Demonstrating Critically Reflexive ICT4D Project Conduct and ICT Training in Rural South Africa

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ABSTRACT

The problem with many ICT4D projects and policy designed for African developmental contexts is that there is a tendency towards deterministic assumptions in that arguments and implementation guidelines are often presented a-contextually. The reality is, however, that ICT4D discourses and practice in the African context often imply cross-cultural working and worldview collisions. Therefore, simply adopting Western values and advice wholesale without deep and adequate reflection, may lead to a design reality gap, disruptive and oppressive ICT transfer, and ultimately failure. In addition, identifying, understanding, and representing cultural context and local development realities may present challenges, because it is interwoven with the assumptions and prejudices of those identifying and representing context or distorted with ethnocentric assumptions about ICT and its developmental role. This paper contributes by offering a case of how a particular ICT4D implementation framework with a developmental agenda was appropriated respectfully and ethically for the development realities of a traditional Afrocentric community in South Africa. The author reflects on a number of issues related to cross-cultural dynamics and power relations as it evolved during a particular case of ICT training and project introduction. Narrative examples, representing both method and phenomena, are used to demonstrate a number of interrelated reflexive themes for ICT4D project conduct and context understanding.

Keywords: Cross-cultural working; Ethics; ICT4D projects; ICT Training

INTRODUCTION AND BACKGROUND

Several problems associated with introduction and operationalising of ICT in developing contexts are presented in literature. For example, Thompson (2008) reflects on the problem of unqualified technology optimism in Information Communication for Development (ICT4D) discourses and policy; Wilson (2004) critiques untested assumptions associated with technology diffusion; Krauss (2013) and Thompson (2004) highlight the need to critique and expose the hidden agenda of international 'players' who see involvement in development initiatives and policy formulation as an opportunity for expanding their markets; Krauss (2013), Zheng (2009), and Thompson (2004; 2008) are critical of the relevancy of 'hard' Western approaches and assumptions in the representation and implementation of ICT4D;

and Hayes and Westrup (2012) question technology deterministic assumptions where technological development is seen as synonymous with meaningful social development (Howcroft and Trauth, 2005). In all these ICT4D discourses the need to reflect on the broader social and economic context is highlighted. Hayes and Westrup (2012) continue by suggesting that the problem with ICT4D discourses is that there is a tendency towards deterministic assumptions in that arguments are often presented a-contextually. They argue that "when the designers successfully match the technology to the context, then the design reality gap is averted, while when there is a significant mismatch the gap will result in failure" (p. 24).

Deepening the debate, Thompson (2008) argues for the need to address assumptions surrounding power relations in development studies. Avgerou (2005) argues that "the unequal power afforded in the discourse between industrialized and developing parts of the world to be one of the most critical issues of contemporary society" (p. 105). She also suggests, supporting earlier concerns, that assumptions about the development potential of ICTs are not questioned adequately. Avgerou (2010) puts forward the idea of a social embeddedness perspective on ICT innovation in developing contexts that questions simple a-contextual transfer and diffusion of ICT. The social embeddedness perspective according to Avgerou (2010) "takes the view that the development and use of ICT artifacts in developing countries concern the construction of new techno-organizational arrangements in the local context of a developing country" (p. 4). Developmental ICTs should therefore be appropriated for the specific context under investigation, because it is expected to then also consider how context is framed during ICT4D introduction processes and practices.

Adding a further perspective on policy conflicts in African developing contexts, Krauss (2013) highlights the need to explore the issue of worldview collisions in the introduction and operationalising of ICTs in developing contexts, and for critical social theory as an underpinning research paradigm for emancipatory ICT4D practices. His argument is that in countries like South Africa, development discourses are deeply associated with cross-cultural dynamics (also see Walsham and Sahay, 2006) and embedded in social structures (Wilson, 2004). Walsham and Sahay (2006) also argue for the need to unpack the notion of culture as a way of seeking understanding and collaboration in cross-cultural working in ICT4D situations. They suggest that "bringing a technology to a new local context also involves some implicit elements of cultural transfer and mutual learning" (p. 10). The problem highlighted here is the risk of simply adopting Western values and advice wholesale without

deep and adequate reflection on the disruptive and oppressive consequences of ICT transfer and associated power dynamics (Avgerou, 2010; Krauss, 2013; Zheng, 2009; Lewis, 1994).

In their study on transformational learning in Botswana, Merriam and Ntseane (2008) argue that in cross-cultural situations, learning is about the establishment of an alternate frame of reference (or a culturally specific set of assumptions, expectations, and values for filtering sense perceptions and constructing meaning) before learning and meaning making can adequately take place (Merriam and Ntseane, 2008). Asante (1990) furthermore rationalises Afrocentricity as a paradigm which "approaches all African phenomena from the standpoint of African centrality" (p. 38). The Afrocentric method insists on the idea of self-inquiry and seeking cultural and social immersion (Asante, 1990). This counsel can be taken to the introduction of ICTs in African developing contexts. For example, in Krauss' (2013) paper on introducing ICT training and policy, he reflects on how worldview collisions affect assumptions, interpretation, implementation, and views of reality. Supporting Merriam and Ntseane (2008) and Asante (1990), he highlights the importance of considering 'Afrocentricity' as an alternate frame of reference that is typically not adequately considered in policy formulation and policy implementation guidelines. Citing Asante (1983) and Willoughby (1928), Krauss (2013) adamantly argues that for an outsider-westerner it may require "special effort, respect, and openness to Afrocentricity in order to master its meaning" (p. 304).

Identifying, understanding, and representing cultural context and local realities may therefore be problematic, because it is interwoven with the assumptions and presuppositions of those identifying context and representing context (Hayes and Westrup, 2012) or distorted with ethnocentric assumptions about ICT and its developmental role (Escobar, 1992; Bourdieu, 1977). Krauss and Turpin (2013) argue that this is often the position that development-outsiders (i.e. the 'developed' and typically those 'doing' the development from the outside) find themselves in. They argue, citing others, that for the outsider-researcher (who is often Western-minded) involvement in ICT4D it "means making a transition from viewing their own mindset, culture, and artefacts (such as ICT) as superior (Escobar, 1992) or more sensible (Harvey and Myers, 2002) to recognising the validity and importance of the local culture and social organisation." (p. 1). This adds to the difficulty of adequately addressing power relations, conflicting interests, and untested assumptions in ICT4D discourses and practice in Africa. Krauss and Turpin (2013) and Walsham and Sahay (2006) specifically

advise that critical social theory is an appropriate orientation to knowledge for adequately interrogating such types of developmental social phenomena.

Hayes and Westrup (2012) highlight two issues related to interrogating context in ICT4D initiatives, namely, that of context representation and the process of context formulation. This paper contributes in this regard as it offers narrative excerpts from a case of how an ICT policy guiding framework with a developmental agenda was appropriated respectfully and ethically for the development realities of a traditional Zulu community in a deep rural part of South Africa. The paper demonstrates how lessons learnt from the ICT4D project introduction phases and of the researcher's critically ethnographic work informed an understanding of the local context, and subsequently the formulation of a project funding proposal and project outcomes for doing teacher training along the lines of a particular policy guiding framework. The paper offers a modest attempt at articulating issues related to cross-cultural dynamics and power relations as it evolved during a particular case of ICT training introduction practices in South Africa. UNESCO's Information Communication Technology Competency Framework for Teachers (UNESCO, 2011, 2008) is used as a project guiding framework. Although the methodology of ethnography is not explored here, the paper includes reflections on how the author collaborated with local project owners and on how ICT training unfolded during the challenging process of appealing to and aligning with an alternate cultural frame of reference (Merriam and Ntseane, 2008).

A particular strength of *how* this paper contributes (i.e. how it presents its findings) is through the use of narratives, and drawing on 'the power of example' (Flyvbjerg, 2001). This is because narratives and examples allow for the representation of virtuoso social acting (Flyvbjerg, 2001; 2006) and demonstrations of mastery of the phenomenon of interest, where the author is able to elaborate on situation, context, timing, subtle nuances, and so forth (Bourdieu, 1990). Flyvbjerg (2001) explains that virtuoso social acting is about reflexive ethical action and value judgement – knowing when to do the right thing for the right reasons. This manner of 'doing' and 'being' is learnt through experience (Flyvbjerg, 2001; Mingers & Walsham, 2010) or by allowing oneself to be get carried away by the 'game' of social interaction in such a way that the 'fight' gets the better of you (Bourdieu, 1977; 1990). Such manner of representing experience is best done through narrative examples and cases (Flyvbjerg, 2001; 2006; Krauss, *forthcoming*).

Narrative has holistic qualities, because it can be seen as both method and phenomenon (Connelly and Clandinin, 1990). Narratives are particularly useful for demonstrating how

entry into the field – in this case ICT4D project introduction – is established and how relationships with research partners could evolve into friendships and stories of empowerment (Connelly and Clandinin, 1990). Therefore, while this paper draws on the same project case as other papers by the author, emphasising similar conclusions, the particular value of this paper is the inclusion of practical and critically reflexive examples that can be used by both ICT4D practitioners and researchers wanting to introduce developmental projects in traditional communities.

In the next section the author provides a brief overview of critical social theory and the methodological debates to which this paper contributes. Thereafter, the paper explores the ethical question of ICT4D conduct. A particular ICT4D project and guiding framework is then presented. The author then *demonstrates* (through examples and narrative) how lessons learnt from doing ethnographic research were incorporated in the process of preparing a project proposal for funding and doing ICT training along the lines of UNESCO's framework. Some reflections on how ICT training unfolded as a new cultural phenomenon in the Happy Valley community in South Africa are presented (Pseudonyms are used throughout the paper to protect the identities of the people involved). The paper concludes with a number of reflexive themes for ICT4D conduct and context understanding.

METHODOLOGICAL APPROACH

The nature of the phenomena of interest that this paper explores – i.e. the interrogating of cross-cultural power dynamics, sensitivity to context and historicity, conflicting interests and untested assumptions in ICT4D introduction, and critical reflexive ICT4D conduct – suggests that critical social theory is the appropriate underpinning orientation to knowledge.

Critical social theory takes a critical stance on what is observed about social phenomena (Hammersley, 1992; Neuman, 1997; Myers, 2009). It questions assumptions and ideologies underlying social phenomena in order to address the emancipatory interests of research subjects (Adam, 2001). Critical social theorists believe that they cannot merely be observers of social phenomena. Instead, they believe that, by their presence in social interaction, they influence and are influenced by the social and technological systems that they are studying (Hammersley, 1992; Thomas, 1993; Ngwenyama and Lee, 1997) and that social reality is produced and reproduced by people (Myers and Avison, 2002). This implies that inquiry into social activity focuses on understanding of meaning "from within the social context and lifeworld of actors" (Ngwenyama and Lee, 1997: 151).

Critical reflexivity is the methodology of critical research (Čečez-Kecmanović, 2011; Stahl, Tremblay and LeRouge, 2011; Krauss and Turpin, 2013). Critical reflexivity is about "*interpretation of interpretation* [sic] and the launching of critical self-exploration of one's own interpretations of empirical material (including its construction)" (Alvesson and Sköldberg, 2000: 6). "By intentionally expressing, questioning, and reflecting upon their subjective experiences, beliefs, and values, critical researchers expose their ideological and political agendas." (Čečez-Kecmanović, 2001: 147)

One of the key knowledge assumptions of critical research is that the theory of critical social theory cannot be separated from practice; it is against its philosophy (Ngwenyama, 1991). "The validity test for a critical IS theory is … in IS practice" (Čečez-Kecmanović, 2005, p. 37). A general problem in critical research, though, is that the theory and practice of doing critical research often do not adequately inform each other, while critical work in IS is mostly conceptual in nature (McGrath, 2005). Stahl, Tremblay, and LeRough (2011) hold that there is a lack of empirical research in the critical tradition and that this is mostly because of a lack of agreement on what constitutes the methodology of critical research. This paper contributes to this debate by offering an example of critical empirical research, where there is an explicit emphasis on the practice of doing critical research in an ICT4D situation.

The paper employs confessional writing to demonstrate critical self-reflexivity (Schultze, 2000; Van Maanen, 1988; Krauss, *forthcoming*). The strength of confessional writing is that the narrator is able to leverage both the ethnographer's and the reader's experiences as it attempts to draw the readers into the text (Schultze, 2000). Ultimately, in this paper, the confessional narratives with examples aim to serve as a 'mirror' for the readers to also reflect on their own assumptions, expectations, practices, and beliefs about how to introduce ICT4D projects more reflexively and more critically (Schultze, 2000; Krauss, *forthcoming*).

THE ETHICAL QUESTION OF INTRODUCING ICT4D PROJECTS

Walsham (2012) argues that the ethical goals of ICT4D research and practice should include "how we can use ICTs to support the poor of the world, not just the formal sectors and the economically well off." (p. 91). Moreover, ethical research is associated with addressing those power structures that may disallow people to live emancipated lives according to the criteria that they choose and value (Mthoko and Pade-Khene, 2013; Stahl, 2008; Hammersley, 1992). Here one can also add that it is ethical to expose and critique the destructive and oppression-sustaining consequences of deterministic and a-contextual

assumptions embedded in ICT4D discourses and practice. Given this and the concerns highlighted earlier, one cannot ignore the ethical question of ICT introduction and operationalizing in developing contexts.

Du Plooy and Roode (1993) explicitly reflect on ethical considerations in context of ICTs and economic development, highlighting the value of a critical social theory perspective in ICT4D research and practice (Stahl, 2008, 2006). Although Du Plooy and Roode (1993) present concepts such as "uncritical technoidolatry" (p. 7), "technocracy" (p. 8), "technopoly" (p. 8), and "technological Utopianism" (p. 9), one can infer that in order to be ethical in development practice and discourses, one should be sensitised to the critical themes of non-performative intent and the critique of technological determinism (Howcroft and Trauth, 2005). Non-performative intent "rejects a view of action that is guided only by economic efficiency [i.e. producing maximum output for minimum input] as opposed to a concern for social relations and all that is associated with this." (Howcroft and Trauth, 2005, p. 4). Technology deterministic assumptions may view technological development as synonymous with meaningful social development. A critique of technology determinism, however, implies that one should also conceptualise the development, adoption, and use of technology in the broader social and economics contexts (Howcroft and Trauth, 2005).

On an implicit level Du Plooy and Roode (1993) support the critical themes of emancipation, the critique of tradition (Howcroft and Trauth, 2005), and the principle of taking a value position (Myers and Klein, 2011) in critical research. In the quest for economic development and the need for survival in developing situations, there is a risk that people may be exploited (Krauss, 2013; Lewis, 1994; Du Plooy and Roode, 1993). The introduction of ICTs can enhance discrimination and support for those that are already in positions of power (Walsham, 2012; Stahl, 2006). In order to be ethical therefore, development should be seen as a multidimensional process that involves social structures, popular attitudes, addressing inequality, freedom from servitude, and so forth (Walsham, 2012; Du Plooy and Roode, 1993). ICTs are a product of a particular economic and political context, and therefore carry with it a philosophy and agenda (Postman, 1992 in Du Plooy and Roode, 1993). This should be exposed, articulated, and critiqued (Walsham, 2012; Stahl, 2008; Thomas, 1993).

Du Plooy and Roode (1993) argue that development discourses and practice should also address "low levels of living, low self-esteem, and limited freedom" (p. 4). The idea of nurturing a person's self-esteem (or right to be a person) and each individual's search for meaning is central to emancipatory and ethical research. Also, context may be represented

incorrectly or inadequately to the research fraternity – i.e. it may be distorted by the presuppositions of someone unfamiliar with the realities and worldview of people in the development situation (Hayes and Westrup, 2012; Krauss, Simuja and Conger, 2015). Supporting the idea of worldview collisions, Du Plooy and Roode (1993), citing Boland (1987), note that ICT has embedded in it, the worldview of the designer. Ethical research should heed against the possibility that technology can engulf the traditions and values of people or impose worldviews, because this may lead to phenomena such as technostress and cyberphobia (Du Plooy and Roode, 1993).

Supporting Hayes and Westrup's (2012) views, Du Plooy and Roode (1993) suggest that ethical ICT4D discourses should challenge the view that the ICT4D artefact is ahistorical and decontextualized. This, subsequently, makes the link between the position afforded by critical research, which is sensitive to historicity and context (Klein and Myers, 1999; Myers, 1997), and ethics (Stahl, 2008, 2006).

In order to adequately identify, understanding, and represent context, Hayes and Westrup (2012) note the value of incorporating the views and approaches of social scientists. This, however, presents challenges if one considers some of the views of ethnographers on how to understand and represent cultural context. Thomas (1993), for example, asserts that you can only interpret that which you are able to perceive, while according to Hammersley (1992) the meaning of emancipation depends on the values that one accepts which consequently implies the need for considerable pre-implementation work. Krauss, Simuja and Conger (2015) specifically elaborate on principles for such potentially contradictory styles of sense-making in cross-cultural ICT4D work and adamantly argue for the prioritising the researcher’s critical self-reflexivity, self-inquiry (Ngwenyama, 2014) and some form of practical immersion (Bourdieu, 1977) before adequate sense-making is possible.

In this paper the author, therefore, argues that ethical ICT context formulation should also explicitly explore local worldviews, value judgments, beliefs, and practices, and the needs and realities of the developing community. Moreover, the author contends that ethical treatment of a culturally different community begins with a critical position of inquiry and reflexivity where the researcher begins inquiry by questioning his own assumptions about reality and ethics in order to discover how the local people weave the logic of ethics, including how value judgements and the subtle nuances of showing respect should guide ethical engagement.

THE ICT4D PROJECT CASE

This paper's contribution and the empirical situation it explores follow from a number of earlier papers and reports on an ICT4D teacher training and policy evaluation project in a deep rural community in South Africa (see Krauss, 2013; Krauss et al., 2009). Therefore, as a starting point for understanding this contribution, it is necessary to briefly reflect on the particular ICT4D project context, on UNESCO's Information Communication Technology Competency Framework for Teachers (ICT-CFT), and on findings of earlier publications and reports from other projects associated with UNESCO's ICT-CFT (Ines and Bastos, 2011; Rwandan Ministry of Education, 2010).

The Happy Valley project

This paper's empirical situation evolved from the author's ethnographic immersion in a community engagement and ICT training project, entitled The Happy Valley Project, in a deep rural part of South Africa. The Happy Valley community is typified by strong Zulu traditions that in many ways still reflect ancient cultural practices and values, similar to those described in Giliomee and Mbenga (2007) and Willoughby (1928). A Zulu king and traditional leadership is, up to this day, the ultimate authority in Happy Valley, regardless of efforts by South Africa's apartheid and post-apartheid governments to lessen the influence of its traditional leaders.

Happy Valley town is the administrative and business centre of a small rural district in South Africa. Herding animals is the primary economic activity in the region. Government social grants and pensions are the only source of a regular, cash-based income for many families. Very few houses have access to electricity and running water and there is limited access to fixed-line and mobile connectivity. The Happy Valley district is one of the most economically disadvantaged communities in South Africa as measured by per capita income and unemployment statistics, and according to some, the home of the worst run municipality in South Africa (Coetzee, 2009). In contrast with the difficulties described above, a number of very successful, community-owned initiatives have been established since the early 1990's. These include Happy Valley Private School, a child hospice for orphans and vulnerable children (Khayamandi Hospice), several home-based and day-care projects, a local hospice (Njalo Hospice) that delivers humanitarian support where the South African Department of Health's mandate ends, and a number of employment initiatives.

From 2008 until 2011, in partnership with several key community members, the researcher has been involved in many of the community engagement and ICT4D activities that evolved since the inception of the Happy Valley project. As ICT4D practitioner, the researcher's role was that of the primary driver and 'outsider' champion of the Happy Valley ICT4D Project. This involvement includes being part of how the Happy Valley Project started and gained momentum, how relationships with teachers and key community members developed and matured, how key community members were empowered through ICT and train-the-trainer initiatives, how the ICT training slowly progressed towards becoming sustainable and community owned, how project stakeholders (the researcher included) were empowered, how the researcher was inspired through relationships with the community and lessons learned from living among the people for periods of time, and how he learned to approach ICT4D research and practice ethically. The project initially started with some funding from UNESCO to support a teacher training project in Happy Valley and a funding requirement to give critical feedback on UNESCO's 2008 version of their ICT Competency Framework for Teachers (ICT-CFT); hence its scrutiny in this paper.

An overview of UNESCO's ICT Competency Framework for Teachers

UNESCO's ICT-CFT started out as a policy framework in 2008 (UNESCO, 2008) and was later revised and presented as a competency framework for teachers (UNESCO, 2011). The first version was presented in three booklets, namely, the Policy Framework, the Competency Framework Modules, and Implementation Guidelines (UNESCO, 2008). The second version is presented in an online document (UNESCO, 2011). Although there are minor differences between the two versions of UNESCO's framework, the fundamental purpose of the project remained.

> "UNESCO's Framework emphasizes that it is not enough for teachers to have ICT competencies and be able to teach them to their students. Teachers need to be able to help the students become collaborative, problem-solving, creative learners through using ICT so they will be effective citizens and members of the workforce. The Framework therefore addresses all aspects of a teacher's work:
>
> The Framework is arranged in three different approaches to teaching (three successive stages of a teacher's development). The first is Technology Literacy, enabling students to use ICT in order to learn more efficiently. The second is Knowledge Deepening, enabling students to acquire in-depth knowledge of their school subjects and apply it to complex, real-world problems. The third is Knowledge Creation, enabling students, citizens and the workforce they become, to create the new knowledge required for more harmonious, fulfilling and prosperous societies [see Table 1]." (UNESCO, 2011, p. 3)

The UNESCO ICT Competency Framework for Teachers			
	Technology Literacy	**Knowledge Deepening**	**Knowledge Creation**
Understanding ICT in Education	Policy awareness	Policy understanding	Policy innovation
Curriculum and Assessment	Basic knowledge	Knowledge application	Knowledge society skills
Pedagogy	Integrate technology	Complex problem solving	Self management
ICT	Basic tools	Complex tools	Pervasive tools
Organization and Administration	Standard classroom	Collaborative groups	Learning organizations
Teacher Professional Learning	Digital literacy	Manage and guide	Teacher as model learner

Table 1: ICT-CFT's revised knowledge areas (UNESCO, 2011, p. 3)

A critical evaluation of UNESCO's ICT-CFT

What remains a problem in both versions of the ICT-CFT is the lack of community engagement guidelines needed for implementation (including guidelines for community entry and for nurturing ownership, collaboration, and partnerships), a lack of a spirit of critique for ensuring that development and economic growth does not disrupt or contradict a community's core values and cultural legacy, and apart from addressing ICTs in education and challenges associated with the rapid development of technologies as the evolving context that motivated the establishment of the ICT-CFT, there remains a lack of theoretical guidance to adequately identify, understand, and represent the broader context of development. Some critical themes are included in the framework, such as that there seems to be an openness to non-performative intent (UNESCO, 2011, p. 7) and the importance of respect for basic human rights (UNESCO, 2011, pp. 4 and 7).

In two other projects, where the appropriation of UNESCO's framework in the sub-Sahara region was scrutinised, an analysis of the respective countries' educational contexts formed a seminal part of the reports, thus highlighting the need for a context discovery phase to more explicitly form part of ICT policy practice. In their analysis of context, Ines and Bastos (2011) explore:

- available information on ICT for teachers in Angola,
- relevant policy and other official documents,
- problems, limitations, and challenges of the current state of teacher education (e.g. that teachers are in many cases underqualified, that there is a need for guidance at a pre-basic level, and infrastructural constraints) and the context of governmental strategies for facing them, and

- the implications of country's political and economic context.

The Rwandan Ministry of Education (2010) on the other hand, presents a background setting for ICT competency guidelines for teachers in Rwanda. The report includes processes for preparing a localised framework and suggestions for the way forward. In their analysis of context, lack of suitably qualified teachers and the need to build awareness among all stakeholders are mentioned. Economic growth is highlighted as "key to reducing poverty and increasing prosperity" (p. 7).

Both reports (Ines and Bastos, 2011; Rwandan Ministry of Education, 2010) applied a consultative process; the writers engaged with teachers and other policy stakeholders, to identify and understand the context of ICT in education. In Rwandan Ministry of Education (2010), field research formed a more prominent part of the process and some level of reflective engagement featured in the way they collected research data. The need to identify where teachers are at is highly emphasised. Although the reports scrutinise the national context and current challenges in much detail, thus adding valuable recommendations, they both lack of a spirit of emancipatory critique. Theoretical guidance for context understanding is under presented.

In an earlier feedback report on the use of UNESCO's ICT-CFT in the Happy Valley project (Krauss, 2013; Krauss et al., 2009), the author of this paper notes that the three approaches or knowledge areas of the ICT-CFT (technology literacy, knowledge deepening, and knowledge creation) should be interrelated or complementary rather than seen as linear as the current matrix-model visualizes (Table 1). The author noted that his experiences are, and this is confirmed by the Rwandan Ministry of Education (2010), that knowledge creation and deepening can be addressed even before technology literacy is possible – thus multiple paths to ICT integration in education are possible. Part of the reasons pointed out relates to the value of acknowledging and aligning with existing cultural knowledge traditions (which the current framework does not give guidance on) and the general lack of resources in communities. Ines and Bastos (2011) and Rwandan Ministry of Education (2010) highlight similar concerns regarding the latter point, namely, that there is a need for pre-basic initiatives (i.e. emerging phases) in the implementation guidelines that are more sensitive to grass-roots level development tensions, context, and realities, such as to address the problem of inadequate teacher education and basic ICT skills. "O[o]ne feels that a missing point in … basic skills … is their 'localization' in teacher's working context." (Ines and Bastos, 2011, p. 17). Also, "t[T]he UNESCO competency standards may be too high. There is a need to

localise the UNESCO standards to meet the needs of Rwandan teachers." (Rwandan Ministry of Education, 2010, p. 19).

DEMONSTRATING REFLEXIVE ICT4D PROJECT CONDUCT

The purpose of this section is to demonstrate – using practical examples and narratives (Flyvbjerg, 2001) – how the author incorporated lessons learnt in the process of preparing a project proposal, in the collaborative establishing of project deliverables, and to ultimately assist in context formulation and representation. In this section the author demonstrates how the establishment of a project scope was a collaborative effort between himself, community visionaries, and UNESCO's representative. He uses narrative examples and excerpts from the UNESCO project proposal, letters, and the author's reflexive fieldnotes on the project.

Preparing a project proposal

In the project proposal I prepared, I explained several oppressive circumstances, e.g. perceptions on the impact of sickness and death and how these factors contributed to hopelessness, and its associated beliefs, and how hopelessness affected the success of development efforts:

> "… In rural KwaZulu-Natal [a province in South Africa], several issues and difficulties complicate community empowerment initiatives. These include high rates of HIV infections, a high occurrence of Tuberculosis (TB), high unemployment, extreme poverty, child-headed households and illiteracy. The impact of these factors has been profound, and is intensifying. Large numbers of children are left orphaned and destitute while malnutrition, sickness and death result in a general feeling of hopelessness, which impacts negatively on programs aimed at empowerment, social development and improving health. …" [Excerpt from the UNESCO project funding checklist: 14 April 2009]

Although I personally prepared and wrote the project proposal, it was in fact a collaborative effort between myself and Dr Smith (from Njalo Hospice), Martha (from Khayamandi Hospice), and Mrs Dlamini (headmistress of Happy Valley School), our key gatekeepers. Project intentions were based on their explanations of needs, difficulties, and oppressive circumstances as well as their guidance on where to focus our ICT4D efforts. In the proposal I explicitly emphasised that we align ourselves with existing development initiatives and agency interests, and that we will aim to institutionalise ICT knowledge as far as possible (Madon et al., 2009). I also highlighted that the proposal was based on a prior needs analysis:

> "… A number of fact-finding and exploratory projects have already been initiated under the theme of 'ICTs for community empowerment'. The overarching aim is to focus on, and customize, ICT solutions that are context specific and culturally sensitive while empowering the community through ICTs to address developmental needs and to be self-supporting and for these projects to be sustainable as far as possible. …
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> … one of the primary values that guide our community engagement initiatives is that of cultural and regional sensitivity in ICT implementation and research. Any project initiated at Happy Valley should be done in close collaboration with community participants. In addition, we recognize that such programmes might impact on or may seem to need changes in mind-sets and belief systems and that a culture which will allow for sustainability and empowerment will need to be established. These impacts on the impoverished community of Happy Valley and those individuals aiming to invest in the community are important considerations in this outreach initiative. It is for these reasons that we aim primarily to support the health workers, teachers and active community volunteers. It is also with this principle in mind that we will tailor-make our ICT training courses to be context specific and culturally sensitive. …
>
> … Primary beneficiaries of the next rounds of training are teachers, health care workers and active community members. Indirectly, and as a result of empowering key community members, ICT training and knowledge may be passed on to other community members, the care centre for orphans and vulnerable children, school children, school leavers and businesses. ICT training courses in the health care area will specifically lead to more efficient and effective management of health care and monitoring of ARVs and TB treatment and for creating a much needed culture of record keeping and statistics among the nursing community. ICT training, provided by UP [University of Pretoria], will strengthen and complement existing empowerment initiatives started by Happy Valley School and Njalo. …" [Excerpts from the UNESCO project funding checklist: 14 April 2009]

I related to some of the principles of community entry as I explained earlier. To ensure sustainability and ownership I incorporated the following in the proposal:

> "… A key principle followed throughout is that of creating community ownership. Consequently, this project is a community initiative and the community has assumed ownership with regards to training and ICT needs. The Department of Informatics' role is to support, guide and empower community leaders to knowledgeably facilitate their own ICT empowerment initiatives, social development and wellbeing.
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> This approach, as well as targeting the key areas of health, education and orphan care, may assist community ICT initiatives to expand. School children may have a better opportunity to get tertiary education, teachers may be able to train other teachers in the area, the mandate of Njalo to train and empower nurses for future jobs in other rural areas may be supported and better employment opportunities through context specific ICT training may be created. …
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> … Currently, the headmistress of Happy Valley School, Mrs Dlamini, together with two other heads of schools in the region, has started literacy training in English and isiZulu at the school. It is on her request, as owner of this initiative, that we now include the ICT training in their portfolio. UP therefore supports the

> community initiative and, in collaboration with the school, will facilitate the management and planning of ICT training. …
>
> … any community empowerment initiative needs champions that drive such an initiative. From the Happy Valley community we have Mrs Dlamini from Happy Valley School, Dr Smith from Njalo and Ms Vermeulen from Khayamandi care, all of whom have been driving community projects for a number of years. …these projects have been successful, managed well and funding and auditing have been open and transparent. Existing community empowerment initiatives have a track record of success. ICT for community empowerment is now an added initiative that will be managed by the same stakeholders in collaboration with the Department of Informatics.
>
> With regard to financial sustainability, very few initiatives in the health care sector and especially where it involves orphans and vulnerable children are considered likely to ever be independently sustainable. The reasons for this include the severity of the HIV and TB pandemics in the area and the extreme poverty and isolation of the Happy Valley community. External funding will be needed for a very long time to ensure continued socio-economic development and health support for orphans and vulnerable children and future generations of Happy Valley. …" [Excerpts from the UNESCO project funding checklist: 14 April 2009]

As part of the project deliverables we had to issue a press release prior to the project starting in June 2009. I made the following statement regarding relationships and addressing beliefs surrounding hopelessness:

> "… We … place a strong emphasis on creating relationships, empowering community workers, facilitating social development, addressing poverty and creating ownership, motivation, hope and liberty in people. We will hopefully be able to identify and empower some teachers, through an additional train-the-trainer initiative, to also facilitate ongoing ICT training in the region. …" [Press release: 15 June 2009]

In my project proposal I had certain ideas and plans about what and how we could do engage with the Happy Valley community and where we needed funding. I had quite an elaborative budget which included infrastructural, operational and training expenses and even bursaries for school leavers. I was somewhat overambitious about what we could achieve, especially since I managed to attract the interest of a possible funder.

Fortunately both the project sponsor and I had the openness to enter into a conversation about issues such as project outcomes, underlying community engagement principles, and expectations. During our conversations, UNESCO's representative explained their mandate and development agenda as well as some of the ideas that he had. I could relate to some of the lessons learnt during the needs analysis and topic discovery phases. We were able to

demarcate the project scope and community engagement principles in a way that worked for both of us. We both agreed to do a single pilot ICT teacher training initiative.

In order to relate to the importance of openness to innovation and unexpected outcomes, I explained to the project sponsor that we will follow a 'small-step approach' with the project, where we innovate with pilot initiatives and follow-up discourse rather than trying to do too much too fast and run the risk of failure and losing the participation of the community. Our conversations continued via email. In the following excerpt from an email I demonstrate how I responded to some of the suggestion he made regarding the use of UNESCO's framework:

> "Dear Pete
> The policy Framework … is certainly comprehensive and covers all avenues as we also understand it. I believe that we'll be able to participate with regard to its application in rural Afrocentric context and especially since Informatics and knowledge in Africa is our department's forte. As the document rightly highlights, there are several unique variables and constraints that affect one's approach to development, such as the intricacies of inter-cultural communication and lack of access to the Internet and mobile connectivity. …" [Email to the UNESCO project funder: 25 May 2009]

The next part of the email demonstrates how we clarified the project scope. It was my response to the funder's request to consider Open Office and free software in our training:

> "We considered Open Office and free software and in fact did some initial research on that, but chose the propriety route, mainly because that is what the school has available. We will certainly consider free software should community needs lead us to that. We and the school have been doing this project on a shoe string budget and future funding may enable us to expand the project scope considerably. Our future intentions include an advanced and follow-up literacy course that will have a module on Information literacy that we will tailor for the school. Currently, however, the school has no internet access and the project will have to address infrastructure first. Our field trip will assist us to plan follow-up engagement and training." [Email to the UNESCO project sponsor: 25 May 2009]

In a collaborative effort, we established the following project objectives in a financing contract between the Department of Informatics and UNESCO:

> "… under the direct supervision of the Communication and Information Advisor, the contractor shall:
> 1. Organize two, five day training courses from 29 June to 12 July 2009 … [This objective was as a direct result of Mrs Dlamini's (the headmistress) guidance and suggestions.]
> 2. Ensure the inclusion and participation of stakeholders in the community … [This objective was based on the principle that we should align with

agency interest in the community and that we should try and initiate some type of train-the-trainer event.]

3. Facilitate logistic arrangements for the training (venue and catering, travel and accommodation, lodging, audiovisual material, lecture fees and course material) …
4. Ensure advocacy and publicity through the media on the training course …
5. Submit to UNESCO by 30 August 2009 a final report on the training course and which should include: (a) the thematic areas that will be guiding the training course, (b) the training material, a list of all participants and facilitators (c) the final draft of the agenda and workplan, (d) recommendations on the use of the policy framework … in rural South African context and ways to further information literacy training through community multimedia and/or training centres in rural South Africa, (e) a detailed financial statement … , (f) evidence of media coverage. …"

[Excerpts from UNESCO's activity-financing contract: 11 June 2009]

By presenting the excerpts from the contract I am demonstrating how the project scope was pinned down collaboratively between key community members, the project sponsor, and myself, and how we attempted to remain open to unexpected outcomes and innovation as well as participation and guidance from the Happy Valley community.

The first training intervention

On the 29th of June 2009, we commenced with an important part of the Happy Valley project. It involved a hands-on ICT training intervention, where we dealt directly with a group of teachers from Happy Valley School. During the two weeks from the 27th of June until the 12th of July 2009, we presented the planned two five-day basic computer literacy courses for the teachers and a number of other active caregivers from the Happy Valley community. We also facilitated a 'Computer Appreciation' course (thus dealing with pre-basic ICT needs), in the afternoons for those people who were active in some caregiving role in the community, but who lacked enough background (e.g. illiterate in writing and reading, unable to speak English, and so forth) to participate in a full basic course, as well as a train-the-trainer initiative in the second week. As project leader of a team of academics this was one of the most difficult, demanding, and probably also one of the most rewarding phases of the project.

The computer training involved the demonstration of new computer concepts, allowing teachers to practice and repeat things over and over again, gaining trust, building confidence, and motivation, gauging existing levels of skills and knowledge, building new knowledge in people, flexibility, and so forth. For me it was innovation in action.

Together with Mrs Dlamini, we initially planned to do the training until about 15:00 in the afternoons, but because of teachers' skills levels and the need for personal interaction, support, encouragement, and so forth, we often had to continue until late in the evenings supporting some individuals. By 5 pm I was normally quite exhausted, being on my feet the whole day, and engaging with teachers. Luckily we were a team and could support each other. As project leader I took some strain though. I had to constantly gauge the timing of how training progressed, decide on breaks, plan for the next day, prepare exercises based on the observations I made about progress, skills, and motivational aspects, and even gauge the approaches of my colleagues who participated in the event. I did not do all of the training, but had to constantly be aware of and observe what my colleagues did.

During this first training intervention I was building deep relationships with the teachers and community gatekeepers. This deep and active participant-observation gave me an opportunity to fast-track acceptance and reciprocity. I was reacting on expressed needs and the guidance of community leaders, and we had followed appropriate community entry protocol. My awareness of my own limitations and need for reflexivity, prior stories of unethical and disruptive engagement (e.g. Madon et al., 2009; Zheng, 2009; Thompson, 2008; Roode, 1993), and the need to connect culturally, guided my approaches.

Aligning with a local project owner

On the Sunday evening (28 June 2009) before the training started, we had a quick meeting with Mrs Dlamini regarding her expectations and guidance on how we should commence with the training the next day. We had submitted to her leadership in the project and therefore needed her guidance on how to continue. Her primary concern was that she wanted the teachers to know the seriousness of the training. She, therefore, wanted us to emphasise the importance and value of the course they were getting. She also wanted all participants to know that although they received the course for free, it doesn't mean that they could skip training sessions. She was quite strict about this. She also wanted them to know how much the course would cost them if UNESCO didn't provide funding, and that they have a responsibility to give their full cooperation. Realising the reasons behind her urgency, I also contributed a few of my own points to support her in her leadership.

In my introductory slides I prepared a brief background on the project and how it started, who we are and where we come from. I highlighted Mrs Dlamini's role and leadership in the project, thus publically acknowledging her position. I had learnt that the teachers would value

and perceive this as important. I presented a brief overview of the course content. I also prepared a couple of points on costs, certification, pass requirements, and attendance policy.

One of Mrs Dlamini suggestions, although obvious, made me reflect on the concept of time. She noted that we should tell the teachers to be on time. To emphasise this she said something like: "you know, us Zulus we look at the sun to judge time". These were some of my first realisations of how the concept of time is viewed differently in their worldview. During my introduction the next morning, I spent some time on a proposed daily schedule. We never really followed this completely, though. In retrospect I believe that it was simply a way to communicate the formality of the event rather than for us to follow it as a specific schedule.

In my pre-course presentation I emphasised responsible engagement, teaching, and project management, as well as UNESCO's requirements for us to report back to them, as inspirational and motivational factors. I wanted to bring across the message that the group of teachers is special, in the sense that they were the only UNESCO funded project operating along the specific project guidelines in the whole of Southern Africa. As mentioned by some participants and also highlighted by Madon et al. (2009), Happy Valley, like most other isolated communities have experienced attempts by 'outsiders' to profit from them. I felt I had to counter the possibility of such consciousness and causes of prior repressive events, and therefore tried to dignify them, acknowledge them, and build inspiration. I also wanted them to realise their privileged position, but also the responsibility that comes with this position. I considered it as a way also to engender participation and commitment. It was relatively easy for me apply these motivating factors, because I had Mrs Dlamini's support and blessing and was working under her authority.

When the course started the following day, we had absolutely no lack of commitment and dedication. The teachers were on time and stayed long after our planned schedule. In fact, most of them ignored the proposed schedule and worked right through their lunches, and tea times. I was amazed at this utmost and raw commitment and dedication.

Mrs Dlamini's authority and role in the community and school allowed us to slot into an existing structure of leadership and power. Her position of power became an emancipatory power in the project (Avgerou, 2005). Our collaboration and alignment with her also became a very strong emancipatory practice. It provided a safe and productive environment for us and

the teachers to function in, confirming also the importance of a school's leadership in such activities (Chigona and Chigona, 2010).

ICT training – a new cultural phenomenon

Western logic is embedded in ICTs (Thompson, 2004) which implies that for deep rural African cultures, learning new ICTs equates to an intercultural encounter (Krauss, 2013; Merriam and Ntseane, 2008). In this section I reflect on the ICT training and some of my observations on the struggles I noted in people.

The first two weeks of active participant-observation during the first training intervention in June 2009 made a huge impression on me personally. I captured my first impressions and struggles in self-reflexivity as follows:

> "… I … had the opportunity to train teachers in basic ICTs in a rural South African community and what a different set of variables it was for my Western, goal-orientated mind! In this untouched [not affected much by Western capitalism and development] community … a completely different view of reality exists. Coming from a background of teaching and knowing the importance of relating new knowledge to existing experience, I was constantly confronted with trying to find similarities in this 'new' social system in order for me to firstly, make sense of the environment and people, and secondly, try and make myself clear during the training sessions.
>
> I had to constantly ask myself whether what I assume is the same as what 'they' assume. At some stage I felt helpless for not having the same frame of reference and for not understanding the way they understand. Every time I talk or teach, I have to question, not only the clarity of what I say, but also how I say it, as well as the preconceived ideas I assume they have about what I want so say. It really opened my eyes to the different worlds of Afrocentricity and Eurocentricity and especially the systems by which people value themselves and what they do. My interactions with the community and my feeble efforts to gain their trust were constantly challenged by my consistent misunderstandings of their different cultural world. Was it not for some of my 'cultural interpreting' colleagues, I would have probably unknowingly offended and lost the very people I tried to collaborate with in this 'meeting of minds'. In doing my ICT-related development work, I was challenged by a uniquely different social reality. …"

Intercultural communication and understanding the different worldviews were my greatest challenges during this time. In my fieldnotes I alluded to the fact that there is a different set of values by which the local people construct meaning and weave logic (Merriam and Ntseane, 2008). I also noted my own frustrations and struggles in the phenomena, that it was in conflict with my own goal-orientatedness, and that I could not articulate the collisions or reasons for my struggles. During the training interventions I noted the following in my

fieldnotes: “the sympathetic meeting of minds is even more complicated as we try to not only understand meaning but also the underlying cultural context and value systems from which meaning emanates.” For some teachers, such as the pre-school teacher and the Zulu language teacher, the computer was an absolutely brand new phenomenon. Many times during the training we had to sit down to allow the teachers to practice things like the difference between a mouse click and a double-click. On the extreme there were those who struggled at least a day to successfully click on a button or icon. The phenomenon of keeping a mouse dead-still during the two clicks of a double-click was impossible for some in the beginning. Typically their actions resulted in a ‘move’. The timing between two clicks was the issue: two clicks following each other and executed too slow is two clicks and not a double-click.

Another example was the issue of clicking *on* a button. In several cases when I told a student to click *on* a button he or she would move the mouse curser above the button and then try to click. I never found a way to explain this verbally in the end. I always had to demonstrate what I meant by *clicking on the button*, and even then I had students who didn’t get it the first time. In some cases I had to actually put my hand on top of the student’s hand to make her or him feel my movements and clicking. In the end I could not predict how people would react to new ICT phenomena. In most cases I believe that the distinguishing factor is simply prior exposure to new technologies. I.e. if you had prior exposure to the computer or some Western technologies, your learning is somewhat easier.

Apart from a few individual cases three things made the training project successful in the end. The first was Mrs Dlamini’s ownership and established position in the community of teachers. For all of us, the direction she provided, both in terms of leadership and power, emerged as a strong emancipatory practice that we could align with. We could function under her leadership, authority, and the social arrangement that she established. Secondly; patience, patience, patience. The most basic way to distort a training intervention like this is to lose your patience. And then with patience comes, repetition and innovation – continuously re-framing new concepts in new ways, trying to find innovative ways to explain them, coming up with new and innovative training ideas and metaphors, and so forth. Thirdly, you need to establish the commitment and buy in of the people you are training. Without their commitment you as trainer cannot respond. Establishing such reciprocity, though, takes time, reflexivity, and the agency role of a gatekeeper.

Reproducing computer phobia (IT-stress)

The story of Mr Ndlovu probably was one of the most tragic events during the training intervention. My observation of him was that he came to the training with a fair level of confidence, but left the training event traumatised and embarrassed. He was one of the few teachers at Happy Valley School who had a degree in teaching and who also assumed a mentorship role for his younger colleagues. His struggles with the computer training, however, and the fact that he was the only one to get a supplementary exam, seemed to put him down in front of his colleagues. The story broadly unfolded as follows.

On the first and second days of the first week, Jacob (my colleague and partner) introduced the teachers to MS Word. He was very patient and I especially noted his friendly ways with the local people. However, on the Wednesday another colleague of mine, Solomon, introduced the teachers to MS Excel. He, however, was simply relentless in his ways. He stormed in with a goal-orientated approach, pushing to cover specific topics that he had concluded are important, without proper reflection on how his fast and relentless pace could possibly affect the teachers' confidence, prior computer fears and phobia, motivation, and sense of achievement. He had a way of 'talking' the teachers through a concept rather than allowing them to practice the concept in their own time and way. Jacob and I quite quickly realised that there was a problem. His assessment on the choice of topic was really relevant to the teachers' work, though. For example, he addressed concepts (e.g. the VLOOKUP function, linking and hyperlinking, the AutoFilter Command, etc.) that could help teachers organise subject marks in spread sheets. But much of that involved calculations. Solomon's goal-orientated approaches were destructive and had an impact on the teachers' confidence. Almost everybody noted how 'difficult' MS Excel is, while I knew that much of their perceptions were because of his approach.

Solomon also was not as observant and sensitive to the teachers as Jacob was. We both hinted to the problem during the training, but it just didn't seem to faze him at all. On the Thursday morning Solomon continued pushing. The more the teachers struggled, the more he pushed, because 'time was running out' and there were still some things to cover. By Thursday early afternoon, I had to step in. As project leader, and seeing the bigger picture, I realised that this might end up in a disaster if I don't do something. I, therefore, against my own nature asked Solomon to excuse himself from the training. He obviously was quite offended at my stepping into the situation. My assessment of the situation was that a couple of the teachers were quite traumatised and that because of the social arrangement of the training intervention,

they couldn't oppose Solomon or ask him to slow down. Solomon also was not open to it. I had to come up with a strategy that could rectify the situation without placing Solomon in a bad light in front of the teachers.

I decided to leave MS Excel for a moment and to do some MS Word revision. I decided to spend the whole of Friday morning to follow a softer and people-orientated approach during the Excel revision. I had to again find ways to turn around 'prior' disruptive approaches that caused computer phobia, IT-fear, and anxiety. That evening Jacob and I had a very long chat with Solomon. It took him quite a while to see our point and to back off. For me it was quite a difficult part of the training, because of the conflict that had now erupted and because I wanted the teachers' first experiences with a computer to be positive. I wanted to establish a foundation and sense of achievement that they could build upon in the future.

So Friday morning I started with something similar than on the first day, where I place everything in perspective, explaining the positives aspects of the topics that Solomon addressed, but that I would do revision in a slower and more people-orientated way. It was tough though, but I managed to again create some understanding and sense of achievement. As I explained things to Malusi (a teacher), he made an interesting remark. He said that; "for Excel we need a Solomon and a Kirstin". I understood that Solomon explained the concepts, and I had a way of opening them up. Again I had to sit down and reflect about what I did.

Mr Ndlovu though, never recovered from this event. During the exam on the Friday afternoon, I noted his hands shaking during the exam. Given the situation, I felt that I should allow him a supplementary exam, which he wrote on the 26th of August when I visited the community again. I argued that because he had some time to practice (July and August), he should be better off than to put him under the pressure of a rewrite immediately. On the 26th of August, when I gave him the supplementary exam he barely made it with 50%. And even then, during the rewrite he was shaking while he was trying to complete the exam and do very simply things. I was concerned, because I observed him to be an intelligent and capable man. On the evening of the 26th, we did a certification ceremony where we handed out all the certificates of the July training. I told Mr Ndlovu that I will reveal his mark then. However, he disappeared – it was as if he almost fled the scene. I think that he was so scared and embarrassed that he simply couldn't face the possibility of failure and disappointment. I reflected a lot on his case, but never had the opportunity to chat with him again.

Scenarios like Mr Ndlovu's made me reflect about how to avoid disruptive and abusive behaviour that would reinforce prior repressive beliefs or experiences (Chigona and Chigona, 2010; Madon et al., 2009; Zheng, 2009; Thompson, 2008; Roode, 1993). During this whole event, I believe that the problem didn't lie with the community and anyone in the community but rather with us as outsiders. We didn't fully understand prior false consciousnesses, the situation and context, existing fears and beliefs, the difficulties and stresses associated of learning new IT concepts and at the same time make some type of cultural transition, and even how to be ethically reflexive (Stahl, 2008) throughout.

RECOMMENDATIONS AND REFLEXIVE THEMES FOR ICT4D IMPLEMENTATION

Given the guidelines and limitations of UNESCO's ICT-CFT, the ongoing ethical question of ICT4D introduction and operationalizing, and the practical realities of doing ICT4D work in Happy Valley, one can extract and summarise the following recommendations and reflexive themes for context understanding and representation. The themes emerged from employing critical reflexivity in the 'doing' of ICT4D project introduction. More specifically, employing critical reflexivity as a methodology means that self-conscious criticism on the part of the researcher forms part of the strategy of conducting the empirical work where the researcher intentionally questioned and reflected upon his own subjective experiences, assumptions, viewpoints, beliefs, values, and agendas, opening them up for debate (Stahl, 2008; Čečez-Kecmanović, 2001). The researcher also examined the empirical situation from all angles; e.g. "people, relationships, situation, place, timing, chronology, causality, connections… data and texts" (Bolton, 2010, p. 13) including thoughts, feelings, and cultural canons that govern particular assumptions and practices (Mezirow, 1998). Doing critical reflexivity adequately, comes from immersion into the social phenomena and developing the ability to elaborate on such nuanced level of detail (Bourdieu, 1990) – i.e. virtuoso social acting. Underpinning all of these reflexive themes is the starting assumptions of a critical position of enquiry and its ethical agenda (see Section 3).

The first reflexive theme is about the importance of **making special effort and showing respect and openness to Afrocentricity in order to master its meaning**. This can be the starting point for understanding the local African culture, beliefs, approaches, and value judgements, and for making sense of how to appropriately deal with context. A number of authors explore this theme. For example, Willoughby (1928) reflects on the African worldview, Ndegwa (1992) studies the relevance of African studies in the global context,

Merriam and Ntseane (2008) study the African frame of reference in cross-cultural learning, Krauss (2013) explores worldview collisions in policy conduct, and Asante (1983) debates the ideological significance of Afrocentricity in intercultural communication.

The second reflexive theme is about **openness to local innovation and the unexpected consequences of local ICT innovation**. The rationale for this theme is that "even if the technologies implemented in an IS project are already common elsewhere and widespread, the local experience of technology implementation and socio-organizational change constitutes an innovation for the organization concerned and may well constitute innovation for its socio-economic context." (Avgerou, 2009, p. 1). In order to be open to local innovation, one also needs to be reflexive about the meaning of sustainability. Ali and Bailur (2007) argue that "n[N]othing has ever been sustainable, and nothing will ever be" (p. 12). Citing Hemmati (2002), they suggest that sustainable development should be seen as a process of dialogue and consensus building among all project partners who together should define problems, design possible solutions, collaborate to implement them, and evaluate the outcomes. They suggest that the unintended consequences of ICT4D implementation should be embraced as improvisations and bricolage, rather than a threat to sustainability.

The third reflexive theme, which follows from the previous, is about **collaboration with cultural interpreters, community visionaries, and gatekeepers**. These project partners can then function both as interpreters of social phenomena (i.e. they can help the outsider to understand the local project context and the local view of reality) and as collaborators in ICT4D work at a level of operationalising (Krauss, 2013; Phahlamohlaka and Lotriet, 2003; Weyers, 2001). Partnerships will then allow one to align with local needs and realities, to collaboratively challenge oppressive circumstances, and to align with local emancipatory practices. An essential aspect of empowering local visionaries and nurturing local ownership is that one should also submit to local social arrangements and local leadership, and their guidance.

The fourth reflexive theme is about **allowing for a time of community entry and enculturation**. Enculturation has two aspects to it. Firstly, it implies an explicit effort in participant-observation work where the researcher familiarises himself or herself with the cultural practices and values of the 'foreign' cultural group (Myers, 2009; De Vos et al., 2007). Conradie (1998) cited by Phahlamohlaka and Lotriet (2003), furthermore, proposes several practical guidelines for ICT4D project introduction. These are:

- to identify for local pioneers with vision
- to establish clear objectives
- to identify external organisations involved in supporting roles
- to establish significant community response to participate and help
- to identify teachers and community members that could offer their services as teachers trainers and facilitators
- to establish train-the-trainer types of initiatives financed by external stakeholders
- to show abundant evidence of co-operation and collaboration among parties involved
- to establish a community centered management approach and thus create ownership
- to establish accountability and transparency, and awareness of changing environments
- to put processes in place to monitor, evaluate, and adjust to changes
- to create constant awareness of pitfalls to be avoided such, as the project being led by technology instead of community needs or trying to do everything with ICTs

Enculturation also implies that one remains cognisant of the disruptive effects of ICT4D introduction; such as that it could engulf the traditions and values of local people or that the acquisition of ICT skills may cause IT-stress or contradictions. Here reflection is required both in terms of the style of managing an ICT4D project and how to facilitate actual engagement with technology. While this idea is broadly mentioned in this paper, more is necessary to elaborate on how to do community entry. Authors such as Myers (2009), Krauss (2013), Chughtai and Myers (2014), Whyte (1996), and De Vos et al. (2007) may assist in this endeavour.

The final reflexivity theme is about **dealing with the realities of hopelessness and tensions** caused by sickness, death, poverty, unemployment, disrupted communities, child-headed households, and so forth (Krauss, 2013; Lewis, 1994). Lewis (1994), in his missionary view on hopelessness, note that it is difficult to address poverty if you do not also address the poverty sustaining world people live in. Developmental practice and context discovery should thus address issues such as creating hope, ownership, motivation, and the on-going institutionalising of ICT knowledge (Madon, Reinhard, Roode, and Walsham, 2009), especially among those people who are in a caring position in the community. Part of this is to negotiate the consequences of prior exploitation and mistreatment of communities by outsiders (Zheng, 2009; Lewis, 1994; Du Plooy and Roode, 1993; Roode, 1993). Lewis (1994) for example stated that "y[Y]ou are poor because the rich and powerful have created systems of politics, economics, and laws which are designed to keep you poor and to protect

their wealth and power." (p. 10-4). Poverty and hopelessness and associated oppressive consequences could affect the sustainability and success of ICT4D initiatives.

CONCLUSIONS

The paper demonstrates how lessons learnt from the ICT4D project introduction phases and the researcher's ethnographic work informed an understanding of the local cultural context, and subsequently the formulation of a project proposal and project outcomes for doing teacher training along the lines of UNESCO's ICT-CFT framework. The researcher used narrative both as method and phenomena. In the narratives, the researcher demonstrated how a project proposal and project outcomes were established and how he reflected on what emanated from the engagements – such as reflections about ICT training as a culturally foreign experience and an example of IT-stress. The paper thus shows how an ICT policy guiding framework with a developmental agenda was appropriated respectfully and ethically for the development realities of a traditional community in a deep rural part of South Africa.

The primary value to the reader is that this paper offers an example of how to possibility de-westernise western-driven ICT4D projects and ICT teaching. A strength of the approach that this paper follows is that it leverages on the power of narrative examples that specifically attempts to demonstrate critical reflexive ICT4D project conduct. The self-reflexive narrative serve as a 'mirror' and sensitising devise (Elliott, 2005) to possibly also emancipate the readers in the way it helps them to reflect on their own practices (Schultze, 2000). The paper thus also contributes to on-going debates on what constitutes a critical research methodology and how the theory and practice of critical research could inform each other.

The project case presented here (and in other papers on the project) in many ways is a collection of stories about collaborative sustainability struggles in Happy Valley. Throughout the research, the researcher attempted to remain open and reflexive regarding unexpected outcomes, work ways and values of the local people regardless of how 'absurd', 'unproductive' or 'illogical' they appeared. There were many times when things evolved in ways that made the researcher feel very uncomfortable, both at a project management and personal interaction level. However, as a result of lessons learnt, understanding his own limitations, and 'advice' from literature, his first reaction remained to allow for local innovation as far as possible and to assume a learning position. Throughout the project this approach not only deepened local ownership, but also developed and reinforced culturally and context specific ICT4D principles and implementation guidelines.

In the paper, the author argues for deeper and more explicit critically reflexive approaches to understanding cultural context (e.g. local worldview, values, and developmental realities) to be part of ICT4D introduction and operationalizing. This is in order to adequately reframe what concepts like emancipation, development, sustainability, and innovation mean in context of local value judgements. However, although many more lessons were learnt around the local culture, worldview collisions, and emancipation, these are not discussed here and further interrogation thereof is necessary.

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