ICTs, youth and sex

Investigating the feasibility of using computers, CD-ROMs and the Internet to teach school-going youth in Kampala District (Uganda) about sexual reproductive health: A case study of the World Starts With Me programme

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Abstract

Uganda has the youngest population in the world and a significant number of these youth get involved in early sexual activity thus exposing themselves to unwanted pregnancies, unsafe abortions, STIs and other complications like obstetric fistula. These risks are attributed to lack of sex education, peer and social pressure, lack of skills needed to resist such pressures, lack of youth-friendly sexual health and counselling services and poverty. Since youth have been identified as the earliest users of new technologies like mobile phones, computers and the Internet, these tools can be harnessed to deliver sexuality education to overcome the trajectory of engaging in risky sexual behaviour. One such programme is The World Starts With Me (WSWM) programme which is the focus of this study. The WSWM is a web-based, CD-ROM curriculum on IT and SRHR for adolescents in schools. The study mainly seeks to examine the relevance, potential and sustainability of using computers, CD-ROMs and the Internet to teach school-going youth about SRH. Using health communication and development communication theories, the study analyses the factors considered when designing and implementing the programme, the knowledge, attitudes and skills youth got from it and the challenges of using new technologies in sexuality education.

Using data collected from a combination of qualitative interviews, document analysis, focus group discussions and observation, the study noted that while the infusion of technology in the programme was a major attraction for some youth to join the programme, it was shunned by majority of the students mainly because they are apathetic towards sex education programmes. This suggests that there is need to first align the youths' opinions towards particular messages before they are packaged in trendy styles. The study noted that although the programme had largely succeeded in equipping some youth with SRH knowledge and skills, some programme goals have not been met because of insufficient training among the actual programme implementers (the teachers), inadequate time, financial and technological resources.

Acknowledgments

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List of Abbreviations

ABC   Abstain, Be faithful, use Condoms

AIDS   Acquired Immune Deficiency Syndrome

ASRH   Adolescent Sexual Reproductive Health

CBD   Central Business District

CDFU   Communication for Development Foundation Uganda

ICPD   International Conference on Population and Development

ICT   Information Communication and Technology

IT   Information Technology

ITU   International Telecommunication Union

LRA   Lord's Resistance Army

MDGs   Millennium Development Goals

MOES   Ministry of Education and Sports

NGO   Non-Governmental Organisation

PEAP   Poverty Eradication Action Plan

PEPFAR   President Bush's Emergency Plan for AIDS Relief

PHM   Persuasive Health Message

PoP   Points of Presence

RCDP   Rural Communication Development Policy

SRH   Sexual Reproductive Health

SRHR   Sexual Reproductive Health Rights

STD   Sexually Transmitted Diseases

STI   Sexually Transmitted Infections

STF   Straight Talk Foundation

SWAP   Sector Wide Approach

UNEB	Uganda National Examination Board
UNESCO	United Nations Educational, Scientific and Cultural Organisation
UNICEF	United Nations Children's Education Fund
UPE	Universal Primary Education
USE	Universal Secondary Education
VAT	Value Added Tax
WorLD	World Links for Development
WPF	World Population Foundation
WSIS	World Summit on the Information Society
WSWM	World Starts With Me
Y.E.A.H	Young Healthy and Empowered

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Uganda has the youngest population in the world according to a 2008 World Bank report – Africa Development Indicators 2008/09. The report, which focuses on youth and unemployment in Africa notes that Uganda's median age is 15 years and several young people (15-24 years) are exposed to severe unemployment challenges and early parenthood.[1] Researchers have noted that several of these youth are sexually active and thus exposed to unintended pregnancies, sexually transmitted infections (STIs), most importantly HIV/AIDS and other complications like unsafe abortions,[2] obstetric fistula, haemorrhage and anaemia.[3]

The above sexual reproductive health (SRH) issues are also a danger to several youth worldwide but especially in Sub-Saharan Africa, because the region has the highest adolescent fertility rate[4] compared to other areas in the world.[5] Research carried out in seven Sub-Saharan countries, shows that at least 80% of the youth in this region are sexually active by the time they are 20 years old, 73% of the women aged 15-19 years in Liberia have had intercourse, as have 53% in Nigeria and 49% in Uganda. In addition, adolescents between 11 and 19 years account for 39% to 72% of all abortion-related complication while in Uganda 17% of the youth aged between 15 and 18 years have undergone an abortion.[6]

The above statistics show that youth are at a high risk of or are struggling with sexual reproductive health problems because some of them are ignorant or have incorrect information about the risks of unwanted pregnancies and STIs, peer and social pressures, lack of skills needed to resist such pressures and to practice safe behaviour, lack of youth-friendly sexual health and counselling services and poverty (Neema et al, 2004:5). Other factors

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[1] *The East African*, 20 December, 2008, '*Uganda has world's youngest population*,' at http://www.theeastafrican.co.ke/news/-/2558/504754/-/rm3wwdz/-/index.html, accessed 16 March, 2010.
[2] Abortion is illegal in Uganda except when it is carried out to save a mother's life.
[3] Report by Allan Guttmacher Institute- Protecting the Next Generation in Uganda: New Evidence on Adolescent Sexual and Reproductive Health Needs (March 2008).
[4] The adolescent fertility rate is expressed by the number of births per 1,000 women aged 15-19 years.
[5] Report by UNICEF at http://www.unicef.org/specialsession/about/sgreport-pdf/10_FertilityFamilyPlanning_D7341Insert_English.pdf accessed 15 March, 2009.
[6] See http://www.advocatesforyouth.org/publications/factsheet/fssxrepr.htm, accessed 15 March, 2009.

contributing to this phenomenon are the declining influence of traditional values and institutions that discourage premarital sex, coupled with the diminishing parental supervision.

Efforts to mitigate the effects of adolescent involvement in risky sexual behaviour were highlighted at the 1994 Cairo International Conference on Population and Development (ICPD) where participants urged governments, non-governmental organisations (NGOs), the private sector and academic institutions to promote sexual reproductive health programmes aimed at increasing awareness and promoting behaviour change among the youth.

At the conference, adolescent sexual reproductive health (ASRH) was defined as *the physical and emotional well-being of adolescents and their ability to remain free from unwanted pregnancies, unsafe abortions, sexually transmitted diseases including HIV/AIDS and all forms of sexual violence and coercion*. According to the Programme of Action adopted at the meeting, availing youth with reproductive health information and services would enable them deal with their sexuality in a positive and responsible manner.

In Uganda, the government responded to the ICPD's call by formulating the National Youth Policy (2000) and a draft Adolescent Health Policy (1999) that stipulated that education and reproductive health are essential in empowering adolescents in the development process. These policies laid the guiding principles used in formulating and disseminating adolescent behaviour change campaigns predominantly disseminated through the traditional mass media (newspapers, radios and televisions), interpersonal and community channels.

The emergence of new information communication technologies (ICTs) like compact disc (CD) and digital versatile/video disc (DVD) players, computers, Internet and mobile phones, has focused debates among development experts on the opportunities, uncertainties and challenges of using these technologies in behaviour change campaigns. Heeks (1999) defines ICTs as electronic means of capturing, processing, storing and communicating information (cited in Melkote and Steeves, 2001:256). The older ICTs have analogue[7] systems and these include the radio and television while the newer ones are digital and they include telephones, wireless cellular phones, communication satellites, computers and the Internet (Ibid: 257). This study examines how the Internet, computers and CD-ROMs are used in sexuality

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[7] Information is held as electric signals and transmitted through electromagnetic waves.

education and assesses the possibilities of implementing computer-based behaviour change programmes among the youth.

Arguments in support of reaching youth through ICTs are based on the fact that young people are the main users of new technologies especially for entertainment purposes like playing games, downloading music, movies and communicating with friends. ICTs have created new learning environments for the youth by increasing the opportunities for obtaining information outside the traditional channels.[8] This thesis assumes that by tapping into these new channels, development and health communication experts can widen their target audience and thus help to reduce the cases of ignorance and misinformation about ASRH. Although research has shown that the effective use of ICTs especially in developing countries is still impeded by technological, financial, manpower and literacy-related factors (see Tedford, 2008), their use in development projects is increasing,[9] and there is need to focus on how they can be comprehensively and suitably used to address the numerous social problems facing mankind.

This research hopes to add to this debate by studying the feasibility of using computers, CD-ROMs and the Internet to teach school-going youth in Kampala District (located in Uganda) about SRH. The study will identify how youth access and use these ICTs, the outcomes of, obstacles to and ways of improving the integration of new technologies in sexuality education. The research will also gauge the chances of sustaining these projects.

Uganda is one of the countries in Sub-Saharan Africa generally characterised with high levels of disparity in access to and usage of ICTs (especially between rural and urban areas) and low levels of ICT infrastructure. But over the past 10 years, the government and the private sector have implemented projects aimed at improving the availability and usage of ICTs in the country. This has led to an increase in the number of fixed and mobile users, improved access to Internet connectivity paving way for the use of ICTs in different projects like the World Starts With Me programme (WSWM) which is the main focus of this research.

My research focused on Uganda because of two reasons. Uganda is my native country and having lived there all of my life, I have witnessed a number of youth-centred behaviour

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[8] See http://siteresources.worldbank.org/DEC/Resources/Youth_ICTS_and_Development.pdf, accessed 20 January, 2010

[9] See http://www.comminit.com/en/ict4d.html, accessed 20 January, 2010.

change campaigns mainly delivered through the traditional mass media channels and none through the new technologies. So the WSWM was a new project that deserved to be analysed in order to offer a pragmatic perspective on the efficacy of using new technologies in sex education campaigns. Secondly, the WSWM programme was first designed for youth in Uganda before it was adapted by Kenya, Thailand and Indonesia. Focusing on the country where the project was initially implemented is bound to raise pertinent issues that communication specialists will encounter as they use these technologies.

I zeroed down to school-going youth participating in the WSWM project in Kampala and Mukono Districts. My original research motives did not include youth in Mukono District because I had imagined that the programme was purely web-based, but on learning that some youth in the district were youth using manuals, I them in the study to provide a comparison between the experiences, knowledge, attitudes and skills attained by the different students.

1.1 Background to the study

The WSWM programme was developed in 2003 as a web-based, CD-ROM curriculum on IT (Information Technology) and sexual reproductive health and rights (SRHR) for adolescents in Ugandan schools.[10] This project was a result of a joint collaboration between World Population Foundation (WPF), Butterfly Works and SchoolNet Uganda.[11] WPF, a Netherlands-based organisation that seeks to improve SRHR issues in developing countries worked with Ugandan teachers, artists, sexual reproductive health specialists and young people to develop the content which was later pretested in three schools before it was rolled out to other institutions. WPF also funds the implementation of the project which is coordinated by SchoolNet Uganda while Butterfly Works, also based in the Netherlands designed the WSWM website and handled other technological aspects of the project.

In terms of support staff in Uganda, WPF is represented by two local consultants who also participated in the content design and were also formerly WSWM teachers in their respective schools. SchoolNet Uganda has two permanent staff: the executive director, also in charge of

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[10] For more on the WSWM, see http://www.theworldstarts.org/start/visitors.html, accessed 20 March, 2009.
[11] SchoolNet Uganda is an NGO working with Ugandan education institutions to set up ICT facilities and develop technical and pedagogical capacity necessary to use ICTs to enhance teaching and learning. It began in 1997 as part of the World Links for Development programme (WorLD) of the World Bank. See more at http://schoolnetuganda.sc.ug/about-schoolnet-uganda, accessed 20 March, 2009.

training and the WSWM technical coordinator. The organisation hires SRH consultants and teacher-support specialists on a part-time basis to assist teachers in the different schools implement the programme. In addition, some WSWM alumni serve as national peer educators to act as role models and encourage fellow youth to embrace the programme. The WSWM project is executed by school teachers who need not be sexual health or IT experts because the content is user-friendly but they should be youth-friendly. The teachers are encouraged to train in school peer educators to assist them during the lessons and also act as links between the teachers and students.[12]

1.1.1 WSWM Objectives

The project seeks to improve the sexual reproductive health and the social and economic development of young people. This is done by focusing on adolescent development, behaviour change and the human rights-based approach. The WSWM aims at availing young people with knowledge to enable them develop right attitudes, learn to cope with negative social norms and master life skills. The project also sets out to empower youth to develop: knowledge and attitudes that promote responsible behaviour, life skills (communication, refusal and negotiation skills and how to use health services) and creative and IT skills in preparation for future career opportunities.

1.1.2 WSWM Structure and Content

The curriculum is divided into 14 lessons but there is a session, *Lesson Zero,* which gives the students basic information about the computer, its parts and their use. The project designers envisioned that this lesson, coupled with subsequent practice would equip the students with basic skills needed to use computers during the lessons. The 14 lessons are set up in a logical sequence of themes that build on and support each other in order to guarantee the effectiveness of the curriculum. Each session has learning objectives, presentations, games, tools, guidelines, stories and assignments, aimed at imparting knowledge, building attitudes and skills. In addition, most information is given by two virtual peer educators (David and Rose, both 16-year-olds). The games and assignments enable the students internalise information and also explore their opinions on the topics discussed. The content is presented

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[12] See chapter six for more on teachers participating in the programme.

against a brightly coloured background, spiced up with several animations, illustrations and audible cues to attract the youth's attention.

1.1.3 WSWM Lesson Setup

Lessons 1-3 include '*The World Starts With Me*', '*Emotional Ups and Downs*' and '*Is Your Body Changing too*?' encourage the youth to value themselves and know the changes they will experience during puberty and adolescence.

Lessons 4-6 covering '*Friends and Relationships*', '*Boys and Girls, Men and Women*', and '*Fight For Your Rights*, raise the need for and how to build meaningful social relationships. Youth are encouraged to identify positive role models and know their SRHR rights.

Lessons 7-11: 'Sexuality *and Love*', '*Pregnancy: 4 Girls and 4 Boys*', '*Protect Yourselves: STIs and HIV/AIDS*', '*HIV/AIDS: U have a role 2 play 2*' and '*Love Shouldn't Hurt*' promote open dialogue about sexual health risks related to pregnancies, STIs and HIV/AIDS, how and where to look for support in case of SRH problems and also encourage the youth to make their own decisions regarding sexual behaviour and respect their partner's decisions.

In lessons 12-14: '*Your Future: Dreams and Plans*', '*My Top Tips Peer book*' and '*Exhibition*' youth are encouraged to use the knowledge acquired to set goals, plan for their future and share the information with their peers. The end of the curriculum is marked by students making peer books and other materials which they showcase at an exhibition.

1.1.4 WSWM Scope

The curriculum targets youth aged 12-19 years who can read English and they need not have computer experience because they are given computer lessons. Although the curriculum can be used in out-of-school facilities like telecentres, the WSWM is implemented in 150 schools in 38 districts.[13] The project was executed in schools because the project implementer, SchoolNet Uganda was already working with education institutions to enhance the use of ICTs in teaching and learning. So the donors relied on SchoolNet Uganda to implement the project in an area of their expertise. Secondly, the needs assessment carried out by WPF before the programme was designed showed that the number of school-going youth had

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[13] See **Appendix 1** showing districts in which the programme is running.

increased mainly because of government policies - Universal Primary Education (UPE)[14] and Universal Secondary Education (USE)[15] that encourage free education. So focusing on school-going youth meant reaching a reasonable target audience and also meeting the need for a continuous SRHR curriculum which was hitherto lacking in most schools.

The project started with three schools in 2003, they increased to 10 in 2004, 28 in 2005, 50 in 2006, 68 in 2007, 100 in 2008 and 150 in 2009. These schools have varying levels of ICT infrastructure and connectivity and a few use manuals because they lack computers. This study focused on three schools taking part in the 2009 project cycle. These are: St. Peter's Secondary School, Nsambya (hereafter referred to as St. Peter's) and Lubiri Secondary School (henceforth referred to as Lubiri). Both schools are located in Kampala while Nyenga Secondary School, Kigudu (hereafter referred to as Nyenga) is found in Mukono District.

St. Peter's is situated on Nsambya Hill about three kilometres from the central business district (CDB) of Kampala. The school, established in 1907 by the Mill Hill missionaries currently has about 1,200 students. Although it used to be considered among the best performing schools, over the past three years, it has ceased to appear on the list of the top 20 schools in the country.[16] The school joined the WSWM in 2004.

Lubiri is situated on the Nateete-Wakaliga Road about eight kilometres from the CDB. The school, founded in 1956 by one of Buganda Kingdom's kings, *Ssekabaka* Edward Mutesa II, was one of the early beneficiaries of the World Bank's WorLD programme in the late 1990s. It has a student population of about 3,200 students and is considered one of the best science schools in Uganda.[17] The school joined the WSWM project in 2008.

Nyenga is located in Nyenga sub-county about 55 kilometres from Kampala. The school, with a population of 760, students is classified as a very rural and poor school. It joined the

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[14] UPE was introduced in 1997 as part of a government policy to provide free primary education to four children in every family.

[15] USE was implemented in 2007 to expand secondary school enrolment. Sponsorship is limited to students in the Ordinary level section. Both UPE and USE have increased school enrolment but this has exerted enormous pressure on the existing school facilities hence affecting the quality of education. See *The Daily Monitor*, 29 March, 2010, '*MPs uncover rot in free education*,' at http://www.monitor.co.ug/News/Education/-/688336/888596/-/item/0/-/dcg6lh/-/index.html, accessed 30 March, 2010.

[16] *The Weekly Observer*, 7 February, 2010, '*Top 10 schools in last 10 years*,' at http://www.observer.ug/index.php?option=com_content&view=article&id=7111:-top-10-schools-in-last-10-years&catid=85:education&Itemid=106, accessed 8 February, 2010.

[17] *The Weekly Observer*, 2 August, 2009 '*Top 400 science secondary schools.*'

WSWM programme in 2005 having acquired three computers through the WorLD project.[18] But the computers have broken down so the WSWM lessons are delivered through a manual.

All the above are government-aided, mixed day and boarding secondary schools. St. Peter's and Lubiri were included in the study because they are located nearer to Kampala city centre, which has better and more ICT facilities than the rural areas. Students studying in the city are likely to have more exposure to ICTs through different avenues like schools, Internet cafes, and at home than their rural counterparts. So their views will elucidate how youth access ICTs and for what purposes. The study focused on mixed secondary schools because; the programme format is designed to cater for both boys' and girls' SRHR needs. Secondly to find out how boys and girls within a similar setting react to computer-based programmes.

1.2 Statement of the Problem

Uganda's mass awareness campaign promoting abstinence, faithfulness and condom use was previously hailed for successfully reducing the HIV infection rate by more than half in the 1990s and improving youth reproductive health, but a large segment of the youth still remains ignorant about how the disease and other STIs are transmitted. This is partly attributed to the country's ambiguous sex education.[19] According to the report, *Protecting the Next Generation in Uganda,*[20] only half of the sexually experienced 15-19 year-old youth have received sex education in school. This calls for a comprehensive and sustained sex education curriculum modelled to fit the youth's changing characteristics and activities.

Since youth have enthusiastically adopted new technologies like the computers, mobile phones and the Internet, experts argue that these gadgets can be used to enable young people to seek, utilise and participate in development programmes. But in order to harness their full potential, there is need to address key questions like: which ICT infrastructure is available to the youth, how are they accessing and using them, how have they benefited from them and how can ICT-based projects be sustained especially in light of the dwindling donor support?

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[18]Check out 'World Links Uganda Nyenga workshop launch' at http://www.world-links.org/downloads/task,search_result/?lang=en, accessed 10 February, 2010.
[19]*The East African*, 24 March, 2008,' *Youth still HIV ignorant*,' at http://www.theeastafrican.co.ke/magazine/-/434746/258526/-/item/0/-/njshc7/-/index.html , accessed 31 January, 2010.
[20] Ibid

1.3 Objectives of the Study

This study is aimed at:

1. Investigating how youth in schools use computers, CD-ROMs and the Internet to learn about sexual reproductive health.
2. Outlining how participatory and interpersonal approaches are integrated in such programmes.
3. Identifying factors considered when designing and implementing the WSWM.
4. Revealing the knowledge, attitudes and skills the youth gained from the programme.
5. Explaining the opportunities and challenges of using ICTs in sexuality education.

1.4 Research Questions

The study is guided by the following questions:

1. How are computer-based technologies used to teach the youth about sexual reproductive health?

Sub-questions

How are interpersonal and participatory approaches infused into the WSWM project?

What factors are considered when designing and implementing the project?

What knowledge, attitudes and skills did the youth acquire from using these technologies in SRH education?

2. What are the challenges and opportunities of using ICTs in sexuality education?

1.5 Justification of the Study

The rights-based approach to SRH (suggested at the 1994 ICPD conference) advanced the need for availing adolescents with information and services to enable them understand their sexuality and protect themselves from reproductive risks. In carrying out this study, I seek to illustrate how Uganda is trying to promote and meet the SRH needs of its young people.

A number of studies about ICTs in Uganda have focused on the digital divide, highlighting issues of access, usage (Mwesige, 2004, ITU Telecommunication Indicators, 2000). The rationale of this study is based on the fact that few studies have focused on the use of ICTs in

health communication in Uganda. I hope this study will add onto the knowledge about the opportunities and challenges of disseminating sexuality education through new technologies.

1.6 Structure of the Thesis

Chapter one introduced the study, reasons why I focused on this topic, the objectives, research questions and scope of the study.

Chapter two presents a review of the ASRH situation and policies in Uganda. It argues that not all interventions are based on policy guidelines because of ignorance about the existence of these policies, limited resources and bureaucracy surrounding their use.

Chapter three outlines and discusses the ICT environment and policies in Uganda. It notes that although the country has made significant improvements in its ICT infrastructure, services and policies, there is need to identify how best to incorporate these tools in development projects to maximise their benefits.

The study adopted theories from development communication and health communication plus Kim Witte's Persuasive Health Framework to analyse the integration of computers, CD-ROMs and the Internet in ASRH. These are discussed in chapter four.

Chapter five highlights the methodology used to gather data for the study. It also outlines how the data was analysed, ethical considerations and challenges encountered during the data collection process.

Chapter six presents and discusses the findings in relation to the research questions outlined in chapter one and theoretical framework in chapter four. It argues that technologies can play a fundamental role in social development if their accessibility is equitable and content is aligned to suit the interests of its target audience.

Chapter seven concludes the study by providing a synthesis of the findings and discussions arising from the study. It argues that the sustainability of computer-based programmes is met with challenges like poverty, limited infrastructure, manpower gaps, and financial constraints among others. The section further offers recommendations on how the project can be improved and identifies possible future research areas.

ADOLESCENT REPRODUCTIVE HEALTH ISSUES AND POLICIES IN UGANDA

2.0 Introduction

This chapter outlines the situation of youth in Uganda, then analyses their sexual reproductive situation. This is aimed at understanding the necessity of availing young people with more comprehensive and sustained sexuality-related information through a variety of channels. The second part of the chapter analyses policies related to ASRH in Uganda. These policies provide the blueprint against which the formulation and implementation of projects is carried out, thereby influencing their outcomes either positively or negatively.

2.1 State of the youth in Uganda

Youth (between 18-30 years) constitute 55% of Uganda's population.[21] Although the majority have attained formal education because of the presence of policies like UPE, USE coupled with the existence of several universities and tertiary institutions, meaningful employment opportunities are still out of the reach for several youth, many of whom live in rural areas. Poverty levels are still high and many young people who work are exploited. Over 93% of the youth live on less than $2 a day.[22] Political violence has displaced many youth especially in northern Uganda, exposing them to rape, abductions, family separation, displacement and even death. The protracted 24-year-old war between the government and the Lord's Resistance Army (LRA) has left an entire generation in the region in need of education, employment, enjoyment of political freedoms, social and cultural rights.[23]

2.2 Review of the ASRH Situation

The draft National Adolescent Health Policy (1999), defines the term 'adolescent' as anyone aged between 10 and 19 year and 'youth' as those between 15 and 24 while 'young people'

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[21]See: '*Uganda: 7.5 million youth to vote in 2010*' at http://www.afrika.no/Detailed/18145.html, accessed 5 February, 2010.

[22] *The East African*, 20 December, 2008, '*Uganda has world's youngest population,*' at http://www.theeastafrican.co.ke/news/-/2558/504754/-/item/0/-/3s4i03z/-/index.html, accessed 3 February, 2010.

[23] Check out 'War-affected children and youth in northern Uganda: Toward a brighter future,' at http://www.macfound.org/atf/cf/%7BB0386CE3-8B29-4162-8098-E466FB856794%7D/UGANDA_REPORT.PDF, accessed 31 January, 2010.

covers people in both age groups (between 10 and 24 years). But these three terms are interchangeably used in this study to refer to the research respondents aged 13 and 20 years.

The numerous literature outlining the ASRH situation in Uganda mainly suggests that many youth are still vulnerable to several SRH problems. According to a survey carried out among 15-19 year-old male and female youth, half of the women and nearly four in 10 men in the same age group have engaged in sexual intercourse.[24] Of these, only 19% of the females and 42% of the males used any modern family planning method despite the fact that more than three-quarters said they knew and approved of these methods (Ibid). The study also added that many young females get pregnant while in school forcing many of them to drop out and either get married or stay at home to raise the children.[25] Also, complications arising from child birth and unsafe abortions are the major causes of death among girls aged 15-19 years.[26]

The report, *Protecting the Next Generation in Uganda,* shows that only 71% of women aged 15-19 and 73% of their male counterparts had heard about other STIs than HIV/AIDS. Even among these, 16% of the females and 19% of the males are unable to name any symptom of an STI. The study concluded that young women in Uganda are nine times more likely than young men to contract HIV. This is attributed to biological factors like the vulnerability of the reproductive tract,[27] social and cultural factors that lead several females to experience early initiation of sexual activity. Another study conducted by the International Planned Parenthood Federation in 2006 showed that one in ten 15-24 year-old women report force at first sex, or higher risk sexual relations with a man 10 years or older and young men (15-24 years) have more than twice the average number of partners than their female counterparts.[28]

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[24] See 'Adolescents in Uganda: Sexual and Reproductive Health', at http://www.guttmacher.org/pubs/rib/2005/03/30/rib2-05.pdf, accessed 10 March, 2009.

[25] Uganda has the highest teenage pregnancy rate in Sub-Saharan Africa. See '*Pregnant Adolescents: Is Uganda Delivering on Promises of Hope*? at http://www.enteruganda.com/brochures/populatejulypage02.html, accessed 1 February, 2010.

[26] *The New Vision,* 19 August, 2009, '*Adolescents need friendly family planning services,*' at http://www.newvision.co.ug/D/8/459/691791/adolescent%20reproductive%20health, accessed 2 February, 2010.

[27] The lining of the vagina provides a large area which is easily exposed to HIV-infected semen. Check out http://www.womenshealth.gov/hiv/women-at-risk/#b, accessed 20 December, 2009.

[28] Check out: Report Card: HIV Prevention for Girls and Young Women,' at http://www.unfpa.org/hiv/docs/report-cards/uganda.pdf, accessed 12 February, 2010.

Despite the above statistics, it should be noted that over the years, more youth have adopted responsible sexual behaviour leading to a delay of sexual debut,[29] fairly widespread use of condoms and other contraceptives, reduction in the number of sexual partners and the HIV prevalence rate. This change in trends is partly attributed to the several behaviour change campaigns that have encouraged youth to be more responsible with their sexuality. These campaigns are discussed later in this chapter.

2.3 SRH Intervention Strategies for Youth

To fulfil the ICPD declarations, the government of Uganda and several NGOs are using multiple approaches to encourage positive behavioural change among the youth and also support ASRH. These include various policies, media campaigns, peer education, outreach programmes and community health services.

2.4 Mass Media Campaigns

The media are a critical component of behaviour change interventions because they provide the channels of communication between the campaign implementers and the target audience. The liberalisation of the airwaves in Uganda in 1993 increased the number of channels through which public awareness campaigns could be disseminated (Tumushabe, 2006:7). The major channels used to reach audiences are newspapers, television and most commonly the radio. Some studies have shown that HIV prevention media campaigns have played a major role in encouraging safer behaviour. Some of these campaigns are summarised below.

2.4.1 The Straight Talk Campaign

Launched in 1993, the *Straight Talk* newspaper (ST), targeting youth and parents, was aimed at encouraging adolescents to delay sexual activity or to practice safer sex. This newspaper, funded by the United Nations Children's Fund (UNICEF) was then a monthly insert in the main daily newspaper *The New Vision* while the extra copies were sent to secondary schools countrywide. Adolescents embraced the newspaper because it was informative yet non-threatening and at that time, the HIV epidemic was at its peak although there were few

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[29] The median age of first intercourse for women increased from 16.3 in 1995 to 17.1 in 2000-2001 and from 17.7 to 18.3 for men in the same period. See http://www.guttmacher.org/pubs/rib/2005/03/30/rib2-05.pdf, accessed 12March, 2009.

interventions targeting the youth.[30] In 1997, The Straight Talk Foundation (STF) was launched, becoming the first organisation in Uganda to carryout public sex education through the media. The Foundation runs three mass media programmes countrywide. The English-language *Young Talk* newspaper (for primary school children), multilingual *Straight Talk* newspapers (for youth in secondary schools) and the multilingual Straight Talk Radio shows (for older adolescents including those out of school and those who cannot read), are aimed at availing the youth with information to protect themselves against reproductive health hazards. The organisation also carries out school-based activities (by 2004, it was overseeing over 700 Straight Talk clubs in schools) and community health fairs.

According to a 2007 evaluation of the organisation's activities, the STF has become an important influence on the reproductive knowledge, attitudes and HIV prevention behaviour among Ugandan adolescents (Kiragu et al, 2007). Exposure to ST materials has increased girls' self esteem, sense of gender equity and the likelihood of abstaining from sex even if they have a boyfriend, while for the boys, their sexual activities have reduced (many resume abstinence) and they take their relationships with girls seriously.[31]

2.4.2 The ABC (Abstain, Be faithful, use Condoms) Campaign

Although the ABC campaign is an AIDS awareness campaign, it also indirectly plays a pivotal role in educating the masses about their SRH needs. It promotes abstinence especially among the unmarried youth, encourages monogamous relationships and the correct and consistent use of condoms among sexually active people. These interventions could in the long run also reduce the spread of STIs, unwanted pregnancies and abortions among the youth. It is important to note that the government mainly supported the implementation of 'abstinence only' campaigns in schools. This was in line with directives from President Bush's Emergency Plan for AIDS Relief (PEPFAR) which funded pro-abstinence campaigns especially in schools (Cohen, 2003).[32] In agreement, the Ministry of Education and Sports (MOES) directed teachers to promote abstinence in schools.

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[30] See http://www.straight-talk.or.ug/home/index.html, accessed 1 April, 2009.
[31] Check http://www.popcouncil.org/Horizons/projects/Uganda_StraightTalk.htm, accessed 1 April, 2009.
[32] See HIV and AIDS in Uganda at http://www.avert.org/aidsuganda.htm, accessed 2 April, 2009.

This thesis is not aimed at providing a thorough critique of the ABC campaign so it shall not divulge criticisms being labelled towards the campaign but the study concurs with Cohen (2003) that there is need for more research to reveal the relevance of the ABC approach to the prevention of other STDs, unplanned pregnancies and abortions.

2.4.3 The Y.E.A.H Campaign

The Young Empowered and Healthy (Y.E.A.H) is a multi-channel communication initiative by and for Ugandan youth aged 15-24 in the East, South West, Central and Northern parts of the country.[33] It combines mass media, interpersonal communication and community media initiatives to reduce the prevalence of HIV/AIDS, early pregnancies and school dropouts among the youth. Y.E.A.H was designed and implemented in 2004 as a partnership between the Communication for Development Foundation Uganda (CDFU) and STF under the Uganda AIDS Commission. Y.E.A.H has carried out campaigns like '*Something for Something' Love* and '*Be a Man'*[34] and produced educational materials used by over 400 partner organisations. Its main channel of information dissemination is the weekly 30-minute radio serial drama Rock Point 256 broadcasting on 13 radio stations in eight languages. Messages in this drama are repeated in radio spots, songs and music videos, posters, comic books, billboards, flyers and posters.

Some of the Y.E.A.H campaigns are aimed at reducing incidents of cross-generational sex[35] and encouraging men to adopt more socially acceptable attitudes and behaviour in order to reduce the HIV/AIDS infection rates and improve the relationships with their peers.

2.5 School-based Campaigns

The campaigns mentioned above have also been implemented in schools. But there are other promotions carried out through clubs formed in schools. These include Anti-HIV clubs, Youth Alive Clubs, AIDS awareness clubs, True Love Waits, AIDS Challenge clubs and the WSWM. These clubs are mainly run by the fellow in-school youth and they use local dramas, skits and music to deliver sexuality information to the youth.

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[33]See http://www.yeahuganda.org/, accessed 30 March, 2009.

[34] For more on these campaigns, check out http://www.yeahuganda.org/, accessed 30 March, 2009.

[35] This is when young women engage in sexual activities with much older men. According to the 2006 Demographic and Health Survey in Uganda, seven percent of young people aged between 15-19 years had recently had high-risk sex with a partner 10 or more years older than themselves (Clifton, 2009).

2.6 POLICIES THAT IMPACT ON ASRH ACTIVITIES

The review of policies related to ASRH is aimed at situating the relevance of youth-centred behaviour change interventions in the broader government programmes. Although several policies concerned with reproductive health are mentioned in this study, emphasis is placed on the the National Adolescent Health Policy, Reproductive Health Policy and the School Health Policy because they are directly linked to the topic under discussion.

Early intervention policies in Uganda focused on combating the spread of HIV/AIDS and addressing family planning and maternal health issues until the 1994 ICPD conference. Thereafter, a wider strategy was adopted to tackle several components of reproductive health which included safe motherhood, family planning, adolescent health, post abortion care, female genital mutilation, management of reproductive health cancers and controlling the spread of HIV/AIDS and other STDs. Some of the policies developed to enable the efficient service delivery of ASRH services were integrated into different sector ministries namely: Ministry of Health, Ministry of Gender, Labour and Social Development, Ministry of Finance and Economic Planning and the MOES (Nakazzi, 2005). Some of these policies are briefly mentioned below and thereafter, those that mainly focus on ASRH are analysed in detail.

- The 1999 National Youth Policy stipulates that the government will fulfill youth development goals as listed in the 1994 Cairo Conference.

- The 2000 National Health Policy seeks to help youth better understand their sexuality, promote responsible behavior and provide them with services to reduce unwanted pregnancies, STDs and HIV/AIDS.

- UPE and USE have increased school enrolment and also empowered adolescents, especially the girls to demand for their sexual reproductive rights and needs.

- The National Population Policy calls for increased girl-child education and the integration of population and family life education into school curricula in order to tackle issues like early child bearing, unwanted pregnancies, STDs and HIV/AIDS.

2.6.1 National Adolescent Health Policy

The policy was first drafted in 1999 to mainstream adolescent health concerns in the national development process in order to improve their quality of life, participation and standard of living. The policy, approved in 2004 is guided by principles from the 1995 Constitution of Uganda, the National Population Policy, the National Gender Policy and Local Government Act, among other statements relevant to the health of young people. Although it tackles a number of issues related to adolescent health like substance abuse, oral and mental health, a bigger proportion of the policy dwells on reproductive health concerns like contraceptive use, unwanted pregnancies and abortions, STIs and HIV/AIDS. The policy calls for re-admission of girls back into school after childbirth, review of the abortion law and increasing the availability of contraceptives to young people.

Implementation, monitoring and evaluation of the policy is spearheaded by the Ministry of Health (MOH) in collaboration with the National Steering Committee on Adolescent Health, The Technical Committee for Adolescent Health, the District Committee on Adolescent Health and partner ministries like: Gender, Labour and Social Development, MOES and NGOs. Although each of the above committees has a membership of between 10-19 people, each committee only allows one youth representative, showing that youth are underrepresented in various policy stages. This almost non-existent participation of young people in policy development might encourage them to shun the policies because they view them as illegitimate or they might not address their specific needs.

2.6.2 Reproductive Health Policy

This document, developed in 2006 by the MOH, the Reproductive Health Division together with other development partners interested in the promotion of SRH, is aimed at providing explicit direction and streamlining the training and provision of reproductive health services. Although the policy addresses all the components of reproductive health, this discussion is limited to the section that directly highlights ASRH. It notes that provision of ASRH services is meant to improve the adolescents' quality of life and standards of living. The policy seeks to provide and increase availability and accessibility of appropriate, acceptable, affordable quality information and SRH services to adolescents, influence positive behavioural change among adolescents and garner individuals, communities and leaders to support ASRH.

This policy urges reproductive health service providers to equip youth with a variety of information concerning but not limited to adolescent sexuality, contraception, unwanted pregnancies, unsafe abortions, early marriages, sexual gender-based violence, care during pregnancy, risky sexual behaviour, harmful traditional practices, drug and substance abuse, proper nutrition, hygiene and life skills. These messages should be clear, simple, accurate, gender and culturally sensitive; observe the rights of adolescents and availed in areas frequented by the youth like schools, religious and community centres, youth/adolescent clubs and local/youth council meetings. Various communication channels like local dramas and folktales, print and electronic media can be used to disseminate the information.

2.6.3 School Health Policy

Without a policy to guide the planning and implementation of health services in schools, previous interventions carried out in these institutions were mainly spontaneous, fragmented and not-effectively coordinated to meet the immense health challenges found in schools. To fill this gap, the MOH, MOES and other key stakeholders recently developed the School Health Policy. It is built within the context of a number of policy instruments and sector guidelines like the Poverty Eradication Action Plan (PEAP), Sector Wide Approach (SWAP), Water Act 1995, Children's Statute 1996 and the Decentralisation Policy among others.

The policy, still in draft form seeks to enable the attainment of a healthy school community in order to achieve optimal education performance and social economic wellbeing by focusing on priority areas like but not limited to water and sanitation/hygiene, school child nutrition, ASRH, counseling and guidance and provision of basic medical and dental health care services. It calls for the inclusion of life skills-based health education, including sex education into the curricular at all levels of education.

2.7 Policy Challenges

The formulation, implementation and evaluation of these policies is from top to bottom. The guidelines are initiated by ministry technocrats and passed onto their intended beneficiaries through different district and sub-county committees. In most of the above policies, teachers and students/pupils are at the bottom of the implementation plan yet they are the main targets for these policies. Young people are seldom involved in policy formulation and their

participation in implementation and evaluation is limited, thus hindering their ability to support policy initiatives.

Many of these policies are rarely used in the actual implementation of development programmes. This is attributed to the limited budget and manpower, lack of cooperation between the different stakeholders, ignorance among the public about the policies and the tedious and time-consuming series of activities to be adhered to if the guidelines are to be followed. A survey carried out in 2008 by Reproductive Health Uganda revealed that several MPs were ignorant about SRH needs and rights.[36] This study posits that legislators are less likely to pass policies and laws they are less knowledgeable about.

In addition, most of these policies have not been distributed to the different stakeholders. The teachers interviewed for this research had not received any of the above policies although they had limited knowledge about their contents, mainly availed to them during workshops organised by SchoolNet Uganda. The students were also ignorant about the existence of these policies thus limiting their participation in policy implementation.

2.8 Section Summary

This chapter has pointed out the state of the youth in Uganda with particular emphasis on the ASRH situation. I have also mentioned the main mass media and school-based interventions pertaining to ASRH. These interventions have helped decrease the incidences of risky behaviour among the youth but there is need to capitalise on these gains by continuously surrounding young people with information about SRH and skills development (especially skills that will enable them get employment and thus avoid transactional sexual affairs).

In the latter section of the chapter, I highlighted the policies that guide the implementation of ASRH activities in the country. I argue that although some of these policies have been used to support the provision of ASRH services, they (the policies) are rarely adhered to by programme implementers because of limited resources and bureaucracy surrounding their use. The next chapter discusses the ICT environment in Uganda.

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[36] *The New Vision*, 6 July, 2008, *'Report says MPs green on health rights,'* at
http://www.newvision.co.ug/D/8/17/637572/reproductive%20health%20policy, accessed 6 February, 2010.

CHAPTER THREE

UGANDA's ICT ENVIRONMENT

3.0 Introduction

In chapter one, I briefly mentioned that although Uganda is generally characterised with high levels of disparity in access to and usage of ICTs, there are several government-led and private sector-based initiatives geared towards improving and incorporating these new technologies in different sectors of the economy and in social development programmes. This chapter maps out Uganda's ICT trends. Understanding these trends is a prerequisite for establishing arguments on the sustainable use of ICTs in development programmes.

The latter section of the chapter discusses ICT policies that impact on the education sector. Policies aid the efficient and coordinated execution of development projects if they are drafted in consultation with their intended beneficiaries and a supportive environment is provided for their implementation. But this thesis argues that the mere presence of ICT policies does not lead to equitable access and use of ICTs if the guidelines are not supported, financed and implemented.

3.1 ICTs in the Ugandan Context

The process of revolutionising the ICT sector began when the government liberalised the airwaves in 1993 and the telecommunication sector in 1996. These processes ended government monopoly in the provision of broadcasting and telecommunication services since laws favouring private sector investment in the provision of these services were formulated and implemented. The Communication Act was passed in 1997 in order to support and improve the telecommunication facilities and open the market to a variety of new services.

By the late 1990s, the government had picked interest in using ICTs to foster development. Uganda was represented at various ICT conferences like the 1997 *Global Knowledge Conference* in Toronto, Canada where President Yoweri Museveni confirmed the government's commitment to ICTs and requested the global community to assist Uganda in developing ICT capacities that could improve the lives of its rural and disadvantaged communities (Parkinson; 2005). Thereafter, the increased private sector participation in the

ICT sector necessitated the need for policies and a governing body to streamline their initiatives. This led to the formulation of the Rural Communications Development Policy (RCDP), 2001 and the National Information, Communication and Technology Policy, 2002. These policies are analysed later in this chapter. The Ministry of ICT was later created in 2006 to spearhead the improvement of ICT awareness, access and utilisation.

3.1.1 Electronic Media

The liberalisation process ended the monopoly of the government-owned Uganda Television and Radio Uganda. These two broadcasters were merged in 2005 to form the Uganda Broadcasting Corporation. By December 2008, there were 188 functional FM (frequency modulation) radio stations while 32 others were licensed but are not yet on air. Most of these stations are commercially-oriented and majority are spread over several districts countrywide. This means that radio reaches a wider audience especially in rural areas. Thirty-five of the 50 licensed television stations are on air but most of these stations only broadcast in Kampala District and for those whose coverage extends to a few other upcountry districts, the broadcasts are limited to the major towns.

3.1.2 Fixed and Mobile Phone Services

The first mobile cellular service provider, Celtel (now called Zain), was licensed in 1993. But by the end of 2009, there were seven telecom providers servicing over 8.2 million mobile phone users, meaning that the mobile phone penetration stood at almost 25% of Uganda's population.[37] Mobile phone network coverage now extends to several rural areas but most subscribers are located in urban areas mainly because poverty constrains most rural dwellers from affording and maintaining a cellular phone. Many rural dwellers mainly access low-cost telecommunication services through rural mobile payphone services like the MTN VillagePhone and Zain's 'Community Phone'.[38]

There has also been an improvement in the technological applications and modes of handsets available. Subscribers now have access to third generation (3G) technologies, GPRS,

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[37] See '*Mobile phone subscribers hit 8.2m*' at http://about.comesa.int/lang-en/publications/other-press-coverage/114-mobile-phone-subscribers-hit-82m , accessed 31 January, 2010.
[38] Keogh and Woods (2005) and '*Village Phone Uganda*' at http://www.africafocus.org/docs04/ict0402.php, accessed 2 February, 2010.

Blackberry and Edge. But mobile phone usage is hampered by a number of factors among them the 18% Value Added Tax (VAT) charged on mobile phones and an increase in tariffs. The increase in tariffs adds to the already heavy burden of a 12% excise duty, the highest in East Africa. Phone manufacturers and telecom companies, argue that abolishing VAT would increase mobile phone penetration especially among the youth, thus giving them access to resources and opportunities in education and enterprise.

Regarding fixed phone services, estimates from the Uganda Communication Commission (UCC) show that fixed lines totalled to 200,000 by May 2009. Although fixed lines offer lower call rates, their penetration is much lower than that of mobile phone users because of the cumbersome procedure involved in acquiring a fixed line compared to getting a mobile phone line. But analysts suggest that the numbers of fixed lines are likely to rise after the emergence of wireless technology for fixed lines which has enabled the provision of a fixed line telephony services at a lower price using existing infrastructure such as telecom masts.[39] Overall, the telecom industry in Uganda has undergone significant improvement over the years. About 10 million people have access to telephones compared to 3,000 in 1998, network geographical coverage is over 90% but the actual penetration is at 35%.[40] This low penetration is attributed to financial and infrastructure constraints.

3.1.3 Internet Developments

Internet use in Uganda started in 1993 but commercial Internet services did not become available until 1994. By 2000, there were about 60,000 Internet users but actual subscription was less than 10,000 (Mwesige, 2004:5). According to UCC, about 2.5 of the 31 million Ugandans could access the Internet by the end of 2008. Mwesige notes that most Ugandans access the Internet at cyber cafes which increased significantly when UCC waived the Internet cafe and payphone license fees in 2002 (Ibid). Access to mobile wireless Internet is also steadily increasing. By December 2008, there were over 200,000 individuals accessing

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[39]*The Weekly Observer,* 14 October 2009, '*Wireless tech spurs return of fixed lines,*' at http://www.observer.ug/index.php?option=com_content&task=view&id=5528&Itemid=68, accessed 29 January, 2010.

[40] *The New Vision*, 16 December, 2009, '*Smile Telecom targets low income earners,*' at http://www.newvision.co.ug/D/9/32/704444/Smile%20Telecom, accessed 1 February, 2010.

mobile Internet from over 160,000 in June.[41] But problems associated with slow connectivity and small bandwidth limit access to sites like www.youtube.com that have heavy material.

The biggest challenge to Internet (and other ICTs) penetration in Uganda is the very low and uneven penetration of telecommunication infrastructure countrywide (Mwesige, 2004). This problem is attributed to the high costs involved in procuring, installing and maintaining the infrastructure. But the arrival of the first undersea fibre optic cable in East Africa in June, 2009 provides hope that the cost of providing telecommunication services will reduce. The cable, commissioned by SEACOM is heralded as the beginning of a new era of faster and cheaper Internet connections. Analysts predict that this cable might enable the provision of faster Internet services but the cost of connectivity will remain high for a considerable amount of time because the industry players, who are mainly private companies, will first want to recover their investments. In addition, several Internet service providers are still contracted to use the services of satellite providers which are still costly and a reduction in international bandwidth prices might not necessarily reduce costs of wireless technology or that of onward connectivity into the hinterland.

To fully benefit from this broadband revolution, the Ugandan government is constructing the national fibre optic cable to be linked to SEACOM's marine cable. This project is envisioned to speed up Internet connectivity and reduce the cost of Internet bandwidth by up to 70% in all major towns. Unfortunately, there are fears that the public is not likely to relish the benefits of faster Internet services because the project is marred with allegations of fraud, mismanagement and sub-standard networking.[42]

Internet usage in Uganda is also faced with a new challenge – the banning of the importation of second-hand computers that was announced in the 2009/2010 national budget. While the finance minister argued that this move was aimed at protecting the environment, it is projected to hamper the development of ICT usage since many Ugandans have been relying on second-hand computers as they are cheaper than the new ones.

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[41]See http://www.ucc.co.ug/MarketReviewDec08.pdf, accessed 10 February, 2010.
[42] *The Daily Monitor*, 11 January, 2010, '*MPs block e-governance project over shoddiness,*' at http://www.monitor.co.ug/News/National/-/688334/839468/-/wgt2p2/-/index.html, and also '*Fresh storm brews over national fibre optic cable,*' http://www.monitor.co.ug/News/National/-/688334/855174/-/whyave/-/index.html, accessed 22 February, 2010.

It is important to note that most ICT infrastructure projects are concentrated in urban areas creating a deficiency in information access countrywide. This scenario has continued despite the presence of the Rural Communication Development Fund aimed at providing universal access to ICTs. The fund has supported the establishment of Internet PoPs (points of presence) in 54 districts, set up ICT training centres and Internet cafes, district information portals and public payphones and multi-purpose community telecentres.

3.1.4 The Telecentre Phenomenon

Telecentres have played a significant influence in the provision of communication services to the rural people, thus enhancing their social and economic development. Telecentres offer access to information and communication through a variety of avenues like telephone services, facsimile services, Internet and email access, library services and training. Uganda's first telecentre was set up in 1999 in Nakaseke sub-county, Luweero District and by June 2007, there were over 110 telecentres in Uganda.[43] Other prominent centres include Buwama Multi-purpose Community Telecentre located in Mpigi District and Nabweru Telecentre.

Although these centres have tried to provide basic access to ICTs in remote areas, they are faced with stiff economic challenges and many are on the verge of closing down. Some locals have shunned these centres because they are ignorant about the advantages of using ICTs, the centres might not be providing the services most needed by the locals since their views were not included in the design and implementation of the services and poverty inhibits them from affording the services. This rejection is highlighted by the case of residents around Queen Elizabeth National Park who shunned the telecentre built in the area complaining that they were not consulted before it was constructed and it was located far away from their homes.[44]

3.1.5 ICTs in Schools

There has been an increase in the number of both government-aided and private schools, and in school enrolment mainly because of policies like UPE and USE. Since the introduction of UPE, primary school enrolment increased from 5.3 million pupils to about 8.5 million in

[43] See 'RCDF to establish 40 telecentres in Uganda', at http://www.i-network.or.ug/news/latest/rcdf-to-establish-40-telecentres-in-uganda.html, accessed 20 December, 2009.
[44] *The New Vision*, 25 March, 2008, '*Residents shun new telecentre*,' at http://www.newvision.co.ug/D/8/18/618519/Queen%20Elizabeth%20National%20Park, accessed 12 January, 2010.

2010 and about 1.2 million students are participating in USE in 1,471 schools countrywide.[45] But the success of these programmes is marred by factors like the high teacher-student ratio, teacher absenteeism, insufficient classroom space and financial constraints.[46]

The incorporation of ICTs in schools began with the World Links Project in 1997 as collaboration between The World Bank's WorLD programme and the non-profit World Links Organisation. In partnership with SchoolNet Uganda, the organisations set up school-based telecentres in rural areas to provide teachers and students with ICT skills and also serve the community who used the centres after school hours. This inclusion of ICTs in schools was aimed at changing the education system from an industrial model (learning by assimilation) to a knowledge-based model to equip the students with ICT skills they can use at work. This project was followed up with others like Uganda Connect (UConnect), which also tried to equip schools with computers and the Internet and also train students and teachers on how to use them.[47] Currently, the MOES is working with NGOs like Connect-ED and the Global Teenager Programme to incorporate new technologies in the education system and reduce the digital divide between urban and rural schools.[48]

Although the above initiatives have enabled some schools to acquire computers, the impact is still low and more programmes are needed to bridge the rural-urban ICT divide (Eremu, 2005). Most schools, especially those in rural areas, have inadequate infrastructure (classrooms, furniture, laboratories, computers, electricity and connectivity), funds, scholastic materials and teachers. Records show that less than half of the 900 government-aided schools have computer laboratories,[49] and even then the equipment available is obsolete (Eremu, 2005). The low level of Internet connectivity in schools is attributed to the poor ICT infrastructure, low electricity coverage and the high costs of setting up a computer laboratory.

[45] The Daily Monitor, 29 March, 2010, '*MPs uncover root in free education*, at http://www.monitor.co.ug/News/Education/-/688336/888596/-1128fpk/-/index.html,viewed 29 March, 2010
[46]*The Daily Monitor*, 10 February, 2010, '*Free education lifts Uganda's HDI*,' at http://www.monitor.co.ug/News/-/688324/857388/-/c7k0i6/-/index.html, accessed 12 February, 2010
[47] Check http://www.uconnect.org/objects.html, accessed 20 December, 2009.
[48] For more on ICT initiatives in Ugandan schools visit http://www.education.go.ug/ict.htm, accessed 20 December, 2009.
[49] *The East African,* 24 August, 2009, '*One-laptop-a-child drive held back by Kampala redtape*,' at http://www.theeastafrican.co.ke/news/-2558/643728/-/item/1/-2444r5z/-/index.html, accessed 11 January, 2010.

3.2 POLICIES RELATED TO ICT GROWTH IN THE EDUCATION SECTOR

Whereas several policies and acts like the 2003 National ICT policy framework, 2001 Rural Communications Development Policy, 1997 Communication Act, the 1995 Press and Journalist Statute and the 1996 Electronic Media Statute were formulated and passed to guide the implementation of ICTs in the country, this study will focus on those affecting technological use in schools. These include: Rural Communications Development Policies, the 2002 National ICT Policy framework and the 2005 draft policy on ICT in Education.

3.2.1 Rural Communications Development Policies (RCDP)

The first RCDP (2001) was born out of the need to harmonise access to communication services between the urban and rural areas. According to this policy, by 1996, 70% of the communication services were located in urban areas thus isolating rural communities (yet most of Uganda's population is rural-based) and denying them the opportunity to initiate valuable interaction with the outside world. This policy was aimed at supporting the development of ICT infrastructure in rural Uganda and ensuring that people in these areas had reasonable and affordable access to communication services. It was hoped that availing these services to most hard-to-reach areas would enable the locals connect to the global information networks.

Unfortunately, this policy fell short of meeting majority of its objectives. The policy had set out to ensure that every sub-county with at least 5,000 inhabitants would have access to communication services by 2005, support the introduction of Internet PoP in every district by 2003, where every PoP would be supported by at least one Internet cyber cafe and enable the introduction of ICT usage in at least one 'vanguard' institution in every district by 2003. But statistics indicate that by 2008 when the first phase of the RDCP was ending, only 923 projects of the 3,863 that had been completed were still in operation countrywide[50]. The project had initially set out to roll out 4,786 projects. Limitations to achieving the goals of this ambitious project include the huge maintenance costs, high illiteracy levels especially in rural areas, lack of ICT awareness and low infrastructure coverage.

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[50]Check out '*Failed rural ICT projects eat up $10 Million*,' at http://allafrica.com/stories/200911020196.html, visited on 4 February, 2010.

In 2009, a new RCDP policy was drafted after evaluating the strengths and weaknesses of the first one. The new policy seeks to reduce the following gaps: geographical isolation, ICT literacy, ICT awareness, affordability, funding and technological issues.[51] The policy is still being drafted and this time, input from the public is encouraged.[52]

3.2.2 National ICT Policy

Private investors dominated the communication sector after the economy was liberalised and they mainly focused on urban areas because they lacked the incentive and infrastructure, appropriate policy and legislative framework to cater for nationwide coverage. To streamline developments in the ICT sector, the government asked the Uganda National Council for Science and Technology (UNCST) to initiate the process of formulating the national ICT policy. This process was concluded in 2002.

The policy mainly seeks to promote the development and effective utilisation of ICTs. Although this policy does not explicitly spell out how to incorporate ICT usage in the education and health sectors, some of its objectives like; providing for the establishment of appropriate infrastructure, creating awareness about the role of ICTs in development, improving functional literacy and ensuring gender mainstreaming in ICT programmes, are a prerequisite for facilitating the pedagogical use of these technologies.

3.2.3 Draft Policy for ICT in the Education Sector

This policy was formulated in 2005 after a series of protracted discussions between the government, private investors, the UNCST and MOES. It operates in conformity with other policies like the 1997 Local Government Act, 1997 UCC Act and the 1994 National Science and Technology Policy. The ICT policy in Education sets out to fulfil the National ICT objectives like creating awareness of ICT use and improving computer literacy. Some of its other objectives include: developing computer curricula for both primary and secondary schools, facilitating teacher training to equip them with basic computer skills and how to integrate ICTs in their teaching. Others are ensuring gender and geographical equity in access to computers in schools and facilitating the acquisition of ICT infrastructure in educational

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[51] See Rural Communication Development Policy for Uganda, 2009 at http://www.ucc.co.ug/rcdf/rcdf-Policy.pdf, accessed 2 February, 2010.
[52] See http://www.ucc.co.ug/rcdf/rcdf-Policy.pdf, accessed 2 February, 2010.

institutions. The policy has supported the provision of computers and Internet services in some schools and several institutions of higher learning have incorporated varying levels of ICT skills training in their curricula. Primary and secondary schools have computer science lessons on their timetables. Computer Studies is examinable by the Uganda National Examinations Board for students sitting their Ordinary Level examinations.

3.3 Policy Challenges

Whereas the above policies show government's commitment to integrating ICTs in development programmes, they have been met with some shortfalls. As noted in the previous chapter, these policies are also 'top-heavy' meaning that they were designed by technocrats without the involvement of their various target audiences. Eliminating the youth in policy formulation limits their chances of supporting and regarding ICT initiatives as legitimate.

Although government rhetoric suggests support for ICT development, it is not reflected in its budgetary allocations, thus hampering the provision of services stipulated in the policies. In the 2009/10 budget, the ICT ministry got 6.5 billion Uganda shillings, amounting to 0.1% of the government's spending and this was the lowest allocation for any ministry funding.

3.4 Section Summary

This chapter exposed the ICT trends in Uganda. It showed that there is consensus among the government and other development partners that the equitable provision of ICT services is critical in facilitating development. The study showed that there has been an improvement in telephony, Internet, broadcasting and other communication services housed in telecentres. Schools had acquired ICT infrastructure like old computers and slow Internet connectivity and their teachers were equipped with basic ICT skills. But an analysis of these trends showed that most ICT services are still concentrated in urban areas thereby marginalising the rural folks, majority of whom make up the back-bone of Uganda's economy.

This chapter also analysed policies affecting the implementation of ICTs in the education sector. The study noted that although these policies had enhanced the provision of ICT services in schools, their implementation was still hampered by factors like lack of support from their target audiences, lack of resources (infrastructure, financial, manpower and time) and lack of ICT awareness.

CHAPTER FOUR

THEORETICAL AND CONCEPTUAL FRAMEWORK

4.0 Introduction

This chapter explains the theories, framework and concepts used to study the feasibility of using computers, CD-ROMs and the Internet in sexuality education for youth. Wimmer and Dominick define a theory as a set of interrelated propositions that present a systematic view of phenomenon by specifying relationships among concepts (1983:10) while a framework, unlike a theory does not try to explain human behaviour, it simply outlines what one should do to develop the most effective and persuasive campaigns (Witte, 1995:146).

Basing one's research on theoretical underpinnings is important because they guide the planning, implementing and evaluating of an intervention (Glanz et al, 2005:23-25). Theories also help to explain behaviour, suggest ways of achieving behaviour change, identify and describe a problem and direct the search for modifiable factors such as knowledge, attitudes, self-efficacy, social support and lack of resources (Ibid: 26). This study integrates theoretical aspects of development communication and health communication to explain how ICTs can be used in sex education campaigns. It is important to note that while there are several theories drawn from the fields of communication, psychology, sociology and medicine that seek to explain behaviour change interventions, there is no unified psychosocial theory or model to guide e-health development to promote behaviour change (SPICH, 1999 quoted in Neuhauser and Kreps, 2003). So this study has a challenge to link the prevailing behaviour change theories to the investigation of computer-based interventions.

In addition to the theories mentioned above, the Diffusion of Innovation and Social Learning theories plus Kim Witte's Persuasive Health Framework will guide the explanation of how the WSWM programme was implemented and how the messages were designed. Literature related to these theories is discussed in relation to their significance to the WSWM project.

4.1 Development Communication Theory

Sexual reproductive health issues are an integral part of development because sexual reproductivity is linked to the rising population growth. The need to slow down population

growth rates amidst the increasing poverty rates calls for multiple strategies, among them communication initiatives that provide information about proper reproductive health care.

The immense importance of communication in development is highlighted by scholars like Melkote and Steeves (2001) and Mefalopolus (2008). According to the World Bank Development Communication Division, development communication occurs when tactical communication strategies aimed at information dissemination, education or awareness-raising and behaviour change are integrated into development projects. This communication must seek to change knowledge and attitudes and understand why people act in particular ways and their perceived barriers to change or adopt new practices.

The rise of development communication theory was the prerogative of scholars who sought to find out how technology and the mass media could alleviate developing countries from the quagmire of underdevelopment and poverty that characterised most of these nations. This theory is pertinent to this study because it provides the framework within which to discuss how to efficiently adopt new technologies in development. In using this theory, I seek to explore how computers, CD-ROMs and the Internet can be effectively incorporated into reproductive health education. This is based on the view that more youth can be reached when ICTs are incorporated into development-related projects.

Having emerged after World War II, the theory entails three theoretical approaches that seek to explain how development can occur in Third World countries. The approaches include: modernisation paradigm, dependency theory and participatory paradigm (Mefalopolus, 2008). In these paradigms, the media was accorded varying roles in the development process, with one paradigm limiting it to merely informing and motivating masses to adopt new innovations and another calling for the active participation of the masses in the communication process in order to be empowered to make meaningful personal choices. This study focuses on the first and last paradigms.

4.1.2 Modernisation Paradigm

There are two paradigms that seek to explain how modernisation can lead to development - the old and new modernisation paradigm. The use of ICTs in promoting development is based in the seemingly new modernisation paradigm, which is relevant to this study because

it seeks to explain how new technologies like the mobile phones, computers and the Internet can be harnessed to foster development. Before delving into the new paradigm, I shall briefly highlight the principles of the old paradigm because they laid the foundation for the current paradigm. The old paradigm, adopted in the 1940s equated development to modernisation and economic growth and suggested that Third World countries would only develop if they adopted a western capitalist economic system, built new infrastructure and acquired new technology (Melkote and Steeves, 2001: 71, McPhail, 2002: 35, Thussu, 2006: 44, Mowlana, 1997: 188). Some of the most influential proponents of the modernisation theory in the 1950s, 60s and 70s were Daniel Lerner, Wilbur Schramm and Everett Rogers.

In this paradigm, the role of communication was to encourage the diffusion of technological-innovation from industrially developed countries and agencies to periphery (rural) countries in the south and persuade the individuals in these countries to adapt the new behaviour (Mowlana, 1997:189, Ghosh, 2006: 42, Melkote and Steeves, 2001: 102-104).

Critics of this paradigm sprang up in the 1970s arguing that this model was ethnocentric (assuming that western ideals were worldwide views), had instead widened the gap between the rich and poor nations and ignored the role of indigenous culture in developing a nation (Thussu, 2006: 44). Another criticism of the paradigm was based on arguments that it promoted a one-way, top-down model of communication where technocrats in the west disseminated information about innovations to the Third World countries. These critics advocated for a two-way interactive and participatory communication process where the locals were encouraged to actively participate in planning and implementing their development plans. Communication experts envision that new technologies can enhance interactivity and direct participation from the 'used-to-be-silent public' (Servaes, 2007).[53]

Currently, the dominant paradigm has been partly abandoned and the new one is yet to be fully embraced (Mefalopulos, 2008), partly because the mere expansion of ICT usage has failed to lead to development. This is partially attributed to the unstable state of technological, economic and political forces in developing nations that still hinder the possibilities of discovering the full potential of using ICTs in development.

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[53] See section 4.3.1 for more on how ICTs can boost participation in the communication process.

4.1.2.1 The New Modernisation Paradigm

In a revision of the modernisation theory, a shift has been made to an almost blind faith in the potential of new ICTs – in what has been called a 'neo-developmentalist view' (Mosco, 1996: 130). According to this view, modernisation requires advanced telecommunication and computer infrastructure, preferably through the 'efficient' private corporations, thus integrating the South into a globalised information economy (Thussu, 2006: 46). The new paradigm is relevant to this study because it explains why, how and the challenges of transferring new technologies to periphery countries in a bid to harness their potential in development communication initiatives.

Having emerged in the mid-1970s, this paradigm was first used to explain how ICTs could influence rural development in Third World countries (Melkote and Steeves, 2001: 256-258). Their perceived immense power of availing locals with information and knowledge to influence their attitudes, behaviour and enabling participation and empowerment has been hyped at meetings like the World Summit on the Information Society (WSIS) where enthusiasm for these technologies is reflected in the demand for universal connectivity.

But this paradigm is also wrought with some weaknesses. Studies have shown that the digital divide between the have and have-nots is still wide and does not seem to be decreasing. The optimism of the 1990s regarding ICTs and their role in development has not been justified so far. This optimism is further quelled by Servaes' argument that although ICTs aid information sharing, they often cannot solve the development problems caused by social, economic and political issues, nor can they change the existing power structures as the information sometimes does not make sense to the people who receive it (2007: 491). This resurfaces arguments that ICTs might be imposed on developing countries without considering the cultural, infrastructural and specific needs of the individuals. In addition, some people view ICTs with suspicion probably because of the past experiences where the media was used to 'spin' arguments and impose change on people (Mefalopolus, 2008: 61).

I argue that while the social benefits of using ICTs to enhance development are vast and it is practical for developing countries like Uganda to embrace technology, the proposal to simply adopt these technologies limits the essence of development. There is need to understand how the technology is used by different communities because that is what denotes development.

I concur with Mefalopolus when he states that although technologies are not the panacea for every communication problem, they can address the specific needs of the locals if they are used within proper cultural frameworks and in processes that engage stakeholders in the selection of objectives, key issues and appropriate channels (2008). If technology is to enhance development, it should be viewed as a means not an end to the development process and as such, its design and use ought to focus on participation of its end users.

This study noted that ICTs cannot be *magic multipliers* of the development process unless the needs and views of their intended recipients are the driving force of the manufacture, selection and utilisation of the technology. Critics of this paradigm advocated for the participatory communication paradigm which shall be discussed later.

4.1.2.2 ICTs for Development

The ICTs for development concept was born out of the need to highlight the role new technologies can play in human development. It is aligned to the above paradigm that suggests the adoption of new technologies in order to leapfrog development, especially in developing countries. The need to engage ICTs in tackling social and economic problems like poverty and health was first emphasised at the 2003 WSIS in Geneva.[54] The summit advocated for the use of ICTs to help achieve the Millennium Development Goals (MDGs)[55] and also called for measures to monitor and bridge the uneven access to technology (digital divide) between the developed and developing world.[56]

It is argued that ICTs can promote community development, enable the locals access market information and prices of locally manufactured goods, stabilise the financial markets and banking systems and enhance education (Ojo, 2005). But Africa is yet to fully experience the benefits of ICT-based development initiatives because these new technologies have increased rural-urban migration, widened the gap between the rich and poor and marginalised the roles

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[54] Check out '*Building the information Society: a global challenge in the new millennium*', at http://www.itu.int/wsis/docs/geneva/official/dop.htm, accessed 11 May, 2009.
[55] These include eradicating extreme poverty and hunger, achieving universal primary education, promoting gender equality and women empowerment, reducing child mortality, combating HIV/AIDS, malaria and other diseases, ensuring environmental sustainability and developing a global partnership for development.
[56] For more on the worldwide discrepancies in access to and usage of ICTs, check out the 2009 ICT Development Index at http://www.itu.int/ITU-D/ict/publications/idi/2009/material/IDI2009_w5.pdf, accessed 12 April, 2009.

of people in setting development polices and strategies. This is because the use of ICTs is still inhibited by a number of economic, technological and cultural factors.

African countries are riddled with financial constraints that hinder them from buying and maintaining ICTs. Technologically, it is difficult to ensure the proper operation of such technologies in places where telephone and electricity lines are inadequate, hard to maintain or even non-existent. Furthermore, technical support is essential in countries where people are less technologically literate. In many developing countries, users need basic training in computer use and literacy skills to communicate effectively on the Internet. In addition, some cultural issues are crucial in gaining fundamental knowledge to efficiently use these ICTs. Language is also a major barrier to effective communication. A 1999 survey revealed that 86% of all web pages were in English (Thussu, 2000 cited in Mefalopolus, 2008) thus precluding access to information for many non-English speakers.

4.1.3 Participatory Communication (bottom-up) Paradigm

This approach was advanced to reverse the failed development propagated by the dominant paradigm. It called for the engagement of the local community in the planning, designing and implementation of campaigns aimed at achieving attitude and behaviour change (Melkote et al, 2001: 192). This paradigm views individuals as active participants not passive recipients in development. Some of the approaches to participatory communication include Paulo Freire's dialogical pedagogy and the ideas of access, participation and self-management advanced by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) in the 1970s (Servaes, 1996: 17). Freire in his *Pedagogy of the Oppressed* proposed that the poor could emancipate themselves if they were allowed to participate in the formulation of solutions to their problems (2000). He called for open communication between the teacher and the learner since students were also capable of identifying their problems and actively participating in solving them.

Freire's concept of communication is significant to the study because it highlights the fact that WSWM implementers should engage their target audience in the planning, implementation and evaluation of the project if it is to address the specific and urgent needs of their target audience and result in positive behaviour change. So the role of the media is to

facilitate dialogue with the target community and incorporate their views in the dissemination of information aimed at behaviour change.

But Servaes stresses that participation does not imply that there is no need for development specialists, planners and institutional leaders. It only calls for the consideration of the locals' beliefs before development resources are allocated (2007:489).

4.2 Diffusion of Innovation Theory

This theory, mainly attributed to Everett Rogers, seeks to explain how and why new ideas, products, opinions and behaviours spread throughout a community. In regard to this study, the diffusion theory provides a basis for explaining how innovations like computers, CD-ROMs and the Internet can be adopted to spread SRH messages among the youth.

Since Rogers was one of the advocates of the modernisation theory, his diffusion of innovation theory was also based on the belief that development would occur if individuals accepted and adopted new ideas from sources external to the social systems and that this process would be facilitated by communication; both interpersonal and mass media, persuading the individuals to adopt the innovation (Melkote and Steeves, 2001: 122-126). The theory assumed that a proper combination of mass-mediated and interpersonal communication strategies can move individuals from a process of awareness through interest, evaluation, trial and finally the adoption of the technology (Ibid).

Rogers defines *diffusion* as a process by which an innovation is communicated through certain channels over time among the members of a social system (1983). He identified the four main elements in the diffusion process as the *innovation*, *communication channels, time* and the *social system*. An innovation could be an idea, practice or object that is perceived as new by an individual or other unit of adoption (Rogers, 2003:11). In the context of this study, there are two innovations: *the first is using new technologies to learn about sexual reproductive matters* while the other is the *adoption of positive sexual reproductive behaviour*. These innovations are communicated to students through teachers, peer facilitators and SchoolNet Uganda staff over a long period of time (usually about nine months) hoping that they will be adopted and passed onto other students, who in this case would be the social system. This theory was adopted for this research because it explains the

factors that could be influenced to ease the use of ICTs in sexuality education and how the students adopted the knowledge, attitudes and behaviour advocated for in the WSWM.

Rogers argues that the adoption of an innovation is influenced by its characteristics as noted below:

- *Relative advantage:* The degree to which an innovation is perceived to be better than the idea it supersedes. Maybe in economic terms, social prestige and convenience.
- *Compatibility:* Degree of consistency with current values and needs of target audience
- *Trialability*: Degree to which an innovation can be tested on a limited basis.
- *Observability:* The ease with which individuals can see the results of the innovation.
- *Complexity:* The degree to which an innovation is perceived as difficult to understand and use. New ideas that are simpler to understand will be adopted more rapidly than innovations that require the adopter to learn new skills.

An innovation can be easily and rapidly adopted if it has a greater relative advantage, compatibility, trialability, observability and less complexity. Parcel and Oldenburg add that these factors should be considered and addressed when the innovation is being developed and communicated to potential adopters and users during dissemination (2005: 317). In this study, I seek to show if and how these factors affected the diffusion of the WSWM project.

The theory also states that an innovation is accepted or rejected after a sequence of events that happen over a certain period of time. Time is the central aspect in the innovation-diffusion process for it connotes the idea that decisions to adopt or reject an innovation are subjected to a rigorous process which entails five stages namely: *knowledge, persuasion*, *decision*, *implementation* and *confirmation*. In the first stage, an individual becomes aware of an innovation and how it works. In the persuasion stage, a person will form a positive or negative opinion about the innovation depending on how the knowledge they received and their experience with it. In the third stage, the individual will engage in activities that lead to a choice whether to adopt or reject the innovation while in the implementation stage, the individual decides whether to adopt or reject the innovation. In the last stage, the individual reinforces the decision made (Rogers, 2003:20).

Different media are suitable for each of these steps. Mass media channels like radios and televisions are usually the most efficient means of informing the public about an innovation but interpersonal channels are more effective in persuading an individual to adopt a new idea, especially if the interpersonal channels link two or more individuals who are near-peers. Information from interpersonal communication can also influence the adopter at the decision and confirmation stage (Ibid: 17-18).

In the diffusion theory, interpersonal communication is spearheaded by opinion leaders and change agents.[57] Opinion leaders are the informal interpersonal links within a society in which they serve as models so they can influence the individuals' attitudes. Opinion leaders are considered to be more active users of the media (McQuail and Windahl, 1993:63) so they can easily convince their communities to adopt an innovation. In the WSWM programme, the interpersonal channels (teachers, peer facilitators and SRH consultants) could be regarded as the opinion leaders; so their attitudes have to be streamlined to support the innovation.

According to Rogers, individuals adopt an innovation at different speed so they are classified in different ideal adopter categories[58] depending on the time one takes to adopt an innovation. These include:

- *Innovators:* These are venturesome individuals who actively seek information about new ideas and try them out. Singletary and Stone (1988:80) say such people have a higher socio-economic status, are exposed to mass media and interpersonal communication and are constantly in contact with the 'change agents.'

- *Early adopters:* They are usually respected opinion leaders and other people refer to them before using a new idea.

- *Early majority:* Although they are seldom leaders, they frequently interact with their peers and adopt an innovation after weighing their options.

- *Late majority:* They are sceptical, cautious and will adopt an innovation after almost all uncertainty about it has been removed.

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[57] This person influences clients' innovation decisions in a direction deemed desirable by a change agency.
[58] An adopter category is the classification of members of a social system according to the basis of innovativeness. And innovativeness is the degree to which an individual is relatively earlier in adopting new ideas than other members of a system.

- *Laggards:* They are traditional, socially isolated and usually adopt an idea after it has been superseded by another more recent idea that is being used by the innovators.

These categories help explain why variations in adoptions occur and they guide the design and implementation of intervention strategies aimed at a particular group of individuals (Parcel and Oldenburg, 2005: 317).

Rogers' theory is criticised for advocating for top-down communication emphasising either adoption or rejection of an innovation (Tang and Ang, 2002: 459-460). The problems related to this assumption were earlier discussed in the sections related to the modernisation paradigm. Despite this criticism, this study still finds the theory useful in discussing factors that influenced the diffusion of the WSWM project.

4.3 Health Communication: Its tenets

Communities worldwide are affected by several diseases whose infection rate and effect can be reduced by availing the locals with prevention and treatment information. The delivery of information aimed at persuading individuals to adopt healthier lifestyles and behaviour is often associated with the term health communication. So the WSWM project encompasses elements of health communication because it delivers messages aimed at encouraging the youth to adopt positive sexual behaviour.

Donohew and Ray defined health communication as the dissemination and interpretation of health-related messages (1990:4). But according to Schiavo, it is a multifaceted and multidisciplinary approach to reach different audiences and share health-related information with the goal of influencing, engaging and supporting individuals and communities to introduce, adopt or sustain a behaviour or policy that will improve health outcomes (2007:7).

This study adopts Schiavo's definition because it highlights the fact that health communication involves the interplay of several participants (like health experts, the target audience and the community) in disseminating information through various channels to a specific audience and this information is aimed at persuading individuals to sustain or adopt new health decisions that will improve their lives. Juxtaposing this definition to the study showed that the target audience and SRH technocrats were involved in formulating the

WSWM content aimed at influencing positive behaviour change among school-going youth and this information is passed on through the Internet, CD-ROMS and manuals.

Health communication can increase awareness, knowledge, attitudes and lead to behaviour change if the messages appropriately designed for a particular target audience are disseminated through the right channels and at the right time. Success in health communication is achieved by critically analysing the problem, messages, sources, and channels, application of relevant theory, strategic implementation and evaluation of the campaign (Flay and Burton, 1990 and Maibach et al, 1993). This study will correlate how these tenets were integrated into the WSWM programme and with what effect. This is aimed at establishing the ease with which these theories can practically be used in the actual implementation of behaviour change campaigns.

4.3.1 Conceptualising E-health Communication

The e-health revolution, spurred by the development and adoption of new ICTs is changing the nature of healthcare and health promotion by providing broader access to health information and services (Kreps, 2003). Eng (2001) defines 'e-health' as the use of emerging ICTs, especially the Internet to improve or enable health and healthcare (quoted in Neuhauser and Kreps, 2003: 12). He adds that e-health communication strategies include but are not limited to health information on the Internet, computer-assisted learning and online support groups. This thesis is partially grounded in the concept of e-health communication because the WSWM project mainly uses new technologies like computers and the Internet to deliver health information.

The need to embrace interventions like the WSWM is based on the belief that e-health media could lead to more intense personal engagement and participation of users, widespread dissemination, customised information accessible to a wide audience, access to information on demand '24/7' and linkages to other support groups which would in turn address the overriding necessity to improve health communication (Ibid). There is a growing assumption that the Internet, because of its interactive and participatory nature can achieve effective health communication by enabling participation in the communication process, delivering specifically tailored messages to meet an individual's needs and combining interpersonal and mass media communication (Ibid). Interactivity can be achieved through chat rooms, user-

initiated searches, online support groups. This enhances its ability to be transactional,[59] responsive (allow feedback) and participatory thus more persuasive (which is a precursor of behaviour change) (Ibid:13, Cassell et al, 1998: 71). However, it is also important to note that these ICTs could enlarge the existing inequalities in health since the poorest sections of the society cannot readily access and use them (Bolam et al, 2006). This is the case in several developing countries where concepts of e-health, telemedicine and e-diagnosis are explored with restricted enthusiasm because of the limited infrastructure, technical expertise, high illiteracy levels and technophobia.

4.4 Social Learning Theory

This theory, based on the works of Albert Bandura, suggests that people can acquire knowledge through interaction and observing other people's behaviour and the consequences (outcomes) of their actions (Bandura 1977:12). The people observed are the models that are important in fostering desirable attitudes and behaviour change because individuals will alter their behaviour according to the actions of and consequences of the model's activities. Modelling is important in the learning process for it can quicken the process of behaviour change. Models providing images of desirable futures encourage individuals to engage in actions that will lead to such goals (Ibid: 13). The theory has been used by health educators to design messages that can motivate individuals to pursue healthier activities by modelling positive outcomes of the new behaviour with credible role models (Ibid).

With technology, communication experts can include visual and audible cues to provide knowledge, model necessary skills and increase self-efficacy through appropriate reinforcement and support (Perry et al, 1990, quoted in Cassel et al, 1998). In the WSWM programme, the role models include the virtual peer educators, student peer educators, the teachers and overall community. Applying the above theory to this study will enable me explain how and why models influence the attitudes and behaviour among the youth.

4.5 The Persuasive Health Message (PHM) Framework

The Persuasive Health Message Framework seeks to ensure that health messages are culturally, demographically and geographically appropriate if they are to influence the

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[59] It must motivate the individual to actively respond to messages and interpret their content.

audience as intended (Atkin and Freimuth, 1989; Fishbein and Ajzen, 1981; Flora and Thoreson, 1988 in Witte, 1995). It is applicable to this study because it outlines the elements that should be incorporated into a health campaign to make it successful. These elements will guide the assessment of the WSWM messages and how they can promote behaviour change.

According to the framework comprised of elements from the theory of reasoned action (Fishdein and Azjen, 1975), the elaboration likelihood model (Petty and Cacioppo, 1986), and protection motivation theory (Rogers, 1983), constant and transient factors must be addressed before campaign messages are developed (see figure 1). This means that health messages presented in a relevant, realistic and comprehensible style should contain *constant* factors which include a *threat* message, an *efficacy* message and various *cues* targeting a specific audience (Witte, 1995:146). The constants are usually fixed elements of the framework that do not change while the transient factors change according to the different population and message goals.
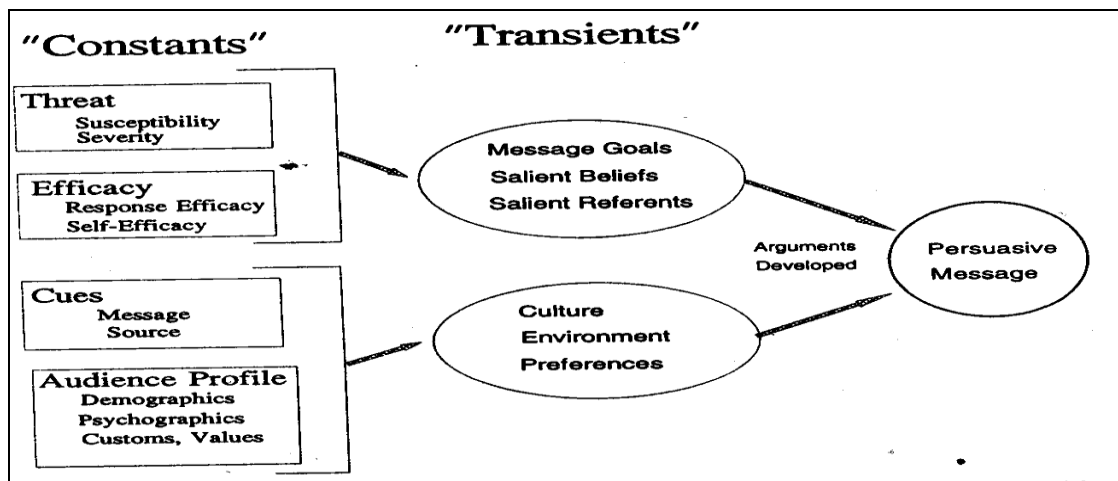
Figure 1. A framework used to develop culturally specific PHMs (Witte, 1995: 148).

The *threat* message tries to convince the audience that they are susceptible to a severe threat while the efficacy message tells them that they can perform the recommended response (self-efficacy) which can effectively avert the threat (*response efficacy*). In the WSWM project, the severe threat message would be that the youth could either contract HIV, other STDs or become pregnant if they engaged in risky behaviour, but they can prevent this by either abstaining from sex or engaging in protected sex (*self-efficacy*) and this improves their health (*response efficacy*).

Cues are variables that influence the persuasive process in an indirect manner. These could include the source, content or argument of the message (Petty and Cacioppo, 1986 in Ibid). The persuasive process can be influenced by the source credibility, attractiveness, similarity and power and the organisation of the message, its appeal (emotional or logical), number of repetitions in a message, vividness of the language used. The campaigns should be designed and implemented basing on the audience demographic and psychographic profile for they determine the message design and channel used. In the WSWM programme, the credibility and attractiveness of the virtual peer educators (who are of a similar age group with the target audience) and the teachers and peer facilitators will influence the persuasive process so these have to be considered in the planning and implementation stages.

On the other hand, information about the transient factors - salient beliefs,[60] referents,[61] culture, environment and message goals will determine the actual message content and constant components. In their theory of reasoned action, Fishbein and Ajzen (1975, 1981 in Ibid) argued that behaviour change can be effectively induced by changing the salient beliefs that cause a specific behaviour. They also add that it is important to determine the referents and what the target audience think their views are on a particular topic (Witte 1995:150). Rodriguez et al (1997: 96) affirm this in their argument that individual attitudes and beliefs toward STDs and HIV prevention should be incorporated into risk-reduction programmes.

In relation to the study, the designers of the WSWM programme should have incorporated the sexual reproductive health needs and beliefs of the youth and teachers while planning and implementing the project.

The second class of transient factors – culture/environment and preferences are used to develop cues and audience profile. The audience profile is developed from cultural (demographic, psychographic) and environmental (potential barriers like level of computers and Internet) information. The channel preferences should also be determined to achieve maximum reach of the message. The PHM enables the involvement of the target audience in the formulation of the campaign thus increasing the chances of it being relevant to them, which according to (Petty and Cacioppo, 1986 in Ibid) could encourage attitude change.

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[60] A person's primary beliefs on a topic or issue.
[61] Individuals who influence how another acts.

This framework will help explain how behaviour change campaigns like the WSWM can be planned, designed and implemented. Studying the target audience, communication channels, message format and other variables that could affect the communication process reveals factors that influence the pedagogical integration of ICTs in sex education and the effects accrued from the programme.

4.6 Justifying the theoretical framework

As earlier noted, no specific theory has been developed to guide the planning, implementation and evaluation of computer-based health interventions but health practitioners can combine a number of theories depending on the nature of a problem, its determinants and opportunities for action. The study adopted development communication theories (the new modernisation theory and Rogers' diffusion of innovation[62]) because the growing hypothesis that ICTs will ultimately enable social development is based on older theories of development that called for the transfer of technology to Third World countries to enable social and economic transformation. The health communication theory (social learning theory) and framework (Witte's PHM) were used to examine the factors that should be considered when designing and implementing health messages like the WSWM content.

This study combined the above theories in order to counterbalance their strengths and weaknesses. For example, Rogers' theory outlines the characteristics of an innovation that affect its adoption and the communication channel to reach the target audience. But it ignores the importance of integrating the target audience's views in the diffusion process (outlined in the participatory communication paradigm). The social learning theory introduces the importance of role models in behaviour change and this concept is enhanced by Witte's PHM that emphasises the need to show susceptibility, use fear and efficacy appeals and consider the different variables that could affect the behaviour change process.

The above theories also provided a framework within which I formulated questions for gathering and interpreting data to answer my research objectives. By focusing on the main principles of each theory, I identified question themes relating to the nexus of the study. The next chapter presents the methodology used in this research.

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[62] This theory is also considered part of the health communication theories because it can be used to examine how new health practices spread through a community.

CHAPTER FIVE

METHODOLOGY

5.0 Introduction

This chapter discusses the research design, methods used for collecting and analysing data and the rationale for using each method. Wimmer and Dominick (1983) argue that each technique has its advantages and disadvantages, so the purpose of the research should guide the selection of the methods. This research employed qualitative research methods because I sought detailed narratives that would provide a deeper and thorough investigation into the possibility of using computers, the Internet and CD-ROMs to teach youth about SRH. The research focused on two schools participating in the WSWM project in Kampala District and one school in Mukono District. The WSWM was chosen because currently, it is the only project using new ICTs to teach school-based youth in Uganda about sexuality matters.

5.1 Triangulation

Triangulation refers to the use of multiple methods to study the same phenomena so that the biases that stem from one method are counter-balanced by the strengths of another thus providing more valid results than those from a single research strategy (Jankowski and Wester, 1991:62, Patton 1991:187).

Denzin (1978b cited in Patton 1991:187) and Jankowski and Wester (1991: 62) identify four types of triangulation namely: data triangulation (the use of a variety of data sources in a study), theory triangulation (the use of multiple perspectives from diverse theories to interpret a single set of data), methodological triangulation (the use of several methods to gather and analyse data about a single object of study) and investigator triangulation (the use of several different researchers or evaluators). Although triangulation is ideal, it is restricted by the researcher's limited budget and short time frame (Ibid: 187).

This study employed triangulation through the use of various sources of data (students, teachers, project staff and documents) that enriched the research with different perceptions about the WSWM programme. Using two theoretical approaches to examine the programme provided a deeper, broader and detailed analysis of the programme. Although only qualitative

methods were used to gather data, their strengths vis-a-vis their suitability for the different interviewees enabled the researcher gather detailed information about the phenomenon under study and also validate the findings. Data gathered during the focus group discussions was validated through observations and document analysis.

5.2 Qualitative and Quantitative Research Methods

A research method is a technique for collecting data (Bryman, 2004:27). Methods are categorised as either qualitative or quantitative and they entail several data collection strategies. Qualitative research describes or analyses a phenomenon without specifically measuring variables although the data can be expressed numerically while quantitative research requires that variables under consideration are measured (Wimmer and Dominick, 1983:19). Qualitative methods include among others participant observation, direct observation, interviews, document analysis and focus group discussions while quantitative methods include content analysis and surveys (Bryman, 2004).

Quantitative methods avail a researcher with numbers that can allow greater precision in reporting results (Ibid: 20) while qualitative research produces a wealth of detailed information (Patton 1990: 14). One of the advantages of the quantitative method is that it enables generalisation and comparison of findings as several people can be interviewed using a limited number of questions (Patton 1990:14) while in comparison, it is difficult to generalise from qualitative methods because fewer respondents are involved in the study but it enables in-depth analysis of a situation (Ibid).

5.2.1 Rationale for using Qualitative Research Methods

According to Strauss and Corbin, research that tries to explain a person's experience with a phenomenon is better explored using qualitative methods (1990:19). Drawing on this argument, I used qualitative methods (in-depth interviews, observation, focus group discussions and document analysis) because I sought to gather comprehensive information from the students, their teachers and other stakeholders in the project about their use of new technologies in sexuality education and the challenges they encountered.

The study also sought to find out the factors considered when designing and implementing the WSWM project and a close interaction with the informants provided me with more in-

depth insight into how this was done. Patton affirms that interacting with informants aids the detailed study of a phenomenon thus providing diverse and more useful data (1990:11).

Using quantitative research methods would have provided me with numbers. Whereas I cannot dismiss the importance of numbers in research, but they do not reveal the real situation behind a phenomenon and besides, the purpose of this research is not to make statistical generalisations but to understand the underlying factors involved in the integration of new ICTs in behaviour change campaigns. This was done by relating the respondents' own narratives to theories discussed in the previous chapter.

5.3 The Case Study Research Design

A research design is the framework used to collect and analyse data to answer a researcher's questions (Bryman 2004: 27). The different types of research designs include: experimental, cross-sectional, longitudinal, case study and comparative. Each design is chosen according to the type of research question, the control an investigator has over actual behavioural events and the focus on contemporary as opposed to historical phenomena (Yin, 2003:1). Patton adds that resources (time, money and personnel) can affect the design choice (1990).

Yin argues that case studies are best used when seeking to answer 'how' and 'why' questions about contemporary events over which an investigator has little or no control (2003:9) and Patton posits that case studies enable a researcher understand a particular problem or unique situation in detail and context (1990:54). Following these arguments, this research adopted the case study because focusing on one programme enabled the researcher carry out an in-depth inquiry into the WSWM project to establish the informants' experiences with the programme in order to point out its outcomes and hopes of sustainability.

This study posits that the WSWM programme and the three schools fall under the Bryman's definition of a case study. He defines it as the detailed and intensive analysis of a case which could be a school, family, event, person or an organisation (2004: 48). Another significance of this design is drawn from Patton's argument that case studies are helpful when a researcher needs to capture individual differences or unique variations from one programme experience to another (1990: 54). Using this design enabled the researcher realise the similarities and variations between the experiences of youth using ICTs and those using manuals.

Case studies have been criticised for lacking rigor (inability to follow systematic procedures during the research or allowing the researcher's biases to influence the findings), also the possibility of generalising from a single case is often questioned but some scholars state that it is possible to generalise case study findings to theoretical propositions (analytical generalisation) than to populations or universes (statistical generalisation), thus achieving validity (Yin, 2003: 10).

5.4 The Study Sample

Although the WSWM project is being implemented in 150 schools, inadequate time, financial and manpower resources entailed that I limit my study sample to three schools. A sample is a subset or sub-segment of the population that is taken to be representative of the population (Wimmer and Dominick, 1983: 58). The samples (respondents) selected for this research and the reasons for their inclusion in the study are explained below:

Forty female and male students – students are the target audience for this programme so feedback from their experiences with the project is essential in determining its success.

WSWM teachers – besides being the actual implementers of this project, they also interact more with the students since they spend a lot of time with them at school.

The SchoolNet Uganda executive director and the desk officer - both officials are the overall supervisors of this project so they provided pertinent background information about the project and how it is implemented.

A representative from WPF – WPF was responsible for developing the WSWM content and also sponsors its implementation. In addition, the representative was among the pioneer members of the project.

Two SRH specialists – they liaise with teachers, students and SchoolNet Uganda to address the sexuality-related issues in schools. Also their expertise in SRH issues necessitated their inclusion as sources for this study.

Two national peer educators – they were part of the group that participated in pre-testing the WSWM content in 2003. Since then, they have continued working with the project and serve as role models, encouraging other youth to embrace the programme.

An official from the MOES – The project is based in the MOES under the supervision of the commissioner in charge of the digital education project. His views illuminated the government's position on the pedagogical use of technology.

5.5 Qualitative Data Collection Methods

This section describes how the data was gathered and why the different methods were used.

5.5.1 Observation

Observation enables a researcher to study the respondents' interactions and behaviour in their 'real-life' setting in order to reveal their social reality (Deacon et al, 1999). Observation can be carried out through a number of methods like simple observation and participant observation. In simple observation, the observer has no relationship with the processes or people being observed, who remain unaware of the researcher's activities.

In participant observation, a researcher immerses him or herself in a group for an extended period of time, observing behaviour, listening to what is said in conversations both between others and with the fieldworker and asking questions (Jankowski and Wester, 1991: 61). Data from this method consists of detailed descriptions of people's behaviour, attitudes, actions, the interpersonal interactions and organisational processes observed (Patton 1990: 10).

According to Berger (2000: 162), participant observation can be carried out in one of the following ways: *Participant as observer,* where the researcher participants with and becomes a functioning part of the group being observed. The other method is the *observer as participant*, in which the observer is a neutral outsider, participating in order to observe and record the proceedings. Although both methods are legitimate and each has advantages and draw backs, the difference is that one promotes familiarity and the latter neutrality.

This study adopted the *observer as participant* method. I attended one lesson in each school[63] and this enabled me observe the following: the socialisation between male and female students during the lessons, the type, state and number of ICT equipment available (how many students share the computers), the students' computer skills and the interaction between

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[63] The lessons are conducted between 4:30pm and 6:00pm. The number of lessons per week varies but each school is supposed to have at least two lessons. St. Peter's and Lubiri had their lessons in the computer laboratory while in Nyenga, they were held in a classroom.

the teachers, students and peer facilitators. I watched, listened and recorded the interactions and occasionally sought explanations from the students on why they engaged in particular activities. I also took some digital pictures during the lessons (see **Appendix 2**).

From these observations, I formulated more questions which had not been included in my interview guides. Berger affirms that observing an informant's actions can guide a researcher to formulate questions for gathering critical information for the study (2000: 167).

The students were informed about the purpose of my presence in their lessons. Knowing that I was also a student encouraged many of them to act freely. My presence did not stop some of them from engaging in different activities during the lessons. I saw some students surfing pornography, reading their emails or making comments on FaceBook during the lesson.

This method is praised for being cheap because the researcher might only require writing materials and a tape recorder but it is also criticised for heavily relying on a researcher's perceptions about the material under study. So observations, contrary to the researcher's preconceptions, might be ignored or distorted. To avoid this, one might need to engage more than one observer which could also prove a bit costly (Wimmer and Dominick 1983: 96).

5.5.2 Qualitative Interviews

Qualitative interviews, according to Lindolf, are aimed at understanding a social actor's perspective about a topic, verifying, validating or commenting on data collected from other sources and testing hypothesis developed by the researcher (1995: 166). Interviews can be classified as in-depth, informal, unstructured and semi-structured.

This study interviewed a number of key respondents to gather their perspectives on how the project was designed, being implemented, challenges met and how they could be overcome. I interviewed the WSWM teachers, national peer educators, SRH consultants, SchoolNet Uganda staff members, a representative from WPF and an official from the MOES in charge of ICT-related activities. Having direct one-on-one interviews with these respondents yielded a broad and thorough account of their opinions on the project. To achieve this, interview guides[64] with open-ended questions were used. This enabled me formulate new questions

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[64] This is a list of questions or issues to be explored during an interview (Patton, 1990: 283). See **Appendix 3** for these guides. By the time I travelled to Uganda to gather data for the study, my research plan did not

basing on the informant's revelations and it gave the respondents freedom to explicitly elaborate their answers rather than if they were required to limit their answers on already determined variables. The guides mainly served as a tool to ensure that different aspects surrounding the project were discussed. Each interview, took between 45 to 60 minutes and they were recorded, transcribed and the data arranged in themes as shown in chapter six.

Since literature about the design and implementation of the WSWM project is scarce, the interviewees provided significant information about these processes and also explained some issues arising from data gathered through other methods. For example, the document analysis showed that there were a number of policies guiding the implementation of sex education in schools but during the interviews, some respondents noted that they were ignorant about the stipulations of these statements because they had not yet accessed them.

5.5.3 Focus Group Discussions

A focus group interview involves about six to eight people discussing a specific topic. The participants are usually a relatively homogeneous group that enable a researcher gather large amounts of data from several people within a short period of time thus increasing the sample size (Patton 1990: 335).

This study employed this method in order to gather information from a relatively larger group of students within a shorter time compared to the interview method where one student would have been interviewed at a time. Acting as a moderator, I provided the students with guiding questions to enable them explain their experiences with the project. This enabled me gather data on how the students use computers, CD-ROMs and the Internet to learn about SRH, how and when they access the technology, how they use it during their free time, their computer literacy skills and challenges encountered when using technology as a behaviour change tool. The discussions were guided by an open-ended interview guide but I introduced new follow-up questions according to the information provided by the students.

I held two group discussions in each school: one for boys and another for girls. The separate groups were aimed at overcoming the incidents of some students feeling shy to openly

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include schools using manuals. So the guides for students and teachers using computers and the Internet were altered to suit respondents using manuals.

discuss sexuality matters in the presence of members of the opposite sex. Each of the boys' group had eight students while there were 5-7 members for the girls' discussions. It was easier to identify boys to participate in the talks because there are more boys than girls in the project. The younger boys and girls were a bit shy in the beginning since the discussions included students from Senior One to Six but later, the assertive students nudged the shy ones into expressing themselves.[65] Some students became more active when they heard their peers talk about their past boy-girl relationships before they joined the WSWM. The discussions with the boys were more vibrant and interactive compared to those with girls since most girls were timid and spoke in low voices. Each conversation took about 60 to 90 minutes. They were recorded but I also took down some notes.

The students introduced themselves at the start of the discussion but their names are not used in the study in order to protect their identity since most of them were below 18 years. Although the students in Kampala easily expressed themselves in English, majority of their counterparts in Nyenga could not fluently speak English so they were encouraged to speak in *Luganda*, one of the local dialects widely spoken by people in the central region of Uganda.

5.5.4 Document Analysis

Analysing documents about the WSWM project enabled me comprehensively understand the project's objectives, design and implementation strategies, future plans and constraints. Most of this information, in soft copy was documented by SchoolNet Uganda during workshops and exhibitions. I was unable to get a comprehensive report about the WSWM activities because its first effect and process evaluation was carried out in 2008 by researchers from the Netherlands but they had not yet released the report by the time of this research.

I also analysed policies, reports and newspaper articles related to the ASRH and ICT environment in Uganda. A substantial amount of data was gathered through the Internet. Newspaper archives, websites of some government institutions and other sites provided valuable information that illuminated the study. Although this was a faster and cheaper way of gathering data since I had access to the Internet, most websites especially those of

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[65] Senior One is the first year of the lower secondary school level which consists of four years (Senior One to Four) and thereafter students are awarded the Ordinary Level Uganda Certificate of Education. This certificate allows them to attend two years in high school (Senior Five and Six) to attain the Uganda Advanced Certificate of Education which allows them to join the university or a tertiary institution.

government ministries are rarely updated so they had outdated data. I had to continuously cross-check information with other sources thus making it time consuming.

These documents revealed a wealth of background information that might not have been got through other data collection methods. Patton agrees that documents are a basic source of information about programme decisions and background or activities and processes (1990: 233). They yield excerpts or quotations from programme records, official publications and reports and personal diaries. Analysing these documents enabled me raise more pertinent questions that were clarified by the informants during interviews.

5.6 Ethical Considerations

Ethics in research revolve around issues of harm, consent, deception, privacy and confidentiality of data (Punch, 1994). Although it is important for a researcher to consider these elements, sometimes it is hard to achieve them because there is no consensus on elements like what is public or private or what constitutes harm. But every researcher should aim at protecting their respondents from harm.

This study dealt with issues pertaining to adolescent sexual reproductive health, which is a sensitive topic. The ethical issues considered in the study included: informing the respondents about the aims of the research and those who agreed to participate in the study did so willingly. Although the interview guides contained general questions, some sensitive issues (like if the students were in special relationships with members of the opposite sex) arose during the discussions but the respondents were asked to feel free not to reveal any information they deemed private. The names of the students were not included in this report to protect their identity for many of them were below 18 years and thus regarded as minors.

5.7 Data Analysis

Data analysis can be defined as the combination of techniques aimed at data reduction, data display and drawing conclusions (Huberman and Miles, 1994). These techniques are employed in the study design, during and after data collection.

In this study, the whole process of choosing a focus programme (the WSWM project in three schools), developing research questions, setting objectives, choosing the theoretical

framework, methodologies, which data to transcribe and analysing it into themes was aimed at selecting only the important data that would expound an understanding of the feasibility of using ICTs in sexual reproductive health education. The data was summarised, interpreted and displayed mostly as text and a few pictures. By comparing the respondents' responses in relation to the research questions, the researcher drew out the similarities and differences in the data and arranged these into themes grounded in the research questions. These themes were then discussed in relation to the theoretical arguments. This process was vital in enabling the researcher come to the conclusions drawn in chapter seven.

5.8 Validity

Validity is concerned with the extent to which an account accurately represents the social phenomenon to which it refers (Hammersely, 1990 in Silverman 2001: 232). Validity seeks to answer the question: is the study accurately measuring what it set out to do in the research questions (internal validity) and can the results of the study be generalised across populations, settings, time (external validity). To obtain validity for this study, I purposefully selected my respondents on basis of their involvement in the project so they were knowledgeable about the topic, the interview guides were carefully crafted to answer the research questions and the use of several data collection methods and sources enabled the researcher to corroborate the findings in order to identify and clarify any gaps.

This study was not aimed at generalising the findings to a broader population but to provide a thorough analysis of the project which could be linked to theoretical assumptions that explain how ICTs can be used in sexuality education, the outcomes of such projects and issues surrounding their sustainability.

5.9 The Research Procedure

Fieldwork data for this study was collected between 8th June and 31st July through interviews, focus group discussions, observing the students during the WSWM lessons, and analysing documents about Uganda's ICT and SRH environments. Before visiting the schools, I contacted their respective head teachers and asked for permission to speak to their teachers and students involved in the WSWM project. Getting permission from the head teachers was

important because it enabled the teachers freely talk to me anytime I inquired about the project.

It was economical and logical for the researcher to meet the respondents (especially the students and teachers) in their natural settings because I had to use observation as a data collection tool which is better carried out in the respondent's real-life setting and also because the students were not allowed to leave school during school hours and that was the time (during lunch break and after classes in the evening) when the data was collected.

5.10 Problems encountered

It was hard to access documents relevant to the study because the libraries I visited were either only for staff members or they lacked the documents I needed. I was denied access to the libraries at UCC and at I-Network because there were only for staff members. Not accessing these libraries possibly hindered me from getting more in-depth knowledge about Uganda's ICT environment since both organisations play an important role in informing the public about ICT-based opportunities. UCC is the regulator of communications in Uganda while I-Network is an NGO that focuses on facilitating and advising on the use of ICTs in development. In addition, it was also hard to access some policies related to SRH like the National Youth Policy because they were out of stock in all the offices I was directed to.

Although it was easy to access the school head teachers and the teachers, attending the WSWM lessons was hard. Since the project is taken as an extra-curricular activity, it runs parallel with other events sports training and these often took precedence over the WSWM lessons. Some students belonged to several clubs so there were instances of conflict of interest with the students finding it hard to choose which club to attend. Sometimes, the lessons were cancelled to allow the students engage in other activities or when the computer room was being used by other school members. This tendency of postponing the meetings disorganised the researcher's time table and wasted a lot of time.

The data gathered through the qualitative methods mentioned in this chapter is presented and discussed in the next chapter.

CHAPTER SIX

PRESENTATION AND DISCUSSION OF FINDINGS

6.0 Introduction

This chapter presents and discusses the feasibility of using computers, CD-ROMs and the Internet to teach school-going youth in Kampala District about sexual reproductive health. In the research objectives identified in chapter one, I also sought to highlight the knowledge, attitudes and skills the youth gained from the WSWM programme, the factors considered when designing and implementing it and the challenges witnessed by the project implementers in trying to promote the use of ICTs in sexuality education.

The discussion is guided by health communication and development communication theories outlined in chapter four. The empirical data was gathered through interviews with officials from SchoolNet Uganda, teachers and SRH consultants and information from the students was got through observation and focus group discussions, I also analysed policies, newspaper articles, and SRHR needs assessment reports from different organisations. The findings are presented in three sections as I try to answer the research questions set out in chapter one.

6.1 Emerging threats to ASRH

This section briefly presents new sexuality-related threats that young people in Uganda are exposed to. This information contextualises arguments on whether the WSWM content critically addresses the youth's needs vis-a-vis their current information needs.

In chapter one, I identified some of the reproductive health challenges youth face but the changing social, economic, political, religious and cultural fabric of society has led to the emergence of new risks. Speaking during a WSWM old head teachers' workshop held on the 16 and 17 June, 2009,[66] Mr. Alex Okwaput, the WPF consultant, noted that youth especially those in schools are now exposed to homosexuality, masturbation, drug and substance abuse, pornography, phone sex and increased use of sex tools. The conflicting sources of information especially in regard to the ABC campaign where different organisations either

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[66] The researcher attended this workshop held at Mukono District Farm Institute.

promote abstinence, being faithful or using condoms confuse the youth. Also, the growing number of teenagers with HIV and those using antiretroviral drugs raises need for a multi-dimensional approach targeting these youth. The study has noted that despite the numerous sources of SRH information available to the youth, many are still ignorant or have incorrect information regarding their sexuality. In addition, several young people are often left to discover sexuality issues on their own or through peers thus exposing them to more risks. Such tendencies perpetuate the continued belief in sexual myths.

In an interview, Ms. Bernadette Mabinda, the WSWM teacher at Nyenga, noted that several youth in her school still believed that pregnancy can be prevented by a girl showering with Coca Cola or washing the vagina after sex, having sex while standing or in water or tying the stomach after sex. In addition, the youth think that growing fat means one has had sex because semen makes people fatter, having sex makes one's breasts grow big and STIs are not spread through sexual intercourse. The above problems show that youth still need continuous SRHR information that also addresses these emerging issues.

6.2 SECTION ONE: Bridging the gap between ICTs and sexuality education

This section tries to answer the first and second research questions: **How are computers, CD-ROMs and the Internet being used to teach youth about SRH? How are participatory and interpersonal approaches integrated into the WSWM programme?**

The data presented in this section highlights the different ICT tools available in schools, how they are accessed and used by the students, how they are integrated into the learning process and the outcomes of their use and the teachers' role in the integration process.

6.2.1 ICT equipment and connectivity in St. Peter's, Lubiri and Nyenga

As earlier mentioned in chapter three, most of the initiatives geared towards enabling the incorporation of ICTs in Uganda's education sector have mainly focused on the introduction of computers and to a smaller extent the Internet in these institutions. Although the integration of ICTs in the education sector intensified after 2005 when the draft policy for ICT in the Education sector was formulated, St. Peter's and Lubiri had already acquired computers by then and were connected to the Internet. Nyenga had also received three computers through the WorLD organisation in 2004 but they soon broke down and the school

has not been able to afford to buy new ones todate. Only the head teacher has a computer connected to the Internet, but the connectivity is very slow.

Both Lubiri and St. Peter's, have a computer laboratory[67] where the computers are kept and computer lessons held and the top school administration also has computers in their offices. Teachers do not have computers in the staffroom so they also use the computers in the laboratory. The size and number of computers in these schools vary. Lubiri has a spacious computer laboratory with 23 of the 26 computers working but only five are connected to the Internet. The majority of these computers were purchased by the school administration while six new Dell computers were a donation from the Netherlands-based Mondial College. The school's Internet connection is very slow.

In St. Peter's, one of the classrooms was converted into the computer laboratory, so it is a small room housing about 25 refurbished or cloned[68] computers, according to Ms. Jane Nasirumbi, the laboratory technician. Only six computers are connected to the Internet. The room also serves as a store for computers that have broken down. Their parts are used as replacements when cloning other computers.

It is important to note that when computers were introduced in schools, their use was mainly to enable students get basic computer skills through using programmes like Microsoft Word, Excel and PowerPoint. They were not a means to enable technology-assisted teaching and learning because of the limited logistical, financial and manpower resources. So the computers in the schools mainly have basic software like word processors (the most common is Microsoft Word), spreadsheet programmes (Excel), presentation software and Internet browsers. They lack educational applications (simulation software, virtual labs and assessment applications) and electronic content (like journals, e-lesson guides and multimedia content) and this restricts their use in the pedagogical process.

Most of the computers were second-hand, outdated or both. In Lubiri, although some of the computers were new, they were outdated while in St. Peter's all the computers were old and outdated. The computers had floppy disk drives (the students store their work on diskettes) yet currently, computer companies are manufacturing computers that use USB flash drives,

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[67] The laboratories are supposed to be open throughout the day unless the lab technician is absent.
[68] Cloned computers are computers fixed with different parts from different brands of manufacturers.

external hard disk drives, CDs, DVDs and memory cards. These old computers often have low computer memory thus reducing their speed and also limiting the amount of work that can be downloaded onto them.

The differences in availability of ICT equipment between the urban schools and rural-based Nyenga highlight the continued debates raised by scholars like Thussu (2000), Aduwa-Ogiegbaen and Iyamu (2005) about the growing digital divide between urban and rural areas. This disparity is widening the learning gap between the urban and rural-based schools thus hampering the efficient and rapid integration of ICTs in education.

6.2.2 Student access to computers and the Internet

The ratio of students to computers was very high in the schools sampled for this study. Lubiri has over 3,200 students creating a computer to student ratio of 1:124. For St. Peter's with 1,200 students the ratio was 1:48. This limited number of computers per student is common in several educational institutions in the East African region according to Hafkin (2009) and a recent survey commissioned by the Rockefeller Foundation.[69]

But since there are fewer students participating in the WSWM programme, the ratio of computers to students is fairly smaller. In Lubiri, there is one computer for every four WSWM students and the same figures apply for WSWM students in St. Peter's.[70] But most students are attracted to the few computers with the Internet so it is common for 6-7 students to share such a computer, mainly because they can surf either during or after the lesson.

Both schools have timetables detailing when the different class streams can access the laboratory for computer classes and WSWM sessions. In Lubiri, the WSWM lessons are held on Tuesday and Thursday between 5:00pm and 6:00pm. In addition, there is a timetable which they follow to access the laboratory when it is free during the lunch breaks but they have to first seek permission from the computer teacher or the lab technician. These officials do not work during weekends so student access is limited to weekdays when they also have several other lessons and little free time.

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[69] The report, which focused on the usage, accessibility and availability of ICT services in 50 institutions in the East African region, showed that there are about 6.8 computers per 100 students in Ugandan universities. View http://www.infoworld.com/d/adventures-in-it/innovation-use-it-still-low-in-east-africa-schools-687, accessed 7 November, 2009.

[70] There are about 75 students in the WSWM programme in Lubiri and 60 in St. Peter's.

In St. Peter's, the WSWM lessons are held on Monday and Wednesday between 5:00pm and 6:00pm. A computer is shared by four to seven students. The school has no specific timetable on how the students can access the laboratory when it is free but they can use it during lunch time if it is open and the attendant lets them in. Although the lessons are supposed to end at 6:00pm in both schools, the teachers often let the students surf for about 30 minutes after the lesson. This is an incentive for majority of the students who attend the lessons.

6.2.3 Student access to computers and Internet outside the school environment

Looking at how the students access these tools outside school raises debate on the possibility of them revising the acquired skills even after school hours especially during the weekends and the holidays. All the interviewed students from Lubiri and Nsambya were in the boarding sections, so during school time, they access the computers and Internet in the computer laboratory but during the holiday, only 50% and 36% of the respondents from Lubiri and St. Peter's respectively visited Internet cafes. In particular, more boys than girls accessed the Internet during holidays and these were mainly older boys, aged between 16 and 18. This is because the older boys could easily devise ways of getting money to pay for Internet access. But they added that they seldom visited the cafes because of the cost. Although most cafes charge less than 1$ per hour, this is still expensive for students.

Only 10% of the respondents said they had a computer at home and 1% had Internet at home. None of the students from Nyenga had access to computers even outside the school.

6.2.4 Students' acquisition of computer skills

The first step in the diffusion process is gaining knowledge about the existence of an innovation and an understanding how it functions (Rogers, 1983: 164). This stage is important because it avails information on how to use the innovation and how it works. This awareness could be gained through the mass media or interpersonal channels.

In the group discussions, the students revealed that they acquired basic computer skills (using Microsoft Word, Excel, PowerPoint and how to surf the Internet) through in-school computer lessons, private lessons during the school holidays and from their peers. The in-school computer lessons are for students in Senior One to Four and their implementation varies in the two schools participating in this research. In Lubiri, because of the large number of

Senior One and Two students (over 500 students), only half of these have computer lessons. Computer Studies is considered part of the extra subjects and a student is free to either drop or continue with the subject after Senior Two and thereafter sit for the UNEB final examinations. In St. Peter's, Computer Studies is compulsory for Senior One and Two students. After Senior Two, a student is free to either drop the subject or continue with it to Senior Four.

According to Mr. Fred Sekitale, the WSWM and Computer Studies teacher at St. Peter's, Senior One students learn the historical and theoretical aspects of the computer and its basic parts and in Senior Two, they are introduced to Microsoft Word, Excel and PowerPoint. Mr. Okwaput argues that this way of teaching Computer Studies is very boring and limits the early acquisition of computer skills among the students. He added that:

> 'The teachers first tell you about the history of computers, how the computer used to be very big like a house then it become smaller and smaller. This is a lot of theory. But the WSWM enables the students quickly learn the basic usage of a computer without understanding the complex programming language.'

As earlier pointed out, *Lesson Zero* in the WSWM is meant to give the students rudimentary computer skills needed throughout the course. According to the students in Nyenga, although *Lesson Zero* was conducted with the help of an old non-functioning computer, it was their first chance to learn about the computer and also to touch it. One of the boys said:

> 'We had never touched a computer so that was our first time. Although it was not working, we were happy that we saw and touched it. Many of us joined the programme because we thought we would learn how to use a computer but we were disappointed when we realised that it does not work' (group discussion with male students from Nyenga).

Ninety percent of the students in Lubiri and St. Peter's said they had basic computer skills. In Lubiri, only one Senior One boy still had trouble learning how to type. This situation is a far cry from the scenario in Nyenga where only 23% said they could attempt to type their names in Microsoft Word and but they and their colleagues had never used the Internet. These computer literate students in Nyenga were also the peer facilitators, who had studied

the WSWM curriculum when the school still had a computer in 2006. By then, there was only one computer for the over 70 WSWM students so very few got the chance to engage in practical computer exercises. In both Lubiri and St. Peter's, over 74% of the respondents said they knew how to surf the Internet. But all the students had not used CD-ROMs. This is because the teacher installs the programme from the CD-ROMs to the computers so there is no need for the students to use CD-ROMs during the lessons.

The teachers argued that in as far as the project requirements are concerned, the in-school computer lessons coupled with the extra time the students spend personally learning how to use a computer provide them with basic skills needed during the lessons.

6.2.5 How ICTs are used during the WSWM lessons

Before I present data on how the computers, CD-ROMs and Internet are used in the WSWM programme, I need to point out that the lessons are attended by students from Senior One to Six and each lesson begins with a warm-up exercise which could entail singing one or two songs or playing a short game.

6.2.5.1 Computers

According to SchoolNet Uganda's executive director, Mr. Daniel Kakinda, the programme was originally computer-based and only implemented in schools with computers. During the lessons, four to seven students gather around a computer, log onto either the web-based version or one downloaded onto the computers from CD-ROMs. The teacher gives them about 15 to 20 minutes to peruse through the day's lessons. Usually, the person seated directly in front of the screen controls the mouse, clicking on the different slides. This person could either be a boy or girl since members of the opposite sex freely sit together and the older students interact with the younger ones. The peer educators monitor the students and help those having problems either clicking on other links within the programme or if the computer has technical problems, they inform the teacher.

The curriculum is presented in text and graphic form against a colourful background on slides. The other animations, especially in the games excite the students and compel them to continue perusing through the content. Each slide has the word 'next' or 'back' with corresponding arrows at the bottom which the students click to either move forward or

backward through the content. During my observation, I noted that the students quickly browsed through the notes and played several games before the discussions began.

Some students type their WSWM notes either in Microsoft Word or PowerPoint and store them either on the computers or on floppy disks. In Lubiri, the WSWM club secretary uses PowerPoint to summarise the day's lesson and this information is printed and pinned on notice boards around the school for other students to read.

6.2.5.2 The Internet

According to the findings, only 22% and 24% of the computers in Lubiri and St. Peter's respectively were connected to the Internet. Computers with the Internet attract the biggest number of students because they can log onto other websites during and after the lessons. Students using the Internet log onto the WSWM website, http://www.theworldstarts.org/start/begin.html, and under the students subtitle, they insert a user name and password in order to access the day's lesson which they peruse through, discuss among themselves its main highlights and play games. The user name (*students*) and password (*coolest*) are universal for all WSWM students in Uganda but this makes the programme exclusive to only students who know the username and password.

One shortfall of accessing the Internet is that the students also open Yahoomail and Facebook websites to send emails to their friends, surf about celebrities and European football clubs during the lessons. In Lubiri, I noticed a Senior One boy surfing pornography during the lessons although he insisted that he was looking for Michael Jackson's videos on a site that had 'homemade sex videos'.

6.2.5.3 CD-ROMs

Each school receives one or two CD-ROMs with both the students' and teachers' versions. The teacher or laboratory assistant downloads the content onto the computers where it is accessed by the students. So the students do not use CD-ROMs during the lessons and they all admitted to not knowing how to use them. The content on the CD-ROM has similar audio and visual cues as that on the web-based version but according to Mr. Sekitale sometimes, there is a slight difficulty accessing some images on the CD-ROM version.

But because of the limited Internet connectivity and the disappearance of computer data when they are reformatted, it is important to have a CD-ROM version as a backup. When I attended the lesson in St. Peter's, the computers had been reformatted and the programme deleted so it took the laboratory assistant 40 minutes to have it reinstalled on 12 computers.

In summary, these tools are used to access SRHR information provided on the WSWM website or retrieve data stored on the computers or other storage tools like diskettes. ICTs have created a multiplicity of channels through which sexuality messages can be conveyed. Using audio and visual cues enabled the youth easily understand and remember the information. Unfortunately, the students do not visit the additional websites provided in each lesson arguing that they have limited time during the lessons. The students also use the computers and the Internet to develop computer and creative skills. More about these skills is presented in section 6.6.

6.2.6 How the students use ICTs in their free time

Over 80% of the students who can access the Internet during their free time said they mainly use it to communicate with friends through emails and chatting either on messenger or Facebook. Ten percent try to improve their typing skills during their free time but all the respondents in Lubiri and St. Peter's said they surf the Internet for international news. Boys focus on news about European football clubs while girls look out for fashion news.

Asked if they ever visited the WSWM website outside the lessons, only 38% said they do. Those who did not said since they revise the notes written during the lessons, there is no need to visit the site. So the fact that very few of these students bother to access SRH information during their free time suggests that in as much as youth are attracted to technology, they mainly want to use it for entertainment purposes so communication experts need to integrate entertaining techniques into computer-based behaviour change campaigns.

6.3 The WSWM teachers' ICT skills and role in the programme

Studies by Bullock (2004) and Kersaint et al (2003) reveal that teachers' attitudes and beliefs towards ICTs are a major enabling or disabling factor in the adoption of technology (cited in Malcom and Godwyll, 2006). If a teacher has limited information and enthusiasm for the use of ICTs in education, they might not use the technology effectively to enhance the

knowledge-acquisition process. These scholars echo Rogers' (2003), argument that the diffusion of an innovation is partly influenced by the opinions of interpersonal contacts. In this study, it is assumed that the teachers' opinions and behaviour toward technology affect how their students adopt and use it. Since the teachers are responsible for propagating the students' use of ICTs, they should first be persuaded to develop positive attitudes towards the use of technology in classrooms and thereafter continuously equipped with the necessary skills to use it for pedagogical purposes.

Explaining the teachers' ICT skills will help elucidate if they have the necessary expertise to integrate these tools in pedagogical practices. Before I highlight their skills and role in this process, it is important to note that the WSWM teachers are usually identified by their head teachers, who forward their names to SchoolNet Uganda. Each school is allowed one teacher but mixed schools are advised to have a male and female teacher. The WSWM technical coordinator, Ms. Allen Nansubuga says these teachers should be youth-friendly, if possible not members of the school disciplinary committee (youth fear such people because they assume that they are tough). The teachers should preferably not be the senior woman or man, because in most cases, they are quite elderly so this raises the issue of generation gap which inevitably hinders the youth from communicating freely with them. These teachers undergo a one-week training by SchoolNet Uganda to equip them with a deeper understanding of both the content and methodology used to deliver the curriculum. They also participate in other periodical trainings to share experiences from the programme and also acquire new skills.

The availability of several ICT training institutions coupled with support from the MOES and individual schools has enabled several teachers acquire basic ICT skills. An interview with Mr. Robinson Nsumbalyazi, (the coordinator of ICT activities in the education ministry) revealed that the ministry had encouraged schools to include a budget for acquiring technology and training their teachers on ICT usage. He added that through the Cyber Schools Technology Solution programme, the ministry was training teachers in 200 schools on how to supplement the teaching of sciences using computers.

However, I argue that the training these teachers receive is often to enable them learn basic computer skills and some technical aspects of the ICTs, not particularly to incorporate ICTs in the teaching and learning process. This is corroborated by Mr. Sekitale, Ms. Mabinda and

Ms. Justine Namaganda from Lubiri who said they did not receive any special training from SchoolNet Uganda on how to specifically integrate ICTs in the pedagogical process. In most instances, SchoolNet Uganda relied on the teachers' previous computer knowledge. The WSWM teachers in Lubiri and St. Peter's also teach Computer Studies and other subjects in their respective schools. Mr. Sekitale has taught Computer Studies for the past six years while his Lubiri counterpart Ms. Namaganda has been a computer teacher since 2001. Both teachers are the heads of the Computer Studies departments in their schools. Despite this, the integration of ICTs in teaching a different curriculum is a new trend for them. The WSWM was their first attempt at incorporating ICTs into the teaching of different courses.

The WSWM teachers who were computer illiterate were only given basic computer skills. Ms. Mabinda said this was her first opportunity to get ICT training.

> 'I did not know how to use a computer. When I was invited for the first WSWM workshop in Kumi District in 2005, it was my first opportunity to hold a mouse. My colleagues laughed at the way I held the mouse and clicked. But this programme has enabled some teachers like me get computer skills and I am now a wizard. I also try to train my colleagues but our computer in the staffroom got spoilt and even some teachers lack interest. Some of them do not have email addresses and do not know how to surf. Others even took long to buy mobile phones' (Mabinda, 2009: Personal Interview with the researcher).

With the above skills, the teachers conduct the lessons thus: they first give the students 15-20 minutes to browse through the content on their own and only help students facing technical problems. The class then begins with a warm-up exercise, recap of the previous lesson then the teacher facilitates discussions on the day's lesson. The teacher encourages the students to contribute their views on the lesson, correct the students' myths about their sexuality and explain any terms the students might not have understood as they browsed through the slides.

During the discussions, the students gather in a circle facing away from the computers to prevent them from getting distracted by using the machines. Peer educators try sometimes in vain, to ensure that no student accesses the computers during the discussions.

The teachers noted that the use of computers and the Internet in the lessons had enabled them enhance their ICT skills, improved the presentation of sexuality material thus making it more fun for the students. But it was hard to maintain order during the classes because some of the students did not pay attention during the discussions as they kept trying to access the Internet.

As shown above, the teachers' inadequate skills are a limitation to the efficient use of ICTs for pedagogical practices. This study noted that at the end of each lesson, the teachers did not carry out the computer, design and creative skills listed in the learning objectives. They attributed this to lack of skills, time and equipment like digital cameras.

The teachers are sometimes assisted by SRH consultants who visit the schools at least once a school term to offer SRH guidance, answer the students' queries and guide the teachers on how the lessons can be conducted. According to Ms. Winnie Akeso, a SRH specialist, some teachers ask them to conduct lessons on *sexuality and love*, *pregnancy* and *STDs* because they think such topics are sensitive and better handled by the experts. In addition to the teachers, SRH experts and peer educators also enable interpersonal interaction with the students to persuade them to adopt the programme.

6.4 What motivated the students to join the WSWM programme?

The adoption of an innovation is affected by its relative advantage, compatibility with existing values, complexity associated with its use, trialability and observability of results from adopting the innovation (Rogers, 2003). This section seeks to identify the factors that influenced the students' decision to join the programme and contextualises them according to Rogers' assertions.

Over 60% of the students in the three schools noted that their main reason for joining the programme was to acquire computer skills which they feel are necessary for one to be competitive in society today. Forty-five percent of these were boys and majority were from Nyenga. These students argued that their parents only allow them to attend the WSWM lessons because they think they will enable them acquire computer skills. A male Senior One student from Nyenga said:

> 'We have tried to explain to our parents what the WSWM is about but they do not
> understand it. Sometimes, they rebuke us for coming home late since we have

lessons in the evening and some of us stay far away (about six kilometres) yet we walk to and from school. So we tell them that we attend computer lessons. This makes them happy because they also know that having basic computer knowledge is important (focus group discussion in Nyenga).

This shows that having computer skills is compatible with the current societal values and expectations. During the interviews, all the respondents noted that this is the era of integrating ICTs into the teaching and learning environment. And the students added that acquiring basic computer skills was not a hard process if they had frequent access to the tools, they could practice on their own and improve their skills.

The audio and visual cues used in computer-based programmes make them more interactive and fun thus highlighting their relative advantage compared to programmes in manuals or other media which might not offer immediate chances for interactivity. According to Ms. Akeso, young people think it is trendy to work with new technologies because they are fast, captivating and break the monotony associated with the blackboard style of learning.

So in line with Rogers' assertions, the study noted that these technologies were adopted because they are easy to use, compatible with societal expectations and they offered more interactivity compared to other media channels. But apart from the characteristics of these new technologies, the students noted that other reasons that compelled them to join the programme included: the desire to learn more about the body changes they would experience as adolescents and wanting to socialise with their peers. Others admired the behaviour of their peers who had participated in the programme while a few were attracted by the artefacts showcased at last year's exhibition.

6.5 Why have majority of the students ignored the programme?

As reported earlier, of the over 3,200 students in Lubiri, only 75 are members of the WSWM and in St. Peter's only 60 are members. This shows that a majority of the students were not attracted to the programme despite the presence of ICTs. This low membership is not only limited to the WSWM club but also to others like the AIDS Club and Straight Talk Club that also tackle SRH issues. In the discussions, the students listed the reasons below as being responsible for the low membership in the WSWM programme.

Most students have a poor attitude towards the club because it involves listening, reading, paying attention to what the teacher says yet they prefer clubs like Interact where music and other entertainment activities are profound. In relation to this, some students think they are already knowledgeable about sexuality issues since some are members of clubs like Straight Talk, so attending the WSWM lessons is not necessary.

Other students think that the topics discussed in the lessons are vulgar and boring. A male student from Lubiri said he invited his brother to attend one of the classes and they were discussing menstruation so his brother told their friends about it, and they begun teasing him. The WSWM also raises issues like sexual relationships that some of the students are engaged in so when they attend such classes, they feel guilty that their activities are being exposed. In addition, some students think the WSWM is about playing computer games and surfing the Internet. So when it is time for the lessons, some students just play computer games then run away when the teacher starts the discussions.

The student's apathy to the programme is explained by Rogers' (1983) argument that people expose themselves to a message or idea that is in accordance with their interests, needs or existing attitudes. In light of the above points, this thesis argues that the mere presence of ICTs will not attract students unless their attitudes towards the content the technology carries are aligned to emphasise their personal development.

6.6 How ICT integration impacted on the students

As earlier noted, over 60% of the respondents said they joined the programme because it is computer-based and offers them the opportunity to use the Internet. Apart from the students in Nyenga, all the other students[71] said using the computers had enabled them improve their computer skills. This was in relation to using Microsoft Word, PowerPoint and surfing but only 30% said they could use Excel.

The students noted that the graphics and animations made the learning process easier and fun. Playing the games also enabled them grasp the topics faster and also quickly remember them.

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[71] They represented 68% of the respondents.

Sharing computers in groups enhanced their teamwork skills thus enabling them socialise and benefit from each others' strengths. The students discussed the information among themselves and also helped their colleagues improve their computer skills.

Having access to the Internet could have made their discussions richer because of the wealth of SRH information they could access from the additional websites provided in each lesson but only 10% of the students admitted to searching for this data. Majority were more interested in surfing for entertainment activities.

Arguments around the creative and design skills accrued from the use of technology are two way. While the students argue that using computers helped build their creativity especially when preparing artefacts for the exhibition. But according to Ms. Sarah Magoba, also a SRH consultant, some young people just copy and paste materials downloaded from the Internet so this does not enhance their creativity. Her point is illustrated by one of the Senior Three female students from St. Peter's who noted that, 'for last year's exhibition, we looked for an image of a person affected by STDs, printed it and mounted it on a chart which we showed to other students to inform then about what would happen to their bodies if they got infected.'

Asked if they would prefer other means of receiving sexuality education other than through ICTs, 75% said they favour the computer-based method especially if the computers are connected to the Internet because this avails them with diverse sources of information at the same time. Ironically, the study has pointed out that only a few look out for other web-based sources of SRH information.

Twenty-five percent preferred newspapers and magazines because they can be read by most students even if they are not computer literate. And since they are stored in the library, it is easier for a student to access them since the library is usually less congested than the computer room. None of the students said they preferred radio or television although 25% said they had listened to RockPoint 256[72] a maximum of two times in the last six months before the group discussion. According to the students, especially those in Nyenga, it is hard to listen to such radio programmes at home either because they are preoccupied with housework, their parent want to listen to other programmes or the radios lack batteries.

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[72]See Y.E.A.H Campaign in chapter one.

Eighty percent of the students in Lubiri and St. Peter's were members of other clubs like the AIDS Club, Straight Talk Club, and also the Prolife Club (only in St. Peter's). But over 70% preferred the WSWM because the other clubs usually provide brief information mainly about HIV/AIDS prevention but WSWM discusses a diversity of topics like relationships, sexuality, fighting for your rights and pregnancy in detail. The diversity in WSWM content is based on the fact that it has a curriculum which is not the case for the other clubs.

The Internet has also widened means through which the youth can communicate their SRHR questions to experts who respond to them. Previously, some students have communicated with SRH consultants directly or through email but with the recent launch of the online support centre (http://schoolnetuganda.sc.ug/wswmonlinesupport), it is hoped that the students will convey their queries and opinions through this forum. Some questions will be directly replied through the students' emails while the more general ones will be answered on the forum so that other students can also benefit from the information. The students are also encouraged to participate in the online discussions. But none of the respondents had used the centre because they had not yet been informed about its existence.

6.7 SECTION TWO: How the WSWM is designed and implemented

This section seeks to answer my third research question: what factors are considered when designing and implementing the project? But it shall also elucidate on how participatory mechanisms are integrated into the programme.

6.8 The Intervention Mapping Model

This programme design, according to Mr. Okwaput, was based on the Intervention Mapping (IM) model. This model entails the use of theory and evidence-based approaches aimed at guiding the planning, formulation, implementation and evaluation of health promotion campaigns. In summary, the model provides a framework for studying the needs of the target community and tailoring information to address these specific needs.

In their book, *Planning health promotion programmes: Intervention Mapping Approach,* Bartholomew et al (2001) note that this model involves the use of a six-step systematic approach to plan, design, implement and evaluate health promotion campaigns. The steps are: needs assessment/situation analysis, programme objectives, methods and strategies,

intervention design, adoption and implementation and evaluation. These steps are briefly presented below in relation to their use in the WSWM project.

6.8.1 Needs Assessment/Situation Analysis

This is the first stage in the IM model and for the WSWM programme, it involved studying and identifying the SRH problems needs of adolescents in Ugandan schools. Flay and Burton (1990) support this exercise arguing that before a campaign is implemented, a needs assessment (often included in the formative research) should be performed to gain more knowledge about the problem, the target audience and relevant social issues because these determine the message content, form and channels used to disseminate the information.

The WSWM needs assessment was carried out in 2003 by officials from WPF in collaboration with SchoolNet Uganda. Data was collected from an analysis of previous reports about the ASRH situation in Uganda and from interviewing teachers and two students from each of these schools - Bishops Secondary School, Mukono, Namilyango College and Wanyange Girls. These schools were chosen basing on the availability of ICT infrastructure and gender of their students.[73]

However noble this assessment exercise was, I critique it for focusing on only two schools from the central region and one in the eastern meaning that the sample was not representative for a programme implemented countrywide. There are some region-specific challenges that impact on the youth's SRH that could have been ignored because of the limited sample. For example in northern and western Uganda, the LRA and Allied Democratic Front conflicts have caused adverse economic, psychological and health effects on the youth in these areas so they could have some unique SRH needs needing specific interventions.

Albeit the above limitation, the WSWM needs assessment revealed that youth lacked sufficient reproductive health knowledge, social skills to effectively avoid peer pressure and also negotiate for respect of their rights. The assessment also pointed to a lack of a continuous and systematic sex education curriculum as most interventions involved a few

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[73] Sometimes, the gender composition of a school is responsible for the presence of unique reproductive health issues. For example homosexuality and masturbation are suspected to be common in single sex schools.

sporadic visits by officials from organisations dealing with SRHR issues. The need to address the above issues called for development of a wider curriculum not only addressing HIV/AIDS prevention but also bringing about holistic change in an adolescent's sexual life. According to Mr. Okwaput, most adolescent intervention focuses on HIV/AIDS yet there are several aspects that affect youth as they grow up.

> 'For example, when girls begin menstruating, it is a frightening experience for them. In school, it is regarded as a dirty, terrible experience and their peers sometimes laugh at them forcing some girls to abscond from school during these days. That is why in the *Body Changes* lesson, we try to educate the youth about the different changes they will experience as they grow up and that these changes are normal' (Okwaput, 2009: Personal Interview with the researcher).

After noting the adolescents' needs, the programme developers identified their target audience as school-going adolescents who would be easily reached in schools. Arguments for providing sexuality education in schools include but are not limited to the fact that several children spend most of their time at school making schools an ideal setting to reach them with health promotion campaigns (Kann et al, 1995 quoted in DiClemente et al, 1999). Also the fact that several parents do not discuss sexuality issues with their children either because they are preoccupied with work, are shy or culture entails that discussing matters related to sex are a taboo warrants the need for teachers to provide this information to their students.

In Uganda, the need for sex education in schools has been echoed by several parliamentarians and organisations working in issues related to reproductive health. According to a survey by Concern for Children and Women Empowerment, an NGO in Uganda, many girls in schools in Gombe and Busukuma sub-counties in Wakiso District were increasingly getting infected with HIV/AIDS because of lack of sex education before they become sexually active.[74]

6.8.2 Setting Programme Objectives

Basing on information gathered in the situation analysis, programme developers are supposed to identify evidence-based objectives for a campaign. Findings from the WSWM needs assessment in Uganda showed that youth needed information and skills to take responsibility

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[74] *Saturday Monitor*, 11 October, 2008, '*AIDS on the rise among schoolgirls.*'

over their sexuality and avoid risky sexual behaviour. This called for setting specific performance objectives. These objectives describe what a learner is expected to do in order to perform the health promoting behaviour identified (Mkumbo et al, 2009).

In the WSWM programme, each of the lessons has learning objectives – these are categorised into three: *Knowledge* (what a student should learn after the lesson); *Attitude* (how a student should feel about certain issues after a lesson) and *Skills* (what a student should be able to do after a lesson). Because of the limited space, I cannot mention all the objectives but generally, the programme as mentioned in chapter one seeks to empower young people with sexual reproductive health information and equipping them with life skills (negotiation, communication and computer skills). An evaluation of these objectives vis-a-vis what the students learnt from the programme is provided in section 6.9.

6.8.3 Theoretical Methods and Strategies

Theories are used to design intervention materials that meet the objectives set in step two. To achieve these objectives, youth need interventions best achieved through using theories that (a) explain behaviour, environment and determinants, (b) change behaviour, environment and determinants and/ or guide intervention development and implementation.[75]

None of the officials interviewed for this thesis could identify the theories used in the formulation of this campaign, but according to the *Evidence and Rights-based Planning and Support Tool for SRHR/HIV-Prevention Interventions for Young People,*[76] the use of (psycho) social theories, particularly cognitive behavioural theories such as the Social Cognitive Theory and the Theory of Planned Behaviour when designing and implementing sexuality education and AIDS intervention programmes could add understanding about and explain factors that influence people's behaviour and how sexual behaviour can be changed.[77]

After integrating theory into the materials, the next step involves choosing the best strategies through which to deliver the information. As already stated, the material collected during the needs assessment was developed into a curriculum delivered through CD-ROMs, the Internet

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[75] Check out the IM Toolkit for Planning Sexuality Education Programmes, at http://www.wpf.org/documenten/20080729_IMToolkit_July2008.pdf, accessed 5 October, 2009.
[76] This tool is used by WPF to supplement the IM Toolkit for Planning Sexuality Education Programmes.
[77] See http://www.wpf.org/documenten/PlanningSupportTool_SRHR_Education_July2008.pdf, accessed 5 October, 2009.

and manuals. According to Ms. Nansubuga, the programme was initially purely web-based because the integration of technology into sex education was considered the best way to create excitement and enthusiasm for the curriculum among the youth. In addition, using ICTs was a new phenomenon; a break away from the use of print materials, radio, television and folktales to deliver sex education. But previous sections have shown that not many youth were attracted to the project mainly because of their apathy towards sexuality programmes.

SchoolNet Uganda's main reason for involvement in the project was because the WSWM was to be delivered through ICTs and not because it is an SRHR programme.

> 'SRH issues are not our core activity. We are a teacher professional development organisation using ICTs. We only implement the WSWM because it is ICT-based. If it were just plain text, we would not be involved in it' (Nansubuga, 2009: Personal Interview with the researcher).

After choosing the delivery channels, the next step involved deciding the schools to participate in the programme. SchoolNet Uganda does not have concrete criteria for this exercise but some of the major factors considered in the selection are stated below.

6.8.3.1 Factors considered when choosing schools

1. **Interests of the development partners**

SchoolNet Uganda works with WPF and the MOES in implementing this programme and they each have different targets. WPF is interested in implementing the programme in more schools in the northern region where several families are living in internally displaced peoples' camps characterised with high levels of promiscuity, early and forced marriages, defilement and rape leading to increase in the number of child mothers.[78] Effects of this war have also spread to the north-east and eastern regions of the country so in their planning sessions, SchoolNet Uganda endeavours to include several schools in these areas.[79]

Since SchoolNet Uganda also runs a number of projects in different schools, it tries to incorporate at least more than one project in a school. This is aimed at economising

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[78] *Saturday Monitor*, 14 February, 2009, '*Teen pregnancies cripple north.*'
[79] According to Ms. Nansubuga, all schools participating in the project in this region have computers apart from one school in Lira town.

resources. According to Ms. Nansubuga, it is better to consolidate similar projects in a school so that the resources for one project can support another. She explains:

> 'We have the Inspiring Science Education for Girls using ICTs project in 20 schools and they are also doing the WSWM programme. There is also the School-based Telecentre Project co-funded by UCC. Under this project, we have five telecentres in Bweranyangi Girls School, Mashera High School, Bukholi College, Ngora High School and Bukomero Secondary. These schools are also in the WSWM project (Nansubuga, 2009: Personal Interview with the researcher).

Furthermore, schools that buy refurbished computers from SchoolNet Uganda are encouraged to join the programme. Through SchoolNet Uganda Technical Service Centre, schools can buy computers at 'affordable prices'. Affordable, according to Mr. Kakinda, implies that the price is lower than what is on the open market. Pentium IVs cost shs300,000 (about $150), which Mr. Kakinda argues, is affordable for most schools. And schools participating in WSWM project can pay for the computers in instalments.

2. Interest from the schools

When the programme began, teachers in the three pilot schools and officials from SchoolNet Uganda often networked with other schools and enticed them to join the project. As testimonies about the programme's advantages spread, more schools showed interest in joining the project. So from 2007, schools have to apply to SchoolNet Uganda for the programme. In the application, schools are asked to mention some of the SRH issues in their community and how they think the programme will help to address the issues. This helps SchoolNet Uganda identify the different SRH issues in the communities and deliberate on how they could be incorporated into the old WSWM curriculum.

3. Budgetary considerations

The budget is the major determinant of the number of schools participating in the programme in a year. Since its inception in 2003, the project is funded by WPF which sets a yearly budget for a particular number of schools and SchoolNet Uganda has to limit their activities within the available resources which are sometimes inadequate. This is articulated by Nansubuga thus:

'We have our budget and WPF also has a target. But sometimes their wish is beyond what we can manage. In 2009, they wanted 200 schools with a budget we are trying to implement in 150 schools (Nansubuga, 2009: Personal Interview with the researcher).

Unfortunately, support from the development partners is dwindling each year. The yearly budget for each school has been reduced from shs2m (about $1,000) to shs1.2m (about $630). The donors argue that after realising the importance of the programme, the schools should now be able to fund most of the project activities like catering for students and teachers to attend workshops or even financing the exhibitions. That is partly the reason why schools are being asked to apply for the programme because doing so implies that they are ready to own and financially support it.

But more than 50% of the schools participating in the project are under the USE programme and such schools are often cash-strapped, so availing funds to projects like the WSWM is often untenable and unsustainable. Most USE schools face challenges like the low teacher-student ratio, limited classroom space and furniture. The Ministry of Education pays private schools a meagre shs47,000 (about $24) per term for each student under the USE programme while government-aided schools get shs41,000 (about $21) per student.[80]

In comparison a number of schools not participating in the USE programme charge between $150 and $250 for day scholars and $250 to $500 for students in the boarding section per term. The difference in funding has substantially affected the provision of services in several USE schools. Many of these schools lack science or computer laboratories, equipment and teachers and they usually operate in financial difficulty which is worsened by government delays in releasing funds yet the schools are not allowed to charge the students any extra fees.[81]

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[80] Each academic year has three terms starting in February to April, then May to August and lastly September to December. There is a two-three week holiday between the first and second term and the second and third term.

[81] *The Daily Monitor*, 15 February, 2010. *'Over 100 USE schools to miss government fundin*g,' at http://www.monitor.co.ug/News/Education/-/688336/861804/-/110ujt3/-/index.html, accessed 1 March 2010.

6.8.4 Intervention Design

The WSWM curriculum is also based on an evidence-based intervention design. It has already been stated that the curriculum was developed after collaboration between teachers and students, artists, SRH specialists. According to the national peer educators, Charles Buwembo and Gloria Mupa,[82] they advised the programme developers to tone down the language to suit young people and to also include role models that would motivate the students to desire to emulate their behaviour.

Mr. Okwaput and other teachers evaluated the content with an aim of aligning it to suit the school environment. This entailed making sure that the content was aligned with Uganda's cultural tenets. In most cultures, discussions about sex are sacred and are rarely held in public (Nyiraneza, 2006). Also, sexual orientations like homosexuality are a taboo and illegal although there are gays and lesbians in the country. Homosexuality is an offence punishable by life sentence upon conviction, yet in the Netherlands where the WSWM idea originated, homosexuality is widely accepted and homosexuals have the same rights as heterosexuals. Bearing Uganda's cultural context in mind, the content developers did mention the different sex orientations like homosexuality but did not expound on it.

This curriculum was pretested in three schools in 2003 and the students' views incorporated into the curriculum rolled out in 10 schools in 2004. In 2005, a manual version of the curriculum was developed to cater for the schools without computers and also used parallel with the computers especially when there is no electricity.

The study notes that local participation was limited to content development and implementation where teachers, SRH consultants and peer educators worked together to encourage the students to adopt the programme. The students also participated in the class discussions, attended workshops where they aired their views on different SRH issues. Local involvement in development projects promotes a sense of ownership over the programme, encouraging the target community to regard an initiative as 'our programme, so let us support it'. Freire (2000) notes that participation of the local community in planning, designing and

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[82] These two participated in the WSWM content development process in 2003 while still Senior Two students in Mukono Bishops Secondary School. They are now university students working with SchoolNet Uganda to help the teachers implement the programme, facilitate during workshops and trainings and also act as role models for the younger students.

implementing behaviour change campaigns will result in emancipation of the locals, increase message reception and break community barriers. According to Ms. Nansubuga, before the head teachers were sensitised about the project, they often referred to the programme as '*this things of yours'* until SchoolNet Uganda engaged them in several workshops and their attitude changed. They are now trying to support and own it.

However, it should be noted that WPF and Butterfly Works are Netherland-based and only the implementer (SchoolNet Uganda) is based in Uganda. So ideas birthed in Uganda were fine-tuned in a foreign country then imported back into the country meaning that the locals have little ownership over this programme thus limiting their support for it.

6.8.4.1 Evaluating the WSWM Messages

Through the lessons, youth are supposed to be equipped with SRHR knowledge, encouraged to develop positive attitudes and skills to enable them build self-esteem, accept physical and emotional changes during puberty and cope with gender roles to become more independent and autonomous, build relationships and decide on and negotiate sexual activity within intimate relationships by proposing alternative options for safe and consensual sexual behaviour including abstinence from sexual intercourse.

The biggest component of the WSWM messages are enshrined in what Witte (1995) referred to as efficacy messages, aimed at convincing individuals that they are able to perform the recommended action to avert consequences of risky behaviour (in this case, the youth are responsible for making their own decisions regarding their sexuality). In a study of the rights-based approach to sexuality education, Kusumawardoyo (2006) notes that the WSWM highlights the adolescents' right to have pleasurable sexuality whenever they are ready for it. This is shown in Lesson 7: *Sexuality and Love* where youth are told it is their right to decide whether to abstain or have safe sex as long as it is responsible and free from risks.

> '*Always remember you are the only one who can make a decision how and when to express your sexuality.*' (WSWM, Lesson 7: Slide 29)

> *In fact, you have to make many decisions about: When? With whom? Why? How far to go? With a condom? Without*? (WSWM, Lesson 7: Slide 31)

But I argue that in subsequent lessons like '*Pregnancy: 4 Girls and 4 Boys*' *Protect Yourselves: STIs and HIV/AIDS*, and '*HIV/AIDS: U have a role to play,*' the dangers of engaging in risky behaviour are outlined thus offering the youth information they can use to decide whether or not to engage in sexual relationships. Rodriguez et al (1997) asserts that the use of more efficacy (motivational) than fear appeals has been found to promote greater sexual responsibility among young people.

Using David and Rose availed the target audience with images of desirable actions carried out by models advocated for in the social learning theory. In this case, virtual peer educators show the youth that they can acquire SRHR knowledge, develop positive attitudes and skills to enable them build self-esteem, accept physical and emotional changes during puberty and cope with gender roles. This will enable them become more independent, build relationships and negotiate sexual activity within intimate relationships by proposing alternative options for safe and consensual sexual behaviour including abstinence.

6.8.5 Adoption and Implementation

The intricacies of the adoption and implementation of the WSWM programme have already been discussed in section one of this chapter. But this section briefly adds that the WSWM is supposed to be implemented within a school academic year (between February and November) but with the varying school activities, the project starts at different times in the schools. Last year, Nyenga and Lubiri started the programme during second school term (in May) because the first term was filled with activities like (counting of Senior One students under the USE programme in Nyenga), music, dance and drama and sports but St. Peter's begun their lessons in first term.

6.8.6 Evaluation

This step, according to Mkumbo et al (2009) entails the mechanisms of assessing the outcomes of an intervention programme which are measured at two levels. The first level, the process evaluation involves assessing whether the programme was implemented as planned. The second entails an outcome evaluation measuring whether or not the learning objectives were achieved and the envisioned determinants of the health promoting behaviour adopted.

Although the WSWM programme began in 2003, the first comprehensive evaluation was carried out in 2008 by a team from the Netherlands. Unfortunately, the results of this study are yet to be released. This thesis has criticised the limiting of local participation in project evaluation to mere respondents in surveys. However, it should be noted that although teachers are supposed to carry out a daily lesson evaluation, they do not do it because of their heavy classroom workload and since they are not paid for implementing the WSWM programme, they see no need to evaluate voluntary activities. But in looking at how the programme is implemented and its outcomes, it can be argued that this research has contributed to an evaluation of this programme.

6.9 Were the programme goals achieved?

The respondents had not completed the curriculum so the findings outlined below are based on the few lessons they had studied. This programme affected the students' knowledge, attitudes and skills as outlined below.

Knowledge

Seventy percent of the students learnt how STDs like HIV/AIDS are spread, how and why they should protect themselves from contracting these diseases. The other thirty percent were mainly students from Nyenga who were on lesson three by the time this research was conducted. But the programme informed the students about why and how to avoid pregnancy. Since its inception in Nyenga, there has been a reduction in the number of girls becoming pregnant while in school. In Lubiri and St. Peter's, the students were not aware of any girl who had become pregnant while in school.[83]

The students learnt about the body changes they were likely to experience, how to cope with them and also control their feelings. In addition, they gained awareness and understanding of their rights especially those concerning sexual reproductive health.

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[83] In all the three schools, girls are subjected to a pregnancy check at the beginning of each term.

Attitudes

Myths regarding sex were corrected and this enabled the students adopt new attitudes like the need to continue abstaining until they finished their education. A male student from Lubiri revealed that he had broken up with his girlfriend who was demanding for sex.

Sixty percent of the students noted that their self-esteem and confidence had improved. They believed in their ability to overcome obstacles and could articulately express themselves even about reproductive health matters.

Skills

These included how to build and maintain social relationships with parents, peers and teachers. A total of 13% said they had developed leadership skills from being peer educators and later campaigned to become prefects in their schools.

Eighty percent of the students learnt how to communicate with their peers especially when refusing to engage in activities against their beliefs.

Students using ICTs gained basic computer and some creative skills like designing posters, writing poems and skits in preparation for the exhibitions.

This study concludes that the WSWM programme to a great extent succeeded in providing its participants with SRH knowledge that influenced their thoughts and beliefs towards their sexuality and encouraged them to avoid risky behaviour. The programme developers had envisioned that many youth would be attracted to the programme because it was ICT-based but the study has shown that majority of the youth, especially the girls did not participate in the programme. This is attributed to their apathy towards SRH programmes and the continued belief that technologies are best used by male sex.

In regard to skill development, the students did acquire communication, negotiation skills and some basic computer skills. But the computer and creative skills fell short of those imagined by the project designers. The study has revealed that teachers do not carry out the computer, design and creative skills listed in each lesson's learning objectives. Giving the students basic skills like typing and using PowerPoint is a far cry from the objectives mentioned in the programme. For example during my observations, Lubiri was on lesson 6: *Fight for your*

rights and among its skill objectives, the students were supposed to among others, use at least three Word Art options in Ms Word for document layout but this was not done. St. Peter's was studying lesson 7: *Sexuality and Love* and among the skills, the students were supposed to learn how to take pictures using digital cameras and how to use the paint programme, but these activities were not carried out. The teachers said they lacked resources, equipment and time to carry out these activities during the lessons.

So the major shortfall of the WSWM programme lies in its inability to impart students with computer, design and creative skills yet this was one of the project's distinguishing features from the other SRH programmes.

6.10 SECTION THREE: Limitations to using ICTs to teach youth about SRH

1. Limited infrastructure

The students and officials noted that the shortage of ICT equipment limits its use in schools. This thesis has shown that the student to computer ratio is also still high and the urban-rural digital divide still rife. Even in cases where the technology is available, it is often second-hand or outdated thus limiting its usage with new educational software applications.

In addition, the common technology considered in most schools are computers and to a lesser degree the Internet yet other gadgets like digital cameras, projectors can also be used for learning purposes. There are calls for the need to diversify the technology available in schools and enable the students become multi-skilled. Another gap lies in the limited Internet connectivity often attributed to the partial infrastructure, low bandwidth and high operational costs. Even in the few instances when the Internet is available, it is very slow and often expensive to access.

The project is located in 38 districts but the poor road network inflates the costs of transporting SRH experts thus limiting the number of visits they can conduct. Ms. Nansubuga says this problem is being overcome by trying to use mobile phones and Internet to communicate with the teachers. But this initiative has also met resistance from some SRH consultants because they were earning more from these visits than if they used ICTs. Previously, they were being paid shs40,000 ($22) per school visit but if they use mobile phones and the Internet, they would get a quarter of this money ($6).

2. Electricity fluctuations

Load shedding is rampant because the demand for power has exceeded the generation capacity resulting in a power deficit.[84] The low electricity supply is attributed to a reduction in electricity produced at the Owen Falls dam and the fact that a bigger percentage of this power is exported to neighbouring countries like Kenya thus resulting in massive day and night load-shedding that affects several institutions. Without electricity, some schools conduct the WSWM lessons using the manual yet each school has only one. Lubiri has a generator that is automatically turned on when electricity goes off but it can only run for a few hours depending on the load it is servicing.

3. Technophobia

Mr. Okwaput contends that there are still several people who fear computers while others regard using them as wastage of time or a desire to show-off. He added: 'In my school, the head teacher thinks using the Internet is wastage of time. We no longer have it because he argued that we were using it for personal gain so it was not benefiting the whole school.'

4. Apathy towards sex education programmes

According to Mr. Kakinda, the biggest challenge to the programme is not the lack of infrastructure but the misconception among teachers and some parents about what sexuality education encompasses. A majority of people think it is like the *senga* programme[85] which teaches people about having sex so they think exposing students to such information will encourage them to engage in the act. In addition, some teachers and head teachers did not have sexuality education when they were in school or even at their training institutions so they do not see the need for having sex education programmes in schools.

Both Mr. Kakinda and Mr. Okwaput argued that very few head teachers see the link between sexuality education and academic performance. Yet studies have shown that students who engage in high-risk behaviour are exposed to serious health consequences and thus might not

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[84] See http://www.uetcl.com/?jc=LoadShedding_end, accessed November 10, 2009.
[85] This is a traditional channel of communication where elderly women teach younger ones about sexual behaviour. *Senga* means father's sister and this was the person mandated to deliver this information but now days, there are commercial *sengas* paid to do this role irrespective of whether you are not their relative.

concentrate in class when they have poor health (inclusive of the emotional aspects) which in most cases result in poor academic performance.[86]

5. Thin budget

As already noted, WPF is the main funder of this project but its support has been diminishing over the years because it wants the project to be self-sustainable by the participating schools. The reduction in donor funds has limited the number of activities SchoolNet Uganda can carryout and the organisation is relying on schools to cover up the other costs. But this is hard for some schools which are already incurring facing financial constraints. With the rise in commodity prices and a government directive warning head teachers not to increase tuition fees,[87] schools are finding it hard to smoothly render services to their students so many will find it hard to cover some activities like the WSWM.

6. Students' hidden agendas

Some students join the project to play computer games or surf the Internet. These students also entice their colleagues to engage in the same activities thus disrupting the lesson. The teachers can hardly rebuke these students because, according to Mr. Sekitale, the lessons are supposed to be conducted in a relaxed environment so the teachers are lenient on the students.

The next problems listed below are not directly related to using new technologies but they affected the implementation of the WSWM programme.

7. Teachers are overloaded and lack motivation

The teachers pointed out that they have a heavy subject workload even before adding the WSWM programme. These teachers handle two or three subjects in various streams coupled with other school responsibilities which require a lot of their time. Mr. Sekitale teaches Luganda, Political Education and Computer Studies, he is also the head of the Computer Studies Department and in charge of the Cyber Schools programme. Ms. Namaganda is also the Computer Studies teacher and patron of the Computer Club. These teachers have to

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[86] See Scott-Jones, 1993 and Kirby, 1997 cited in McManis and Sorensen, 2000.
[87] *The Daily Monitor*, 12 February, 2010, '*Schools defy govt to increase tuition*,' at http://www.monitor.co.ug/News/Education/-/688336/860382/-/110tqrn/-/index.html, accessed 3 March, 2010.

prepare lesson plans, set and mark exercises, tests and examinations in their respective subjects. So by 5:00pm when they are supposed to begin the WSWM lessons, the teachers are already tired. Although the classes are supposed to end at around 6:00pm, the students often stay behind using the Internet until the teachers force them to leave at around 6:30pm.

In addition, the teachers lack motivation for carrying out the WSWM programme. They are not paid for implementing the project yet it takes up a lot of their time as they have to prepare for the lessons and also be available to counsel the students when they need help. Mr. Okwaput says: 'It is a sacrifice to help these students because the economic situation is so bad that a teacher would prefer to look for money than spend time listening to their problems.' Because they are not motivated, some teachers do not carry out the required project activities like lesson evaluations.

8. Head teacher and teacher turnover

Head teacher and teacher transfer affect the efficient integration of ICTs in education. This happens either when a head teacher or teacher who supports the programme is transferred to another school which might not even have the facilities to nurture the programme or a teacher who has apathy towards technology is transferred to a school using ICTs. This is elaborated by Mr. Okwaput when he argued that change in school administration had affected the implementation of the programme in his school. He added: 'The old administration supported the programme but the new leaders associate it with computers yet the head teacher does not like technology. The programme faces stiff competition from the numerous programmes the school management puts up in the evening. The students want the programme but the administration does not give it time.'

Another challenge is that sometimes teachers are transferred after they have undergone training on programme implementation thus creating a manpower gap. Teachers in government or government-aided schools are often transferred at the beginning of the school calendar year in January yet most training sessions take place in December and early January. These transfers are also experienced by teachers in private schools so filling this void inflates SchoolNet Uganda's budget, thus limiting its activities.

9. Timetabling the programme

Finding a convenient time for the WSWM lessons is difficult because of the heavy daily school timetable. In most schools, the day's activities run from 8:00am to 5:00pm and thereafter, students are either supposed to go home, participate in co-curricular activities, or do housework (for those in boarding schools). Amid this busy schedule, it is often difficult to create time for another activity like the WSWM whose curriculum is not examinable. So the WSWM is timetabled at the same time with other co-curricular activities making it difficult for some students to decide which activity to attend.

6.11 Section Summary

This chapter has argued that although majority of the students joined the WSWM programme because they wanted to gain computer skills and also surf the Internet, the number of participants in the programme was minimal compared to the school population. This was attributed to students' apathy towards SRH programmes and the belief that technology is best used by the males. This shows that the mere incorporation of ICTs in behaviour change campaigns will not attract several youth if they have apathy towards the content delivered through the new tools.

The study noted that students use the computer and Internet to access SRH information from the WSWM website or data downloaded and stored on the computers and use PowerPoint to summarise the lessons and share the information with their peers. It was also noted that the youth mainly use the Internet to search for entertainment-related events so health communicators should integrate more engaging aspects into sexuality education.

It has been noted that although the three WSWM versions have the same content, there are differences in the audio and visual cues and in offering interactivity and participation. The web and CD-ROM version basically have the same animations, colour and presentation of material with a slight difference noted in difficulty in accessing some CD-ROM images. But without the Internet, it is impossible to access the websites provided in each lesson to avail the students with more information about the issues presented in the lessons. The manual lacks colour, audio cues and limits the ways the students participate in the lessons. For example they cannot play the different games or access website with more information.

As an SRH programme, the WSWM recorded success among the participating students because they were equipped with knowledge about various factors that affect their sexuality. This influenced their attitudes towards risky behaviour and encouraged them to abstain, read hard and achieve their dreams. But the study has noted that the implementation has fallen short of providing the envisioned computer, design and creative skills. This is attributed to inadequate skills among the teachers, equipment and time. The diffusion of the programme is hampered by factors like limited ICT infrastructure, electricity fluctuations, technophobia, head teacher and teacher turnover and apathy towards sex education programmes.

CHAPTER SEVEN

CONCLUSION AND RECOMMENDATIONS

7.0 Introduction

This research aimed at investigating the feasibility of using computers, CD-ROMs and the Internet to teach school-going youth about SRH. The study assumed that since youth are attracted to new technologies, an in-school SRH curriculum delivered through computer-based technologies would attract many and hopefully encourage them to avoid risky sexual behaviour. The success of such a strategy depends on the content of the curriculum, how it is designed and packaged, the availability of ICT infrastructure and manpower (knowledgeable in both ICTs and SRH) and support from the school administration and the government.

The case I researched is the World Starts With Me programme (WSWM) being implemented in 150 schools in Uganda. Since I could not study all the 150 schools, I undertook my research in three schools namely: St. Peters' Secondary School Nsambya, Lubiri Secondary School and Nyenga Secondary School. The former two schools were chosen because they use ICTs during their WSWM lessons and are located in Kampala District, making it easier for me to access them. Nyenga which is located in Mukono District uses manuals during the lessons. Nyenga's inclusion in the study was aimed at providing a comparison between the experiences and outcomes of using ICTs vis-a-vis using manuals. I also attempted to give an explanation for these outcomes.

This research set out to establish how computers, CD-ROMs and the Internet are used to teach youth about SRH, identify the factors considered when designing and implementing computer-based SRH messages and how participatory approaches could be integrated into such programmes. The study also sought to point out the knowledge, attitudes and skills the youth gained from the programme and explain the opportunities and challenges of using ICTs to educate the youth about sexuality matters. Although this was not among my original research objectives, I also made distinctions between the content provided in the manuals and the web-based version of the programme.

Using qualitative methods (interviews, focus group discussions, document analysis and non-participant observation), I gathered information from students, their teachers, SRH

specialists, SchoolNet Uganda staff and an official from the Ministry of Education. The data was analysed using development communication, health communication theories and Kim Witte's Persuasive Health Framework.

7.1 Summary of main findings and arguments

7.1.1 Integrating ICTs in sexual reproductive health education

In reference to my first research question: *How are ICTs being used to teach youth about sexual reproductive health?*, this study has noted that youth in schools are using these technologies and materials to access SRH information either from the Internet (mainly the WSWM website: http://www.theworldstarts.org/start/visitors.html) or that downloaded from CD-ROMs and stored on the computers at school.

As highlighted in chapter one, the purpose of this curriculum defers from the '*just say no to sex*' approaches usually advocated for among school-going youth. The WSWM tries to offer comprehensive reproductive health education by addressing a diversity of social, legal, economic and political issues that affect adolescent development and behaviour change. The essential message in this curriculum is that youth should be empowered with adequate knowledge and skills to enable them make their own decisions regarding their sexuality. The study has noted that although all the students interviewed had gained knowledge and skills (chapter six), the most important lesson they had learnt was to abstain from sexual intercourse at least until they finished their education.[88] This information has helped youth overcome myths regarding their sexuality thus change their attitudes towards sexuality-related matters. By providing youth with hope that they could be successful in the future if they made the right decisions, this curriculum embodies Bandura's and Witte's PHMF efficacy appeals which entail encouraging the target audience that they are able to engage in the right activities to improve their wellbeing. The learning process is eased by the combination of text, audio and visual cues in the WSWM curriculum.

The youth are supposed to use computers (in combination with other activities like songs, poems and skits) to create materials to educate their peers and community about SRH. These

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[88] Majority of the female students preferred to wait until they completed their university education while for the males, joining the university would mean that they are mature enough to engage in sexual activities.

materials are showcased during exhibitions held after completing the curriculum.[89] But I noted that majority of the youth could only use PowerPoint to make presentations highlighting the main learning tenets of each lesson. They lacked the necessary expertise, programmes and equipment to efficiently and quickly make diverse materials depicting what they learnt. Although I did not attend any exhibitions, I watched some CDs highlighting some of the 2008 exhibitions and noted that most of the items showcased were art pieces drawn on manila paper (with coloured pencils, crayons and markers), poems, songs, testimonies and skits. According to the teachers interviewed, they rarely use computers to produce the artefacts for the exhibitions because of inadequate equipment like printing facilities (most schools only have printers that print on A4 size papers and only in black and white), they usually have a short time to prepare for the exhibitions yet students are slow when using computers compared to when using their hands to create the art pieces. In addition, the teachers lacked the necessary expertise to use computers in graphical work so they could not impart these skills to their students.[90]

In a bid to expand the channels through which students express their views and problems to counsellors, SchoolNet Uganda created the online support centre (http://schoolnetuganda.sc.ug/wswmonlinesupport/) in early 2009. By the time of this research, it was too early to judge the success of this innovation because majority of the students were still ignorant about its existence. I carried out my research between June and July but the centre was introduced to the students in August.[91] Although they had not yet used it, the students noted that it could help the shy students seek help from counsellors. Currently, the site has some questions answered by SRH consultants. To adopt and use the centre, the students not only have to gain knowledge about its existence but also go through Rogers (2003) rigorous process of *persuasion*, *decision making*, *implementation* and *confirmation* (chapter four*).* This process could be eased through support and guidance from the teachers, peer educators and SchoolNet Uganda staff. In addition, although it is an initiative from

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[89] The essence of these exhibitions, which are facilitated by the students is to bring together youth in about two to five schools (located within the same geographical area) to educate their peers, teachers, parents, school administration and the community about the knowledge and skills acquired during the 13 lessons. This gives the youth the chance to be change agents. The exhibitions, usually held in October are the last events in the WSWM calendar.

[90] The teachers' ICT skills are discussed in chapter six.

[91]The centre was introduced to peer educators who were mandated to inform their peers about its existence and use.

SchoolNet Uganda, providing a link for the centre on the WSWM website would make it more easily accessible for the students since majority said they visit this website more often than the SchoolNet Uganda website.

7.1.1.1 Teacher influence in the adoption process

This study observed that the students' adoption of ICTs is partly influenced by their teachers' attitudes and beliefs towards technology. In chapter six, I argued that these teachers are the interpersonal links that can persuade the youth to adopt new technology, support and guide the integration process if the project is to have long-term success. Arguments for this are based on assertions that the diffusion and use of ICTs is dependent on the influence from opinion leaders (Rogers, 2003). In this study, the teachers are opinion leaders for the students. Through their interpersonal interaction with the students, they have persuaded a few to adopt the use of technology in learning about SRH by pointing out the advantages of using it and passing on the ICT skills.[92] Fifty percent of the respondents joined the programme after their Computer Studies teachers (who are also the WSWM teachers) promised to grant them more opportunities to use computers if they joined the project.

In relation to the above argument, the study noted that the use of in-school teachers to deliver the WSWM curriculum was both an advantage and disadvantage to the programme. In-school teachers spend a lot of time with the students putting them in a better position to impart knowledge, monitor the students' behaviour within the school compound and advise where necessary. But having not had any sex education, coupled with lack of comprehensive training in the delivery of reproductive health education and the fact that the primary subjects they teach in school are not health or science-related sometimes made it difficult for these teachers to adequately answer all the students' questions. They have to rely on the expertise from SRH consultants who are not always readily available. This raises the need for more teacher training on SRH issues and how they can pass on the knowledge to their students.

In addition, the students' attitudes towards these teachers also affected their participation in the programme. While all the respondents said they found their WSWM teacher easygoing and interesting, they also revealed that some of their friends stayed away from the

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[92] Reasons why some students have shunned the programme are explained in chapter six.

programme because they did not like the teachers. This feeling hinges on their negative interaction with the teachers in the other subjects they teach.

In response to the question how *are interpersonal and participatory approaches integrated into the programme*, the study noted that peer educators, teachers and SRH consultants act as the interpersonal channels through which these youth can be persuaded to

7.1.2 Factors considered when designing and implementing the WSWM programme

The third research question involved *identifying factors considered when designing and implementing the WSWM project*. It was stated in chapter six that the WSWM programme was developed according to the Intervention Mapping model which entails the use of theory and evidence-based approaches to plan, design, implement and evaluate health promotion campaigns. These steps include: needs assessment/situation analysis, programme objectives, methods and strategies, intervention design, adoption and implementation and evaluation.

This study noted that the WSWM needs assessment revealed a need for a continuous and systematic sex education curriculum not only addressing HIV/AIDS prevention but also bringing about holistic change in an adolescent's sexual life. So in cooperation with a few students, artists and SRH specialists, WPF developed a 14-lesson curriculum to provide youth with SRHR knowledge, promote positive attitudes and behaviour change. The study noted that the WSWM content could have been based on (psycho) social theories like Bandura's Social Cognitive Theory and The Theory of Planned Behaviour that help to explain factors that influence people's behaviour and how sexual behaviour can be changed. However, I argued that the sample used during the WSWM needs assessment (six students from three schools located in the central and eastern regions) was very thin for a programme going to be implemented countrywide. This limited the identification of a variety of SRH needs of youth in different parts of the country especially those in the north that experienced the LRA war.

This study noted that although the content was developed in Uganda, the web and CD-ROM design was done by Butterfly Works and the evaluation by WPF, both based in the Netherland. Meaning that the target audience did not participate in designing the final content format and they were only mere respondents in the evaluation process. Excluding the target audience from any phase of a campaign limits local ownership of the programme yet,

scholars like Mefalopolus (2008) have argued that this inhibits the success of a project. Also, although the evaluation was carried out in 2008, the project implementers had not received the report by the time I completed my research in 2010. Lack of evaluation reports hampers the process of improving the programme since there is a lack of information about the outcomes of the project, the strategies that worked or failed and why.

I established that WPF tried to align the content within Uganda's cultural aspects, especially on issues like homosexuality, which is illegal in Uganda. So homosexuality is merely mentioned in the curriculum as one of the sex orientations but it is not expounded upon. But the fact that it was mentioned also shows that WPF tried to adhere to its basic principles that promote a positive, non-judgemental approach towards sexuality, openness to and acceptance of young people's sexuality and the rights of young people to accurate and correct information and to self-determination in order to make their own responsible choices. While adhering to a community's cultural expectations is important, it is more beneficial to the target audience if matters are discussed in an open and explicit manner. There is a growing gay culture in Uganda, and it has deeply penetrated the school arena[93] so comprehensive discussing such sex orientations in sexuality education is important for the youth.

Despite the low levels of ICT penetration in most schools, the programme developers insisted on making the programme computer-based because they assumed youth would be attracted to the innovation since they love technology. This study noted that majority of the students who joined the programme were attracted by the fact that it is computer-based thus providing a new interactive perspective to learning. The use of a combination of illustrations, colourful presentation of the text and games made learning more fun. This coincides with Lepper and Malone's argument that computers and the Internet have the potential to enhance the learning process because of their interactive and participatory nature that makes 'learning more fun' (1987, quoted in Cooper and Weaver, 2003).

Ironically, this study also noted that majority of the youth did not participate in this programme despite the fact that it is computer-based. This was attributed to their indifference

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[93]See *The Daily Monitor*, 11 February, 2010 '*MP cautions students against AIDS*' at
http://www.monitor.co.ug/News/National/-/688334/859798/-/wi27wp/-/index.html accessed 11 February, 2010.

towards SRH programmes. This means that the mere presence of technology will not entice several youth to join a programme unless its content is linked to their interests.

Finally, I noted that other factors considered during the implementation are the interests of schools, development partners and budgetary considerations.

7.1.3 Evaluating the knowledge, attitudes and skills gained from the WSWM

The WSWM programme mainly seeks to improve the SRH, social and economic development of young people by availing them with SRHR knowledge, life skills (decision making, communication, refusal, negotiation, using health services, buying and using condoms and contraceptives), computer and creative skills in preparation for the modern job market.

In a bid to establish the *knowledge, attitudes and skills* the youth gained from this programme, I compared the outcomes of the WSWM in schools using ICTs and another using manuals. The findings showed that all the youth participating in this programme (irrespective of the channel used to deliver the message) said it had enriched their sexual reproductive knowledge, improved their self-esteem and confidence, taught them how to build and maintain social relationships with different members of the community.

Having this knowledge had enabled the youth in the project overcome myths regarding their sexuality. As noted in chapter seven, apart from deciding to abstain from sex until they completed their education, the respondents also felt that knowing their rights reinforced their determination to avoid engaging in risky sexual behaviour.

In addition, this programme tried to avail the youth with creative skills especially in regard to making posters, writing poems and performing skits. For the students who used computers during the lessons, the programme enabled them fine-tune or learn basic computer skills. They could use programmes like Microsoft Word and PowerPoint and e-mail to communicate. The study has shown that not only did the youth feel they need such skills to ably compete for jobs in the future but society now dictates that they gain these skills. I also argued that the youth were not very conversant with using computers to create artefacts for the exhibitions. This was attributed to lack of the required skills among their teachers, lack of equipment and time.

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The study established that the major difference in the outcomes of this programme between the students who used computers and their counterparts who used manuals was in relation to the computer. The youth using manuals did not gain any basic computer skills (see chapter six). This is a shortfall in one of the programme objectives and it can be overcome by availing the schools with a sufficient number and diversity of technology, equipping teachers with more pedagogical and graphical skills and creating more time for these lessons.

So I argue that the WSWM programme improved the youth's knowledge on SRHR issues and this impacted positively on their attitudes and behaviour. This success is attributed to the diversity in SRHR issues presented in the curriculum, skill-building elements which empower the youth to make right decisions regarding their sexuality and designing the curriculum in an attractive and interactive format. The programme fell short on its goal of imparting computer, design and creative skills. The burden of this shortfall is shared by the project implementers, school administration and the government.

7.1.4 Challenges of using computers and the Internet in SRH education

The previous chapter showed that the student to computer ratio is still high and that when available; the computers are often obsolete (also noted in chapter three). Furthermore, the lack of ICT infrastructure in Nyenga highlights the much talked about rural-urban digital divide which inhibits the diffusion of these technologies in pedagogical practices.

This research revealed that the WSWM teachers' computer literacy skills fall short of enabling the efficient incorporation of computers and the Internet in the pedagogical process. Since SchoolNet Uganda had limited funding, they used teachers who already had at least some basic computer knowledge. The organisation only provided basic computer training for the computer illiterate teachers.[94] This means that the teachers were equipped with resources to teach '*what*' a computer is, not to teach '*with*' a computer. This was reflected in the design of the curriculum where the teachers are expected in their first lesson to teach their students the different parts of the computer and their functions and thereafter in subsequent lessons leave them to browse through the slides on their own. There is no doubt that this improves the

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[94] As noted in chapter six, teachers who were computer literate were not given any training while those without these skills were given basic knowledge on how to use its main parts like the mouse, keyboard, how to type and save work.

students' computer skills but it limits the teachers' role to merely leading the discussions related to the topic. I noted that none of the teachers carried out the learning objectives listed under the computer, design and creative skills component of each lesson. They attributed this to lack of equipment (like digital cameras), materials and time. I argue that the use of ICTs in pedagogical instruction entails equipping the teachers with skills and instructional strategies that focus on making the lessons learner-oriented, facilitate interactivity, participation, group learning, and problem solving. The teachers also need exposure to other modern channels of communication and their classrooms equipped with this technology.

Conversely, I argue that these ICTs may be a distraction for some students during the lessons. This was reflected in the observation that some students with access to the Internet instead surf the web either for entertainment-related programmes or pornography. Others preferred learning how to type or use the different functions on the computer. One of the reasons for this occurrence is the fact that majority of the students prioritise entertainment compared to sex education. In addition, the limited opportunities to access computers and the Internet force them to make use of any time they get even if it's lesson time to fulfil their information needs. This is compounded by the teachers' laid back attitude which encourages the students to engage in various distracting activities. These teachers feel the students are doing them a favour by attending the classes so they do not want to be strict on them.

Another discrepancy highlighted is the difficulty in overcoming the digital gender divide. Findings from this research show that girls have shown less enthusiasm for this project. They accounted for only a third of the project members. And for majority, the fact that it is a computer-based programme was a secondary reason for their participation. According to the respondents, majority of the girls kept away from the programme because they are shy when discussing sexuality matters in the presence of members of the opposite sex, others are already involved in relationships so they think they might be exposed during the discussions and some imagine computers are best used by boys. Related to this, Cooper and Weaver (2003) suggest that there are several psychological factors responsible for dissuading girls from utilising their full potential when it comes to using computers. These include computer anxiety (females experience more anxiety when working with computers than males), the social context surrounding computing classes could have a large impact on the females' behaviour and attitudes (most computing classes are carried out in groups. So their gender

composition, social dynamics will inhibit or facilitate learning). Societal stereotypes that expect girls to perform more poorly at computers lead to poor performance because of the anxiety of knowing that others will interpret their performance through this stereotypic lens. It is important that the above factors are addressed by various stakeholders in order to reduce the gender gap. There is need to ensure that females understand the significance of ICTs in social change and support their access to and use of these technologies. Other challenges to the use of new technologies are presented in section 7.10.

7.2 Implications for Theory

As noted in chapter four, there are no specific theories used in the study of web-based behaviour change campaigns but this study related the theories of development communication and health communication plus Witte's Persuasive Health Framework to explain the viability of using computers, CD-ROMs and the Internet in SRH education.

The WSWM programme registered success in raising awareness about the youths' SRHR issues and changing their behaviour because its designers and implementers incorporated various tenets of the theories mentioned above. These included participation of the target audience (students, teachers and local project implementers) in content formulation and implementation, respecting the indigenous culture and using interpersonal sources. These principles are integral components of the development communication paradigm. However, the fact that the curriculum format was designed in Netherlands and its evaluators based there means that locals were excluded from the two critical stages of a health campaign (methods and strategies, evaluation). In light of the above, it is worth noting that the WSWM project also deviated from Paulo Freire's calls for total participation of the locals in formulating solutions to their problems. The study agrees with Gumucio-Dagron argument that exclusion of the locals from any process of the project limits its sustainability.[95] This is reflected in the findings where some head teachers were referring to the project as '*this thing of yours*' because they had not participated in any steps of the project.

This study showed that the curriculum used relevant and attractive behaviour models and a relatively larger number of efficacy messages than threat messages delivered through

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[95] Check out, '*What can ICTs do for the rural poor*?' at http://www.ifad.org/events/wsis/phase1/presentations/alfonso.htm, accessed 5 January, 2010.

communication channels that appealed to the youth. This was also in line with health communication strategies envisioned by Bandura's social learning theory.

The study showed that the pressure to adopt ICTs hinges on the assumption by proponents of the modernisation theory who suggested that 'development is a matter of technology'. But the study concurs with Gumucio-Dagron that access to technology does not automatically lead to sustainable development.[96] This is because the locals might refuse to use the technology or use it in ways that satisfy their needs (which might deviate from those of the health communicators). I argue that the effective use of ICTs can lead to social change in a community if the locals are involved in the selection of technology that benefits them, in deciding its content and how the technology is used.

But the study notes that paradigms like development communication need to be reoriented to focus on the study of ICTs if these discourses are to facilitate the understanding of the role of these new technologies in human development. Over the years, scholarly literature in the development communication arena has focused on traditional mass media channels like newspapers, radio and television in development (see Hemer and Tufte, 2005; Gumucio-Dagron and Tufte, 2006). Research on ICTs for development has focused on communities' readiness, skills and use of these new technologies but there is still need to study the diverse and more representative samples of youthful ICT users to determine the level of their participation in these communication initiatives, how and why they are adopted and consequences of their interaction with technology.

This research notes that although the above theories were resourceful in guiding the interpretation of the findings, it was difficult to apply some of their principles in the research. It was impossible to classify the WSWM participants according to Rogers' (2003) adopter categories because doing so would require prolonged studies that take time to analyse the activities and backgrounds of the students. Even then, I argue that it would remain a steep challenge to adopt these categories because of some of their overlapping characteristics. So using these categories to guide the implementation of ICT-based projects is a challenge.

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[96] Ibid

7.3 Implications for Policy

The policies analysed in this study include those related to ICT, SRH and the youth. These include but are not limited to the 2005 draft policy on ICTs in Education, 2003 National ICT policy framework, 2001 Rural Communications Development Policy, 1996 National AIDS Control Policy, 2000 National Health Policy, the 2004 National Adolescent Health Policy, 2006 Reproductive Health Policy, School Health Policy and the 1999 National Youth Policy.

Although these policies are aimed at supporting and guiding the efficient service delivery in their particular areas of concern, majority are still in draft form and their stipulations are never turned into action because of financial constraints, limited manpower and infrastructure. For example, despite the several policies calling for the introduction of continuous sex education curricula in schools, this has not been done in many schools.

This study has shown that although the ICT-related policies have had relative success in streamlining the provision of some of these tools in schools, there is need to focus on how they can be effectively integrated in the learning process. Currently, their usage in education can be described as what Bottino (2003) refers to as optional addendums to an unchanging traditional teaching environment.

I also call for the adjustment of other sex education programmes to promote skill development. The WSWM programme has shown that skill development is not only limited to the technical aspects but also social skills (negotiation, refusal and decision making skills). Bottino (2003) adds that other skills that need to be integrated into the learning process include cognitive (how to integrate different knowledge) and relational (how to foster interpersonal capacities, responsibility, co-operation, adaptability and flexibility).

7.4 Recommendations

The study also sought to propose practices that could improve computer-based campaigns. The recommendations stated below are in addition to those highlighted in the sections above.

Think beyond computers and the Internet

Local discussions on ICTs are centred on computers and the Internet but using other technologies like phones (landlines and mainly the short message services (SMS) function on

mobile phones), digital and video cameras can also achieve behaviour change. While school-going youth cannot be reached through mobile phones because they are not allowed to have phones in school, providing them with a toll free phone number which they can call any time and have their queries answered by an SRH expert would increase their knowledge about sexuality matters. In addition, the youth can produce documentaries and videos about topics that affect them like stigmatisation of people living with HIV/AIDS. Involving the youth in creating their own content avails a wealth of data since they speak and act from their personal experience and this gives them ownership over the material.

Link content to changing situations

With ICTs, it is possible to continuously update information to suit new SRH threats or issues. Designing messages for a radio message, uploading new information on a website would be faster and cheaper than creating a newsletter with the same message. The WSWM curriculum is lacking in-depth information about issues like homosexuality, drug abuse and discordance. But on the noble side, a new curriculum for children in primary section (below 12 years) is being developed in partnership with Save the Children and Kyambogo University. The AIDS Support Organisation is also trying to adapt the WSWM curriculum to youth born with HIV.

Networking with different organisations

There is need for research into and sharing of best practices regarding pedagogical instruction using ICTs. For example projects like the WSWM and the Cyber Schools Technology Solution ought to be studied in greater detail to identify how they were designed, implemented and evaluated, what were their effects and why, and what could have been done to improve the results.

7.5 Suggestions for future research

This study has established that despite the fact that the programme was mainly computer-based, many students, especially the females shunned it. While some reasons for their indifference were mentioned in this research, they were not exhausted, so future studies could focus on the non-participants in computer-based projects to provide a detailed analysis of their attitudes towards these programmes.

This programme runs in 150 schools but because of limited time, financial and manpower resources, this study focused on three schools. Another investigation could focus on more schools in different districts especially those in northern Uganda. This would yield a wider insight into the practicality of using ICTs in SRH education.

7.6 Conclusion

These findings show that the inclusion of computers and the Internet in a youth-centred SRHR project drew mixed reactions from its target audience – students and teachers. While the presence of technology was the major pulling force for some youth to participate in the programme, majority of their colleagues shunned it. This means that the mere presence of technology cannot draw youth into participating in SRHR projects. Programme developers need to first reconcile young people's perceptions towards reproductive health education before they can harness the potential of including ICTs in their campaigns. In addition, the content provided by these new technologies should be aligned with the changing youth SRH needs and packaged in an engaging and trendy style. The study noted that the WSWM teachers were not conversant with reproductive health issues, teaching with ICTs and they portrayed some laxity during the lessons. So there is need to equip these teachers with more SRH knowledge and restructure their teaching mechanisms.

In trying to answer my main research objective which is to evaluate the viability of using computers, CD-ROMs and the Internet in SRH education, this study analysed the accessibility, use, relevance and sustainability of the WSWM programme. The study notes that although the programme improved the youths' SRHR knowledge and equipped them with various life skills, it is riddled with various challenges like limited ICT infrastructure, digital divides (both geographical and gender based) and electricity fluctuations. Other challenges include technophobia, apathy towards sex education programmes, financial constraints that limit funding for the projects, lack of manpower and difficulty in aligning the programmes within the school's timetable. Most importantly, if donor-support is withdrawn, the financial sustainability of the WSWM is intangible because most schools already have severe fiscal challenges. The above factors show that the explicit use of these technologies to reach the youth is still elusive. Unless the challenges are addressed soon, the ICTs for development agenda shall remain a mirage to developing nations like Uganda.

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Appendix 1: Districts involved in the WSWM programme in 2009

Key

District boundaries International boundaries

Districts involved in the WSWM programme

X Districts where the research was carried out

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Appendix 2

Pictures taken during the WSWM lessons in the three schools

Figure 2 (a**)** Ms. Mabinda from Nyenga using a chart to show body changes experienced by males and females

Figure 2 (b) Mr. Sekitale guides students of St. Peter's during the WSWM lesson
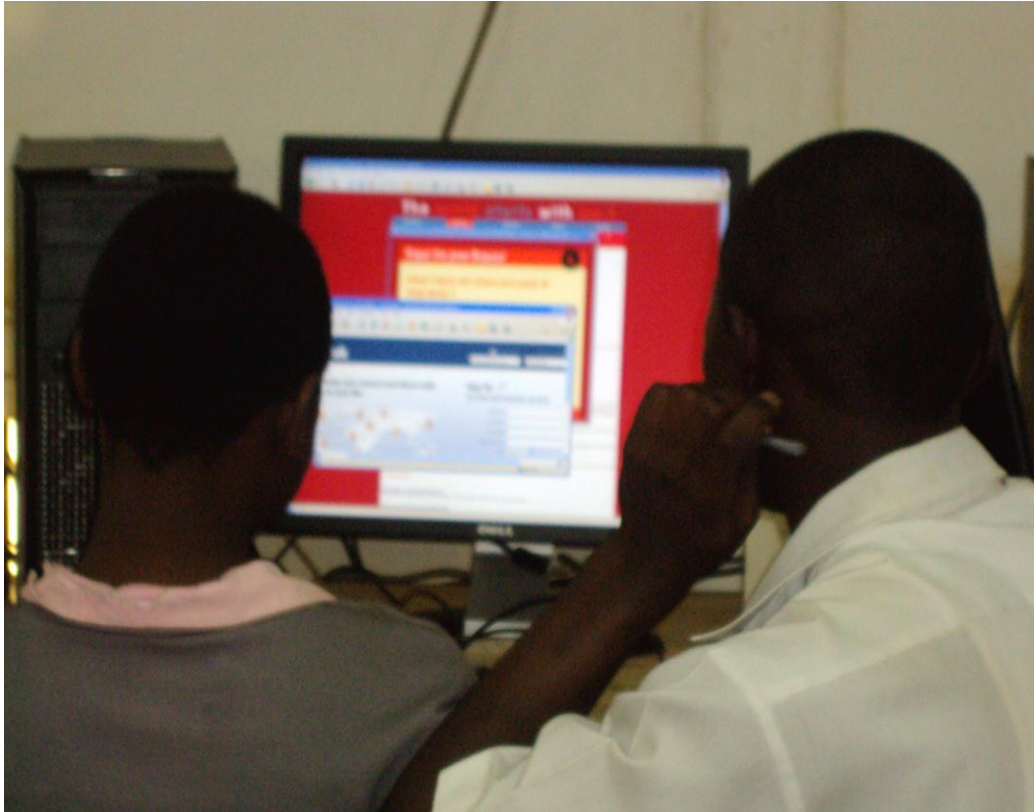
Figure 2(c).Lubiri students logging onto Facebook during the WSWM lesson

Figure 2 (d). A WSWM lesson in Lubiri. The students are perusing through the day's lesson before the discussions begin

(Photos by Maria Roselynn Muzaaki)

Appendix 3: Interview guides

Focus group discussion guide for students using computers and the Internet in the WSWM programme

1. When did you start using computers and the Internet?

2. How do you access these tools?

3. How often do you access them?

4. How do you use them?

5. What factors and features of the Internet and computers affect how you use them?

6. Describe your experience with the WSWM programme.

7. What knowledge, attitudes and skills have you attained from this programme?

8. How effective have computers and the Internet been as tools for promoting behaviour change compared to other mass media channels like newspapers, radios and televisions?

9. What challenges have you encountered while using new technologies to learn about sexual reproductive health?

10. How can these challenges be overcome?

THANK YOU

Interview guide for teachers using the Internet and computers in the WSWM programme

1. What is your role in the designing, implementation and evaluation of the WSWM programme?

2. What skills were you equipped with in preparation for your participation in the programme?

3. How is this programme integrated into the school curriculum?

4. What sexual reproductive issues are predominant in your school?

5. How has the sexual reproductive information delivered through the Internet and computers changed the knowledge, attitudes and behaviour of your students?

6. What are the unique contributions of using the Internet and computers to promote behaviour change compared to other mass media channels like newspapers, radios and televisions?

7. How do the computer literacy levels of your students affect the use of these technologies during the lessons?

8. What problems have you encountered while implementing this programme?

9. How can they be overcome and the project improved?

THANK YOU

Interview guide for SchoolNet Uganda technical staff

1. What factors were considered when designing, implementing and evaluating the WSWM programme?

2. Mention your role in the planning, implementation and evaluation of this programme.

3. What criteria do you use when choosing the schools to participate in the programme?

4. What factors did you consider when deciding the channels (Internet versus CD-ROMs) to use in the particular schools?

5. What is the unique contribution of using these channels to disseminate SRHR information to the youth compared to using print and electronic mass media channels?

6. Why did this project focus on using new technologies in the midst of inadequate ICT infrastructure in schools and the high computer illiteracy levels?

7. Mention some of the challenges encountered while trying to use these new technologies to promote behaviour change among the youth?

8. How can they be overcome?

9. How can ICTs be effectively integrated into the health sector?

10. Have you carried out any evaluation of the programme? If so, what were the outcomes of the assessment?

THANK YOU

Interview guide for other informants (SRH consultants, national peer facilitators and the WPF representative)

1. What are the main sexual reproductive needs among the youth?

2. What is your role in the implementation of the WSWM programme?

3. How often do you visit these schools?

4. Have you undergone any training in connection to your participation in the programme? If so, mention some of these training sessions.

5. What are the benefits of using these technologies in sexuality education compared to other mass media channels like newspapers, radios and televisions?

6. What differences have you noted among the students using manuals and those using ICTs?

7. Mention the challenges encountered in implementing this programme?

8. How can they be overcome?

9. Where do you see the programme in the next four years?

THANK YOU

Interview guide for ministry of education official

1. Why should sexual reproductive health information be delivered in schools?

2. What is your role in the design and implementation of computer-based school campaigns?

3. What factors should be considered when designing, implementing and evaluating such programmes?

4. What initiatives is your ministry implementing in order to support the integration of ICTs in education?

5. What is the unique contribution of using new technologies in sexuality education?

6. What constraints are encountered during the implementation of health campaigns through the Internet and CD-ROMs

7. How can they be overcome?

8. What is your opinion on the argument that developing countries like Uganda are simply adopting new technologies from the west and imposing them in different sectors without assessing their applicability in the local context?

THANK YOU

Appendix 4: List of key informants

1. Forty students from the St. Peter's Secondary School, Nsambya, Lubiri Secondary School and Nyenga Secondary School

2. Mr. Daniel Kakinda, SchoolNet Uganda's Executive Director

3. Ms. Allen Nansubuga, WSWM Technical Coordinator

4. Ms. Winnie Akeso, SRH consultant for Kampala and Arua districts

5. Ms. Sarah Magoba, SRH consultant for Mukono District

6. Mr. Alex Okwaput, WPF consultant

7. Ms. Justine Namaganda, WSWM teacher in Lubiri Secondary School

8. Mr. Frederick Sekitale, WSWM teacher in St. Peter's Secondary School, Nsambya

9. Ms. Bernadette Mabinda, WSWM teacher in Nyenga Secondary School

10. Mr. Robinson Nsumbalyazi, the coordinator of ICT activities in the Education Ministry

11. Mr. Charles Buwembo, National Peer Educator

12. Ms. Gloria Mupa, National Peer Educator

Appendix 5: Facts about Uganda

Uganda is a landlocked country located in East Africa and bordered by Kenya, Tanzania, Sudan, DR Congo and Rwanda.

Capital city: Kampala

Administrative divisions: By 1 July, 2010, the country will be divided into 99 districts each governed by a local government[97].

Total land area: 241, 038sq.Km of which 197, 100sq Km is covered by land and 43, 938sq Km by water.

Population

- Over 32 million people[98], majority of whom live in rural areas and engage in agricultural activities.

- Life expectancy for men is at 52.8 years and women 54.1 years

- Fertility rate is at 6.2%

- The median age is 15.

Climate: Good tropical climates with dry seasons that run from December to February and June to August

Languages: English is the official national language but other widely spoken languages include *Luganda* and Swahili plus other bantu and nilotic languages.

Literacy: A total of 66.8% Ugandans are literate (2002 census). 76.8% are male and 57.7 female.

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[97] *The New Vision*, 9 February, 2010, '*Districts to elect chairpersons'* at http://www.newvision.co.ug/D/8/13/709626/New%20Districts%20to%20Elect%20Chairpersons, accessed 6 March, 2010.
[98]*The New Vision*, 25 November, 2009, '*Uganda population now at 33 million*,' at http://www.newvision.co.ug/D/8/12/702385/population%20growth%20in%20Uganda, accessed 6 March, 2010.

Religion: Over 80% are Christians and about 12% are Muslims.

Economic indicators: Economic growth stands at 6.5% of GDP in 2009.[99]

Other sources: CIA at https://www.cia.gov/library/publications/the-world-factbook/geos/ug.html, accessed 6 March, 2010.

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[99] *The Daily Monitor*, 5 March, 2010, '*Government accused of fabricating economy growth figures – report*,' at http://www.monitor.co.ug/News/National/-/688334/873390/-/wj61n9/-/index.html, accessed 6 March, 2010.