

## **IMPACT OF AN E-LEARNING INITIATIVE IN THE CONTEXT OF ICT4D: A CASE STUDY OF OFFERING AN ADVANCED INTERNET COURSE IN UNDERPRIVILEGED COMMUNITIES**

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### **Abstract**

This research explores several aspects of offering an online digital literacy course to underprivileged communities by undertaking a case study of offering an Internet Super-User (ISU) course, made accessible to members of disadvantaged urban community in Cape Town. The study used a combination of the Sen Capabilities Model (Kleine, 2010) and the Sustainable Livelihoods Model for the analysis and thus provides an interesting application of these models. The findings of this research study indicate that online education can have significant impacts in the lives of students, especially in the informational, economic and, most importantly, the psychological dimensions of the participants' lives. Critical success factors of this particular online learning initiative included the high-touch service delivery model, while perceived and experienced challenges associated with the online delivery of the ISU course were hindering internet access and outdated course material. Many of these findings should be applicable to other online courses aiming to develop the human capital potential of Africa.

**Keywords:** ICT4D, e-Learning, online learning, human capacity building, impact, critical success factors of e-Learning, e-Learning in Africa

### **INTRODUCTION**

Information and Communication Technology for Development (ICT4D) is a movement that supports social development via the means of ICTs. One of ICT4D's main goals is to "enhance human capacity" via the means of e-Learning (Rothenberg-Aalami & Pal, 2005, pp. 4-5). This paper focuses on the critical success factors, impact and sustainability issues for using online courses to build human capacity in underprivileged communities in Africa. A combination of the Sen Capabilities Model (Kleine, 2010) and the Sustainable Livelihoods Model was used for the analysis.

In particular, a case study of the Internet Super-User (ISU) course offered by GetSmarter is used. GetSmarter offers online courses commercially, but makes its ISU course available to South African underprivileged communities at a highly-reduced fee, using R-Labs to provide computer access. This research was initially motivated by GetSmarter's intention to roll this project out to disadvantaged communities in other African countries where R-labs has a presence, starting with Sierra Leone.

However, the findings of this research should be relevant to other members of the ICT4D community interested in human capacity building through online education especially in an African context. Additionally, e-Learning organisations in the private and public sector wishing to implement e-learning should be able to heed the critical success factors uncovered. Finally, academic researchers interested in sustainable development and the impact of ICT4D will benefit from a practical, real-world application of the Sen Capabilities and the Sustainable Livelihoods Models.

### **LITERATURE REVIEW**

#### **ICT4D**

Information and Communication Technology for Development (ICT4D) can be described as "the ability to access, adapt, and create new knowledge using new information and communication technology for social, political, and economic development purposes" (Vaughan, 2006, p. 2). It re-presents a movement of stakeholders that connect improved access to ICTs to economic and social development. One of ICT4D's main goals is human capacity building, in part by development through e-Learning (Rothenberg-Aalami & Pal, 2005).

#### **Critical Success Factors & Challenges of e-Learning**

Online learning, also known as e-Learning, refers to the support or enhancement of learning by using Information and Communication Technologies (ICTs) (Ssekakubo, Suleman, & Marsden, 2011), or training provided via a digital device, such as a smartphone or computer, designed to support individual or organisational learning activities (Clark & Mayer, 2011).

In order to measure the impact of online courses on the lives of underprivileged members of society, critical success factors (CSFs) i.e. "those things that must be done if a company is to be successful" (Selim, 2007, p. 397) are investigated. Selim (2007) determined several CSF's. Instructor related CSFs were the instructor's attitude towards and control of technology and teaching style. Student-related CSFs included computer competency, degree of interactive collaboration and course content. Other CSFs were adequate support, technology infrastructure and ease of use.

Furthermore, Wild (2002) outlines critical success factors in the form of evaluating readiness issues of organisations, including (1) infrastructure, (2) person responsible to edit knowledge content, (3) organisational culture, (4) attitude regarding acceptance, (5) knowledge requirements, (5) computer literacy, and (6) technology requirements.

Concerning the challenges of e-Learning, Andersson (2009) critically reviews e-Learning and its challenges in developing countries, which are summarised in *Table 1*.

Table 1: Framework on Challenges for e-Learning (Andersson & Groenlund, 2009)

|                                 |   |
|---------------------------------|---|
| <b>Individual Challenges</b>    | <b>Student:</b> motivation; conflicting priorities; economy; academic confidence; technological confidence; social support (home and employers); gender; age<br><b>Teacher:</b> technological confidence; motivation/commitment; competence; time |
| <b>Course Challenges</b>        | <b>Course design:</b> curriculum; pedagogical model; subject content; teaching and learning activities; localisation; flexibility<br><b>Support provided:</b> support for students from faculty; support for faculty                              |
| <b>Contextual Challenges</b>    | <b>Organisational:</b> knowledge management; funding; teacher/staff training.<br><b>Societal/Cultural:</b> teacher/student role; attitudes on e-Learning and IT; regulations  |
| <b>Technological Challenges</b> | Access; cost; software and interface design; localisation   |

Challenges are categorized into four categories: (1) Course challenges (issues surrounding course content, delivery and design), (2) challenges pertaining to individuals’ characteristics, both for students and teachers, (3) technological challenges relating to existing infrastructure, costs, technological fit and ease of use, and (4) contextual challenges with regards to organisational, societal and cultural issues (Andersson & Groenlund, 2009).

**E-Learning in Different African Contexts**

With regards to e-Learning in Africa, Kwapong (2009) states the goals outlined by Ghana’s Ministry of Education distance education programs as (1) increased access and participation of education, (2) assistance provided towards progress, (3) improved individual ability to adapt to changing knowledge and skills requirements, (4) support towards equality and “democratization” of education, and (5) education that is affordable.

In terms of the existing infrastructures to support e-Learning platforms, Unwin (2008) discusses results from a questionnaire provided to 316 participants from the *e-Learning Africa* database (from 42 different African countries), involving availability of electricity, computers and Internet. The results showed that only 8 respondents had no supply of electricity at all, that 6% of respondents had no access to computers and that 27% of respondents had poor Internet connectivity.

Kinuthia (2007) points out that culture impacts on the acceptance, usage of and impact of e-Learning, and defines culture as “the beliefs, philosophies, traditions, values, perceptions, norms, customs, arts, history, experiences, and patterns by individuals and groups”. Furthermore, these groups are characterised by their age, ethnicity, religion – and most importantly – language.

**Theoretical Frameworks for Measuring Impact of Development**

The term “development” is more specifically defined as enhancing people’s choices through the expansion of their capabilities and opportunities (Berenger & Verdier-Chouchane, 2007), while aspects of human development are seen as sets of choices and achievements that are vital for the humans to succeed and thrive. Although extensive investments are made towards ICT4D projects by NGOs and both public and private sectors, little assessment on the actual impact of these initiatives is conducted (Heeks & Molla, 2008). The following frameworks can assist in assessing the impact of ICT4D projects.

Sen’s capabilities model shifts the focus of development from economic growth to individual freedom (Kleine, 2010). According to Sen (1999, p. 3), development is “a process of expanding the real freedoms that people enjoy” to “lead the lives they have reason to value”. Sen’s approach aims to assess development in terms of social relationships, individual well-being and overall transformations in society. This assessment is based on the resources, or “commodities”, used during developmental activities, the “functionings” (individuals’ achievements while using “commodities”) and “capabilities” (individuals’ ability to achieve “functionings”) (Hatakka & Lagsten, 2012) of the target population benefitting from these activities (Berenger & Verdier-Chouchane, 2007).

While Sen (1999) views development in terms of individual choices and achievements, the Sustainable Livelihoods Framework emphasises the fact that the lives of the poor must be seen as a complex combination of interrelated factors (Berenger & Verdier-Chouchane, 2007). Furthermore, this framework uses a systematic view of poverty and its causes, while taking a broader view of development opportunities, their impact and their match to livelihood priorities, and focusing on the people and their priorities for setting objectives (Ashley & Carney, 1999).

In order to effectively assess the impact of ICT4D, Gigler (2004) suggests the Empowerment through ICTs Framework, which combines the Sen Capabilities Approach and the Sustainable Livelihoods Model, by substituting livelihoods strategies in the Sustainable Livelihoods Model with the concept of capabilities from

the Sen Capabilities Approach (Heeks & Molla, 2008). Gigler (2004) classifies the impact of ICT4D projects into six dimensions, each observed by various outcome indicators (Table 2).

Table 2: Indicators for Individual Empowerment (Gigler, 2004)

| Dimension                     | Objective  | Outcome Indicator  |
|-------------------------------|--|--|
| <b>Informational</b>          | To improve the access to information and informational capabilities  | Improved capacity to use different forms of ICTs; Enhanced information literacy; Enhanced capacity to produce and publish local content; Improved ability to communicate with family members and friends abroad  |
| <b>Psychological</b>          | To support a process of self-reflection and problem-solving capacity   | Strengthened self-esteem; Improved ability to analyze own situation and solve problems; Strengthened ability to influence strategic life choices; Sense of inclusion in the 'modern' world   |
| <b>Social (Human Capital)</b> | To strengthen people's human capital (skills, knowledge, ability to work and good health)                      | Enhanced ICT literacy and technology skills (e.g. repair computers); Enhanced leadership skills; Improved program management skills  |
| <b>Economic</b>               | To enhance people's capacity to interact with the market   | Improved access to markets; Enhanced entrepreneurial skills; Alternative sources of income; Productive assets strengthened; Improved employment opportunities; Improved income through lower transaction costs (less time constraints); reduced transport needs; and increased timeliness of sales |
| <b>Political</b>              | To improve people's participation in decision-making processes at the community-level and the political system | Improved access to government information/services (e-government); Improved awareness about political issues; Improved capabilities to interact with local governments   |
| <b>Cultural</b>               | To strengthen people's cultural identity   | Use of ICTs as a form of cultural expression (i.e. design of computer graphics, websites); increased awareness of own cultural identity  |

Furthermore, Gigler (2004) draws a distinction between individual and collective capabilities, resulting in both involving the capabilities of a social, economic, informational, political and cultural nature. However, individual capabilities include psychological abilities to achieve, while collective capabilities include the organisational ability to achieve specific livelihood outcomes (Heeks & Molla, 2008).

## METHODOLOGY

This research is exploratory in nature, as the researcher attempted to gain additional insights into the themes of impact and critical success factors & challenges of e-Learning in African contexts within the case study of GetSmarter and R-Labs, as well as considering the broader field of ICT4D. Our research philosophy is post-positivist, in that it will – similarly to positivism – support objectivity while identifying the possible effects of biases (Robson, 2002). Also, a post-positivist approach selects the method to be applied depending on the research question being addressed (Wildemuth, 1993).

Two models were used in the data analysis. The *critical success factors* (CSFs) and challenges to e-learning were investigated using the Andersson & Groenlund (2009) framework which looks at CSFs on the individual, course, contextual and technological level. The *impact* of the course was investigated using the capabilities and outcome indicators suggested by Gigler (2004), i.e. informational, psychological, social, economic, political and cultural indicators.

This research is based on a case study of GetSmarter's Internet Super-User course, offered to members of the Mitchell's Plain community, made accessible by R-Labs and funded by US Aid. This allowed the researcher to explore a research topic within a specific, real-life context

(Saunders, Lewis, & Thornhill, 2012). Within this case study, main stakeholders were interviewed (using semi-structured interviews containing open-ended questions), while past students of the ISU course were surveyed using predetermined questions, based on the Empowerment through ICTs Framework (Gigler, 2004).

Data collected during a survey and various interviews, was categorised data into themes (open coding), then recognising relationships between these themes (axial coding), and finally producing theories through selective coding (Saunders, Lewis, & Thornhill, 2012). A cross-sectional data collection approach was used. The sample selected includes 30 past graduates of the ISU course and 7 important stakeholders from GetSmarter, R-Labs and the University of Cape Town. Table 3 represents the demographic information of the 30 survey participants, all of whom are past graduates of the ISU course:

Of the 7 interview respondents, A-D were from GetSmarter (Co-Founder & Managing Director; Systems & Technology Manager; ISU Course Creator & Coordinator; ISU Course Instructor); E and F were from R-Labs (Managing Director and ISU Graduate & Lab Facilitator) and G was the University of Cape Town ISU Quality Assurer. A document analysis was also performed on a survey conducted by GetSmarter on past students after the completion of the ISU course earlier in 2013.

Collected data was analysed using the general deductive approach and the NVivo software. Participation in this research was voluntary and that all personal details remained anonymous and confidential. Full ethics approval was obtained from the UCT Research Ethics Committee.

Table 3: Demographic Information on Survey Participants

| General Demographic   | Specific Demographic Categories/Ranges | Distribution (in responses and percentages respectively) |
|---|--|--|
| <b>Gender</b>   | Male                                   | 10 (33%)   |
|   | Female                                 | 20 (67%)   |
| <b>Age</b>  | Younger than 20                        | 3 (10%)  |
|   | 20-30                                  | 25 (83%)   |
|   | 31-40                                  | 2 (7%)   |
| <b>Race</b>   | Black                                  | 4 (13%)  |
|   | Coloured                               | 18 (60%)   |
|   | Asian                                  | 2 (7%)   |
|   | Prefer not to answer                   | 6 (20%)  |
| <b>Home Language</b>  | Afrikaans                              | 3 (10%)  |
|   | English                                | 24 (83%)   |
|   | Xhosa                                  | 2 (7%)   |
| <b>Level of Education</b>   | School (up to Grade 12)                | 3 (10%)  |
|   | School (up to Grade 10)                | 21 (72%)   |
|   | Tertiary Education                     | 5 (17%)  |
| <b>Status of Employment (before completion of the ISU course)</b> | Unemployed                             | 9 (30%)  |
|   | Self-Employed                          | 1 (3%)   |
|   | Office Administration                  | 8 (27%)  |
|   | Other                                  | 8 (27%)  |
| <b>Monthly Income (before completion of the ISU course)</b>       | I did not earn income at that time     | 12 (40%)   |
|   | R 0 – R 2 500                          | 6 (20%)  |
|   | R 2 500 – R 5 000                      | 9 (30%)  |
|   | Prefer not to answer                   | 3 (10%)  |

**DATA ANALYSIS & DISCUSSION OF FINDINGS****Critical Success Factors & Challenges of e-Learning**

During the data collection process, it seemed that critical success factors and challenges aligned, so as to fall into

one of four categories, as mentioned by Andersson & Groenlund (2009). Table 4 shows analysed data grouped into these categories and their respective sub-categories

Table 4: Observed CSFs &amp; Challenges

| CSFs and Challenges                              | GetSmarter Survey   | Own Survey Results   | Interview Results  |
|--|---|--|--|
| <b>Individual CSFs/Challenges</b>                |   |  |  |
| <b>Student:</b>                                  |   |  |  |
| Motivation                                       | -   | 100% indicated that UCT's certificate of completion was a very important motivating factor for them            | F: "They almost regard it in such high esteem that they don't want to lose on it, because they come from public schooling systems, where they won't have resources that they would be able to use over here."                                  |
| Conflicting priorities                           | -   | -  | A: "They don't have the opportunity to focus 3 hours, and often they're hungry."   |
| Economy  | -   | 30% of respondents were unemployed before completing ISU   | A: "... in our particular program, the students can't afford to pay"   |
| Technological confidence                         | -   | -  | E: "It was the most scary thing for all of us, to actually go and work on a computer"  |
| Social support (support from home and employers) | -   | 4% indicated help from friends during the ISU course   | A: "Those guys don't have necessarily a supportive living environment", "There was a social structure, where they made people feel safe, where they could actually focus on the learning at hand.", "...strong community is really important." |
| <b>Teacher:</b>                                  |   |  |  |
| Technological confidence                         | -   | 7% indicated poor computer literacy skills before taking ISU   | -  |
| Motivation and commitment                        | -   | -  | C: "a big factor is the constant personal attention from the admin assistant, combined with a motivated course instructor... that middle team..."  |
| <b>Course CSFs/Challenges</b>                    |   |  |  |
| <b>Course Design:</b>                            |   |  |  |
| Curriculum                                       | "Give criteria on each assignment, so that we know what to focus on in the assignment"  | 89% found that ISU's structure made it easier to complete; 93% found the course length (10 weeks) "just right" | F: "...the structure is perfect!"  |
| Pedagogical model                                | "This online course is really something nice with doing everything online. The quizzes; | 37% indicated that they would have liked more one-on-one contact with the                                      | B: "...high-touch for us means proactive communication... just a more personal interaction."   |

|                                      |   |   |  |
|--------------------------------------|---|---|--|
|                                      | discussion forum; videos...”  | course instructor   |  |
| Subject content                      | “Some of the course material was outdated”  | 100% of respondents did not find the ISU course difficult   | F: “Sometimes what’s happening in the course outline is not updated to where the text base is”   |
| Teaching & learning activities       | “The videos have been of great help.”   | -   | -  |
| Flexibility                          | “There has been a lot of assignments, but they spread the time space so perfectly”  | -   | A: “They don’t have the opportunity to focus three hours, and often they’re hungry.”   |
| <b>Support Provided:</b>             |   |   |  |
| Support for students from faculty    | “[D] would post questions randomly which made the discussion forum exciting & interacted well with us students. Anything we needed to know [D] would assist”; [D] is also a great help. [D] provides you with everything you need to complete the modules...” | 79% indicated that R-Labs employees helped them; 92% are “very satisfied” or “satisfied” with support provided; 85% obtained support from R-Labs, while 74% got help from the ISU course instructor | B: “...high-touch for us means proactive communication”  |
| <b>Contextual CSFs/Challenges</b>    |   |   |  |
| <b>Organisational:</b>               |   |   |  |
| Economy and funding                  | -   | -   | A: “It is only sustainable as long as there is an availability of funders out there to fund our students’ studies.”, “...in our particular program, the students can’t afford to pay”  |
| <b>Societal/Cultural:</b>            |   |   |  |
| Attitudes on e-Learning and IT       | -   | -   | F: “...because a lot of the recruits that come in, all they know is that the Internet is Facebook.”  |
| <b>Technological CSFs/Challenges</b> |   |   |  |
| Access                               | “Images in the assignments must be resized to less than 100 KB...It will be easier to upload even on slow 2-4 KB/sec dial-up internet connection”; “assignment files take a long time to upload on a slow connection”   | 50% were either “very satisfied” or “satisfied” with the computers and internet connection at R-Labs<br>32% do not have access to computers, other than R-Labs                                      | E: “...to access the reading material, to download it and to... internet is very slow”, “But, a place like Sierra Labs, if that is a place where people can come to access the internet, because that is what the type of infrastructure...like, a nice, fast internet connection... and there is laptops available” |
| Cost                                 | -   | 46% said that the fee charged was “worth it”  | -  |
| Software and interface design        | “Communicating online needs to be updated”<br>“The GetSmarter online website is very helpful”   | -   | -  |

**Impact**

Gigler (2004, p. 8) developed the Empowerment through ICTs Framework to answer the question of “whether and under which conditions the improved access to information and knowledge facilitated by ICTs can enhance the individual and collective capabilities of the poor to better achieve the lifestyle they value”. This was

used to measure the impact of the Internet Super-User course on the lives of the participants. While most impact - both revealed through the survey and the interview with R-Labs’ Internet Super-User Course Graduate and Lab Facilitator - is observed in the *psychological* dimension, actual impact is seen across all dimensions as summarized in Table 5.

Table 5: Summarised Data Showing Impact of ISU

| Dimension & Outcome Indicators   | Survey Results   | Interview Results   |
|--|--|---|
| <b>Informational</b>   |  |   |
| Improved capacity to use different forms of ICTs                       | Computer literacy skills increased 76%<br>Internet skills increased by 47%<br>Daily internet usage increased 29%<br>General browsing increased by 20%<br>Blogging increased by 50%<br>Online financial transactions increased by 27% | F: “If you were a woman doing the GetSmarter course, it’s already a gateway. So, you can specialise in this content... Graphic design, web design”,<br>“I see it as a foundational plane to introducing different aspects to what there is online. So, it’s not that you’re just using... You’re almost gaining ground as to what you can do” |
| Enhanced information literacy  | Computer literacy skills increased 76%<br>Internet skills increased by 47%<br>General browsing increased by 20%  | F: “So, it’s not just shaping the person, in terms of skilling them up, in terms of digital expertise...”   |
| Enhanced capacity to produce and publish local content                 | Blogging increased by 50%  | F: “And actually blog about their experiences...”   |
| Improved ability to communicate with family members and friends abroad | Use of online communication tools (email, IM, chat) increased by 17%<br>77% indicated improved or more social interactions/connectedness after completion  | F: “They go onto their social networks, like Twitter, Facebook...”  |
| <b>Psychological</b>   |  |   |

|   |   |  |
|---|---|--|
| Strengthened self-esteem  | 73% indicated higher self-confidence/worth/respect after completion   | A: [quoting from a marketing video] "And now, I've completed a UCT program that makes me proud, that makes me feel like I have a future"<br>F: "So, there is confidence on that level, on seeking out new opportunities, because a person realises, "Ah! I have this gift!" or "I have this talent!",<br>"Like, the small impacts... which is confidence."   |
| Improved ability to analyze own situation and solve problems                              | 73% indicated increased access to information (e.g. by using Google)  | F: "They'll subscribe to news feeds to find out what's the true story."  |
| Strengthened ability to influence strategic life choices                                  | -   | F: "They've taken hold of an opportunity that was afforded to them."   |
| Sense of inclusion in the 'modern' world  | General browsing increased by 20%<br>Blogging increased by 50%<br>77% indicated improved social connectedness after completion<br>59% indicated increased engagement in their community | F: "Also, being more engaged, because there is still a lot of segregation, so it's not just engagement in what's happening in their lives and me as a person, but in my community... Engaged in the world really."   |
| <b>Social (Human Capital)</b>   |   |  |
| Enhanced ICT literacy and technology skills   | Computer literacy skills increased by 76%;<br>Internet skills increased by 47%  | F: "...in terms of skilling them up, in terms of digital expertise..."   |
| Enhanced leadership skills  | -   | F: "...essentially what the grow leadership Academy is about, it's got three components, which is leadership, entrepreneurship and digital media."   |
| <b>Economic</b>   |   |  |
| Enhanced entrepreneurial skills   | 9% indicated having "new ideas" as a result of completing the ISU course<br>4% said that completion provided the opportunity of establishing their own social enterprise                | F: "So, it's like a social enterprise thing, where GLA students are afforded the opportunity to pitch their business ideas at the time..."   |
| Alternative sources of income   | 14% indicated that they had more/new job opportunities after completing ISU   | -  |
| Improved employment opportunities   | 14% indicated that they had more/new job opportunities after completing the ISU course<br>33% indicated that UCT's certificate of completion resulted in opportunities for them         | A: "They run internship programs where they place their grads with companies and specific NGOs, who are looking for digital literacy skills."; "R-Labs [...] will give you work experience and that internship in turn well either turn into a full-time job at the NGO"; "Digital is the right place to be right now, because it's a growing industry."; F: "a lot of the recruits, they drop out, because they gain employment." |
| Improved income   | 5% indicated increased income after completing the ISU course   | -  |
| <b>Political</b>  |   |  |
| Improved awareness about political issues   | (73% indicated increased access to information (e.g. by using Google)   | F: "There will be a riot and they'll just hashtag what's happening in their area ..."  |
| <b>Cultural</b>   |   |  |
| Use of ICTs as a form of cultural expression (i.e. design of computer graphics, websites) | Blogging increased by 50%   | F: "...prerequisite course for other courses, like web publishing, like web development and that sort of thing. And obviously, that would have even greater impact, because people can actually create their own things... I mean, like your app"  |
| Increased awareness of own cultural identity  | 59% indicated increased engagement in their community   | F: "...so it's not just engagement in what's happening in their lives and me as a person, but in my community... Engaged in the world really."   |

With regards to the impact, the most persuasive outcomes of taking the ISU course translate into the positive impact on informational and psychological aspects in the lives of its participants. More specifically, most participants experienced an improvement in their information and computer literacy and ability to use the Internet in general, while the majority felt increased self-esteem, social interaction (or "connectedness") and engagement in their community. From an economic perspective, a third of the participants indicated that UCT's certificate of completion resulted in more opportunities for them, while 5% indicated increased income after completion of the ISU course.

## CONCLUSION

The main focus of this research was to explore the impact and critical success factors of online learning for human capacity development in Africa. This was done by means

of a case study of an initiative involving GetSmarter, R-Labs and the Internet Super-User course.

The study revealed that this human capacity building initiative achieved a wide range of ICT4D impacts, the most significant being access to ICTs via R-Labs, capacity building and development via the provision of Internet and digital literacy skills. Furthermore, the most pertinent critical success factors for this specific case study are reflected in GetSmarter's high-touch service delivery model (in other words, the constant interaction between students and the course instructor), the consistent course structure and the support provided by the course instructor during the presentation of the ISU course. However, the major challenges experienced were associated with the dynamic nature of this course, and the consistent need to match the text-based material with changing online assignments and websites. Also, internet

connectivity seemed to prove problematic to some students, as well as confusion regarding assignment-specific evaluation criteria.

Importantly, the initiative shows significant impact in the lives of past students, in all aspects, especially the informational, economic and, most importantly, the psychological dimensions of the participants' lives.

Limitations to the generalization of the findings to other e-learning human capacity building initiatives must be borne in mind: this was just one single case study using one course in one local disadvantaged community; the e-learning model used is relatively high-touch and, therefore, quite resource intensive; internet connectivity was good; and participants were quite motivated. However, the two theoretical frameworks used should be easily applicable in other contexts.

Recommendations for future research include: investigating the different context of other African countries – such as Sierra Leone, Tanzania and Namibia – in more detail; comparing the social/community development side of e-Learning against the commercial aspect and exploring the potential of mobile e-Learning in the context of specific African countries.

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