagues (2008) list time as one of five resources in their model of QoL (see Figure 2-1, p21). Furthermore, time emerged as one of six environmental factors influencing the nature of the intervention, participants' steps and intervention outcomes, from the initial analysis of CLIQ results using a grounded theory approach (see Figure 9-1). Also supporting the addition of time as a resource, Kleine (2010b:679) refers to *more personal time* as a secondary outcome, which sits alongside *more income* and *easier communication* (see Figure 3-7, p65). The latter two are also represented in her model as financial and social resources. This would suggest that time could similarly be viewed as a resource, as indicated in Figure 9-3 (p272).

**Luck and chancy causation:** Kanbur (2011:2) asks two pertinent questions with respect to equality of opportunity: a) "What happens when one person's effort becomes another person's circumstance?" and, b) "What happens when luck determines difference between opportunity and outcomes?"<sup>118</sup> With regard to luck, Lewis (1986:131) notes that "[s]ometimes we seek information about causes, and we are disappointed to learn that the only information to be had is negative ... in other words nothing causes the one thing to happen rather than the other".

There was evidence suggesting that in a number of cases, chance played a role in the particular path followed by some participants. For example, initial efforts to raise awareness about CLIQ in eNyakatho, indicated that we would struggle to get 36 men and women willing

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<sup>117</sup> Subsequent to the completion of this chapter and the amended Choice Framework, I learned that Kleine (2013:44) had revised her CF to include time as an eleventh resource.

<sup>118</sup> Kanbur's (2011) first question raises an interesting issue that would require much research and analysis, namely, how one person's CF affects another. While parents and caregivers undoubtedly have a great influence on a person's resource development in the early years of their life; the views, decisions and actions of peers and others that a person interacts with, also affect resources and is arguably far more difficult to investigate. This issue sits alongside Kleine's question regarding the applicability of the CF at group level (2010b:688) for further research.

and able to take part. During CLIQ's initial field-day, a group of people attending a dance audition joined the CLIQ group while they were waiting – a number of them indicated interest and were eventually included in the sample. In eMpumalanga, there were 88 people interested, and after selecting those that fitted our criteria, there were still 58 who were eligible. From this set, we randomly selected 6 participants in each occupation and gender sub-category, resulting in 37 selected participants. In both these examples, chance was responsible for inclusion (or exclusion).

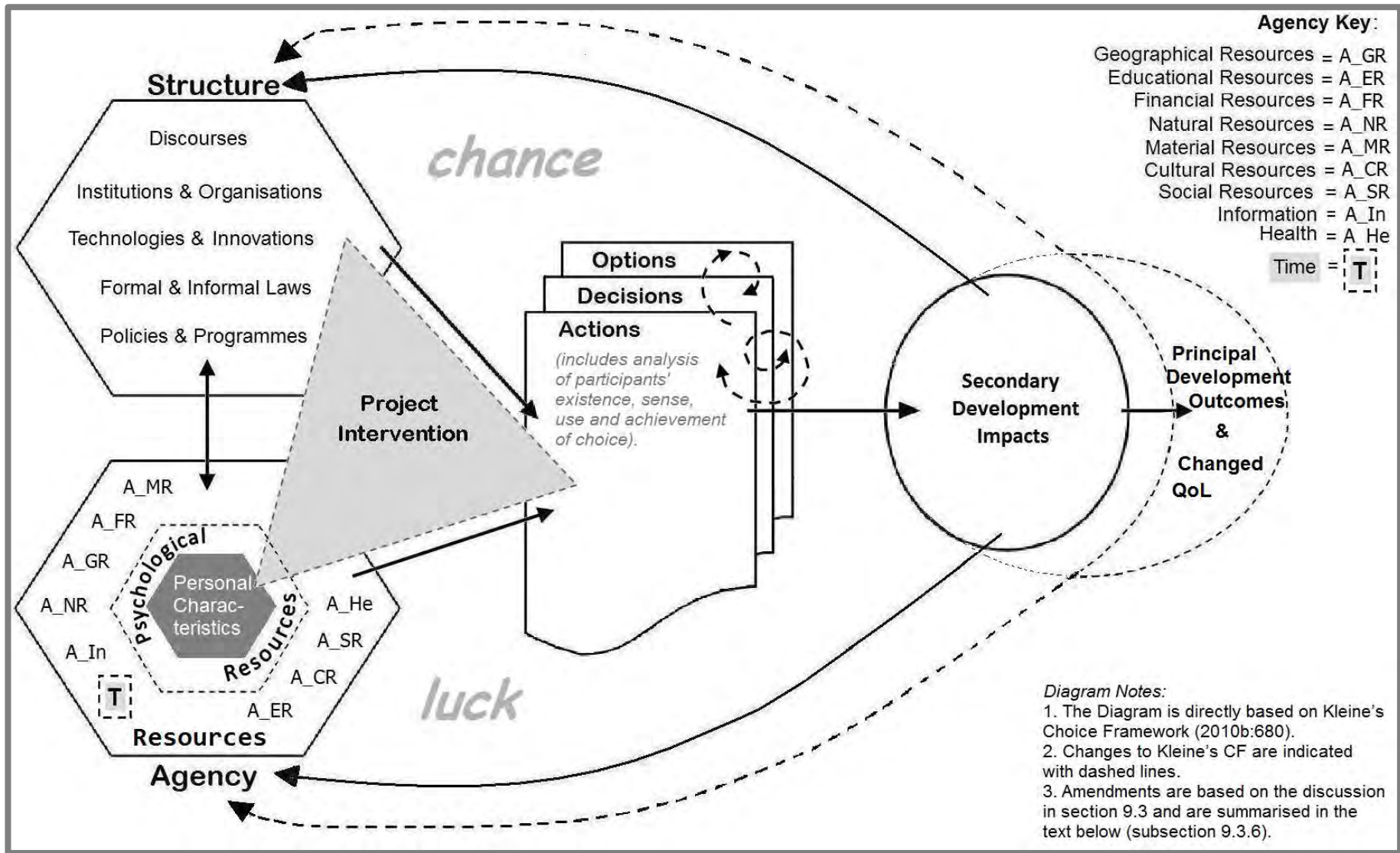
Lewis (1986) argues that chancy causation is a conceptual possibility that must be accommodated by a theory of causation. This is echoed in Kanbur (2011:3): "In an ideal world, inequality in outcomes should reflect only differences in effort and choices individuals make, as well as luck. (Paes de Barros et al, 2009)." Thus, it is important to recognise that chance also plays a role in influencing the process of empowerment. The additional data analysis and literature to be reviewed puts further discussion of chance outside the remit of this thesis. The amended CF merely recognises that chance can play a role in determining the outcomes of agency and empowerment, as it is a characteristic of the background operating environment (see Figure 9-3, p272).

### 9.3.6 *Suggesting an Amended Choice Framework*

Figure 9-3 presents an adapted version of Kleine's CF (2010b) as altered by the issues discussed in the five subsections above. In summary, changes to Kleine's CF (2010b:680) illustrated in Figure 9-3 are as follows:

- a] *Psychological resources* are relocated to form a ring around *Personal Characteristics*. The element of *Personal Characteristics* remains unchanged, although ideally it should include only innate characteristics, like age and sex.
- b] Kleine's *Secondary Development Outcomes* is renamed as *Secondary Development Impacts*. *Principal Development Outcomes/ Changed QoL* indicates choice with respect to self-defined QoL. Both *Changed QoL* (development outcomes) and *Secondary Development Impacts* still form one element of the model, and both affect *Structure* and *Agency*.

**Figure 9-3: An amended Choice Framework**



- c] *Options, Decisions and Actions* is suggested as a term to replace Kleine's Degrees of Empowerment, although it still includes analysis of participant action concerning existence, sense, use and achievement of choice. Multi-directional arrows within *Options, Decisions and Actions* indicate a non-linear process.
- d] An element representing a *project Intervention* can be added, overlapping *Structure, Agency* and *Options, Decisions and Actions* to facilitate planning, monitoring, adapting, analysing and/or evaluating the specific role of the intervention in empowering individuals and the effect of the intervention on aspects of agency and structure.
- e] *Time* is added as an eleventh resource and the model operates in an environment characterised by *luck* and *chance*.

In conclusion to chapter 9, Kleine's CF (2010b:680) builds on Sen's capabilities approach (1999) with respect to choice and addresses Hickey and Mohan's (2005) criticism of participatory methodologies, through the inclusion of agency and structure as central elements in the CF. Her model builds on previous efforts to model empowerment (Aslop and Heinsohn, 2005) and is consistent with theory on human development and QoL (see Alkire, 2002; Costanza *et al.*, 2008), by specifying parameters or broad categories for development outcomes without defining development or QoL. Critically, the CF reflects current ICT4D theory that recognises the impact of social norms, institutional policies, prevailing discourse, etc. on the provision access and use of ICTs, thereby building on past development lessons regarding these aspects of structure. Similarly, the CF reflects theory on QoL (see Costanza *et al.*, 2008) and ICT4D (see Heeks, 2002; Warschauer, 2008) that indicate the need for a range of resources beyond digital skills and equipment, in order to make effective use of ICTs. The CF also builds on insights from Kleine's participatory fieldwork and is consistent with a participatory and holistic approach to development, which has empowerment and self-defined development as central features (see Chambers, 2008; Rahman, 1993) and views ICTs as tools for use. The CF therefore reflects the same sets of theories that are implicit in CLIQ, based on a post-field analysis of implementation.

There are a number of similarities between Kleine's CF and the initial model of the CLIQ intervention, which emerged from an analysis of participants' experiences. However, the existing CF proved more useful for the analysis of the bulk of CLIQ findings. Kleine's CF

can be enhanced to reflect CLIQ findings more accurately by elevating the importance of psychological resources above other resources as an element of agency; by separating impacts from more substantial development outcomes; and by adding a separate element representing the intervention. Changing the term *degrees of empowerment* makes the model easier to understand and more readily reflects action i.e. what people actually do within the project process. The addition of time as an eleventh agency resource and the characteristic of chance within the broader operating environment, results in a model that can account for CLIQ findings more comprehensively.

Kleine's presentation of the CF as a living tool encourages users to adapt it and share their ideas in the common interest, which illustrates Kleine's internal consistency with regard to her participatory approach. It is my hope that these suggestions are debated, tested and refined (or discarded) in the best interest of those who are meant to benefit from the vast development industry.

# CHAPTER TEN:

## REFLECTIONS & CONCLUSION

This thesis considered whether people's engagement in an ICT intervention located within a participatory approach was empowering, and if so, why it was empowering. The project, named CLIQ (Community-based Learning, ICTs and Quality-of-life), was conducted in four areas in the province of KwaZulu-Natal (SA); with assistance from four local organisations (each responsible for running a USAASA-supported telecentre) and USAASA's KZN representative. There were two aspects to the intervention. The provision of basic computer training and subsequent allocation of prepaid time to participants for computer use at their local telecentre, formed one aspect. The second aspect of the intervention was the four participatory action research (*par*) processes conducted in each area, which included group and individual work with selected participants on topics relating to ICTs, QoL and their personal goals. CLIQ had three objectives, namely to assist participants to improve their QoL; to research ICT impact on QoL; and to assist telecentres with capacity building.<sup>119</sup>

This concluding chapter begins by providing an overview of the research and analysis process; followed by a summary of findings on changes to participants' QoL, project impact, and empowerment, which highlights how aspects of the environment (or structure), individual characteristics and resources (or agency) influenced empowerment outcomes. The chapter then illustrates the validity of Kleine's Choice Framework (2010b) as a model of empowerment applicable to ICT (and development) interventions; by showing how the framework accounts for the variety of development outcomes, as well as the different causal paths linking engagement in CLIQ with these development outcomes. The fourth section focuses on inner empowerment and the importance of psychological resources to individual effort in pursuit of life goals and development outcomes; as well as how the ICT and *par*

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<sup>119</sup> This chapter continues to use the abbreviations used throughout the thesis, as detailed on page xiv (with only a few exceptions in this introduction).

aspects of CLIQ resulted in inner empowerment. Based on some CLIQ findings not accounted for by Kleine's CF, the fourth section outlines adaptations to the CF and the chapter concludes with reflections on theories of ICT4D, PAC venue sustainability and PMS.<sup>120</sup>

### 10.1 The process of research and analysis

CLIQ used a generic *par* methodology combining elements of PAR (see Rahman, 1993) and PRA (see Chambers, 2008) and CLIQ's engagement with project participants took place between mid 2008 and late 2011. The process in each area started with an initial field-day in order to select project participants from those showing an interest in learning to use computers. Using participatory visual methods, the initial-QLA that followed, established information about the local area; local use and perception of sources of information and modes of communication; local indicators of QoL and comparative levels of individual QoL; and participants' life goals. After basic computer training (on operating a computer, word processing, email and internet use) some months later, participants began using their free computer hours. The mid-QLA monitored change in QoL and importantly included revision and planning with respect to life goals on an individual basis. The second phase of computer training focused on participants' common life goals, which were getting a job; small business activity; FET; and internet use, including social networking. The final-QLA (about two years after the initial-QLA) revisited local definitions of QoL and established perceived change in QoL on an individual basis, as well as any perceived CLIQ impact. Lengthy IIDIs focussed on how and why participants' lives had changed. Care was taken to identify whether or not reasons for changed QoL were linked to CLIQ, as well as whether or not impact from engaging in CLIQ was also regarded as reason for QoL change. The final part of each area-based process was a community feedback workshop.

CLIQ findings were based on the outputs of group work and individual in-depth interviews with participants conducted during the three QLAs which included a range of participatory visual diagramming research methods. Fieldworkers' observations and reflections on their informal interaction with participants also informed my analysis of

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<sup>120</sup> In this concluding chapter, I do not cross-reference issues discussed in the body of this thesis so as not to disrupt the flow of ideas and understanding.

findings. An analysis of implementation was based on process data (such as quantitative data on individual participation in scheduled CLIQ activities); records of communication with project stakeholders; fieldworkers' reflections and insights on the research process; and my personal experience of and reflection on implementing CLIQ. The nature of capacity building activities undertaken to assist telecentre staff and improve telecentre functionality – which also served to facilitate project implementation – highlighted issues of PAC venue performance and provided a deeper understanding of the context of participants' use of their free computing hours between scheduled CLIQ activities.

From an implementation ranking of the areas, CLIQ was implemented with the greatest success in eMpumalanga (a rural area), followed by eNingizimu (a peri-urban area) and then eNyakatho (an urban area). Rural eNtshonalanga participants experienced the lowest intervention quality. Area-based data on participation in QLAs and computer training produced a participation ranking placing the areas in the same order, linking better participation with better implementation (without directional causality). Overall, good participation was recorded for three fifths of participants, while one fifth missed more than one activity but did attend some computer training (average participation); and the remaining one fifth did not attend any computer training (poor participation). This individual participation variable was used in the quantitative and qualitative analysis of participants' stories of their engagement with CLIQ, along with gender, age and area. The impact sample of 113 participants (with between 20 and 37 participants per area) included those who attended at least two QLAs or at least the final-QLA, resulting in 30% attrition from the selected sample of 162 (which was drawn from the initial group of 227 people wanting to take part in CLIQ).

Challenges to implementation centred on the relative non-functionality of telecentres and common challenges facing the practice of *par*. Over the two years, all telecentres experienced periods when either computers had no connectivity; the computers were not working at all; or the telecentre was closed. Methodological challenges included a conflict between the dual goals of action and of research; the limited time that participants could dedicate to participating in QLAs, training and computer use; the co-ordination of research and training activity across four areas; and the incompatibility of *par* processes with the protocols of formal learning institutions and funders.

Guided by principles of *par*, fieldwork challenges were resolved by balancing the need for quality data for external research analysis, with the need to adapt planned project activity to support participants' agency and allow each area-process to evolve in response to the local context. Where trade-offs were made, these were accounted for during the analysis of affected information and processes. With varying research contexts and evolving *par* processes in each area, direct comparability of findings between sites was difficult. Use of the GT approach ensured that the compilation of participants' diverse experiences reflecting the local context and research process, retained depth of understanding and variation, with categories and issues emerging from the data. Initial analysis of the CLIQ process and findings resulted in three research outputs: a] an analysis of telecentre functionality (Attwood *et al.*, 2010); b] a quantitative analysis of impact and causality (Attwood *et al.*, 2011); and c] a community report (CLIQ-Participants *et al.*, 2011). Based on this work, empowerment (specifically non-material and inner empowerment) was identified as the focus for this thesis, as expressed in my research question:

*When researching the impact of ICT use on QoL, can people be empowered through their engagement with an opportunity for ICT training, access and use, as facilitated through a people-centred participatory approach?*

With a focus on inner empowerment; literature on QoL, development, agency, empowerment, ICT4D, PMs, logic modelling and psychology was consulted. The overt influence of the literature on my analysis of findings was minimised by identifying relevant literature topics after my detailed exploration and analyses of findings from fieldwork. Revision of the above-mentioned papers on functionality (2010) and impact (2011) was based on reading and analysis done for this thesis, resulting in the publication of Attwood *et al.* (2013) and Attwood *et al.* (2014). Another publication on the relationship between the *par* process, empowerment and QoL outcomes (Attwood, 2013) was also based on my work for this thesis.

## 10.2 QoL Change, Impact and Empowerment

Two thirds of CLIQ's impact sample of 113 participants improved their QoL over the fieldwork period, while QoL decreased for 12% and remained unchanged for 22%. Reasons for QoL change and the nature of CLIQ impact were complex and diverse. The most

common reasons for a change in QoL related to changes in access to money, either from changed job status, changes in small business activity or changes in a family members' income. The vast majority of those from a core sample of 92 participants recounted a positive impact from CLIQ. The most common impact from CLIQ engagement was some form of inner empowerment, expressed by participants as self-confidence, hope, direction, motivation, self-esteem, happiness, etc. Other common impacts were more friends and social networks; new computer skills and computer use; and access to information and greater knowledge. Although less common, participants also experienced material CLIQ impacts through changes in their livelihood activities, such as getting a job or a more successful small business. Thus, CLIQ impacts were both material and non-material, some of which directly improved QoL - just over a third of the total sample attributed a positive change in their QoL to some aspect of their engagement with CLIQ.

The literature refers to different types of empowerment and while there is no consensus on definitions or categories of empowerment, Sen's CA (1999) and Rowlands' four types of power (1997) informed many discussions on empowerment (and agency). Also consistent across much of the literature reviewed for this thesis, was reference to agency and structure with regard to development and empowerment. ICT4D, empowerment and QoL literature refer to various forms of empowerment enabled in part through an increase in resources (see for example, Aslop and Heinsohn's [2005] model of empowerment; Costanza *et al.*'s [2008] model of QoL; and Heeks' [2002] Information Chain). The circular nature of the development process is also evident in much of this literature. This is well illustrated when considering that personally-held resources are both inputs for, and outcomes of, individual efforts to improve QoL. Noting this, the focus of this thesis has been on empowerment from non-material development outcomes, specifically inner empowerment. Common non-material resources which increased due to participation in CLIQ on an individual basis were psychological, social and geographical (spatial) resources, as well as education and information (using Kleine's [2010b] categorisation of ten agency resources).

The literature also commonly makes reference to contextual influence (including aspects of structure) on development outcomes and on empowerment. Structure impacts on a person's ability to act and to achieve goals, and affect people differently depending on

their personal characteristics. The most prominent structural aspects that impacted on participants' engagement in CLIQ were social norms, infrastructure and the rules and policies of institutions and organisations (which were jointly reflected through the level of PAC venue functionality). Analysis of individual stories of QoL change and CLIQ impact revealed that different development impacts resulted from specific combinations of personal characteristics (e.g. gender, age) and personal disposition, interacting with aspects of structure and individually held resources. This favoured ICT adoption and use by younger males who lived closer to the telecentre, and hindered the efforts of women (living near or far from the telecentre) to acquire computer skills or sustain effective ICT use. Nevertheless, some younger and older women were able to make use of the CLIQ opportunity to improve their QoL, although this was to a lesser extent than expected given their better levels of participation in CLIQ (when compared to men). Participants' views on ICT use by gender and age, confirmed the presence of a gender and age digital divide in SA.

#### *10.2.1 Development Outcomes and Agency Resources*

Some self-reported outcomes for participants reflected their goals, while for others, outcomes were unexpected. As reflected in Kleine's CF, outcomes represented a change in one or more personally-held resources. CLIQ's initial logic model indicated whether these outcomes were regarded by participants as changing QoL or not. Both aspects of the intervention – ICT training, access and use and the *par* process - led to non-material empowerment, reflected through the range of development outcomes achieved by participants and a range of participants' resources that increased due to these outcomes. Many participants' activities and achievements that led to increased social networks and information, as well as increases in financial, geographical, and educational resources; also led to increased psychological resources (representing inner empowerment).

Social resources were increased through interaction with fellow local participants, CLIQ staff, and with others in the community who were encountered as a result of participating in CLIQ. With new skills to interact over the internet (through emailing and social networking) and increased cell-phone use for some, social resources were also increased through new ICT use. The focus of some visual participatory methods (like mapping the local area or matrix analysis of sources of information) facilitated peer learning, information sharing and

local analysis. Participants gained ICT information from CLIQ staff (such as the range of computer applications and their uses), as well as information related to common goals (like the basic contents required for a business plan). Outside of scheduled CLIQ activities, useful information was also shared informally among participants and fieldworkers (like perceptions of living in Durban). Furthermore, with new ability to use the internet, participants accessed information of interest to them online, whether related to shopping, government databases, FET opportunities, hobbies or world news. CLIQ impacts described by participants as a changed view of the world or an open mind relate to the fostering of a new perspective on life, akin to consciousness-raising – an explicit objective of *par* processes. Participants found that different aspects of CLIQ contributed towards a new worldview. For some, it was the endless array of information topics accessible through the internet or their own analysis of local information through CLIQ methods that provided an expanded view of the world. For others it was the thoughts, feelings, ideas and other intangible results of interactions different people, as well as the effects of reflecting on the concept of QoL and setting their own life goals.

CLIQ specifically targeted computer skills. However the flexible approach to process, topics of discussion and the nature of interaction with participants allowed for the informal sharing of cell-phone use skills and related information as well. Some participants transferred their new connected computer skills to cell-phone use, while others increased their cell-phone use without acquiring any computer skills. Besides the impact on educational resources, the mere acquisition of computing skills led to inner empowerment (e.g. through increased social status or happiness). In addition, the realisation that they had the ability to learn to use a computer, as well as the actual use of computers irrespective of output (and in some cases cell-phones) was another source of inner empowerment for participants. New and increased ICT use also led to increased information and social resources, illustrating the interconnectivity, circularity and multi-directional causality embedded within individual CLIQ stories.

Participants recognised community activity and participation as an indicator of QoL – also found in theory on QoL and human development (see Alkire, 2002; Costanza *et al.*, 2008). Increased community activity and participation as an outcome was closely intertwined with other outcomes (such as more social networking). Participating in CLIQ

gave people something new and different to do; a new place to go to; a new reason to challenge and overcome gender restrictions on mobility and social interaction; a new topic of conversation and unusual experiences. This fostered different aspects of well-being like self-esteem, a sense of belonging, information on community activities, and a new perspective on life or expanded horizons. Resembling what Heeks' refers to as ICT intermediaries (2009), some participants assisted their peers with computer practice or typed documents (e.g. CVs, church agendas and soccer fixture lists) for others in the community. This raised participants' social standing and with that, their self-confidence and sense of purpose.

Furthermore, participants specifically referred to inner empowerment by expressing CLIQ impact on their lives as increased direction in life, more hope, happiness, more confidence, self-esteem and so on. This was a direct recognition of changes in their own psychological resources, although not expressed as such. The ethos and culture of CLIQ reflected in the nature of interaction between CLIQ staff and participants; the flexible process guided by *par* principles; a focus on individual life goals; and the projects goal to support participants to improve their QoL, were vital elements which led to inner empowerment.

### 10.2.2 Context and Structure

In terms of gender, two thirds of the selected and impact samples were women and, two thirds of those with improved QoL were women, which suggests no gender pattern in attrition or in likelihood of improved QoL. Further gender analysis revealed better participation among women than men and quantitative analysis of findings showed better participation and implementation were both associated with an increased likelihood of CLIQ impact and improved QoL. However, increased effort from women (in the form of better participation) did not result in proportionately more women than men improving their QoL. Furthermore, more men from areas with good implementation improved their QoL, compared to men from areas with poorer implementation, but this pattern did not emerge for women. This indicates that differences in levels of participation and implementation were insufficient to explain variance in outcome, when disaggregated by gender. Kanbur (2011) contends that differences in development outcomes should only reflect differences in

effort and luck (chance), in an ideal world. The unique stories of participants revealed that inequality of opportunity due to structural factors in combination with individual resources and personal characteristics influenced outcomes, in addition to variance in effort and chance.

Early analysis of process and outcomes identified a set of environmental aids and inhibitors as influencing levels of project participation and implementation. These factors (which were part of an initial logic model to explain how CLIQ worked) were: a] power relations and local stakeholders; b] personal characteristics and disposition; c] personal circumstances (such as income, location and dependants); d] time; e] social norms and values; and f] telecentre functionality. The application of theory on agency and structure (see Archer, 2004; Samman and Santos, 2009), which is consistent with Sen's CA (1999) and models of empowerment (see Aslop and Heinsohn, 2005; Kleine, 2010b), identified some of these aids and inhibitors as agency resources, and others as aspects of opportunity structure.

The rejection of the technological digital divide marked a recognition within the ICT4D community that contextual and structural issues affecting other areas of development (like access to education, small business development and health-care) apply equally to ICT4D (Heeks, 2002; Pinkett, 2000; van Dijk, 2006). Subsequent revisions to ICT4D theory emphasised that while the effective use of ICTs for human development does require functional equipment and appropriate technology, ICTs were merely tools and there were a number of structural factors, as well as individual resources and skills not specific to ICTs, that were critical for effective ICT use (Snyman, 2007; Warschauer, 2008).

Structural factors in combination with variance in individual characteristics (like age) and participants' unique resource sets either promoted or hindered positive CLIQ outcomes. For example, the prevalence of gender norms regarding household labour and childcare found across the research sites served to restrict, frustrate or prevent women's participation in CLIQ activities, but not men's participation. This reflects formal and informal laws – one of Kleine's five aspects of structure - as influencing development outcomes. Low telecentre functionality was the outcome of problems with equipment, technology and infrastructure; the operation and governance of organisations responsible for the telecentres; the motivation and vision of TC staff; and the policies and programmes of USAASA. Together

these reflect Kleine's remaining four aspects of structure, namely policies and programmes; institutions and organisations; discourses; and technologies and innovations.

### 10.3 Modelling ICT4D: does theory fit reality?

The insufficiency of project-related variables (levels of participation and implementation) to explain QoL change and project impact was to be expected. Relying on two project-related variables to explain outcomes is simplistic and resembles a technological approach to ICT4D – predicting that the mere provision and use of ICT hardware and software will result in pro-poor development. This is because neither the context nor varying levels of skill or access to resources is considered as potential influencing factors. Simple models cannot be used to explain complex situations (Rogers, 2008).

QoL, participation in research activity and development, and ICTs are each recognised as complex and multi-faceted phenomena. This thesis has considered the process and outcomes of a project incorporating these three phenomena domains, analysing the resultant interactions, causality chains and empowerment (itself recognised in the literature as a complex phenomenon). Complexity is reflected in the different *par* processes that unfolded in each area, as well as in the variety of individual outcomes, in which multiple, alternative and sometimes counter-intuitive causal paths to improve QoL can be identified. Similar impacts increased QoL for some but not others, reflecting people's different goals and different definitions of QoL. This is congruent with Sen's aversion to specifying a list of basic human needs, and presenting development rather as freedom, or choice. A theory or model to represent the influence of agency and structure on processes of empowerment and development, therefore needs to accommodate a variety of different outcomes as constituting development (or improved QoL).

Drawing on Aslop and Heinsohn (2005) and Sen (1999), Kleine (2010b) presents choice as the principal development outcome in her CF as a model of empowerment. The CF presents empowerment as resulting from the interaction between aspects of structure and the resources a person has access to (linked to their personal characteristics). Different degrees of empowerment lead on to development outcomes, either secondary (referring to specific outcomes like making new friends), or principal, in the form of choice. A development outcome often has a multiple impact on resources as illustrated for example

by the impact of email communication with a new friend in another city, on a participant's social, psychological and information resources. Development outcomes also affect aspects of structure, representing the cyclical nature of development processes. Klein's CF thus addresses a key criticism of PMs, namely that PM theory and practice does not explicitly recognise the concepts of structure and agency (Hickey and Mohan, 2005).

Development is concerned with the lives of people. Therefore any valid development-related theory must accommodate the continuous cycle of life and the complex and diverse nature of life. As a logic model of a complex system, Klein's CF displays features regarded as indicative of complexity, namely recursive, multi-directional, simultaneous, alternate and inter-active causal chains (Rogers, 2008). CLIQ findings displayed these features. The same goal and subsequent outcome (such as getting a job) represented improved QoL for some, while for others it was merely a means to reach a different outcome due to different perceptions of what constitutes a good life. Furthermore, participants with similar circumstances and demographics realised different outcomes. Similar paths targeting improved QoL were fruitful for some, but diverted or reversed for others due to their unique co-incidence of compounding factors of structure, resources and unexpected events (such as pregnancy). Also, achievements are multi-faceted, such as the example where getting a job had the negative impact of preventing further CLIQ participation but positive impacts on financial resources and social status. The potential increase in social resources from further CLIQ participation was lost, but new friends from the work place resulted in a different increase in social resources. The point at which more friends as an outcome of getting a new job, for example, is converted to increased social resources to support concurrent or future agency endeavours, is not clear. This example reflects the difficulty of establishing or defining the difference between a positive impact on a person's life and improved QoL. Positive outcomes attributed to the CLIQ intervention were only realized for some, after the final evaluation of QoL, illustrating that more action or resources were required for the desired development outcome. This is represented by multiple passes through a model of an intervention and supports the addition of time as an eleventh resource, to Klein's (2010b) set of ten.

Klein's CF accommodates examples of lived reality because it allows for an endless variety of interaction between aspects of each of its four main elements: agency

(encompassing personal characteristics), structure, degrees of empowerment and development outcomes. CLIQ findings on diversity of outcome illustrate alternate paths to similar outcomes; similar paths to alternate outcomes; recursive causality, where a series of causal chains are needed to reach an outcome of choice; and similar outcomes leading to QoL improvement for some but not others (reflecting different personal definitions of a good life). These findings are accommodated in the CF, which visually illustrates the ongoing cycle of agency, empowerment and development outcomes.

The complexity of lived experience does not fit neatly into a hierarchical information structures. Tracing causality within individual participant's stories showed so much variance that no conclusion could be made with respect to common causal chains, for example linking new skills to getting a job. Analysis revealed that outcomes are complex in nature, not fitting easily into static defined categories or following logical or linear paths. Kleine (2010b) presents the CF as a model to be used and adapted and therefore would probably agree with the notion that sub-elements in the CF are not mutually exclusive but rather overlap or have shifting boundaries, similar to what Sey and Fellows (2011) regard as the blurry line between intermediate impacts and end outcomes. Within each of Kleine's four main elements, are sets of factors, each of which can be filled to reflect the context and the nature of the individual. Amidst all the variety and difference, a common finding was how some factors within the CF's four main categories, were present within all individual CLIQ stories

With reference to Kleine's set of ten agency resources, the resources most affected through CLIQ engagement were psychological, social, education, geographical (or spatial) and information. These resources were also important inputs, together with the other remaining resources (namely financial health, natural, cultural and material resources). Some resources rose to prominence during analysis through their absence (such as not having a personal cell phone) while others were more noticeable through their presence (such as information about a new job opportunity).

## 10.4 Enabling Psychological Resources and Inner Empowerment

Rowlands (1997) places core values (described by others as psychological resources) at the centre of her empowerment model and regards inner power as the most important form of power. Participants identified and attributed inner empowerment directly to both the ICT and *par* aspect of CLIQ. An analysis of CLIQ findings illustrates how the methods, topics, process, ethos and mode of interaction of the evolving *par* process, contributed to non-material empowerment and specifically inner empowerment – the most common CLIQ impact.

*Methods* enabled the exploration and learning of new skills in analysis, facilitation and expression. Increased social confidence was visible among participants during the final dissemination workshop, as participants proceeded to organise themselves into small groups to facilitate debate, record and report back on their reactions to the CLIQ findings. Whether recognized or not, participants gained cognitive and process skills from repeating similar techniques and methods over the fieldwork period, such as card sorting to identify common themes which will most likely be of benefit to them in the future. Visual outputs from these methods were a source of pride, such as local maps which revealed local information of value and their ability to represent and analyse information. Some participants gained a greater sense of self-worth when noticing that CLIQ kept, referred back to and eventually returned their goal diagrams. Interest from others in the visual outputs, such as fieldworkers' interest in maps showing local no-go areas, fostered self-confidence. Comparative matrices on sources of information for small business people, for example, resulted in information sharing and ideas of immediate practical value to participants. The visual, interactive production of information and analyses illustrated participants' knowledge and capabilities leading to inner empowerment, by eliciting information they never knew they had or never regarded as valuable.

Goal-setting emerged as the single most empowering *topic* within the *par* process, with many indicating that they gained direction, motivation, happiness, hope or some other form of inner empowerment. Participants were prepared for goal-setting through methods that required them to consider what a good life meant for them and to evaluate relative levels of local well-being. Goal-setting also served to direct the content of computer

training, so that participants could learn applications that would be of practical use to them when pursuing their goals (reflecting theory of ICTs as tools).

The *process* of revisiting the topics concerning what constituted a good life, personal goals, plans and achievements, and relative level of well-being over a period of about two years, served to focus participants' attention on their QoL, thereby supporting their effort to improve their QoL. It also served the external research objective by promoting reflection on QoL definitions, levels and changes, helping to refine participants' thoughts and thereby producing more accurate information. Recognizing the role of fieldworkers as change agents allowed for the sharing of researcher knowledge during the research process as well. The two-way sharing of information eroded some participants' initial perception of fieldworkers as role models or people who were somehow better than they were (fostering self-esteem). The impact of any research activity on its participants (including the researchers) is acknowledged within the constructivist and critical theory paradigms. This allowed a relaxed approach to social interaction between fieldworkers and participants outside of formal *par* methods or training sessions. Without having to maintain a semblance of objectivity or to avoid 'influencing' the data, friendships and trust between CLIQ staff and the participants was promoted.

Meeting face-to-face as a *mode of interaction* promoted mobility and had other empowering spin-offs, such as meeting new people, increased awareness of community activities, and even new customers for small business. Verbal interaction enhanced participants' social skills and reduced isolation and boredom, providing a sense of belonging, happiness, empathy and purpose. Through working in groups, participants discovered their common (and divergent) views, promoting solidarity in some cases, and debate in other cases, where different views promoted further reflection. Individual interviews with fieldworkers also created a private space for personal expression, the sharing of problems and the exploration of options for the way forward. Three successive IIDs facilitated fieldworkers' genuine interest in participants' unique lives, goals and progress. Noticing fieldworkers' interest in their lives boosted the self-esteem of participants.

The *ethos* of CLIQ led to better quality information. Good rapport between CLIQ staff and participants was grounded in a deliberate approach to treat participants with dignity, equality and respect. This was done by considering the potential effect of all aspects of the

research process participants' self-image and on the relationship between fieldworkers and participants. An example of this was CLIQ's provision of a shared lunch for fieldworkers and participants. By voluntarily revealing untruths that they had shared earlier in the process, the quality of CLIQ's information was enhanced. Thus, the methods, topics, process, ethos and mode of interaction of the *par* process contributed to improving the quality of CLIQ data, as well as to enhancing participants' QoL and/ or psychological resources.

Some participants continued to share developments in their lives with fieldworkers and myself, after the last QLA. Continued social interaction between fieldworkers and participants occurred after fieldwork, with examples still visible through social networking sites in 2013 (facilitated by their new ICT skills). This is an indication of the success of adopting a transparent research agenda and of aiming to build trust and support participants to improve their QoL. Relationships were fostered by a flexible process that allowed fieldworkers to listen to and accommodate group and individual requests regarding timing of activities. The attitude and behavior of CLIQ fieldworkers was specifically noted by some participants as empowering.

While this thesis has presented the CLIQ intervention as having two aspects (the *par* process and ICT training, access and use), these aspects are not that easily distinguished from each other. On reflection, I believe that providing ICT training, access and use without the surrounding project ethos, process and focus (notably discussion on QoL and individual time with fieldworkers setting personal goals), would not have yielded the same outcomes currently attributed to the ICT aspect of the CLIQ intervention. Similarly, I believe the process aspect of CLIQ would have been less empowering and less beneficial without the ICT aspect, because of the enhanced self-esteem and confidence that resulted from acquiring ICT skills and the expanded worldview that was opened up to some participants through surfing the internet. Inner empowerment (and conscientisation as an outcome for some), was created through the synergy between the process guided by principles of our common humanity and a focus on ICT skills and use. A similar level of inner and non-material empowerment would probably not have resulted from a combination of a *par* process and for example, the training, access and use of sewing machines, to support efforts to improve well-being.

Analysis of the CLIQ process (alternating between QLAs and ICT-related activities) and non-material outcomes confirms that *par processes* and ICT access and use share a focus on three core components, namely a] information and knowledge; b] communication and social interaction; and c] action and participation. This resonates with N’gambi and Brown’s (2004) reference to education, socialization and communication as being one and the same thing with the potential to liberate thought, as well as with the approaches used by successful internationally-recognized examples of ICT4D through participation, such as ActionAid’s *ReflectICT* (De Vries, 2006). The CLIQ experience of empowering ICT access and use (within a participatory process) as facilitating information, communication and participation validates Vengerfeldt’s (2003) three basic reasons for ICT use, and is the rationale for calling for effective ICT access, not only to access human rights, but a right in itself.

Literature from the fields of mental health, psychology and development asserts that insufficient attention is given to the role of psychological resources with respect to development (Chopra *et al.* 2009; Patel *et al.*, 2007; Prince *et al.*, 2007). Rowlands (1997) regards inner empowerment (an increase in psychological resources) as the most critical type of empowerment; Mruk (2006) notes self-efficacy as most critical to agency; and personal goals are recognised as essential for motivation and achievement (Bandura and Locke, 2003). Evidence from CLIQ indicates the need for a minimum level of psychological resources for an individual to engage their agency (i.e. recognise opportunities, use resources and pursue goals); and increased psychological resources as an outcome of a people-centred approach to an ICT intervention.

While Kleine’s CF accommodated most of CLIQ’s findings in a holistic and practical way, this thesis proposes a few amendments to the model and offers some clarifications on aspects of the model that may be useful to others. This thesis has argued that, for the analysis of agency and empowerment directed at human development through the CF, it is useful to a] regard mental health as part of psychological resources; b] acknowledge the blurry line between Kleine’s psychological resources and personal characteristics; and c] regard psychological resources as a conduit or filter for a person’s access to their other

resources.<sup>121</sup> To enact agency requires a combination of various mental skills, characteristics and abilities in order for people to recognise their resources, perceive opportunities, imagine possibilities, evaluate options, decide on action and implement decisions in pursuit of life goals (as reflected by Kleine's degrees of empowerment). This supports elevating the importance of psychological resources within a model of empowerment as *the* personal resource that recognises, filters, imagines and motivates for the creative use of other resources (as do assertions in the literature about the lack of recognition of the importance of mental health in pursuit of development). I have illustrated this through an amended CF model, wherein psychological resources appear as a ring around personal characteristics, with Kleine's other nine resources, occupying the outer ring of the agency octagon. Time emerged as a resource - where present (and a constraint - where lacking) from initial analyses of CLIQ results. Supported further by Costanza and colleagues' model of QoL (2008) which has time as one of five capitals needed to meet human needs, I argue that time should be added as the eleventh agency resource in the CF.<sup>122</sup>

Another three minor adjustments to the CF may prove useful to some who use it. Firstly, adding a fifth optional element to the CF representing a specific intervention, facilitates the use of the CF to plan, monitor and evaluate the intervention. As an overlay, it does not change any aspect of the model but focuses attention on interaction between the intervention and elements of the model. This addition to the model facilitates analysis of how each the intervention influences structure, agency, empowerment processes and development outcomes, and in turn, how each of these main CF elements influence the intervention. Secondly, renaming 'degrees of empowerment' as *options, decisions and actions* makes the CF more user friendly by using more common language and by clearly indicating the activity centre of the model. Thirdly, among the multiple aspects, compounding elements and diverse factors that influence people's options, decisions and actions, the randomness of life must be added as characterising the wider context within

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<sup>121</sup> This assumes that Kleine's personal characteristics refer to innate characteristics and recognises that the source of psychological resources is both innate and learnt.

<sup>122</sup> Subsequent to the development of my set of adaptations to the CF, I discovered that Kleine (2013:44) has included Time as a resource in her revised CF.

which humans operate. Luck, or chancy causation (Lewis, 1986) sometimes explains part of a development outcome.

Kleine's presentation of the CF as a living tool encourages users to adapt it and share their ideas in the common interest, which illustrates Kleine's internal consistency with regard to her participatory approach. It is my hope that these suggestions are debated, tested and refined (or discarded) in the best interests of those who are meant to benefit from the vast development industry.

### 10.5 Further Reflections on Theory

CLIQ findings support the body of literature which asserts the value of using local definitions of QoL as a basis for external research analysis and as a basis for local action. Furthermore, participants' views on QoL confirmed theories in which indicators of QoL are multi-dimensional, including material and non-material indicators. Notably, social interaction, participation and state-of-mind (psychological resources) were included among participants' descriptive elements of a good life. The diversity of individual definitions of QoL supports Sen's CA, specifically freedom as the ultimate indicator of development and similarly, Kleine's use of choice to account for diverse perceptions of QoL and development outcomes.

Limited evidence of ICT impact on human development despite widespread claims regarding the potential for this (Hamel, 2010), is partly due to the difficulty of establishing causality between ICT access and use, and human development outcomes (Heeks and Molla, 2009; Prado, 2010). Participants' varying goals and opposing assertions regarding which specific outcomes improved QoL and which did not, reflect Sey and Fellows' (2011) blurry line between end outcomes and impacts and provides evidence as to why theorists find it difficult to establish a universal definition of well-being or human development (Alkire, 2002). Initial analysis of participants' stories did not yield any common causal chains. The range of different paths to reach similar outcomes, similar paths leading to different outcomes, reversal of empowerment, and barriers encountered; reinforces the need for models of development, empowerment and QoL to accommodate recursive, alternate, multiple and simultaneous causality, complexity, and diversity (as argued by Rogers, 2008).

### 10.5.1 ICT4D Theory

The CF is consistent with current ICT4D theory. Literature on ICTs asserts the potential for ICTs to be empowering when used as a tool as appropriate to the local context and alongside other needed resources and skills, inclusive of action resources (Heeks, 2002), strategic skills (van Dijk, 2006) and so on. Current ICT4D theory fits the view into reality provided by CLIQ findings. Gurstein's (2007) definition of Community Informatics (as an alternative to or specific approach within ICT4D) captures the political goal of working towards social justice through PMs, recognising the importance of the local context and the range of resources required. CI is therefore a more appropriate umbrella term for CLIQ, than ICT4D, because ICT4D incorporates a wider range of perspectives on and approaches to the use of ICT for development (including an overtly technological approach).

From a review of pro-poor ICT4D theory, I synthesised core aspects of current ICT4D theory. The overriding aspect is that ICT4D policy and practice has (or must have) a moral agenda, where provision, access and use promotes social justice. This necessitates that it takes the local context into account, given that structures in the immediate operating environment impact on all human activity and development action. ICTs can facilitate access to the human need for information, communication and participation. However technical ICT devices are merely tools which can be used to alleviate poverty - or exacerbate it. Access to information regarding the potential benefits of ICT use with respect to people needs will promote pro-poor ICT use, provided that other resources needed for effective use are also accessible. Resources required include skills to use ICT devices, as well as other social, material, cognitive, information-handling and strategic skills. As a tool to address the complex problem of inequality and to promote human development, the multi-faceted nature and process of ICT provision, access and use must be recognised. This is facilitated through the use of logic modelling and participatory approaches to ICT provision, access and use for human development. Given the permeation of the digital era into all aspects of life and that the state has an obligation to provide an environment conducive to a reasonable QoL for all; the state has an obligation to provide universal ICT access which all citizens are effectively able to use. By not doing this, the state increases the poverty of the marginalised. This view is reflected in the increasing call globally for ICT access to be regarded as a basic human right (LaRue, 2011).

### *10.5.2 PAC Venue Sustainability*

Low and varying telecentre functionality was a major obstacle to the effective implementation of CLIQ, the causes of which were the same as reported a decade ago (see Benjamin, 2001), and similar to those found globally (see Roman and Colle, 2002). Provision of technically functional equipment (with supporting infrastructure) remains important, but alone will not address social injustice, empower the marginalised or even merely lead to the poor's access and use of ICTs. This is because the prevailing status quo that keep people poor and without basic services (e.g. discriminatory gender norms) are the same factors that prevent their effective use of ICTs.

The value of having a local physical space where people can meet, work and interact as reported by others (e.g. Prado, 2010) was confirmed through CLIQ findings. Both national government and local organisational policies, programmes and practice need to adopt a developmental approach to ICT4D whereby the technical, social and infrastructural services offered are based on locally-determined needs and furthermore, local participation in telecentres extends to include ownership and other aspects of oversight. While in some contexts, a business model for telecentres has succeeded, this has failed more often than it has succeeded. The definition and measure of telecentre success should match a PAC venue's goals; so as not to incorrectly conclude, for example, on financial failure when the PAC venue's goals were social sustainability.

The context of telecentre use has implications for the practical provision of telecentre services. Details concerning opening times, rules for usage and provision of training should be developed through the strategic participation of local interest groups, to promote widespread and effective use of telecentres. Management according to principles of good governance, together with local accountability are essential to avoid abuse of resources and selective benefit. ICT champions with a developmental consciousness and a participatory approach have proven effective in growing local telecentre use, especially when they have management, administrative and technical skills, as well as motivation and vision. Effective government policies and programmes which define an operating environment conducive to telecentres targeting social justice and digital inclusion, are needed. Government has a role in oversight to ensure effective and equitable use of funds and delivery of services, leaving the operation and management of telecentres to local stakeholders (as reflected in

USAASA's latest planned approach to telecentres (USAASA, 2010). Networking and partnerships also play a positive supporting role, when the respective political, social and financial agendas of various stakeholders aim for transparency.

Bringing together literature on PAC venues and CLIQ findings, aspects of structure with respect to telecentres in South Africa that need attention include:

- a] the prevailing discourse reflected in a telecentre's vision where a business orientation often overrides social development goals;
- b] state policies on access to ICTs and the internet and programmes such as USAASA's provision or support of PAC venues to better target universal access and service;
- c] the rules and norms of usage, such as telecentre operating hours to account the social and infrastructural context of use; and
- d] the management and staffing of telecentres and the governance of associated organisations to promote pro-poor development and stifle corruption.

Any action needs to factor in continual technological evolution and innovation.

### *10.5.3 Empowerment from PMs*

This thesis has concluded that CLIQ's *par* process as implemented had a substantial impact on participants' psychological resources. An analysis of inner empowerment from CLIQ engagement shows how or why the various fundamental aspects of *par* are important to ensure an empowering impact. The well-documented inclusive and empowering effect of working in groups to share and analyse information through visual methods was confirmed. Less well documented are examples of inner empowerment from the pursuit of dual action and research goals, from the behaviour of field staff and from project ethos (as found within CLIQ).

The dual goals of action and research clashed at times during the various area-based processes, but they were also mutually reinforcing. The externally motivated research goal contributed to participants' inner empowerment through the multiple methods to establish local definitions of QoL and reasons for changed QoL which were repeated over the fieldwork period. Similarly, the research objective benefitted from goal-setting and planning, initially included only to focus participant's efforts and to motivate them to

improve their QoL. This illustrates how iteration between planning, action and reflection (the cycle of *par*) was beneficial to CLIQ's action and research goals. As one focus of the research, ICT skills and use provided the mechanism for participants to easily communicate with us on an ongoing basis, also supporting CLIQ's research goal by providing information on QoL progress beyond fieldwork.

Through interaction with peers and CLIQ staff, participants shared and gained information, with many examples of how this information supported their goals. Inner empowerment resulted from participants' reflections on the process of information sharing. Self-esteem was gained from realising they held information of value to others; and self-confidence was gained from their ability to combine and jointly analyse various bits of information and from social and process skills gained. Realising that others shared similar issues and circumstances provided solidarity and envisioning goals provided hope and motivated participants; and so on. From informal interaction with fieldworkers (and from the internet) the boundaries of participants' (and researchers') knowledge expanded, leading to what some termed 'an open mind'. In some cases new perspectives on life included elements of conscientisation.

Through adopting a flexible approach, together with a focus on the lives of participants some gained a sense of self-worth, because we were interested in how they thought about QoL and how they thought they could improve their life. Sufficient rapport and trust was established for participants to be open enough about their realities for us to realize that where we did use external categories to define occupations, these were not appropriate. Numerous comments about their interaction with fieldworkers indicated that participants were motivated, inspired and supported by fieldworkers; and that new and genuine friendships with fieldworkers were of value to them. While not all interaction had a positive impact on participants, the bulk was positive as evidenced through participants' reflections of their CLIQ experience and continued social interaction after CLIQ's final local workshop.

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# APPENDICES

Appendix A: Project Management and Capacity Building Activities .....	310
Appendix B: Participatory Visual Diagramming (Additional Notes) .....	311
Appendix C: QoL, ICT and PAC in SA .....	313
Appendix D: The focus of QLAs and CLIQ Computer Training .....	317
Appendix E: Process Timelines and Differences in Implementation by Area .....	320
Appendix F: Living Resource Guide for TCs and participants .....	324
Appendix G: Learning Contract between Participants and CLIQ .....	325
Appendix H: Similarities between CCIs and CLIQ .....	326
Appendix I: Data Tables .....	327
Appendix J: Changes in QoL and CLIQ impact .....	330
Appendix K: Comparative Indicators of QoL .....	334
Appendix L: Thesis section corresponding to Initial CLIQ Model Labels .....	335
Appendix M: CLIQ Findings through Rowlands' Empowerment Model .....	336

## Appendix A: Project Management and Capacity Building Activities

<p>As project manager, my tasks and responsibilities included:</p> <p>.....</p> <ul style="list-style-type: none"> <li>a] Assisting with the overall design and structure of the research</li> <li>b] Designing topics to be explored during qualitative fieldwork, as well as the participatory visual methods used for each QLA</li> <li>c] Training and re-training fieldworkers to undertake the facilitation of group work and IIDs.</li> <li>d] Conducting IIDs with a couple of participants and telecentre managers and facilitators</li> <li>e] advising computer trainers on the design of the computer training components</li> <li>f] Fieldwork management, including between 4 and 8 field visits per site together with logistical arrangements and finances.</li> <li>g] Extensive communication with telecentre managers to facilitate the research and identifying and pursuing opportunities for capacity building at telecentre level</li> <li>h] Coding of qualitative data using the GT approach</li> <li>i] Content and production of a community report and the dissemination of the results to participants</li> <li>j] Communication with USAASA and DoC regarding their involvement in CLIQ and their potential use of the results</li> <li>k] Co-writing academic papers for publication and presentation at international conferences</li> <li>l] Establishment of a multi-purpose CLIQ website</li> <li>m] General project management and co-ordination of various role-players and assistants to carry out their roles within a changing research process, across four areas.</li> </ul>	<p>CLIQ's main capacity building activities included:</p> <p>.....</p> <ul style="list-style-type: none"> <li>a] Basic trouble shooting and simple maintenance tasks on computers, including removal of unwanted - and installation of needed software.</li> <li>b] Liaising between service providers, USAASA and the telecentre manager regarding nature of specific technical problems with computers.</li> <li>c] Assisting the facilitators to understand basic technical issues and the process of requesting quotes for jobs from commercial service providers and how they could monitor services delivered, given their relative lack of technical knowledge regarding ICT maintenance.</li> <li>d] Assisting facilitators with invoicing CLIQ for participant hours used and associated issues of general communication and administration.</li> <li>e] Providing basic job description for facilitators aimed at bringing more structure and responsibility to the role, while improving the daily running of the telecentre.</li> <li>f] Discussions and email communication with USAASA, telecentre managers and facilitators regarding the payment of stipends to facilitators and other organisational, administrative and management issues that were either raised with me or that I observed as obstructive to general functioning of the telecentres (where appropriate).</li> </ul>
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## Appendix B: Participatory Visual Diagramming (Additional Notes)

Quantitative and qualitative methods from the (post-) positivist paradigm, include anthropological methods such as observation and emersion, and in-depth group and individual discussion associated with qualitative post-positivist research, as well as quantitative questionnaires. Issues regarding the use of for example quantitative questionnaires within *par*, relate to the stage in the *par* process; what lead to and who decided on the need for a questionnaire; who designs the questions; who will use the results; and importantly, what the results will be used for. Benefits of large visual methods in groups, using a variety of low-tech and often movable objects, are that they:

- a] Facilitate local analysis
- a] Allow multiple engagement (verbally, visually, writing or drawing )and accommodates debate
- b] Produce a tangible local product reflective of local environment that can be of other local use
- c] Illustrate to people that drawing maps and creating analysis matrices are within their capacity
- d] Uncover additional information not necessarily linked to the current topic that is useful for different purposes and that facilitate peer learning for general knowledge
- e] Allow those who arrive late or after completion to see what was discussed, without the embarrassment of interrupting proceedings or to have to ask for a participants view of what was discussed.

Much innovation and creativity arises when practitioners experiment with combinations of these to explore new issues in different ways. The list of methods is endless, as new methods are continually being invented, while old ones are adapted or are evolving into new versions.

The sequencing of methods is important. Methods commonly progress from broad, non-contentious simple and general aspects to sensitive, personal, complex and contentious aspects. Initial exploratory investigations often refine or redefine the focus, as groups of people share and analyse their knowledge and as they identify and engage with issues or goals, they increase their understanding of their reality. "Pictures have to be accompanied by sensitive facilitation, keen and patient listening and effective debriefing" (Narendranath, 2007:78). However, diagrammatic information does not include all relevant or useful

information and the careful recording of discussion and debate (as well as process) must accompany visual outputs.

Methods used within participatory research are drawn from a variety of sources, which can yield information and be analysed quantitatively or qualitatively. Hargreaves *et al.* (2004) recounts a process whereby they quantitatively analysed qualitative data from participatory wealth ranking, in order to assign poverty lines based on local perceptions of poverty. The team “successfully identified the number of poor households and described how poor they are” (ibid : 26) – comparable over eight villages - using standardised and replicable participatory, qualitative and quantitative methods in order to identify local project beneficiaries in a way that was locally relevant and accepted. Regardless of the ‘usual’ paradigm under which a method is used (such as quantitative questionnaires within a post-positivist approach), it is the surrounding context and process concerning who defines the questions, who analyses the information, and other questions regarding power relations and agendas, that determines whether a particular method is appropriate for use within a *par* process.

## Appendix C: QoL, ICT and PAC in SA

### Appendix C.1: Race, Gender and QoL in South Africa

SA ranked 121<sup>st</sup> (out of 186 nations) in 2012, according to the Human Development Index, which places SA in the *medium-human-development* group (United Nations Development Programme, 2013:17-19). SA has been labelled as one of the nations with the most inequality between citizens. Much inequality is found across lines of race and sex.

To illustrate one aspect of this, a comparison between 2001 and 2011 data reveals that while the income of female household heads grew faster over this period than that of their male counterparts (see row D, Appendix C-Table 1); in 2011 the annual average household income for male household heads was still almost double that for female household heads (see row C).

**Appendix C-Table 1: Average annual SA household income for household head**

Annual Average Income for Household Head	Population Grouping				Total (Household Head)	Sex	
	'Black/African'	'Coloured'	'Indian/Asian'	'White'		Female	Male
A] 2001 Income in Rands	22 522	51 440	102 606	193 820	48 385	27 864	636 26
B] 2011 Income in Rands	60 613	112 172	251 541	365 134	103 204	67 339	128 329
C] Income as a multiple of lowest groups' income.	(Lowest) 1	1.9	4.1	6.0	–	(Lowest) 1	1.9
D] Ratio of income for 2011:2001	2.7	2.2	2.5	1.9	2.1	2.4	2.0
E] Ratio of income for group: total	0.6	1.1	2.4	3.5	1	0.6	1.2

Source: Author's own calculation based on 2001 and 2011 data from StatsSA (2012:41-42)

Similarly, following the racial categories used by Statistics South Africa, the gap between 'white'-headed households and 'black'-headed households in terms of average annual income has decreased over the 2001 to 2011 period. Row D (Appendix C-Table 1) shows that average annual income rose faster for those in the black/African, coloured and Indian/ asian groups, that those in the white group). Nevertheless, average annual income for 'white'-headed households in 2011 was still six times more than that of 'black'-headed households (see row C, Appendix C-Table 1).

Furthermore, Posel (2012) found inequality in terms of subjective well-being in her analysis of the South African National Income Dynamics Study data from 2008 and 2010: "Whites are not only richer than Africans, but they also report higher levels of life satisfaction" (Posel, 2012:8).

## **Appendix C.2: ICT use in SA**

With respect to ICTs, SA was ranked 91st in 2011, according to the ICT Development Index; and in Africa SA ranks 6<sup>th</sup>, with the Seychelles (ranked 70<sup>th</sup> globally) as the highest ranked African country (ITU, 2012c:21). The percentage of South Africans categorised as individual internet users increased from 5.4% in 2000 to 21% in 2011 (ITU, 2012c:211). The SA Census of 2011, reports that just over a third of South Africans do access the internet (StatsSA, 2012:66), which indicates a rapid recent increase in internet use (even if allowing for possible differences in definitions of internet use between the data sources). Skuse and Cousins (2005:5) refer to the “...stellar expansion...” of the cellular telephone market in SA in the early 2000s and StatsSA (2012:66) confirms the popularity of cell-phones; with internet access through mobile phones noted as the most common form of internet access. In view of ICT growth rates and potential for connecting more and more people to the Internet, the price and affordability of mobile-broadband services is becoming an important issue (ITU, 2012c). SA ranks 98th (ITU, 2012c:76-77) when comparing ICT price baskets across countries; and 7<sup>th</sup> in Africa, with Mauritius (ranked 39<sup>th</sup> globally) as Africa’s highest ranked country.

Following racial and gender patterns of inequality in SA, Snyman (2007:121) notes that the exclusion of the majority of South Africans from the information superhighway as a “glaringly obvious” dichotomy. Lower use among black people and among women is not only due to income inequality, but can also be linked to general patterns discrimination and inequality in SA with respect to service delivery, education, and so on.

South African research on ICT use and infrastructure found positive economic impacts, such as increased employment and income when an area received network coverage (Klonne and Nolen, 2010). Research with poorer urban working women found three distinct uses the mobile internet for first time users, namely job seeking, information search, and for “self-expression and personal networking” (Gitau, *et al.*, 2009:5). Benefits from telecentre use in a less-urbanised area were also found, including building social confidence, an opportunity for self-development, hope, access to current information, increased social interaction, and a sense of pride and inclusion (Gomez *et al.*, 2012b: 12). Skuse and Cousins (2005:11) note how mobile phones have become part of the livelihood, migration and welfare strategies of the rural poor, but also that benefits from ICT opportunities are skewed towards the rural elite. Skuse and Cousins (2005) thus, quite rightly, do not conclude on whether increased ICT use in SA will exacerbate or alleviate inequality.

A good example of the use of participatory research in SA on telecentres is found in the work of Mphahlele and Maepa (2003). They used a mix of methods, including participatory methods, questionnaires, focus group discussions and community meetings, and appeared to embrace the

ethos and principles of PMs. For example, their inclusion of community workshops had goals that supported the identification of real needs by community members; the inclusion of community members in analysis and decision-making based on results of the study; and a culture of partnership (Mphahlele and Maepa, 2003:222-223).

### **Appendix C.3: Public Access Computing in South Africa**

PAC venues include public libraries, telecentres, and cybercafés where people from poorer communities can use computers and the Internet (Gomez *et al.*, 2012a:1), although it mostly only public libraries that offer this service for free (with a time limit on use per person). Noting the initial provision of telecentres in 1990 by the ITU and the ANC's adopted worldview that "...information delivered via ICTs could be an instrument to accelerate development and become a positive force for social change", Snyman (2007:124) traces the government's preference for the telecentre approach back to 1996. The first South African telecentre was established in 1998, and 1999 saw the decision to include telecentres as part of multi-purpose community centres (MPCCs) aiming to "...empower the poorest and most disadvantaged communities with access to government and non-government information and services" (ibid:125). Despite plans to build 100 telecentres a year, only 65 telecentres were in existence by 2000 (ibid), a third of which had both working computers and telephones (Benjamin, 2001:2).<sup>123</sup>

The situation did not seem to improve over the next five years (Snyman, 2007:128), nevertheless the national government's DoC continued to support and administer a reported 154 telecentres and 362 online computer facilities located in schools (USAASA, 2010). USAASA embarked on a three year project to assess and redirect (or handover) telecentres and Snyman (2007:130) concludes with the optimistic view that "[t]he acknowledgment that the USA failed to deliver on its mandate and the fact that the reasons for failure were identified and new role-players with the know-how to change the status quo have been appointed, will hopefully lead to a change for the better" (ibid:130). However, this was not to be. By 2010, the USAASA handover initiative to revise mechanisms for telecentre provision (including the requirement that telecentres develop an acceptable business plan before being handed over to local entities) had failed (Sithole, 2010).

Gomez and colleagues (2012b:8) also refer to USAASA's initiative to handover telecentres for local ownership, and that USAASA had responded with a new planned approach of "... becoming a

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<sup>123</sup> This does not take into account other existing PAC venues which were established by non-governmental, civic or private organisations; phone shops established by telecommunications operators (like Vodacom), or the Public information terminals (PiTs) which were being established at the time, also by the DoC in partnership with the South African Post office (Snyman, 2007).

leader and facilitator of universal service projects rather than an implementer; managing projects ... instead of doing projects; and working with partners as a networked organization as opposed to talking to partners” (ibid:8). Like Snyman (2007), Gomez and colleagues also concluded with hope regarding USAASA’s potential (see Gomez *et al.*, 2012b:15).<sup>124</sup> However, this article does not recognise that this was USAASA’s *second* handover plan.

Evidence from some South African studies and USAASA documentation indicate that implementation of USAASA’s universal service and access mandate (ECA, 2005) has been far from adequate. On the support role played by USAASA, Gomez and colleagues (2012b: 14) conclude that “...the paternalistic view of USAASA as provider of funding, equipment, and troubleshooting prevents the telecentre operators from finding solutions by themselves in order to make their facility work” (Gomez *et al.*). The DoC and USAASA were also plagued by numerous internal organisation and governance problems, which sometimes were made public through newspaper reports such as “*Sentech: The basket case*” (Mail and Guardian, February 12-18, 2010:34) and “*Nyanda and DG at loggerheads...*” (Mail and Guardian, July 16-22, 2010:1). Referring to numerous studies on ICT public access in SA published after 2004 (including CLIQ), Gomez and colleagues (2012b:14) concluded that “[t]elecentres currently have the same difficulties that Benjamin discussed 10 years ago, indicating an underlying problem with the telecentre model”.

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<sup>124</sup> A brief communiqué from the KZN USAASA co-ordinator to CLIQ noted the failure of the (first) handover initiative referred to by Snyman, which was in operation at the time of CLIQ (Sithole, 2010). A key change with the second handover initiative was that they would outsource the restoration of technical functionality to a private company (Personal Communication, USAASA KZN representative, on various occasions in 2010, 2011 and 2012).

## Appendix D: The focus of QLAs and CLIQ Computer Training

Appendix D-Table 1: Topics and Methods for QLAs

Initial-QLA	On Day 1	Method	To explore, establish or reflect on ...
	Group	Time line	A history of the area (and for rapport building between fieldworkers and participants)
		Mapping	Geographical extent of their area or community, showing key features or land marks in the area, as well as the telecentre and their houses (and for rapport building).
		Time-trend	Changes in community over time regarding issues of concern to them, as well as development and ICTs
	Individual	Picture yourself	Visualisation of their current life, and introduction of goal-setting to be done on day 3.
	On Day 2		
	Group	Social circle	Relationship with or types of people communicated with and medium of communication.
		Communication matrix	Likes, dislikes, cost, convenience and common users of different types of communication
		Information matrix	Types and source of information needed in normal course of life, ranking the best source for each type of information.
	On Day 3		
	Group	QoLLine	Their understanding of well-being and ill-being in their area; their description of local well-being groups; and their location on the QoL continuum.
		QoLMobility	Changes in participants' well-being over the two years prior to mid 2008, with reasons.
		Computer use diagram	Exploring what they know about computer components, applications and uses, reflecting on nature of users and informing them about some applications and uses not mentioned.
	Individual	Goal-setting	Exploring their current 'occupation' or activity, its difficulties, as well as communication and information practices regarding occupation; realistic goal-setting and planning for goals (including information and communication needs)

**Appendix D-Table 1: Topics and Methods for QLAs (continued)**

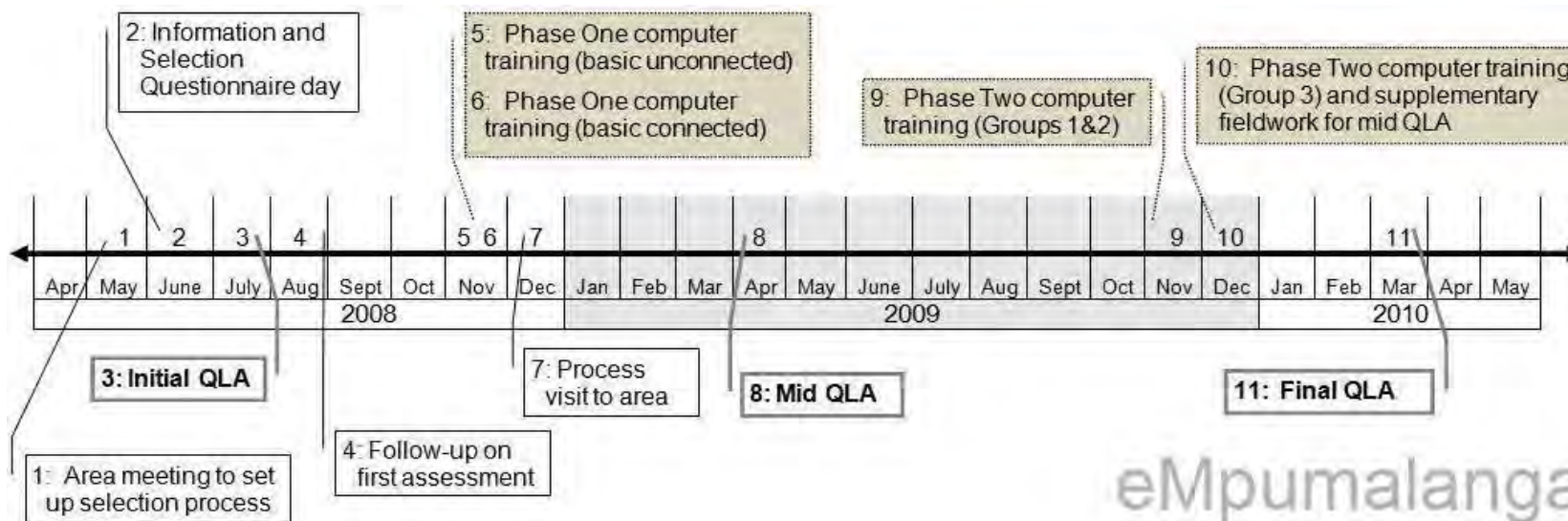
Mid-QLA	On Day 1	Method	To explore, establish or reflect on ...
	Group	Update timeline	
		Reflecting on computer training	participants' comments and reflections from phase 1 training; introducing participants to analysis through card sorting
		QoL-line review	Checking for changes in participants' QoL since 1 <sup>st</sup> QLA, with reasons
	On Day 2		
	Individual	Communication circle	Who they communicate with, how, and regarding what issues
		Information matrix	analyse cost, usefulness and ease of obtaining information that participants' have needed in last 6 – 9 months
		Computer use pie chart	applications that participants used since phase 1 training, noting those used most often and those most enjoyed
	On Day 3		
Individual	Revising goals & actions	understand life changes since 2008, revise life goals, discuss three exercises done on day 2 and discuss training requirements for phase 2 computer training	
Final-QLA	On Day 1	Method	To explore, establish or reflect on ...
	Group	Mapping / or life line review	finding out where participants did not arrive, live and getting updated contact details, so we can find them
		Impact Venn Diagram	evaluate impact of CLIQ at community and group level
		Statements on Continuums	Best and worst of CLIQ: evaluate participants' personal experiences of taking part in CLIQ
	On Days 2 to 5 ...		Individual In-depth interview including visual methods to explore:
	QoL-line		Perceived changes in individual well-being over duration of CLIQ, with reasons
	Individual graph plotting changes in 7 aspects of life		Understanding changes regarding happiness, money, social networks, computer and cell usage, hope, knowledge and activities, over last 2 years
Reflecting on personal goals		Assessing whether CLIQ, computer or cell use impacted on their ability to reach their goals	
Statement sorting		Motivations and challenges to participation in CLIQ: finding out why participation varied throughout the project	
Social views on ICT use		Understanding local views on computer and cell use according to age and gender	
ICT Knowledge Pie		Computer skills and abilities, how these were acquired, and most useful computer applications	

**Appendix D-Table 2: Contents of Computer Training Phases**

Training phases	Issues covered
<i>Phase 1 (Module 1):</i> <b>Computer basics and word processing</b> (over two days, in two three-hour sessions)	<ul style="list-style-type: none"> <li>▪ Introducing participants to computers, learning to use the mouse; operating system basics like saving files and opening documents.</li> <li>▪ Introduction to word processing (Microsoft Word)</li> </ul>
<i>Phase 1 (Module 2):</i> <b>Internet and email</b> (over two days, in two three-hour sessions)	<ul style="list-style-type: none"> <li>▪ Internet: Using the internet; how to find something on the web; exploring the range of information out there;</li> <li>▪ Email: opening a Google Mail email account; accessing email account; sending and receiving emails and attachments by email</li> </ul>
<i>Phase 2:</i> <b>Need-based training</b> (over three days, with six hours of training and practice on each day)	<ul style="list-style-type: none"> <li>▪ Job searching: understanding the job market; how to compile a CV; how to look for jobs on internet; how to apply on line</li> <li>▪ Small business: thinking about local demand and supply for goods and services; producing a business plan; marketing of small businesses; basic costing and business calculations</li> <li>▪ Further study: the range of FET institutions; considering what to study, how to find courses offered and available bursaries; on-line applications</li> <li>▪ General: searching for information on web; use of social networking tools</li> </ul>
<i>Notes:</i> There were usually between 8 and 12 participants per group, with most participants having access to their own computer terminal.	

## Appendix E: Process Timelines and Differences in Implementation by Area

**Appendix E- Figure 1: eMpumalanga Timeline**

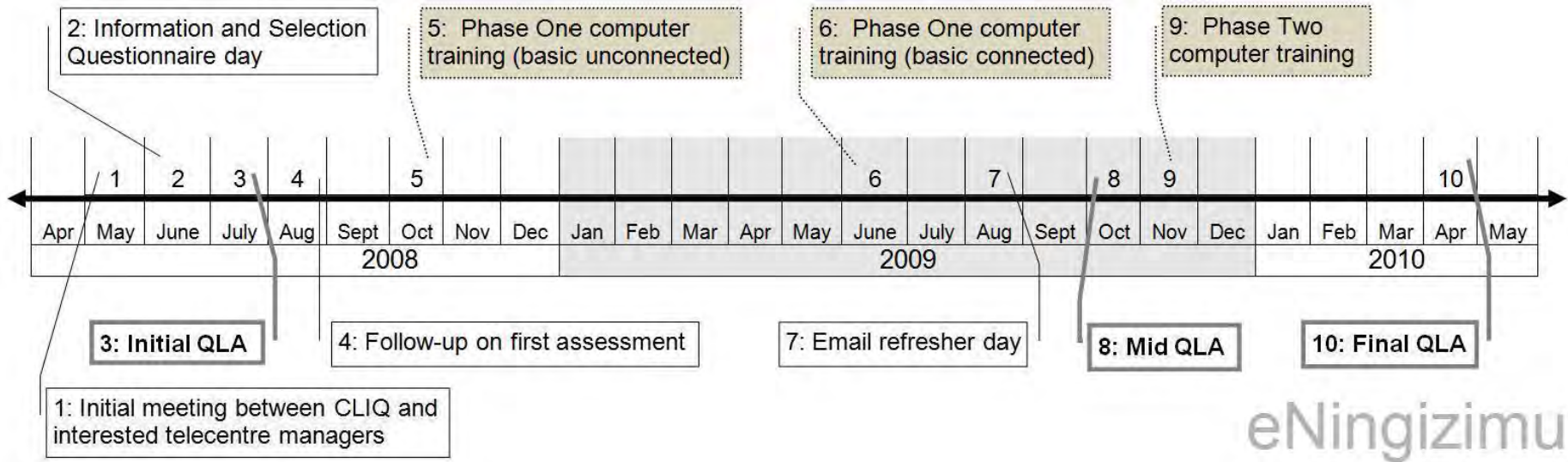


### Appendix E-Note 1: eMpumalanga Process Deviations

At eMpumalanga, there was an initial training delay of a few weeks as the user-interface of all computers in the TC was dominated by Vuvuzela software which did not allow the use of common applications like Google search, MS word, MS control panel and so on. Phase 2 training was also delayed by a few weeks however neither of these delays had any noticeable effect on process. A number of eMpumalanga participants (some of whom were very active and enthusiastic) could not make either of the two phase 2 training sessions. Some participants had also missed the mid-QLA due to temporary work outside the area. On their request, a third phase 2 training session was scheduled some time after the main phase 2 training sessions.

In addition to training provision, CLIQ used the opportunity to conduct mid-QLA research activities that these and some other local participants had missed. During a pilot dissemination workshop at the end of 2010, participants debated the CLIQ findings in groups and generated messages targeting 3 different audiences: a) what government should do or change regarding TC provision; b) how the telecentre can improve its local operation; and c) how CLIQ could be improved if repeated elsewhere. Due to useful insights from participants, this exercise was conducted during the final dissemination workshops in the other 3 areas.

**Appendix E- Figure 2: eNingizimu Timeline**



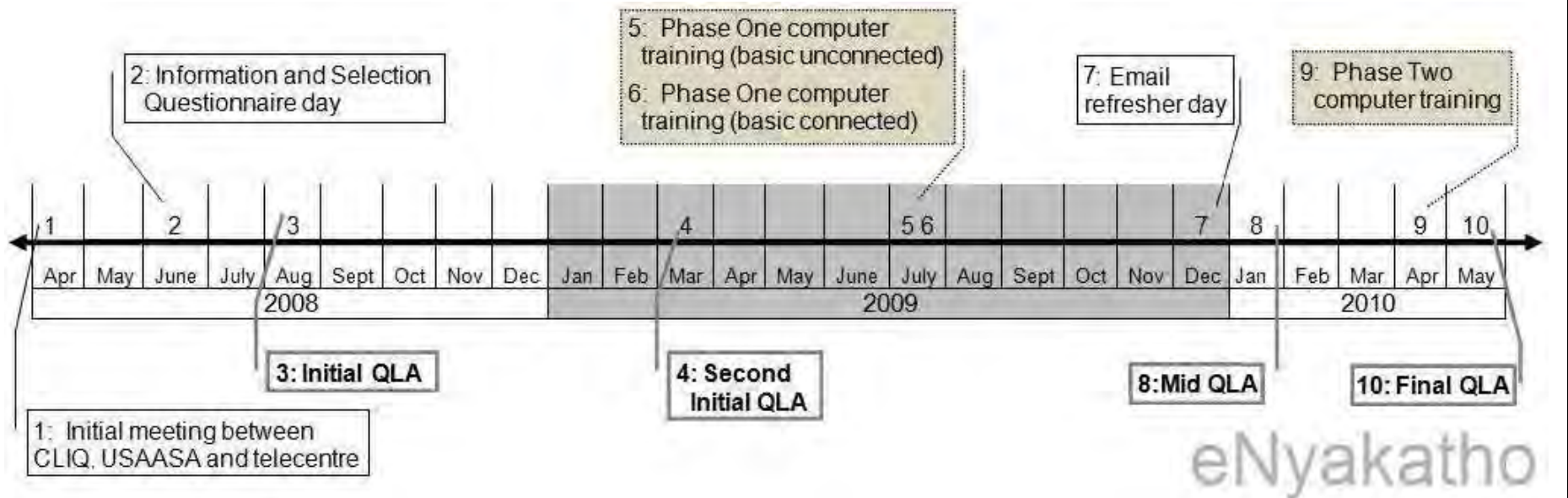
**Appendix E-Note 2: eNingizimu Process Deviations**

In eNingizimu, there was a delay of eight months, between module 1 and module 2 of phase 1 training, caused by a lack of connectivity, which despite attempts by CLIQ to assist, took many months to sort out. This delay resulted in a problem accessing the services of our preferred computer trainer, which extended the delay for another month. eNingizimu participants also experienced the announcement and then delay of computer training during this period. Two months after module 2 of phase 1 was done, CLIQ added an additional “email refresher” day (effectively a one-day booster-training to assist with email and internet use).

This was added because email communication between participants and the CLIQ office was much less than we were experiencing from the eMpumalanga participants. The mid-QLA and phase 2 training however, did subsequently proceed on time. The interruption of phase 1 training led to loss of enthusiasm from some participants and meant that newly acquired off-line computer skills were not entrenched in the weeks immediately after module 1.

eNingizimu

**Appendix E- Figure 3: eNyakatho Timeline**

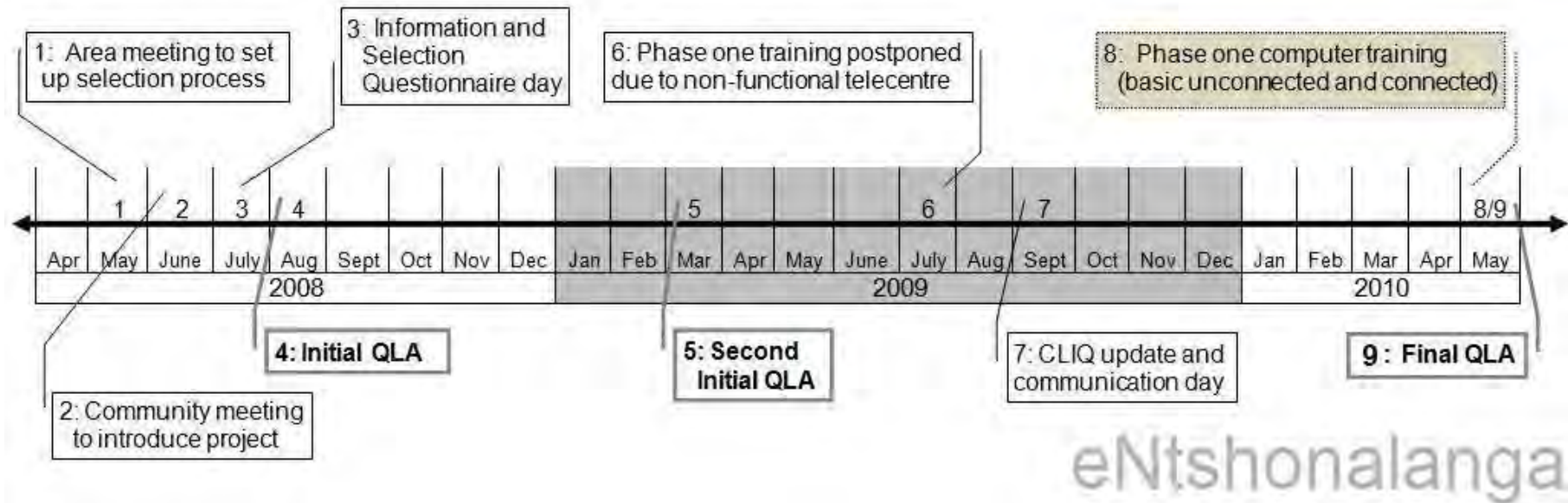


**Appendix E-Note 3: eNyakatho Process Deviations**

In eNyakatho, Phase 1 training was delayed due to problems with accessing CLIQ’s preferred trainer, which was partly a knock-on effect from the delay in eNingizimu. Following success of an email refresher day in eNingizimu, a similar one-day event was added in eNyakatho towards the end of 2009. The aim of this was to assist participants with aspects of email and internet use because we were aware that participants were not encouraged to use their hours at the TC, and generally did not receive assistance from the facilitator. The email refresher was also aimed at motivating participants to stay involved in the project (as attendance at assessments was generally lower in this area and the mid assessment was due to take place in January 2010, immediately after the December break).

Phase two training was delayed because the TC was closed towards the end of 2009, when virtually all computers were damaged by rain. Phase two training was eventually conducted at a UKZN computer laboratory in March 2010. This was done despite an initial decision that all CLIQ training should happen in local TCs in order to implement the intervention in as realistic an environment as possible. The reason for this was that participants’ need for training and our moral obligation to provide the training was deemed more important than controlling for factors that might bias the research results.

**Appendix E- Figure 4: eNtshonalanga Timeline**



**Appendix E-Note 4: eNtshonalanga Process Deviations**

In eNtshonalanga, participants only received phase 1 computer training. This occurred two weeks prior to the final assessment (in May 2010), which was the first time since June 2008 that the TC had functional and connected computers. Participants were not able to make use of their hours to practice their skills or explore using a computer to improve their lives, in the two weeks prior to the final assessment (or during the extended period of computer use granted - until the end of 2010). Despite the TC being functional from May 2010 onwards, participants found that at most times the TC was locked and they couldn't access the computers. Participants also never received phase two training or engaged with fieldworkers during a mid-assessment, thus missing the experience of reflecting on goals and re-planning. After announcing and then cancelling phase 1 training in mid 2009 (due to inaccurate TC functionality claims from the manager), a one-day meeting was held with participants to explain the events behind the cancelled training and what was being done to get their process back on track.

This also allowed participants to physically see the state of the TC and to engage briefly with the manager regarding his role in the turn of events. This opportunity for CLIQ to communicate face-to-face with participants was also used to motivate them, while being transparent about the difficulties facing the project and reaffirming CLIQ's commitment to providing them with computer training. From a research perspective, changes in quality-of-life measured in May 2010 did not reflect the potential impact of individual computer use time because participants had no access to computers and even if they did, the time during which to explore or implement any actions between the training and the final assessment) was negligible. Thus project impact that could be measured was limited to the impact of taking part in the recent training and the assessments, and the affect of the overall process.

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## Appendix F: Living Resource Guide for TCs and participants

The Living Resource Guide that CLIQ created for use by TC facilitators, participants and others who showed an interest, contained information related to the topics listed below. Effort was made to provide information that would be of use to participants based on my understanding of their needs and goals over the two years of fieldwork. CLIQ left printed copies and an electronic copy with TC facilitators after mentioning the Resource Guide during the final dissemination workshops. TC facilitators were encouraged to edit and update the guide based on aspects that users found useful and to add to it, based on common requests for information and advice that they received.

- Human rights
- Children's rights
- Getting a plot of land
- Business plan outline
- CV template and guidelines
- Application letter for job
- Job searching websites
- Newspaper websites
- Creating a gmail account
- Using your gmail account
- What I can expect from my local government (citizen rights)
- National Help lines: Child-line; Zuma's Hotline; Crimestop; Domestic violence; Police; Ambulance; Water; Electricity; ID/ Home Affairs
- Colleges and other tertiary institutions (lists and websites)
- Bursary opportunities (lists and websites)
- Pointers on using the internet and dangers of providing personal details
- Basic notes on using word
- Basic notes on using excel

## Appendix G: Learning Contract between Participants and CLIQ

<p><b>Background and Objectives:</b></p> <p>CLIQ is a research project. We want to find out if computers can improve people's life if they get training that is based on their information and communication needs. We also want to try to improve the lives of the participants while we are doing this research. To do this we will find out what information and communication you need to help you. We will train you to use a computer and we will give you 100 hours of free computer time after the training.</p> <p>For your life to improve, we need effort from you. We need to include people on Project CLIQ ...</p> <ul style="list-style-type: none"> <li>• who want to take part in the study;</li> <li>• who think that it can benefit them; and</li> <li>• who can commit themselves to all the activities.</li> </ul>	<p><b>What CLIQ will do...</b></p> <ul style="list-style-type: none"> <li>• Train you through a specially designed training course based on your expressed needs</li> <li>• Provide you with at least 100 hours of free time on the computer, including internet and email time, at your local telecentre</li> <li>• provide you with R15 a day for the logistical costs you incur (such as transport, etc) on training days and fieldwork days, not on computer use days after the training</li> <li>• provide a child minder at the telecentre for children 6 years and under for those who usually have their young children with them</li> <li>• provide you with a simple lunch on fieldwork days</li> <li>• keep confidential any information that you wish to be kept confidential, in that your name will not be attached to it.</li> <li>• respect your right to withdraw from the project if it becomes dangerous or detrimental to you in any way, providing that we can use the information you have given us to date, and hoping that you'll share your reasons for withdrawing.</li> <li>• design an ICT training programme that matches your expressed needs as closely as possible, taking other participants' needs into consideration.</li> <li>• attempting to schedule fieldwork and training at times most suitable to the group of participants</li> </ul>
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**What CLIQ needs from Participants...**

**Can you.....?**

1. Take part in group work and individual work with fieldworkers. This work will take about 3 days in June or July, followed by about 1 day in September, about 3 days in March 2009 and another 5 days in September 2009.	Yes/ No/ Not sure
2. Share information about your understanding of wealth and poverty in your area and your own wealth status, as well as your information and communication needs	Yes/ No/ Not sure
3. Set personal goals to improve your quality of life	Yes/ No/ Not sure
4. Attend and complete a computer training programme (which will be scheduled to suit local timetables and should take 2.5hrs once a week for 8 weeks)	Yes/ No/ Not sure
5. Try to apply what you have learnt in the training to improve your own quality of life, by using the free computer time given to you by CLIQ	Yes/ No/ Not sure
6. Share information with fieldworkers about your progress and evaluate whether the ICTs are improving your quality of life	Yes/ No/ Not sure

**Please consider** whether or not you can make a commitment to CLIQ. If you do not want to take part in this study, please tell us by Friday 15 August at the latest. On Friday we will ask you to sign this learning contract which means that you want to take part in CLIQ and will try your best to attend all of our activities. If you cannot take part fully or are not interested, please let us know so that we can offer your place to someone else, as there is a waiting list.

Preferred Contact Number:		
Alternate Contact Number:		
Occupation	Activist / Self Employed / Unemployed Youth	
Name of Participant:		Gender: Female / Male
Date:		SIGN:
Project Manager:	Heidi Attwood	SIGN:

## Appendix H: Similarities between CCIs and CLIQ

Features of CCIs that make them difficult to evaluate (Kubisch <i>et al.</i> , 1995:3-5)	Similarity within CLIQ to Complex Community Initiatives (CCI) feature
<b>Horizontal complexity:</b> This refers to the range of systems and sectors that the initiative engages with, such as housing, social support, education, economic activity and so on.	At an individual level, the CLIQ opportunity aimed to allow participants to focus on any aspect of their lives which they wished to improve, as expressed through participants' different goals and the emerging reasons for QoL change.
<b>Vertical complexity:</b> There is a relative lack of understanding of if and how changes at a family or community level translate into changes for individuals in the family or community. The issues of interest regarding vertical complexity are "understanding the specific pathways through which community-level variables affect individuals" and "how improvements in individual and family conditions affect the wider community" (ibid:4).	Opportunities at community level don't necessarily have a similar affect on all individuals, and similar changes at an individual level can have different effects at a family or community level.
<b>Contextual issues:</b> Political, geographical, demographic, social and economic factors or resources (such as the macro-economic climate or racial barriers) impact on the success of CCI's.	Similarly, a number local factors (which differed between areas) over which CLIQ had no control, had a direct impact on the nature and success of the intervention, such as the weather; the housing density; gender norms; local ICT connectivity; and so on.
<b>Flexible and evolving intervention:</b> "Even in multi-site initiatives where all communities have the same overall charge, the approach and the individual program components may vary significantly from place to place" (ibid:5).	The CLIQ process evolved differently at each site, according to local constraints, findings, stakeholder activities, and participant's needs.
<b>Broad range of outcomes:</b> CCI's seek improvements in a range of less concrete domains for which there are few agreed-upon definitions, much less agreed-upon measures (ibid:5).	QoL and ICT impact are both multi-dimensional concepts, both without commonly accepted definitions or approaches to measurement. The bases on which participants might conclude improved QoL, was not defined prior to fieldwork. Rather participants' own definitions were used for concluding QoL change, leading to the emergence of diverse outcomes.
<b>Absence of control groups:</b> When testing the impact of an intervention, a common approach is to use control groups. Kubisch <i>et al.</i> (1995) refer to logistical and methodological problems with finding a community that can act as a comparative control group for CCI communities.	In addition to logistical and methodological problems, CLIQ had ethical objections to using control groups in the intervention. While a control group would have assisted greatly in reaching CLIQ's research objective, it did not fit with the action objective of assisting participants to improve their lives. Furthermore, CLIQ's attempt at difference-in-difference analysis based four QLAs at regular intervals had to be abandoned due to CLIQs flexible area-based process and contextual differences between sites.

## Appendix I: Data Tables

**Appendix I-Table 1: Participation data for the impact and the selected sample**

Project numbers and indicators	Total	eMpuma- langa	eNingi- zimu	eNya- katho	eNtshona- langa
<b>Selected Sample</b>	162	37	34	38	53
<b>Impact Sample</b>	113	33	20	23	37
<b>Core Sample</b>	92	33	18	18	23
<b>1:</b> Proportion of selected sample that did not attend any or sufficient QLAs to be included in the impact sample (attrition).	30%	11%	41%	39%	30%
<b>2:</b> Proportion of <i>impact sample</i> that attended both the initial and final-QLAs	71%	85%	75%	65%	59%
<b>3:</b> Proportion of <i>selected sample</i> that received some computer training	57%	86%	62%	45%	42%
<b>4:</b> Proportion of <i>impact sample</i> that received some computer training	78%	94%	95%	74%	57%
Average for rows 2 and 4	75%	90%	85%	70%	58%
<b>Success ranking for Implementation (where 1<sup>st</sup> =best and 4<sup>th</sup> =worst)</b>		<b>1<sup>st</sup></b>	<b>2<sup>nd</sup></b>	<b>3<sup>rd</sup></b>	<b>4<sup>th</sup></b>
<i>Note:</i> In terms of attrition, eNtshonalanga was placed second, above eNyakatho and eNingizimu. This is probably related to the relative lack of opportunities and alternatives for people in rural, compared to urban areas. Row 2 indicates the proportion of impact sample that experienced the full process, from goal-setting (initial-QLA) through to reflection during the final-QLA. This is relevant for both CLIQ's research goal in terms of the collection of adequate comparable data over time, as well as the goal of assisting participants to improve their lives.		The proportion of the selected sample that received some computer training (row 3) shows that this was the lowest in eNyakatho and eNtshonalanga, while eMpumalanga was again the best performing area ( 86%) followed by eNingizimu, with 62%. Considering the proportion of the impact sample that attended at least some computer training, eNingizimu and eMpumalanga come out on top, followed by eNyakatho and then eNtshonalanga.			

**Appendix I-Table 2: Successive CLIQ samples by area**

Participant involvement in CLIQ	Total	eMpumalanga	eNingizimu	eNyakatho	eNtshonalanga
Interested Sample	227	88	47	36	56
Selected Sample	162	37	34	38	53
<b>Impact Sample</b>	<b>113</b>	<b>33</b>	<b>20</b>	<b>23</b>	<b>37</b>
<b>Core Sample</b>	<b>92</b>	<b>33</b>	<b>18</b>	<b>18</b>	<b>23</b>
Impact sample as % of selected sample	70%	89%	59%	61%	70%
Core sample as % of selected sample	57%	89%	53%	47%	43%
<b>Area proportion of total Impact Sample</b>		<b>29%</b>	<b>18%</b>	<b>20%</b>	<b>33%</b>

**Appendix I-Table 3: Participants' Age Groups**

Age Categories	All Areas		eMpuma-langa		eNingizimu		eNyakatho		eNtshonalanga	
	M= Male	F= Female	M	F	M	F	M	F	M	F
up to 24 yrs	20	42	9	10	1	4	6	8	3	22
25-40 yrs	16	23	7	7	3	5	4	1	3	8
40yrs +	2	10	0	0	1	6	1	3	0	1
<b>Impact Sample Size</b>	<b>38</b>	<b>75</b>	<b>16</b>	<b>17</b>	<b>5</b>	<b>15</b>	<b>11</b>	<b>12</b>	<b>6</b>	<b>31</b>
Average Age (in yrs)	26	28	25	25	30	37	24	31	25	24
Minimum Age (in yrs)	19	17	20	19	21	20	19	17	20	18
Maximum Age (in yrs)	41	64	34	37	40	53	41	64	31	46
<b>Average age in years</b>	<b>27</b>		<b>25</b>		<b>36</b>		<b>28</b>		<b>24</b>	
% aged <25yrs	55%		55%		25%		61%		68%	

**Appendix I-Table 4: Participants' self-declared occupation group in 2008**

Occupational group	Desired split	Total		eMpuma-langa		eNingizimu		eNyakatho		eNtshonalanga	
Unemployed Youth	33%	39	35%	12	36%	5	25%	12	52%	10	27%
Community Activists	33%	42	37%	12	36%	8	40%	7	30%	15	41%
Self-Employed	33%	32	28%	9	27%	7	35%	4	17%	12	32%
<b>Impact Sample</b>	<b>120</b>	<b>113</b>	<b>100%</b>	<b>33</b>	<b>100%</b>	<b>20</b>	<b>100%</b>	<b>23</b>	<b>100%</b>	<b>37</b>	<b>100%</b>

**Appendix I-Table 5: Nature of CLIQ impact by area**

Nature of CLIQ impact	Total	eMpumalanga	eNingizimu	eNyakatho	eNtshonalanga
CLIQ Intensity/ Dosage		1 <sup>st</sup>	2 <sup>nd</sup>	3 <sup>rd</sup>	4 <sup>th</sup>
CLIQ affect on QoL	36%	55%	50%	26%	19%
CLIQ Impact	41%	45%	30%	39%	43%
No/ unclear Impact	23%	0%	20%	35%	38%
<b>Impact Sample</b>	<b>113 (100%)</b>	<b>33(29%)</b>	<b>20(18%)</b>	<b>23(20%)</b>	<b>37(33%)</b>

**Appendix I-Table 6: Level of participation by QoL change group**

Nature of individual participation	Total		Improved QoL		Unchanged or Declined QoL	
Good	64	57%	51	69%	12	32%
Average	24	21%	16	22%	8	21%
Poor	25	22%	7	9%	18	46%
<b>Impact Sample</b>	<b>113(100%)</b>		<b>74(65%)</b>		<b>39(35%)</b>	

**Appendix I-Table 7: Nature of Impact by level of participation**

Nature of CLIQ impact	Total		Good participation		Average Participation		Poor participation	
CLIQ affect on QoL	41	36%	33	52%	8	33%	0	0%
CLIQ Impact	46	41%	29	45%	10	42%	7	28%
No impact	5	4%	1	2%	1	4%	3	12%
Unclear Impact	21	19%	1	2%	5	21%	15	60%
<b>Impact Sample</b>	<b>113</b>		<b>64 (57%)</b>		<b>24 (21%)</b>		<b>25 (22%)</b>	

**Appendix I-Table 8: Positive and Negative CLIQ impacts**

Type of CLIQ impact	Total Core		Combined per impact type
Only positive impacts	71	77%	92% with at least one positive impact
Positive and negative impacts	14	15%	
Only negative impacts	2	2%	17% with at least one negative impact
No impact	5	5%	
<b>Core Sample</b>	<b>92</b>		

## Appendix J: Changes in QoL and CLIQ impact

**Appendix J-Table 1: QoL Change and CLIQ Impact for eMpumalanga participants**

QoL Change CLIQ Impact	i. Improved QoL	ii. Unchanged QoL	iii. Lower QoL	Impact Group: # of p'pnts
a. CLIQ impact linked by participant to reason for QoL change	<u>Group ia: 16 participants</u> MabasoM23G NelliF37A ManikweF21G NkuluF26G MinenhleF33G NonkuF26G MlamuliM28G MimiF21G (09)NedM29A MankeM24G MakhosiF22G MbonaM22A MakhoM28G MesseM20G MusaM21G MthembeniM28G		<u>Group iiiia:</u> ManeseF20G NeneF27G	18
b. CLIQ impact recognised but not linked by participant to QoL change.	<u>Group ib: 8 participants</u> ManeliM33P NikiweM34G MilliF19G NonhleF24G N'jabuF23G (09)Mpumef23A NganeM24G NathanM22P	<u>Group iib: 4 p'pnts</u> MunaM20G N'duduzoF34A Noziphof26G (09)NgekeF22A	<u>Group iiib</u> NdodaM20G NomaF27G (09)MlaniM25A	15
cn/cu. Unclear/ no CLIQ impact	-	-	-	0
<b>QoL Change Total</b>	<b>Improved QoL: 24</b>	<b>Same QoL:4</b>	<b>Lower QoL: 5</b>	<b>33</b>
Sex	11 Female: 13 Male	6 Female: 3 Male		17 F: 16 M
<b>Participation</b>	<b>G=18 A=4 P=2</b>	<b>G=6 A=3 P=0</b>		<b>G=24 A=7 P=2</b>
<i>Abbreviations for Appendix K</i>	G: Good participation A: Average participation P: Poor participation	P'pnts: participants M = Male F = Female	09: Last QLA attended in 2009	

### Appendix J-Note 1: Participation in eMpumalanga

Data on participation in eMpumalanga indicates that people from this area showed the most enthusiasm for the project. Among the 88 people attending the initial field-day, women (54) outnumbered men (34). Due to a sufficient number of men showing an interest in CLIQ, this bias did not carry through to the selected sample of 37 people, which included 18 men and 19 women. The impact sample for eMpumalanga is 33 participants, which is 89% of the 37 selected to take part, resulting in the lowest area attrition rate of 11%. Almost half of the participants (17) attended all CLIQ activities. Of those in the impact sample, 24 participants attended all three QLAs and 19 participants attended all computer training sessions, with only 2 participants not attending any computer training, again reflecting the higher enthusiasm for participants from this area, particularly when compared to the urban areas. There were no gender differences according to the number of QLAs or number of training sessions attended. The final dissemination workshop took place in September 2011, attended by 16 participants, the telecentre manager and facilitator, and representatives from a few local NGOs.

**Appendix J-Table 2: QoL Change and CLIQ Impact for eNingizimu participants**

QoL Change CLIQ Impact	i. Improved QoL	ii. Unchanged QoL	iii. Lower QoL	Impact Group: # of p'pnts
a. CLIQ impact linked by participant to reason for QoL change	<u>Group ia: 8 participants</u> S'boF52G SimphoF52G SamkeF53G (09)SonkeF22A SarahF50G ZiphoF30G Slif30G	<u>Group iia:</u> SafarF35G SiyaF53A	<u>Group iiaa:</u> SallyF24A	10
b. CLIQ impact recognised but not linked by participant to QoL change.	<u>Group ib: 5 participants</u> SeanM42G SimonM30A ShellyF32G SwelihleF20A SynthiaF21A	<u>Group iib:</u> SisekeloM31A		6
cn. No CLIQ impact: QoL change unrelated to CLIQ.	<u>Group icn:</u> SiphoM21G		Group iicn: SaneF50P	2
cu. Unclear CLIQ impact: QoL change unrelated to CLIQ.	<u>Group icu:</u> (09)SihleM27A	<u>Group iicu:</u> (09)SomaF32A		2
<b>QoL Change Total</b>	<b>Improved QoL: 14</b>	<b>Same QoL: 4</b>	<b>Lower QoL: 2</b>	<b>20</b>
Sex	10 Female: 4 Male	5 Female: 1 Male		15 F: 5 M
<b>Participation</b>	<b>G=9 A=5 P= 0</b>	<b>G=1 A=4 P= 1</b>		<b>G=10 A=9 P= 1</b>

**Appendix J-Note 2: Participation in eNingizimu**

In eNingizimu, many more women (37) than men (10) showed an interest in the project based on 47 people who attended CLIQ's initial field-day. This resulted in a gender bias in the selected sample of 25 women to 9 men. However, once participants were selected, there was no indication of any trend that either men or women were more likely to drop out. The impact sample for QoL analysis in ENingizimu is 20 participants (15 females and 5 male). When considering the age of participants, younger selected participants were more likely than older ones to drop out of the project. The average age of the 16 participants who participated until 2010 was 36 years, while the average age of the 10 who only attended the first QLA was 24 years. Only seven participants attended all CLIQ activities in eNingizimu and one person in the impact sample did not attend any training at all. Two fifths of participants (14 people) did not attend sufficient CLIQ activities to be included in the impact sample, leading to an attrition rate of 41%. The dissemination workshop took place in September 2011, attended by 15 participants, the telecentre manager and facilitator, and a number of representatives from local community organisations.

**Appendix J-Table 3: QoL Change and CLIQ Impact for eNyakatho participants**

QoL Change CLIQ Impact	i. Improved QoL	ii. Unchanged QoL	iii. Lower QoL	Impact Group: # of p'nts
a. CLIQ impact linked by participant to reason for QoL change	<u>Group ia:</u> 5 participants BerylF64G DuduzileF25A BongaM20G BalungileF24 A BusiF24G		<u>Group iia:</u> BathaF21G	6
b. CLIQ impact recognised but not linked by participant to QoL change.	<u>Group ib:</u> 6 participants DobhaF50G BhalisileF19G BettyF47G BhekiM20P BhozaM21G Dumim29A	<u>Group iib:</u> DinahF21G	<u>Group iiib:</u> Divaf32G BenguM21G	9
cn. No CLIQ impact: QoL change unrelated to CLIQ.	<u>Group icn:</u> DemmiF17P BongiM20A		<u>Group iiicn:</u> BenjiM19P	3
cu. Unclear CLIQ impact: QoL change unrelated to CLIQ	<u>Group icu:</u> (09)DeniseF24A DaryIM26G	<u>Group iicu:</u> (09)DwayneM41P (09)DarshinM25P (09) DahduM22P		5
<b>QoL Change Total</b>	<b>Improved QoL: 15</b>	<b>Same QoL: 4</b>	<b>Lower QoL: 4</b>	<b>23</b>
Sex	9 Female: 6 Male	3 Female: 5 Male		12 F: 11 M
<b>Participation</b>	<b>G=8 A=5 P=2</b>	<b>G=4 A=0 P= 4</b>		<b>G=12 A=5 P=6</b>

**Appendix J-Note 3: Participation in eNyakatho**

All 36 people who attended CLIQ's initial field-day in eNyakatho were selected, as well as an additional two people who arrived for the first QLA, resulting in a selected sample of 20 women and 18 men. The additional 2 people were accepted into the sample, as we anticipated high levels of attrition in this vibrant urban area. Based on QLA attendance, QoL analysis was done on two thirds of selected participants (23 out of 38) in eNyakatho. The impact sample is split equally between men and women. Only five of the 23 participants attended all CLIQ activities. There was a slight tendency for more women than men to attend computer training, but due to the small sample size, a gender difference cannot be concluded. Six participants from the impact sample did not attend any computer training at all. Eleven of those selected to take part did not return for the initial-QLA and another 4 attended only the initial-QLA, thus no impact analysis could be done on this group of 15 participants, leading to an attrition rate of 39%. The dissemination workshop took place in September 2011, attended 7 by participants, the telecentre manager and facilitator, and included a surprise visit from USAASA officials from Head Office, orchestrated by the KZN representative.

**Appendix J-Table 4: QoL Change and CLIQ Impact for eNtshonalanga participants**

QoL Change CLIQ Impact	i. Improved QoL	ii. Unchanged QoL	iii. Lower QoL	Impact Group: # of p'pnts
a. CLIQ impact linked by participant to reason for QoL change	<u>Group ia: 7 participants</u> CeliweF28G KhweziF20G KhethaF21G KuhleF26G KhumbuzileF24G KiraF21G KhonzaphiF20G			7
b. CLIQ impact recognised but not linked by participant to QoL change.	<u>Group ib: 13 p'pnts</u> CelenkosiniM27G KiranM28A CabangileF28P KholiweF21G ChazileF23G KhuseloF27G KhanyoF20G KhekheF24 G KhombisileF28P KhonaF46G KhalesakheF21P KateF19 G KhanyaF22G		<u>Group iiib:</u> Khosif21P KwaziM20G KhaboF25G	16
cu. Unclear CLIQ impact. QoL change unrelated to CLIQ. (All exited 2009)	<u>Group icu:</u> JojoM31A	<u>Group iicu: 13 participants</u> JobeF20P JabulileF29P JomoM22P JabulisiweF22P JulaF23P JoyinileF27P JabuF20A JonganiM23P JoyceF21P JongileF23P JuquF21P JikileF23P JoyF18P		14
<b>QoL Change Total</b>	<b>Improved QoL: 21</b>	<b>Same QoL: 13</b>	<b>Lower QoL: 3</b>	<b>37</b>
Sex	18 Female: 3 Male	13 Female: 3 Male		31 F: 6 M
<b>Participation</b>	<b>G=16 A=2 P=3</b>	<b>G=2 A=1 P=13</b>		<b>G=18 A=3 P=16</b>

**Appendix J-Note 4: Participation in eNtshonalanga**

In eNtshonalanga, women showing an interest in CLIQ outnumbered men by about 3:1. Of the 56 who attended the information day, 41 were selected to take part. However, an additional 12 people attended the first QLA, some of whom were not present during the initial field-day. We nevertheless accepted all 12 into the sample due to political considerations on the advice of the TC manager, who was active in local politics. The resultant selected sample was 53, including 43 women and 10 men. Impact analysis was done on 70% of selected participants (38 of the 53), based on their QLA attendance, with 17 participants attending all CLIQ activities. Neither men nor women were more likely to attend computer training or QLAs. Just under half of selected participants (23) attended the CLIQ computer training. This number is lower than expected, because the computer training was delayed by about 12 months due to TC non-functionality. The extended delay in training increased the likelihood of participants changing their contact details; losing interest in the project; or gaining access to other opportunities which prevented their continued participation. eNtshonalanga was a maduzane area, where training was due to occur later in the project cycle, with two QLAs planned before training. Fourteen participants attended both these QLAs (with 6 months in between) allowing for impact analysis, but did not return for the final-QLA. This created a sub-group within eNtshonalanga of 14 participants for whom CLIQ had information of direction of QoL change over six months, but no information on the nature of CLIQ impact (a focus of the final IIDI). This group of 14 was much bigger than similar sub-groups in the other three areas (either 3 or 4 participants). The dissemination workshop took place in September 2011, attended by 14 participants and a few representatives from the community, however the telecentre manager did not attend.

### Appendix K: Comparative Indicators of QoL

	1. <b>Indicators</b> of QoL	2. <b>Descriptors</b> of high (H) or low (L) QoL (from 2008 group life-lines and 2010 individual life-lines)	3. <b>Individual life goals</b> (from 2008 individual goal-setting)	4. <b>Reasons</b> for changed QoL (from 2010 IIDIs)
<b>Common QoL Indicators:</b>	1 Housing	L: Sleep on pipes; house falling down H: proper house; mansion house	Build house away from family; extend home; own 4-roomed house	Built house; extended house; moved home
	2 Study/ education (for self)	L: Uneducated H: university education	Want to study (usually specifying area of study); want to learn computers*	Attained computer* or other skills; registered/ started study
	3 Jobs	L: without a job H: job with regular income; top positions	Get any job; get a specific job	Got job; got increase; lost job
	4 Small business	H: own business(es); type of business; registered business	Expand or start own business (usually specifying type)	Started, improved, declined or ended small business
	5 Money (access & affordability)	L: not enough money; can't afford; don't even receive grants H: money in bank; sign cheques; buy whatever they want	Save money; loan money; access bursary; access sponsorship	Brother got grant; sister got job; father lost job
	6 Car (Travel)	L: walk on feet H: many or luxury cars; fly	Buy a (specific) car	Bought a car
<b>Less Common QoL Indicators:</b>	7 Friends and networks	H: Associate with overseas people	Spend time with friends	More/ new friends
	8 Attitude, behaviour & state-of-being	L: can't even think; appreciate life; criminals H: Selfish; happy life	Learn to be a better person; work hard; be a role model	Felt empowered; greater self esteem; more direction; have hope
	9 Community engagement & voluntary activity	L: beggars H: money sponsors; community leaders	Continue with volunteer work (assisting scholars, etc.); start soup kitchen, soccer club etc.	Can now mix with other people; able to interact with community
	10 Basic services	L: use candles H: flush toilets; taps in yard; have electricity	Get legal electricity; get solar power; buy water tank	Installed solar electricity
	11 Family	L: too many children H: 2 children; are married	Get married; have 2 children	Got support from family; had a baby; got married; lost family member
	12 Education (for family member)	L: children not at school H: private schools	Put child into crèche; send children to good school	Children started at university
<b>Uncommon QoL Indicators:</b>	13 Assets	L: don't own anything H: TV; computer* expensive cell*; fridge	Get DSTV; buy computer; buy cows	Bought laptop
	14 Driver's License (ref. indicator 6)		Get learner's or driver's license	Got learner's; registered for driver's
	15 Employ people in own business (ref. indicator 4)		Employ people to help with own business	Employed people in own business
	16 Identity document & birth certificates	L: No ID; no birth certificate		Got ID corrected; ID was stolen
	17 Health/ Illness	Are sick; are alcoholics		Illness
	18 Office for self (ref. indicator 4)		Have office for own business	
	19 Computer usage			Use of computers
	20 Clothes & food (ref. indicator 5)	L: have no food; sleep without eating; old clothes H: eat in restaurants; eat good quality food; satisfy needs; labeled clothing		
	21 Greater knowledge/ world view			greater knowledge of world; know things never thought would know

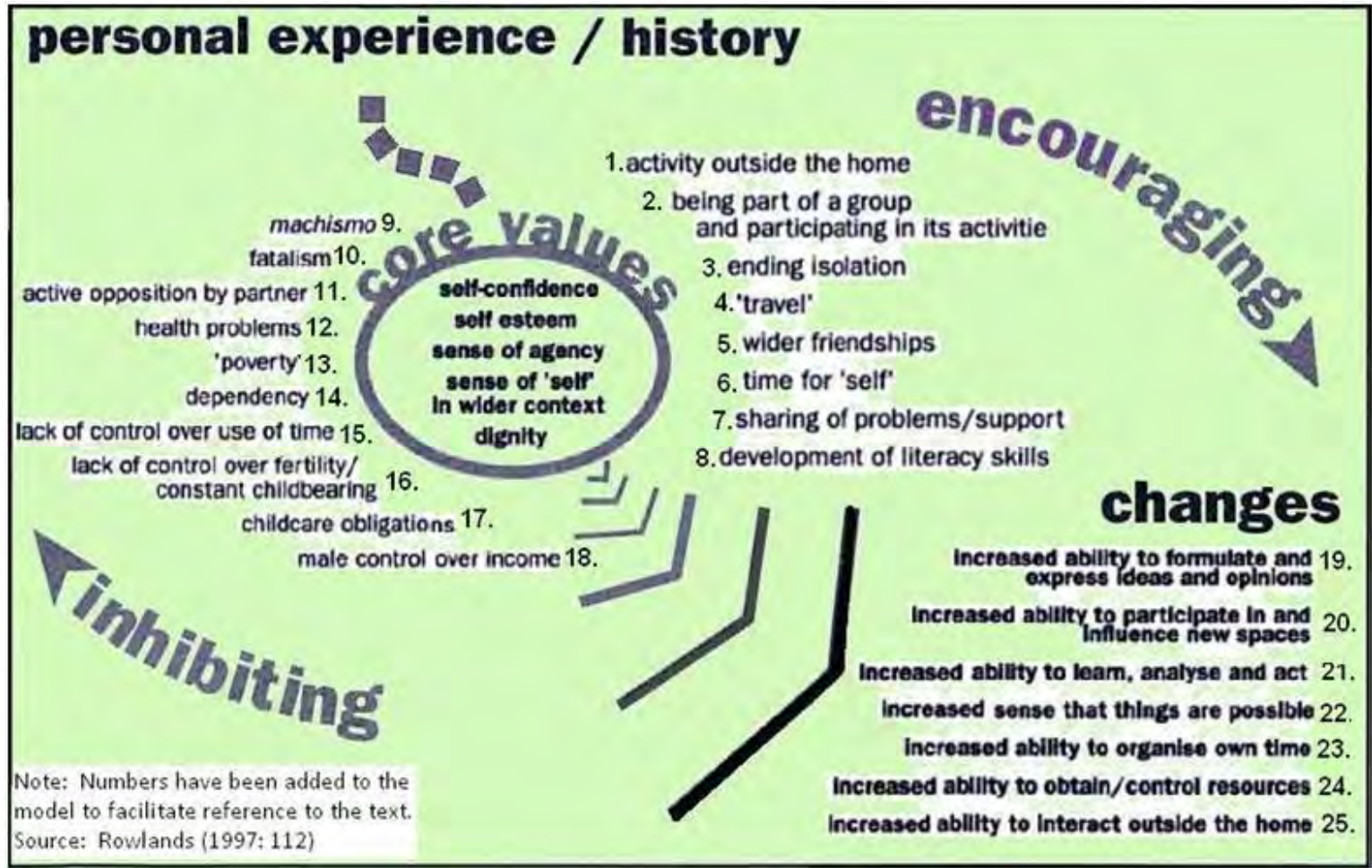
\*Note: As computer training and use, and cell-phone use was a key topic of discussion with participants, it influenced the likelihood of participants mentioning descriptors, goals and reasons related to cell-phones and computers.

Source: A copy of this table appears in Attwood (2013:10) as *Quality-of-life indicators with examples of descriptors, life goals and reasons for changes in quality-of-life*.

## Appendix L: Thesis section corresponding to Initial CLIQ Model Labels

Element in Initial CLIQ model (Figure 9-1, p246)		Thesis section discussing element in Initial CLIQ model
Environmental Aids and	A: Power relations and local stakeholders F: Telecentre functionality	8.4: Telecentre Functionality
	B: Personal characteristics and disposition E: Social norms and values	8.2: Personal Disposition and Health 8.1: Social Norms, Perceptions and Experiences
	C: Personal circumstances D: Time	8.3: Opportunity Cost: Time, Money and Energy 8.5: Complexity, Multi-causality and Continuity
CLIQ process & Participant steps to change QoL		5.2: The Design and Implementation of CLIQ 6.4: Project variables for sample definition and analysis
Outcomes of intervention (inclu. reasons for QoL change & impact on participant's life)		7.3: Factors Affecting Participants' Lives

**Appendix M: CLIQ Findings through Rowlands' Empowerment Model**



Notes:  
i. From my view, only the Spanish term 'machismo' immediately reveals that Rowlands' model is not based on CLIQ findings. The term "Machismo" has Spanish roots and means: "male behaviour that is strong and forceful, and shows very traditional ideas about how men and women should behave" (Source: <http://dictionary.cambridge.org/dictionary/british/machismo> (26 June 2012)).

ii. The numbers in the table below indicate the corresponding factor from Rowlands' PAEM (adjacent diagram).

iii. Shaded and bulleted text in the table below indicates CLIQ factors not directly referred to in Rowlands' PAEM model.

**Appendix L-Table 1: CLIQ findings corresponding to factors in Rowlands' PAEM**

Encouraging factors from CLIQ findings	Inhibiting Factors from CLIQ findings	Individual Changes from CLIQ findings
<ol style="list-style-type: none"> <li>1. Having something different to do</li> <li>2. Group membership and group activities</li> <li>3. Meeting local people who experience similar problems/ seeing others achieving their goals</li> <li>4. Reason to leave the house/ being at a different location</li> <li>5. More friends and wider social network: increased interaction with local people, outsiders (fieldworkers) and virtual friends</li> <li>6. Formal and informal opportunities to express themselves and learn something</li> <li>7. Return visits by outsiders who showed an interest in them, discussed problems and gave advice</li> <li>8. Development of ICT literacy (realising they can use a computer/cell-phone)</li> </ol> <ul style="list-style-type: none"> <li>● Finding information they need or are interested in</li> <li>● Increased communication – in person, by internet, via cell-phone – locally, with outsiders and with new friends</li> <li>● Access to a new tool (computers and Internet) for use to meet their needs</li> </ul>	<ol style="list-style-type: none"> <li>9. Gender norms regarding ICT use, domestic roles and other aspects of life (enacted by men and internalised by women)</li> <li>10. Poor mental health or poor self-esteem (including perceptions of inability, low ability, or being a slow learner and low hope)</li> <li>11. Gendered norms and restrictions imposed by partners and/or family regarding ICT use and activity outside the home, particularly for women</li> <li>12. Poor eyesight or poor health</li> <li>13. Limited access to cash, insecure or low-yielding livelihoods</li> <li>14. Dependency was implied in some cases</li> <li>15. Prescribed use of time or allocated 'responsibilities' for women, meant lack of time</li> <li>16. Lack of control over child-bearing was not mentioned</li> <li>17. Lack of time due to multiple and competing needs and responsibilities (to put a plate on the table, childcare, etc)</li> <li>18. No money for travel together with prevailing gender norms was found, for example male refusal for women to take part because would not pay for child care</li> </ol> <ul style="list-style-type: none"> <li>● Poor self-perception regarding racial and age stereotypes</li> </ul>	<ol style="list-style-type: none"> <li>19. Ability to envision goals and plan for future, and to recall local history and debate views on information and communication</li> <li>20. More skills to engage in and facilitate group discussion, as well as ability to present ideas</li> <li>21. New or increased ability to express, record and analyse thoughts and ideas</li> <li>22. Hope for the future, motivation to pursue goals, with increased belief in own abilities</li> <li>23. Able to save time by using the internet</li> <li>24. More able to get jobs or improve small business, meaning increased ability to access to money</li> <li>25. Increased confidence to interact outside the home (including increased ability to challenge social norms)</li> </ol> <ul style="list-style-type: none"> <li>● Increased self-esteem, happiness and sense of achievement from participation and/or specific outcomes</li> <li>● Increased knowledge and changed conception of the world (including changes in beliefs about stereotypes)</li> <li>● Increased ability to access information, including news</li> </ul>

