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Where leaders learn

Introducing and implementing ICT4D training in a developing community in South Africa

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ABSTRACT

Information Communication for Development (ICT4D) essentially looks at development from a political, economic and sociological perspective – the general underlying assumption being that a greater inclusion of ICTs into society fosters development. This paper looks at how developing countries in the past have chosen to introduce ideas from the West without necessarily questioning the applicability and approaches associated with these technologies. There is great truth in Bill Gates' statement that the poor do not need ICTs. However, the poor do need economic opportunity, improved nutrition and health care, healthy environments, education, and other components of a rewarding and sustainable livelihood, all of which can be delivered through effective use of ICTs. Lasting impact in terms of ICTs is identified through a closer look at issues of empowerment and cohesion provided by the evidence of a holistically transformed community or nation. Studies have shown that one of the most significant reasons why ICTs fail, more especially in developing countries, is due to a lack of effective and sufficient training. This conceptual paper looks at how ICT4D training can be introduced and implemented in a developing community in South Africa, with the aim of addressing development from the root up. Addressing issues of the great digital divide will hopefully result in a significant and sustainable reduction of inequality and poverty in South Africa.

Introduction

Information and Communications Technology (ICT) has become a common catchphrase with differing viewpoints of its purpose and impact amongst both experts and the novice audience. As the name suggests, ICT encompasses all the technology that facilitates the processing, transfer and exchange of information and communication services. Digital television, radio, computers, telephones, email and the internet are just a few examples of ICTs. ICT has traditionally been introduced purely from a strategic perspective with the aim of improving the economic condition of a country. However, ICTs may facilitate the enhancement of the lives of developing communities by broadening access to marketing information, creating new economic opportunities, increasing efficiencies and effectiveness in various industries, improving market competitiveness of communities, providing information which could assist in the delivery of better access to social services such as skills development, educational facilities, employment, healthcare and improving governance functions (Chilimo & Ngulube, 2009).

This more holistic and broad view of the potential of ICTs has led to what is commonly known as Information Communication Technology for Development (ICT4D). ICT4D is an interdisciplinary area referring to how information and communication technologies can be used to enable or support human/socio-economic development activities in developing countries (Khene, 2012). ICT4D essentially looks at development from a political, economic and sociological perspective. The underlying assumption is that a greater inclusion of ICTs into society fosters development. However, are we right in making this assumption?

In this paper we look at ICT4D challenges in South African context. We specifically question some of the typical assumptions associated with ICT4D implementation and research. Towards the end of the paper we propose Critical Social Theory as an appropriate paradigm for studying ICT4D phenomena. We then conclude with a framework for ICT4D introduction and implementation.

ICT4D in developing contexts

Africans have more often than not introduced ideas from the West with the intention to better themselves without necessarily questioning the assumptions rooted in the applicability and

associated approaches of these technologies. Over the years developing countries have reaped devastating results of embracing technology while few have seen the real value of investing in technology (Gomez & Pather, 2012). These results have led to the need to contextualise ICT4D and test the real impact of implementing such technologies in a developing context (Avgerou, 2009; Krauss, 2009). Results have shown the need to introduce ICTs in a way that fosters the advancement of a community while it still keeps its unique social fibre in-tact (Krauss, 2009). Issues that have been overlooked in the past now form an integral role in ensuring the success of many ICT4D endeavours. One such issue is that of how ICTs are introduced and implemented into a community. For many, it is often a case of ‘carelessly infusing’ information technology without considering the social issues, values, cultural bearers and other challenges unique to developing communities (Du Plooy & Roode, 1993). Training, in ICT4D, for example is often overlooked or inadequately conducted (Pade-Khene, 2010).

The question then is how ICT training can be used to better equip individuals in order to inspire, motivate and empower them to take ownership of their own setting and position in society without re-enforcing a repressive situation or disrupting the local community fibre? In this paper we start off by looking at what ICTs are in the first place and then proceed to defining ICT4D. That way one can move forward in understanding how they can be used in more effective ways to eradicate issues plaguing development in developing countries.

There is no questioning the emergence of ICTs into developing countries; however, emphasis is often placed on the development and implementation aspects to Information Technology (IT) as opposed to the socio-economic aspects (Avgerou, 2009). It is for this reason that many often wonder about the real and lasting benefits of introducing and implementing ICTs into a developing context. In principle, ICTs have always been available since the advent of the printing press (Osterwalder, 2002). In recent years a broader perspective has been adopted which encompasses the socio-economic context of communities and organizations hosting new technologies. This has proved to be more appropriate to the developing context as the focus is shifted towards the potential of ICT in contributing to the improvement of socio-economic conditions (Avgerou, 2009).

However, the question often thrown at authors is how can computers be prioritized over people’s need for water and roads (Gomez & Pather, 2012)? As reiterated by Krishna and Madon (2003), many old challenges in terms of the inappropriate focus and resource

allocation still remain. There is great truth in Bill Gates' statement that the poor do not need ICTs (McNamara, 2003). What the poor need is economic opportunity, improved nutrition and health care, healthy environments, education, and other components of a rewarding and sustainable livelihood (McNamara, 2003).

Setting up Millennium Development Goals (MDGs) by the United Nations has been an attempt to directly address fundamental injustices and inequalities that currently blight our planet (Heeks, 2005). Gerster and Zimmermann (2003) believe that if the MDGs are taken seriously, the contribution of ICTs to challenges gripping Africa poverty reduction should be a major issue in the international debate. McNamara (2003), however, has called for a need to be more realistic about the broader changes required in a developing country in order to foster sustained growth and poverty reduction, as well as the role of ICTs in effecting those broader changes.

Krauss (2009) holds that assumptions regarding the applicability and associated approaches of ICTs should be questioned. This implies a need to contextualise ICT4D and to test the impact of ICT implementation in the specific cultural context of individual communities; keeping in mind that these artefacts were designed with the west/developed context in mind (Krauss, 2009). Africa's mistake, according to Du Plooy and Roode (1993), has often been in "adopting new technology to enable it to leapfrog the gap between it and its developed trading partners without taking the time to ponder some of the ethical issues and socio-economic implications associated with this action." The only concern fundamentally has been the economic or financial benefit gained from ICTs. An interesting question posed by Obijiofor (1998) is whether new ICTs will launch Africans on the path of socio-economic development or will they subject Africa to a new form of dependence?

The 'prophecy' by Du Plooy and Roode (1993) some twenty years ago about information technology being used to enhance discrimination, increase the gulf between the rich and poor, and to support new forms of colonialism, supporting those already in positions of power, and further alienating the under-privileged from the benefits of true democracy and empowerment has come true. When a powerful technology is introduced into an organization or a society, it does not leave the organization or society unaffected; more so in a context that openly embraces ideas not belonging to it. Asante (1983) holds steadfast to the identity of Afrocentricity, however, how can Africans hold on to both the opportunity for effective interaction between themselves and non-Africans and the hope of technological advancement

when technology is centred on total change according to the designer's worldview? In no other continent and among no other peoples have outside influences so thoroughly dominated economics life and other spheres of life (Asante, 1983). Maybe it is for this reason that countries like India and Brazil have gone ahead and left Africa in a vicious cycle of dependency and exploitation.

For Development

ICT4D cannot be discussed to gratification without concentrating on the concept of development. The 'for development' aspect has caused the much controversy and division among authors as varying views exist regarding what development really is (Avgerou, 2009). While some view development from merely an economic perspective, others have an all encompassing view of development. The application of ICTs as a developmental tool has progressed through various phases over time. Three decades ago the use of ICT4D was viewed as a needless luxury (Gomez & Pather, 2012). Some authors believe that development must be conceived as a multi-dimensional process involving major changes in social structures, popular attitudes, and national institutions, as well as the acceleration of economic growth, the reduction of inequality, and the eradication of absolute poverty (Todaro, 1989, in Du Plooy & Roode, 1993). The obscure view of development has often led to the mismatch between a community's needs and what is being offered by ICT4D. Development, in essence, must represent the whole spectrum of change which an entire social system, tuned to the diverse basic needs of individuals and social groups within that system, moves away from a condition of life widely perceived as unsatisfactory, and towards a situation or condition of life regarded as materially and spiritually "better". (Du Plooy & Roode, 1993). This shift causes one to focus on the intangible measures of development.

Todaro's (1989) suggested three core values that should serve as a conceptual basis for understanding inner meaning of development, are in many way unanimous to Gomez and Pather's (2012) understanding of development:

- **“Life-sustenance:** The Ability to provide basic needs

To increase the availability and widen the distribution of basic life-sustaining goods such as food, shelter, health and protection;

- **Self-esteem:** To Be a Person

To raise levels of living including, in addition to higher incomes, the provision of more jobs, better education, and greater attention to cultural and humanistic values, all of which will prevent to cultural and humanistic values, all of which will serve not only to enhance material well-being but also to generate greater individual and national self-esteem; and

- **Freedom from servitude:** To be able to choose

To expand the range of economic and social choices available to individuals and nations by freeing them from servitude and dependence not only in relation to other people and nations, but also on the forces of ignorance and human misery.” (p. 87)

Development is more than just a numerical analysis of economic figures such as GDP, it is an in-depth analysis of the human; which is in itself is complex (Gomez & Pather, 2012). Development requires an in-depth study of self, the context within which self exists and how it interacts with its environment (Gomez & Pather, 2012). This is what makes ICT4D an interdisciplinary study which delves into the areas of anthropology, sociology, economics, and politics all centred on information technology (Heeks, 2009). With an interdisciplinary perspective in mind, under-development moves from being a simple case of “low infrastructure and income in an economy to addressing low levels of living, low self-esteem, and limited freedom” (Du Plooy & Roode, 1993). It then becomes obvious that intangible outcomes such as empowerment, self-esteem and self-worth, social cohesion and social fabric, relationship with governments, achievement and recognition should be the desired result (Gomez & Pather, 2012).

It is clear that without improving the level of living of people within a nation, the prospects for development are practically non-existent. Success in the economic set of processes is thus a necessary, but not a sufficient condition for meeting the broader concerns of socio-economic progress. For this reason, economics may play a central role in the development process. However, the impact of that role will be greatly reduced, even nullified, if simultaneously the importance of attending to the determinants of national and personal esteem, and of striving to broaden society’s freedom to choose, is not also given priority and attention (Bohwasi & Mukove, 2008).

Calls to focus on the intangible impacts of ICT4D have previously fallen to deaf ears due to the fact that it is a far more challenging approach. Hence, many have chosen to avoid the road less travelled. This study however insists on pursuing the very path that has so often been

avoided in order to ascertain results that may not be tangible but that will make a significant difference to developing communities. Intangible impacts which require evaluation include empowerment, self-esteem, and sense of self-worth, at the individual level, and social cohesion and strengthening of social fibre, at the collective level (Gomez & Pather, 2012).

ICT4D from A Global Perspective

Since the early 21st century, countries such as Canada, Japan and those of the European Union have implemented their strategies, policies, programs and legislation to facilitate the expansion of ICT capabilities in an attempt to create a more advanced society (Ghanbari, 2010). However, Habermas suggests that technology has all too often been used mainly to empower the rich and privileged to retain their positions of economic social and political power (Habermas, 1974; cited in Unwin, 2009).

In a debate led by Du Plooy and Roode (1993) the careless infusion of information technology in the economy of developing countries is the main point of departure. On the one hand a broad observation about the Western society is that a number of major economic developments and new industries have provoked growth. The assumption made is that technological innovation is synonymous with human progress. In developing countries the emphasis is very often focused strongly on the efficient use of resources – not to retain profit as is the case with developed countries, but rather as a means of survival (Du Plooy & Roode, 1993).

Though, developed countries have implemented innovative ideas to technological advancement one cannot ignore the disparity between the outcomes experienced by developed countries as opposed to developing countries. Developed countries are developed for a reason. Mainly because they have conquered preliminary challenges that developing countries are still grappling with (Unwin, 2009). A closer look needs to be taken at developing communities in order to distinguish what the specific problems are in those specific areas and how ICTs can then be disseminated so as to uniquely eradicate challenges specific to that context.

The South African Case

In the South African context there is a need to introduce ICTs in such a way that the unique social fibre of developing and traditional communities stays intact, that local culture and

values are respected and that the community is truly empowered according to their worldview and understanding (Krauss, 2009). Ensuring that the unique social fibre of developing and traditional communities stays in-tact seems almost impossible unless an inside-out approach to ICT4D projects is taken as opposed to an all-encompassing ‘blanket’ approach.

Ten years ago South Africa was on par with Brazil in terms of Internet connectivity, but after only a decade the country has been surpassed by other developing countries (Ellis, 2012). South Africa’s challenge is often that it is expensive to be innovative; unlike in India where they have significantly lower costs when it comes to ICT access. A recent article by Vermeulen (2012) reflects the same issue of how a lack of financial support from government and the public sector can really stifle the process of development. Cape Town has recently seen the launch of the West Africa Cable Systems (WACS) in an effort to revolutionize ICT in South Africa and fourteen other African countries. The purpose of the 17200km marine cable is to help lower the cost of Broadband access and to contribute to the establishment of ICT4D artefacts such as e-education and e-health in Africa (Sithole, 2012). This comes as exciting news, not only for South Africa, but for entire continent. Challenges of infrastructure are being addressed; however, it is important to remain mindful of the broad perspective of development which is beyond infrastructure and other tangible factors. A true and lasting impact in terms of ICTs is identified through a closer look at issues of empowerment and cohesion provided by the evidence of a holistically transformed community or nation.

Invaluable lessons can be taken from projects such as the SEIDET project (Phahlamohlaka, 2008). The project marks a remarkable story of empowering an African community with education and ICT. SEIDET has illustrated the importance of local community involvement and the supporting roles of academic research. The distinguishing factor of this project is that unlike most ICT projects established in developing communities, it did not copy other organizations or formulae but rather created its own inspiration according to what it was ready to do. Ultimately it contextualised ICTs to its specific context (Phahlamohlaka, 2008).

The Challenges

Oppressive Circumstances

As was once said by Frantz Fanon, “the oppressed will always believe the worst about themselves.” This quote highlights the importance of not just looking at the communal reasons for stagnancies in the pursuit of development but also the personal, or rather

individualistic challenges faced by those with the potential of embracing technology. There is also the issue of false consciousness which leaves the victim trapped in the idea that there are incapable of achieving and keeps them in a constant state of regression (Allahar, 2004).

These are but a few of the oppressive circumstance that need to be addressed when introducing and implementing ICTs artefacts (Pade-Khene, 2010). These are challenges people tasked with the responsibility of ICT training will have to face head-on and find working solutions to. These oppressive circumstances are often attitudinal matters which need to be addressed from a psychological perspective.

A Lack of Sills, Education and Literacy levels

A lack of skills, education and low literacy levels are challenges directly facing any ICT4D endeavour as they inevitably lead to high failure rates in the implementation of ICTs. Jain (2006) expounds on some of the key areas of concern that African countries face: a lack the infrastructure needed to implement certain ICTs and digital illiteracy prohibits the local community from making use of ICTs even if ICTs are successfully implemented. Chigona and Chigona (2010) list some of the factors influencing utilization of ICT in teaching. These include access to resources, quality of software and hardware, ease of use, incentives to change, support and collegiality in their school, school policies, commitment to professional learning, background in formal ICT training and in addition, computer-phobia (Chigona & Chigona , 2010).

Lack of education is with no doubt one of the crippling factors to development of any poor nation. The level of knowledge and skills people in a country display will dictate what level of service or product can be marketed. If the labour force has received a higher level of education or has computer skills, the transition to new markets could be quicker than if you had to train individuals from a preliminary basis (Mamaghani, 2010).

Education as a Solution

Studies have shown that one of the most significant reasons why ICTs, more especially ICTs in developing countries fail is due to a lack of effective and sufficient training (Pade-Khene, 2010). However, there is a gap in literature will regards to the training of staff members, more especially those in municipal or government positions, in the use ICTs in a work environment. Proper introduction and implementation therefore, is mobilized by sufficient and effective training of individuals interacting with ICTs. Training of staff members

adequately ultimately leads to confident staff and an over-arching effect of inspired, motivated and empowered staff members. Essentially transformation results in the emancipation of these individuals allowing them to take ownership of their own position society; an all encompassing and socio-economical contributing form of development (Du Plooy & Roode, 1993). This view of development looks at the development of the individual, his community and ultimately a nation.

The three key areas of focus that Pischetola (2011) suggests are important to consider when contextualising ICT initiatives are cultural transformation, social and intellectual capital and long-term effective training. She argues that ICT should be embedded as part of local life and culture rather than simply deployed to a given area, and that human resources are far more important for long-term success than the technology itself is. Finally, she asserts that a lack of comprehensive training can prevent an ICT initiative from reaching its full potential by causing it not to gain the necessary support from within the community.

Carlos (2007) states that local involvement in the improvement process is critical and that the local community should eventually take responsibility for and ownership of the updated infrastructure. This process of transferring responsibility, it is further argued, will lead to greater acceptance of ICTs in the long term as a result of people feeling more involved in the implementation and maintenance processes (Carlos, 2007).

Critical Social Theory as an ICT4D research paradigm

In the previous sections attention has been drawn to disparities or conflicts between what ICT4D is perceived to do or enable and the unique realities and perspectives associated with the situation in which ICT is supposed to enable development. In this section we propose Critical Social Theory or critical research as an appropriate position of enquiry for studying ICT4D phenomena (Avison, Fitzgerald & Powell, 2005; Avgerou, 2005; Adam, 2001; Čečez-Kecmanović, 2001; Krauss, 2009; Fourie & Krauss, 2010).

Critical social theory takes a critical stance on what is observed about social phenomena (Neuman, 1997). It questions assumptions and ideologies underlying social phenomena in order to address the emancipatory interests of research subjects (Adam, 2001). Critical 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;

Klein & Myers, 1999; Ngwenyama & Lee, 1997). 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 social theorists extend the responsibility of the researcher beyond the development of explanations and understandings of social phenomena which is the mandate of Interpretivism and conventional social research (Thomas, 1993; Neuman, 1997; Klein & Myers, 1999) to a critique of unjust and inequitable conditions of the social situation from which people require emancipation (Hammersley, 1992; Ngwenyama & Lee, 1997). Critical researchers recognise the need for social research to affect change (Hammersley, 1992; Thomas, 1993; Myers & Klein, 2011) and that their ability to affect change is “constrained by various forms of social, cultural and political domination” (Myers & Avison, 2001:7).

Although there are many authors that deeply scrutinise critical research in ICT4D, we will briefly highlight only two sets of guidelines for critical research in this paper. The first relates to the epistemology of critical research, i.e. how to build knowledge as a critical theorist. Understanding the epistemology of a research paradigm should be a natural outflow of understanding the critical theorist’s assumptions about knowledge, truth and reality. Howcroft and Trauth (2005) put forward five themes which shape a critical epistemology:

Their first theme, which is **emancipation**, is a thread running through all the different critical streams. According to them, emancipation implies a commitment to freeing individuals from power relations around which social and organisational life are woven, and that keep people in a state of repression. It is a central objective of critical research. The intention is to focus on “the oppositions, conflicts and contradictions in contemporary society, and to be emancipatory in that it should help to eliminate the causes of alienation and domination” (Myers & Avison, 2002:7). Howcroft and Trauth’s (2005) second theme is the **critique of tradition**. The aim is to disrupt the status quo rather than simply reproducing it. That is, critical researchers question and disrupt taken-for-granted assumptions inherent in the status quo, and assume the perspective of wider social, political, historical, economic and ideological contexts. The third theme is **non-performative intent**. This theme implies a rejection of a view of action that is guided only by economic efficiency (i.e., the production of maximum output for minimum input) as opposed to a concern for social relations and all that is associated with it (Howcroft and Trauth, 2005). The fourth theme is about the **critique of technological determinism**. It challenges “discourse surrounding socio-economic change

... which assumes that technological development is autonomous and that societal development is determined by the technology” (Bijker 1995, cited in Howcroft and Trauth, 2005:4). “C[c]ritical literature seeks to conceptualize technology development, adoption and use within the context of broader social and economic changes.” (Howcroft and Trauth, 2005:4). The fifth theme is **reflexivity**, which highlights a uniqueness or methodological distinction between critical and other research traditions. Critical reflexivity provides reflections on the role of the researcher as a producer of knowledge and the mediations and negotiations that are associated with this role, and specifically the extent to which the researcher is implicated in the mechanisms that promotes and maintains repression in the social phenomena.

The second is a set of principles for critical research by Myers and Klein (2011) (Figure 1).

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|---|
| The Element of Insight <i>Refer to Klein and Myers’ (1999) set of principles for Interpretive research</i> |
| The Element of Critique |
| 1. The principle of using core concepts from critical social theorists This principle suggests that critical researchers should organize their data collection and analysis around core concepts and ideas from one or more critical theorists. |
| 2. The principle of taking a value position Critical theorists advocate values such as open democracy, equal opportunity, or discursive ethics. These values drive or provide the basis for principles 4 through 6. |
| 3. The principle of revealing and challenging prevailing beliefs and social practices This principle suggests that critical researchers should identify important beliefs and social practices and challenge them with potentially conflicting arguments and evidence. |
| The Element of Transformation |
| 4. The principle of individual emancipation Alvesson and Wilmott (1992) say that all critical social theory is oriented toward facilitating the realization of human needs and potential, critical self-reflection, and associated self-transformation. |
| 5. The principle of improvements in society This principle suggests that improvements in society are possible. The goal is not just to reveal the current forms of domination, but to suggest how unwarranted uses of power might be overcome (although the critical theorist should not assume any special position of authority). Most critical theorists assume that social improvements are possible, although to very differing degrees. |
| 6. The principle of improvements in social theories All critical theorists believe that our theories are fallible and that improvements in social theories are possible. Critical researchers entertain the possibility of competing truth claims arising from alternative theoretical categories, which can guide critical researchers in their analyses and interventions. |

Figure 1: A set of principles for critical research taken from Myers and Klein (2011:25)

To save on space in this paper we will not discuss Myers and Klein’s (2011) principles here. However, it is important to note that they suggest that the mandate of critical research cannot be captured by a fixed set of principles, that their principles should not be viewed as canons

to limit the kinds of research that IS researchers may conduct, and that their principles should not be used in a mechanistic manner but rather with judgement and discretion on whether, how and which of the principles should be used in a given project.

Guidelines for ICT training

In concluding this paper we put forward an improved framework, adapted from Krauss (2009), for introduction ICT training in South African developing contexts. This framework is a very concise summary of a much more detailed report on ICT4D collisions and community entry by one of the authors. Using Critical Social Theory as a position of enquiry, Krauss (2009) reflects on a UNESCO funded teacher training project in a traditional community in a deep rural part of South Africa, where he assumed the role of project manager and outsider champion. UNESCO's ICT Competency Standards for Teachers Policy Framework (UNESCO, 2008) and ICT training are referred to as examples of ICT4D artefacts.

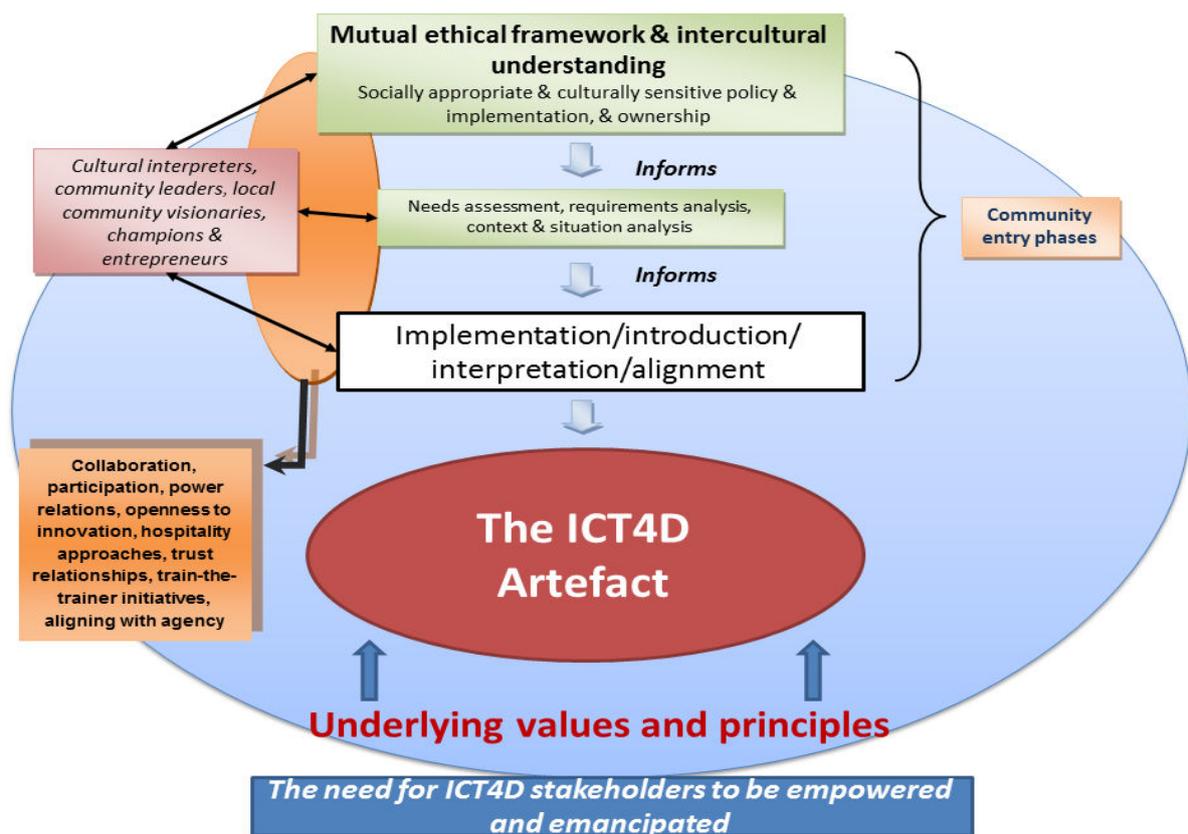


Figure 2: A model for community entry and introducing the ICT4D artefact in deep rural communities in South Africa.

In this paper we make the framework more generic to ICT4D and also include the importance of understanding the various worldviews that form part of ICT4D discourses and practice in South African contexts.

Based on a critical underpinning and fieldwork experiences from a three-year ethnographic ICT4D study, we propose in Figure 2 how ICT training implementation could be introduced in deep rural communities in South Africa. Figure 2 visualises (adapted from Krauss, 2009):

- the community entry phases of policy implementation in deep rural situations,
- ethical research practice and appropriate and culturally sensitive community engagement and technology introduction,
- the importance of a collaborative needs or situation analysis as part of community entry,
- appropriate alignment with local leadership, ownership and power relations,
- the need to examine individual situations,
- the prominence of knowledge literacy and competence as the final objective,
- the importance of trust relationships with cultural interpreters and community visionaries as advisories and equal partners, and the subsequent collaboration in introducing and understanding the ICT4D artefact,
- the underlying and possible contradicting values that project stakeholders and participators may assume, and
- the need for ICT4D stakeholders, both the “developed” and “developing”, to be empowered and emancipated possible misconceptions and ethnocentric thinking and approaches. .

A more detail on the discussion of this framework and how it evolved can be found in Krauss (2009).

In summary

In the first part of the paper we highlighted the need for questioning the assumptions we make about the value and need for using ICT to foster development. We also showed that critical research is an appropriate research paradigm for studying ICT4D phenomena. As a point of departure for understanding the issues highlighted in this paper and also to be clear on our orientations to knowledge in ICT4D research we put forward two sets of guidelines

for critical research, i.e. principles for critical research from Myers and Klein (2011) and themes shaping a critical epistemology from Howcroft and Trauth (2005). We conclude with framework for introducing ICT training or any ICT4D artefact for that matter in developing contexts in South Africa.

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