

Volume

3

Understanding Impact



United Nations
Educational, Scientific and
Cultural Organization



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Foreword

With the unrelenting spread of HIV, the AIDS epidemic has increasingly become a significant problem for the education sector. In the worst affected countries of East and Southern Africa there is a real danger that Education for All (EFA) goals will not be attained if the current degree of impact on the sector is not addressed. Even in countries that are not facing such a serious epidemic, as in West Africa, the Caribbean or countries of South-East Asia, increased levels of HIV prevalence are already affecting the internal capacity of education systems.

Ministries of education and other significant stakeholders have responded actively to the threats posed by the epidemic by developing sector-specific HIV and AIDS policies in some cases, and generally introducing prevention programmes and new courses in their curriculum. Nevertheless, education ministries in affected countries have expressed the need for additional support in addressing the management challenges that the pandemic imposes on their education systems. Increasingly, they recognize the urgent need to equip educational planners and managers with the requisite skills to address the impact of HIV and AIDS on the education sector. Existing techniques have to be adapted and new tools developed to prepare personnel to better manage and mitigate the impact of the pandemic.

The present series was developed to help build the conceptual, analytical and practical capacity of key staff to develop and implement effective responses in the education sector. It aims to increase access for a wide community of practitioners to information concerning planning and management in a world with HIV and AIDS; and to develop the capacity and skills of educational planners and managers to conceptualize and analyze the interaction between the epidemic and educational planning and management, as well as to plan and develop strategies to mitigate its impact.

The overall objectives of the set of modules are to:

- present the current epidemiological state of the HIV pandemic and its present and future impact;
- critically analyze the state of the pandemic in relation to its effect on the education sector and on the Education for All objectives;
- present selected planning and management techniques adapted to the new context of HIV and AIDS so as to ensure better quality of education and better utilization of the human and financial resources involved;
- identify strategies for improved institutional management, particularly in critical areas such as leadership, human resource management and information and financial management;
- provide a range of innovative experiences in integrating HIV and AIDS issues into educational planning and management.

By building on the expertise acquired by UNESCO's International Institute for Educational Planning (IIEP) and the EduSector AIDS Response Trust network (originally the Mobile Task Team [MTT] on the impact of HIV/AIDS on education) through their work in a variety of countries, the series provides the most up-to-date information available and lessons learned on successful approaches to educational planning and management in a world with AIDS.

The modules have been designed as self-study materials but they can also be used by training institutions in different courses and workshops. Most modules address the needs of planners and managers working at central or regional levels. Some, however, can be usefully read by policy-makers and directors of primary and secondary education. Others will help inspectors and administrators at local level address the issues that the epidemic raises for them in their day-to-day work.

Financial support for the development of modules and for the publication of the series at IIEP was provided by the UK Department for International Development (DFID) and the Joint United Nations Programme on HIV/AIDS (UNAIDS).

The Mobile Task Team (MTT) on the impact of HIV/AIDS on education, based at HEARD at the University of KwaZulu-Natal from 2000 to 2006, was funded by the United States Agency for International Development (USAID). The EduSector AIDS Response Trust, an independent, non-profit Trust was established to continue the work of the MTT in 2006.

The editing team for the series comprised Peter Badcock-Walters, and Michael Kelly for the MTT (now ESART), and Françoise Caillods, Lucy Teasdale and Barbara Tournier for the IIEP. The module authors are grateful to Miriam Jones for carefully editing each module. They are also grateful to Philippe Abbou-Avon of the IIEP Publications Unit for finalizing the layout of this series.

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Volume 3: Understanding Impact

Supporting policy development and implementation requires a detailed understanding of the issues influencing people and organizations. In volume 3, you will begin to look at what it means to collect data and information to inform the actions your ministry will undertake and to improve on what has been implemented.

Learner's guide	7
List of abbreviations	11
MODULE 3.1: ANALYZING THE IMPACT OF HIV/AIDS IN THE EDUCATION SECTOR	17
 Aims	18
 Objectives	18
 Questions for reflection	19
 Introductory remarks	21
1. Objectives of impact assessment	23
Scope of impact assessment and data collection	23
2. Methodology	28
Projections (using new or existing sources of data)	28
3. Presenting results	39
 Summary remarks	43
 Lessons learned	44
 Answers to activities	45
 Bibliographical references and additional resource materials	48
MODULE 3.2: HIV/AIDS CHALLENGES FOR EDUCATION INFORMATION SYSTEMS	51
 Aims	52
 Objectives	52
 Questions for reflection	53
 Introductory remarks	54
1. Impact of HIV and AIDS on education	57
2. Annual data collection processes	61
3. The need for complementary and local-level EMIS	62

4. District-level education management and monitoring information system (DEMMIS)	63
5. Data availability and reporting options	65
6. DEMMIS implementation planning	67
7. Prerequisites for successful DEMMIS implementation	71
8. Management checklist	73
 Summary remarks	75
 Lessons learned	76
 Answers to activities	77
 Appendix	83
 Bibliographical references and additional resource materials	86
MODULE 3.3: QUALITATIVE RESEARCH ON EDUCATION AND HIV/AIDS	89
 Aims	90
 Objectives	90
 Questions for reflection	91
 Introductory remarks	92
1. Conducting qualitative research to better manage the situation	94
2. Collecting, processing and analyzing qualitative data in the context of education and HIV/AIDS	100
3. Associating qualitative and quantitative research	109
 Summary remarks	113
 Lessons learned	114
 Answers to activities	117
 Bibliographical references and additional resource materials	121
MODULE 3.4: PROJECTING EDUCATION SUPPLY AND DEMAND IN AN HIV/AIDS CONTEXT	125
 Aims	127
 Objectives	127
 Questions for reflection	128
 Introductory remarks	129

1. Using projections, forecasting, simulation models and scenario building	130
2. Simulation models: projecting enrolments	134
3. Simulation models used in education	136
4. Supply and demand in projections and simulations: taking HIV and AIDS into account	138
5. The bigger picture: what are the strengths and limitations of a simulation model?	142
6. Types of education models	143
7. Incorporating HIV and AIDS into education models	145
8. Integrating the impact of HIV and AIDS on teachers in the simulation model	147
 Summary remarks	150
 Lessons learned	151
 Answers to activities	152
 Appendix	153
 Bibliographical references and additional resource materials	158
Useful links	159
HIV and AIDS glossary	163
The series	169

Learner's guide

by B. Tournier

This set of training modules for educational planning and management in a world with AIDS is addressed primarily to staff of ministries of education and training institutions, including national, provincial and district level planners and managers. It is also intended for staff of United Nations organizations, donor agencies, and non-governmental organizations (NGOs) working to support ministries, associations and trade unions.

The series is available to all and can be downloaded at the following web address: www.unesco.org/iiep. The modules have been designed for use in training courses and workshops but they can also be used as self-study materials.

Background

HIV and AIDS are having a profound impact on the education sector in many regions of the world: widespread teacher and pupil absenteeism, decreasing enrolment rates and a growing number of orphans are increasingly threatening the attainment of Educational for All by 2015. It is within this context, that the series aims to heighten awareness of the educational management issues that the epidemic raises for the education sector and to impart practical planning techniques. Its objective is to build staff capacity to develop core competencies in policy analysis and design, as well as programme implementation and management that will effectively prevent further spread of HIV and mitigate the impact of AIDS in the education sector.

The project started in 2005 when IIEP and MTT (the Mobile Task Team on the Impact of HIV and AIDS on Education), now replaced by ESART, the Education Sector AIDS Response Trust, brought together the expertise of some 20 international experts to develop training modules that provide detailed guidance on educational planning and management specifically from the perspective of the AIDS epidemic. The modules were developed between 2005 and 2007; they were then reviewed, edited and enriched to produce the five volumes that now constitute the series.

Each situation is different

Examples are used throughout the modules to make them more interactive and relevant to the learner or trainer. A majority of these examples refer to highly impacted countries of southern Africa, but others are drawn from the Caribbean, where high HIV prevalence levels have frequently been documented. Each epidemiological situation is different: the epidemic affects a particular country differently depending on its traditions and culture, and on the specific educational and socio-economic problems it faces. Understanding this, the strategies and responses you adopt will need to be context-specific. The suggestions offered in this set of modules constitute a checklist of points for you to consider in any response to HIV and AIDS.

In some countries, different ministries are in charge of education in addition to the ministry of education. For example there may be a separate ministry of higher education, or a ministry for technical education. For clarity, we shall use the terms ministry of education when referring to all education ministries dealing with HIV and education matters.

Structure of the series

This series contains 22 modules, organized in five volumes. There are frequent cross-references between modules to allow trainers and learners to benefit from linkages between topics. HIV and AIDS fact sheets and an HIV and AIDS knowledge test can be found in Volume 1 to allow you to review the basic facts of HIV transmission and progression. At the end of all the volumes is a section of reference tools including a list of all the web sites and downloadable resources referred to in the modules, as well as an HIV and AIDS glossary.

The volumes

Not all modules will be of relevance or interest to each learner or trainer. Five core modules have been identified in Volume 1. It is recommended that you read and complete these before choosing the individual study route that best serves your professional and personal needs.

Volume 1, *Setting the Scene*, gives the background to how HIV and AIDS are unfolding in the larger society and within schools. HIV and AIDS influence the demand for education, the resources available, as well as the quality of the education provided. The different modules should allow you to assess better the impact of HIV and AIDS on education and on development, and will allow you to understand the environment in which you are working before articulating a response.

Volume 2, *Facilitating Policy*, helps you to understand how policies and structures within the ministry promote and sustain actions to reduce HIV-related problems in the workplace and in the education sector. Supporting policy development and implementation requires a detailed understanding the issues influencing people and organizations with regards to HIV and AIDS.

In **Volume 3, *Understanding Impact***, you will assess the need to gather new data to understand the impact of HIV and AIDS on the education system in order to inform policy-making. You will then learn different approaches to collecting and analyzing such data.

Volume 4, *Responding to the Epidemic*, will provide you with concrete tools to help you plan and implement specific actions to address the challenges you face responding to HIV and AIDS. It will prepare you to prioritize your actions in key areas of the education sector.

The last volume in the series, **Volume 5, *Costing, Monitoring and Managing***, focuses on costing and funding your planned response, monitoring its evolution and staying on target. The management checklist at the end provides you with a comprehensive framework to advocate, guide and inform the planning and management of your HIV and AIDS response.

The modules

Each module has the same internal structure, comprising the following sections:

- **Introductory remarks:** Each author begins the module by stating the aims and objectives of the module and making general introductory remarks. These are designed to give you an idea of the content of the module and how you might use it for training.
- **Questions for reflection:** This section is to get you thinking about what you know on the topic before launching into the module. As you read, the answers to these questions will become apparent. Some space is provided for you to write your answers, but use as much additional paper as necessary. **We recommend that you take time to reflect on these questions before you begin.**
- **Activities and Answers to activities:** The activities are an integral part of the modules and have been designed to test what you know as well as the new knowledge you have acquired. It is important that you actually do the exercises. Each activity is there for a specific reason and is an important part of the learning process.

In each activity, space has been provided for you to write your answers and ideas, although you may prefer to make a note of your answers in another notebook. You will find the answers to the activities at the end of the module you are working on. However, in some cases, the activities and questions may require country-specific information and do not have a 'right' or 'wrong' answer (e.g. "Explain how your ministry advocates for the prevention of HIV"). As much as possible, sources are suggested where you could find this information.
- **Summary remarks/Lessons learned:** This section brings together the main ideas of the module and then summarizes the most important aspects that were presented and discussed.

- **Bibliographical references and resources:** Each author has listed the cited references and any additional resources appropriate to the module. In addition to the cited documents, some modules provide a list of web sites and useful resources.

Teaching the series: using the modules in training courses

As stated above, these modules are designed for use in training courses or for individual use.

Trainers are encouraged to adapt the materials to their specific context using examples from their own country. These examples can be usefully inserted in a presentation or lecture to illustrate points made in the module and to facilitate an active discussion with the learners. The objective is to assist learners to reflect on the situation in their own country and to engage them with the issue.

A number of activities can also be carried out in groups. The trainer can use answers provided at the back of the modules to add on to the group reports at the end of the exercise. In all cases, the trainer should prepare the answers in advance as they may require country-specific knowledge.

The bibliographic references can also provide useful reading lists for a particular course.

Your feedback

We hope that you will appreciate the modules and find them useful. Your feedback is important to us. Please send your feedback on any aspect of the series to: hiv-aids-clearinghouse@iiep.unesco.org - it will be taken into account in future revisions of the series. We look forward to receiving your comments and suggestions for the future.

Enjoy your work!

List of abbreviations

ABC	Abstain, be faithful, use condoms
ACU	AIDS control unit
ADEA	Association for the Development of Education in Africa
AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral therapy
ARV	Antiretroviral
BCC	Behaviour change communication
BRAC	Bangladesh Rural Advancement Committee
CA	Cooperating Agency
CAER	Consulting Assistance on Economic Reform
CBO	Community-based organization
CCM	Country Coordination Mechanisms (Global Fund)
CDC	Centers for Disease Control and Prevention
CRC	Convention on the Rights of the Child
CRS	Catholic Relief Services
DAC	Development Assistance Committee (OECD)
DEMMIS	District education management and monitoring information systems
DEO	District education office
DFID	Department for International Development
DHS	Department of Human Services
EAP	Employee assistance programmes
ECCE	Early childhood care and education
EDI	EFA Development Index
EdSida	Education et VIH/Sida
EFA	Education for All
EMIS	Education management information system
ESART	Education Sector AIDS Response Trust
FAO	Food and Agricultural Organization
FBO	Faith-based organization
FHI	Family Health International
FRESH	Focusing Resources on Effective School Health
FTI	Fast Track Initiative

GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GIPA	Greater Involvement of People living with or Affected by HIV and AIDS
HAART	Highly active antiretroviral therapy
HAMU	HIV and AIDS Management Unit
HBC	Home-based care
HDN	Health and Development Networks
HFLE	Health and family life education
HIPC	Highly indebted poor countries
HIV	Human Immunodeficiency Virus
HR	Human resources
IBE	International Bureau of Education
ICASA	International Conference on HIV/AIDS and Sexually Transmitted Infections in Africa
ICASO	International Council of AIDS Service Organizations
IDU	Injecting drug user
IEC	Information, Education, and Communication
IFC	International Finance Corporation
IIEP	International Institute for Educational Planning
ILO	International Labour Organization
INSET	In-service education and training
IPPF	International Planned Parenthood Federation
KAPB	Knowledge, attitudes, practices and behaviour
M&E	Monitoring and evaluation
MAP	Multi-Country AIDS Program (World Bank)
MDG	Millennium Development Goals
MIS	Management information system
MLP	Medium-to-large-scale project
MoBESC	Ministry of Basic Education, Sport and Culture
MoE	Ministry of education
MoES	Ministry of Education and Sports
MoHETEC	Ministry of Higher Education, Training and Employment Creation
MSM	Men who have sex with men
MTEF	Medium-term expenditure framework
MTCT	Mother-to-child transmission
MTT	Mobile Task Team (MTT) on the Impact of HIV and AIDS on Education

NAC	National AIDS Council
NACA	National AIDS Co-ordinating Agency
NDP	National Development Plan
NFE	Non-formal education
NGO	Non-government organizations
NTFO	National Task Force on Orphans
OOSY	Out-of-school youth
OVC	Orphans and vulnerable children
PAF	Programme Acceleration Funds (UNAIDS)
PEAP	Poverty Eradication Action Plan
PEP	Post-Exposure Prophylaxis
PEPFAR	(US) President's Emergency Plan for AIDS Relief
PMTCT	Prevention of mother-to-child transmission
PREP	Pre-exposure prophylaxis
PRSP	Poverty reduction strategy paper
PSI	Population Services International
PTA	Parent-teacher association
SACC	South African Church Council
SAfAIDS	Southern Africa HIV and AIDS Information Dissemination Service
SGB	School governing body
SIDA	Swedish International Development Cooperation Agency
SMT	School management team
SP	Smaller project
SRF	Strategic response framework
SRH	Sexual and reproductive health
STI	Sexually transmitted infection
TB	Tuberculosis
TOR	Terms of reference
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
UNDG	United Nations Development Group
UNDP	United Nations Development Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFPA	United Nations Population Fund
UNGASS	United Nations General Assembly Special Session on HIV/AIDS

UNICEF	United Nations Children's Fund
UP	Universal precautions
UPE	Universal primary education
USAID	United States Agency for International Development
VCCT	Voluntary (and confidential) counselling and testing
VCT	Voluntary (HIV) counselling and testing
VIPP	Visualization in participatory programmes
WCSDG	World Commission on the Social Dimensions of Globalization
WHO	World Health Organization
WV	World Vision

Module

A. Kinghorn

3.1

Analyzing the impact of HIV/AIDS in the education sector

About the author

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Module 3.1

..... ANALYZING THE IMPACT OF
HIV/AIDS IN THE EDUCATION SECTOR

Table of contents

-  **Questions for reflection**
-  **Introductory remarks**
- 1. Objectives of impact assessment**
 - Scope of impact assessment and data collection
- 2. Methodology**
 - Projections (using new or existing sources of data)
 - Surveys
 - Behavioural surveillance
 - Biological surveillance – HIV seroprevalence testing
 - Qualitative research
 - Costing and economic evaluations
 - Dealing with uncertainty
- 3. Presenting results**
 - Key considerations for impact assessment presentations and reports
-  **Summary remarks**
-  **Lessons learned**
-  **Answers to activities**
-  **Bibliographical references and additional resource materials**



Aims

The aim of this module is to familiarize learners with the issues and options involved in conducting assessments of the impacts of HIV and AIDS on the education sector. The module also prepares learners to develop strategies that are appropriate to fulfil their objectives for an assessment.



Objectives

At the end of the module you should be able to:

- understand the role that impact assessments can play in programme development, advocacy and policy-making and planning;
- structure the assessment to focus on the issues that are most important to your work and the intended or anticipated results;
- choose an appropriate methodology to use when conducting an impact assessment;
- identify the sources of key data, information, and issues on HIV and AIDS and their impact on education;
- identify the key HIV and AIDS impact parameters that should be assessed in their own contexts;
- recognize the risks of uncertainty in conducting assessments and interpreting results.

Before you begin...



Questions for reflection

Take a few minutes to think about the questions below. You may find it helpful to make a note of your ideas in the spaces provided. As you work through the module, see how your ideas and observations compare with those of the author.

What is an impact assessment of HIV and AIDS on the education sector?

Name some objectives that your ministry or institution might have when conducting an impact assessment.

What data or information would you want to collect to structure your assessment?
How would you collect it?

Do the education sector or education institutions in your country have sufficient information and data to develop an evidence-based, prioritized response to HIV and AIDS? What are the critical information gaps?

What role can impact assessments play in advocating new policy measures in the education sector with respect to HIV and AIDS?

Module 3.1

..... ANALYZING THE IMPACT OF
HIV/AIDS IN THE EDUCATION SECTOR



Introductory remarks

HIV and AIDS impact assessments have been widely used in recent years as a way to mobilize responses to HIV and AIDS in the education sector and to refine planning in responses to HIV and AIDS.

Traditionally, education sector impact assessments have covered two main areas:

- Internal or supply-side impact reflects the susceptibility and vulnerability of sector employees and also the vulnerability of education delivery due to HIV and AIDS.
- External or demand side impact reflects the impact on the demand for education services, ranging from changes in the expected numbers of children requiring education to the different needs of learners, for example prevention skills or support for orphans and vulnerable children (OVC).

Impact assessments and monitoring activities are likely to be most relevant in countries where there is a high prevalence of HIV and AIDS. However, they are also relevant in high prevalence areas of countries where the overall epidemic is less severe. Issues raised by this module may also be useful to guide situation analyses, or monitoring and evaluation frameworks for prevention and care in specific circumstances of low-prevalence countries.

Much of the response to HIV and AIDS in the education sector is based on understanding gained from impact assessments or studies of particular dimensions of impact. However, analysis of impact is often criticized for shortcomings. These include:

- the cost of assessments;
- the time required and possible delays when finalizing results;
- studies with results that are too shallow or too comprehensive and detailed for some key uses;
- the perception that studies confirm what is known already;
- methodological limitations and debates;
- limited ability to provide 'the answer' for HIV and AIDS programmes and simplify challenges;

- further detailed planning and budgeting is often required after an impact assessment; and
- failure to lead to action.

In this module, the process of setting up an education sector impact assessment is presented. The objectives, scope and methodologies are explored, focusing particularly on what data your ministry should collect in order to achieve the objectives of your assessment and how you can use it effectively to influence stakeholders and partners within the education sector.

This module should be studied in conjunction with [Module 1.2](#) - *The HIV/AIDS challenge to education*, [Module 3.2](#) - *HIV/AIDS challenges for education information systems*, [Module 3.3](#) - *Projecting education supply and demand in an HIV/AIDS context*, and [Module 5.3](#) - *Project design and monitoring*

1. Objectives of impact assessment

Impact assessments provide **information to guide better planning and management**. The objectives of an impact assessment and the questions that need to be answered will influence the type of information that should be collected and the methodology employed.

Impact assessments are often intended to **strengthen advocacy** around HIV and AIDS. This advocacy may aim to stimulate or strengthen mainstreaming of HIV and AIDS into the strategies and actions of the education sector or of other partner sectors to address various aspects of impact. Typically, top leadership/management is targeted by advocacy initiatives as they are the decision-makers who have the greatest ability to act and/or introduce change.

Various limitations of available data and information often impede planning efforts to confront HIV and AIDS within education systems. These limitations in information include:

- types and size of impacts (on education sector employees, service delivery and needs, quality, access, gender equity, programmes, policies e.g. EFA);
- susceptibility and vulnerability of staff or learners; and
- adequacy of responses to HIV and AIDS.

Before beginning an impact assessment of any kind, you must have clear objectives. It must be decided what the ultimate goal of the study is. The goal of such assessments is to understand how HIV and AIDS is impacting systems internally (on the health of employees, on their vulnerability) and externally (on the learners). It is helpful to ask yourself, *are you interested in improving data collection to improve planning and procedures within the ministry, or are you interested in using the study to advocate more support to schools and teachers?* These are just examples of things that you should think about before launching any assessment of HIV and AIDS. Once the objectives are clear, choosing the scope and methodology will be easy.

Scope of impact assessment and data collection

Once you have clearly decided your objectives, you can decide on the scope or range of your impact assessment. Impact assessment can involve collecting information on a wide range of HIV and AIDS issues that influence an education system in different ways. Table 1 highlights information that can be generated to assess impact within the education sector.

Collecting detailed information on all these areas can often be demanding. Therefore, as stated above, it is important to decide in advance the objectives and the priority questions to be answered in order to ensure that resource requirements and the length of time of the assessment are appropriate.

HIV and AIDS are often not the only, or necessarily the biggest, challenges to education systems. There has been increasing emphasis on ensuring that the

scope of impact studies includes obtaining data to contextualize HIV and AIDS impacts in relation to:

- other education and development policies, i.e. Education for All, workplace policies;
- other challenges to education apart from HIV and AIDS, such as poverty and learner vulnerability, or general staff attrition or absenteeism.

Including the above issues in impact assessments is important as:

- HIV and AIDS-related needs compete with other needs for resources. Prioritization and resource allocation must therefore be based on a sound understanding of the types and size of challenges facing education;
- responses can be designed with a more holistic approach that takes advantage of potential synergies between responses to HIV and AIDS and other challenges. For example, measures to address attrition due to HIV and AIDS may be relevant to other important causes of attrition, and *vice versa*.

Table 1: HIV and AIDS information that can be generated to assess impact.

	Risk of HIV infection, illness and death (Susceptibility)	Impact of illness and death (Vulnerability of individuals or system)
Internal impact on employees and on the delivery of education	<p>a) Employee susceptibility Factors putting staff at risk of HIV infection, e.g. conditions of employment, insufficient HIV-related knowledge Levels of infection among staff Employee illness & death rates Current situation & future scenarios</p>	<p>a) Implications for employees Welfare of infected or affected employees</p> <p>b) Implications for delivery of education services Costs or disrupted delivery related to e.g. absenteeism, training, pension, death or medical benefits, vacancies, work disruption etc. Effects on quality & productivity Teacher training/staffing implications Critical vulnerabilities e.g. certain posts/skills groups/processes</p> <p>c) Factors that increase vulnerability Limitations of HR management & development systems</p>
External impact on learners and the needs to be met by education systems	<p>a) Learner susceptibility to HIV infection E.g. risks due to low HIV-related knowledge or skills, unsafe school environments and community circumstances Expected numbers of infected & sick learners</p> <p>b) Expected trends in school-age population growth</p>	<p>a) Implications for infected or affected learners/OVC Material deprivation, stress and other obstacles to learners' development and rights</p> <p>b) Implications for education and development goals Access, enrolment and performance Loss of investment in education</p> <p>c) Factors that increase vulnerability Fees, regulations or other factors Limitations of support systems in education or its partners</p>

The scope of work of impact assessments will also often cover several cross-cutting or generally applicable themes. These include:

- **Gender issues:** By investigating how men, women, boys and girls are all affected by the impacts you choose to analyze, you can see differences in risk and as a result better target these groups when developing response measures. For example, women can often be affected by HIV and AIDS more than men as they must care for ill relatives or raise orphans of family members, while a boy might have to leave school to work should he become the oldest male in his family due to AIDS.
- **Rights of infected and affected people:** The International Declaration of Human Rights states that all people have rights to health and well-being, education, and recognition before the law. HIV and AIDS raise many specific issues in relation to the rights of infected and affected people in institutions and communities. Using impact assessments to analyze how these rights are upheld or denied could be an effective tool for advocacy and is often needed to guide planning in critical areas.
- **Option appraisal:** This explores which responses are the highest priority, and the most feasible, efficient and cost-effective options for responses. Option appraisal could, for example, assess the 'affordability' and effectiveness of different ways to provide antiretrovirals (ARVs) for employees. The number and types of options that should, or can, be investigated will often be influenced by whether guidance is being sought for an initial, general strategy or to refine existing strategies and planning.
- **Response analysis:** This can involve evaluating existing HIV and AIDS response programmes and/or coping strategies in education and its partner sectors, as well as responses in human resources (HR) and other areas of management and planning.
- **Recommendations:** These can be relatively 'high-level' strategic recommendations, or they may be more specific, relating to 'micro' aspects or particular components of the response, depending on the requirements of the sector. To promote mainstreaming, it may be useful to identify particular recommendations for specific education sub-sectors and components, not only the HIV and AIDS programme and unit. For example, if one response programme involves creating voluntary, counselling, testing and support networks for teachers, perhaps the recommendation could be for teacher training colleges to conduct similar programmes. Keep recommendations realistic and prioritize them to avoid an overwhelming list. It is important to remember that recommendations, initiatives and policies must be flexible enough. They cannot assume that all institutions can or should respond in exactly the same way.

There are several other issues to consider when deciding the scope and depth of any impact assessment.

- **The education components and/or sectors to be covered in the assessment:** Which level of the system interests your assessment? (schooling, higher education, teacher education, management).
- **Whether the assessment is to have a developmental or a HIV and AIDS-specific focus.**
- **The level of analysis: Will your study produce analyses at a regional, district or national level?** This should be decided when determining what information the assessment will focus on and analyze. This depends on

your questions. For example, it should be noted that aggregated national-level data can hide important impacts in certain districts, and small samples of schools or districts may over- or under-represent impact.

- **Finality and detail of recommendations intended for the assessment.** Recommendations may be developed further through a follow-on process once key information is available.
- **The time and resources available to conduct the assessment.**
- **Whether the assessment is largely operational/action-orientated or academic research.**

And finally, with regard to scope, increasing attention is being given to more targeted investigations of:

- specific impact areas and uncertainties that need more accurate information to facilitate planning decisions, such as a better understanding of orphans' school attendance and dropout;
- specific intervention options, in order to appraise the feasibility, effectiveness and cost effectiveness of the various options for response management.

2. Methodology

Several different methodologies can be useful in providing data and information for assessments on HIV and AIDS impact and related issues. The choice of methodology will depend on factors such as the types of questions the study has to answer, and data availability and reliability. For most assessments, a mix of methodologies (triangulation) is likely to be desirable. In this module we will look at the following methods:

- Projections (using new or existing sources of data)
- Surveys
- Behavioural surveillance
- Biological surveillance – HIV seroprevalence testing
- Qualitative research
- Costing and economic evaluation

Projections (using new or existing sources of data)

A projection is a means of extrapolating on the basis of past trends. They do not attempt to predict what will happen in the future; they only present what would happen if certain conditions prevailed. In the case of HIV and AIDS, projections provide an idea of current and future levels of infection, death and illness among education sector employees, as well as of the number of orphans in the population. Projections can also help to provide estimates of current and future teacher supply and demand, as well as cost or other implications of ARV treatment for education sector employees. Most importantly, however, projections can be used to guide decision making for implementing policy and response programmes.

Projections are made using models. These models are often calibrated, or adjusted, using HIV prevalence survey data taken mainly from antenatal clinics but also from other sources where available. Similarly, projections can be checked against illness and death/attrition data, for example among education sector employees.

However, it should be noted that these sources of data may not always provide a very accurate picture of infection rates and other impacts in a workforce or even a country's population. Modelling involves many assumptions. It is important to be careful when working with projections as there may be uncertainties about the accuracy of projections, and this may lead to inappropriate responses.

To reduce the risk of such inappropriate responses, researchers can try one of two approaches.

- The first is to improve the data used to calibrate the projections, and then to improve the information that tracks whether the projections are being confirmed or contradicted by reality so that adjustments can be made.
- The use of scenarios, or scenario building, and sensitivity analysis is a second important approach. These assess how important key uncertainties are, and thus whether projections seem adequately reliable or too hazardous as a basis for planning decisions. Scenarios and

sensitivity analyses are produced by changing important assumptions used in modelling (within a realistic range of estimates). Simple scenarios can be produced using excel spreadsheets. For example, they may ask “What if the level of HIV infection is 18 per cent or 12 per cent, not 15 per cent” or “How many staff would require funding for ARV treatment if only half, not all, actually have access to ARV treatment?” The new results will help to assess whether the resulting policy and planning decisions would be very different and thus avoid the risk of making the decision before better information is available. This type of projection tends to be most useful where levels of impact are expected to change substantially.

Overall, projections provide guidance for planning and advocacy. But projections should always be used with due understanding and consideration of their limitations. Whether a particular set of projections is accurate enough to assure a policy decision depends on the particular policy decision to be taken. Furthermore, their feasibility should be assessed for each type of planning and policy decision.

It is important to note that in many cases it may not be advisable to spend large resources to produce new, customized demographic projections for an education sector impact study. For example, it may be unlikely that greater accuracy will change key planning decisions. Or it may be that new projections will probably be as unreliable as existing general population projections due to a lack of key calibration data (for more information on projection models see [Module 3.3, Projecting education supply and demand in an HIV/AIDS context](#)).

Utilizing existing data to assess impacts and trends can be less costly than primary data collection. Routine data from EMIS, payroll, pension fund, other HR databases, DEMMIS and informal district information systems can be used to ascertain key information, particularly on enrolment trends and patterns as well as staff and personnel deaths, retirement and other attrition.

Initially, the availability and reliability of these data may be problematic, and this must be considered when opting for this approach and interpreting results. But use of routine data can lead to strengthening of basic information systems. This strengthening can have spin-off benefits and allows for better ongoing monitoring and management of impact.

Surveys

School surveys (that is, specific surveys of samples of schools) are often employed to assess the nature and extent of a range of HIV and AIDS impacts and responses in education. However, there are several challenges to using surveys for impact assessment. These include

- ensuring an adequate sample size and avoiding selection bias;
- ensuring quality of collected data, particularly around sensitive issues or taboo subjects;
- assuring validity of subject responses;
- assuring data analysis is sufficient to identify issues and associations with rigour.

A limitation of school surveys is that they do not reach out-of-school populations. However, other surveys (e.g. demographic and health surveys (DHS) or alternative

population-based/household surveys) or their datasets can add information, such as numbers of orphans.

Behavioural surveillance

Behavioural surveillance involves the development of standardized questionnaires for staff and/or learners to generate indicators of knowledge, attitudes, practices and behaviour (KAPB) that can then be measured and monitored over time.

The objectives of KAPB studies include:

- identifying knowledge gaps;
- identifying existing behaviours (which include risky behaviour, e.g. frequently changing sexual partners, condom use, etc.);
- identifying cultural and other practices (e.g. wife inheritance);
- identifying attitudes and beliefs (which includes staff/learners' views on HIV and AIDS);
- identifying key groups, situations or risk factors to target;
- identifying sources of information and services;
- assessing manager and supervisor preparedness and effectiveness of responses;
- tracking levels and trends using baseline and follow-up studies; and
- increasing awareness and advocacy .

Well-designed KAPB studies can provide useful information for designing prevention interventions. They can identify what groups to target and what information and/or activities are the most needed within the community. Once the response is in place, the tools used in the KAPB study for data collection can then be altered slightly to track the programme's effectiveness.

KAPB studies can be expensive or sometimes misleading if they are used in isolation. It takes time to develop questionnaires that accurately measure what the study aims to evaluate, and they should usually be pre-tested. They may not give enough information on the causes for certain attitudes and behaviours to guide the design of interventions. Furthermore, there are often concerns that respondents give answers that they feel they 'should' give, rather than answers that are true reflections of actual attitudes, practices and behaviours.

KAPB studies also give very limited indications of levels of infection, as they are technically closer to qualitative assessments and research. They can, however, be linked to blood or saliva HIV surveys in order to overcome this limitation. This combination can also indicate links between levels of infection and different knowledge, behaviour, attitudes and practices, which can be useful to design responses.

KAPB study questionnaires give limited opportunity for subjects to mention and discuss issues that the people who chose the questions did not know about or expect to be important. This can lead to important limitations. In addition, KAPB give limited opportunity for participation in developing recommendations and responses, though this can be addressed through other aspects of work in a community or schools.

Biological surveillance – HIV seroprevalence testing

Surveys using blood or saliva tests can be employed to assess levels of HIV infection (and other tests can be used for other STIs). They have usually been unlinked and anonymous to encourage participation and protect confidentiality, but increasing opportunities for treatment make it desirable to encourage participants to use surveys as an opportunity to learn their HIV status.

Surveys using biological tests are useful when it is imperative to have a more accurate idea of prevalence in order to inform policy or planning decisions. They can also give extra plausibility to impact assessments.

However, they can be costly and complex to do well and ethically. Furthermore, their results have limitations. A single seroprevalence survey alone will usually not give a clear sense of trends, and thus whether infection rates are climbing, falling or stable. It is also vital that there be buy-in to ensure that participation in the study is high. Even if a relatively low proportion of employees or participants refuse to be tested, results could be misleading. For example, if 20-30 per cent of education sector employees refuse, they may include a disproportionate number of employees who already know that they are infected or at high risk and are afraid that positive tests could have negative implications for them. Thus, the results for the other 70-80 per cent could significantly underestimate levels of infection.

Success is much more likely if participation is encouraged by the existence of a credible programme or plan to provide support for infected employees. The sensitive nature of HIV seroprevalence data makes it vital that there be a clear HIV and AIDS policy, or HIV and AIDS in the workplace policy ensuring confidentiality, non-discrimination and established networks of support and counselling for affected employees.

Qualitative research

Qualitative research does not aim to generate statistical measures of impact or risks. Instead, it aims to give the participants a chance to express and explain their views and perceptions of priorities. In addition to identifying the 'what', participants can also explain the 'why' and 'how'. In order to do this, the research uses techniques such as personal testimony, focus group discussions and informant interviews. These typically use open-ended questions that allow participants to express themselves more freely and fully than they would through surveys or questionnaires which aim at producing quantitative measures (statistics) of certain risks and impacts.

Qualitative research often alerts decision-makers to issues which they may not have anticipated or asked about in a survey. The research can provide rich information relatively quickly about the priority issues to be addressed. This may include information on challenges and successes, as well as suggestions to guide the planning of responses. They can also highlight key reasons for failures of HIV and AIDS interventions. Qualitative research is very useful when interpreting quantitative data.

In addition, qualitative research can also help to identify and understand key impacts that are difficult to quantify. For example, these impacts may include the

implications of illness and deaths in employees' families and communities for their morale and productivity, and what the impacts are on staff and students if a teacher is ill with an AIDS-related illness.

Some quotes that illustrate the rich information that can be provided through conducting qualitative research are shown below in Box 1.

Box 1 Quotes resulting from qualitative research

"I have a long-term relationship now that I have been transferred away from my wife so that I am not tempted to sleep with many women. Some colleagues have many short relationships to preserve their marriages. I don't know who is more at risk, we may all be infected."

"We feel protected by our HIV/AIDS knowledge when we are in our classroom. But when we are in the hostels or in town, we don't know how to apply it. It is a different world out there."

"The greatest disruption occurs if a financial manager is absent or leaves. No-one else can do their job and they are hard to replace."

"The HIV/AIDS programme has a vehicle but it is always being used by the Regional Director."

"On the surface it may appear that [orphan] problems are as simple as the inability to pay fees or discipline issues but you later discover that their problems have deeper roots."

Source: A Kinghorn. Personal Communication. From impact assessment focus group data from Botswana, Zimbabwe, Namibia, Mozambique 1999-2004.

Qualitative research does involve challenges however. It can be misleading and inaccurate if interviews are not conducted by researchers experienced in data collection and analysis. For example, an anecdote about an extreme case may be presented as if it were the norm. In addition, as qualitative research does not provide statistics it may have less credibility with some stakeholders. (For more information on projection models see [Module 3.3 – Qualitative research on education and HIV/AIDS](#))

Costing and economic evaluations

Costing and economic evaluations are often considered to be crucial components of assessments. They can answer questions such as the following:

- What is the size of various HIV and AIDS-related costs (e.g. teacher training, pensions, medical care, absenteeism, lost investment in learners), and how do these costs affect the response to HIV and AIDS?
- Which costs can be managed?
- What are the highest costs to the sector and which are thus priorities to manage?
- Which responses are 'affordable' and which responses are likely to be cost-effective or offer potential savings?

There are various limitations and methodological issues that must be considered before commissioning cost estimations or economic evaluations, and interpreting results. These include the following:

- Available data and methodologies may not be able to provide accurate cost estimations or economic evaluation. Costs and benefits may be over- or understated.
- Direct, quantifiable costs may often seem relatively small, especially when compared to some initial expectations. This difference could distract attention from important non-financial impacts and undermine the commitment of key players who are mainly interested in budgetary or high-cost issues.
- Methods and their results often involve value judgments that may not be immediately obvious. In particular, costs that cannot easily be translated into monetary measures may not be considered significant. For example:
 - the effects of lower morale and higher stress among staff may be down-played because they are not costed;
 - if there is no system for teacher replacement, teacher absenteeism may not incur direct financial costs to the sector, but can cause real costs to learners, whose education is disrupted;
 - costs that fall on households or other sectors such as health may also not be considered important by educational planners, but may have large implications for a country and its people.
- There are often particular technical challenges related to important cost components such as pensions (which may require full actuarial valuation) and medical care. These challenges may be complicated by the fact that required information may not always be accessible to ministries of education from the relevant partner ministries.

Overall, the resources and time required for extensive investigations of costs should be weighed against their likely benefits. Care should be taken to ensure that results are presented in a way that recognizes important limitations or assumptions that can result in misinterpretation.



Activity 1

Education sector HIV/AIDS impact assessments (30-40 minutes)

The checklist below and the questions that follow are intended to help you to define the scope of work and methods for risk or impact assessments by your ministry.

1. Read each area of impact information listed in the *first column* of the checklist.
2. Put a cross (X) in the second or third column depending on whether there is enough information available to guide action in the sector. Place more than one X to indicate more important information gaps.
3. *Notes/key information needs or issues to consider* in the fourth column are to remind you of things to consider for further investigation or ideas about the best method to collect the missing information.

Now answer questions A, B, C and D. When you have finished your answers, compare them with those of other members of your group (if applicable).

Which are the priority gaps in knowledge about HIV/AIDS impact and responses? (where did you put the most Xs?) List the areas that need the most information? (in other words, in what priority areas among those you have chosen would an impact assessment be the most useful?):

- _____
- _____
- _____
- _____
- _____

Are there any other priority areas you would add?

- _____
- _____
- _____
- _____

What are the main uses of the impact assessments you propose and who are the key target audiences? What could be the uses for policy advocacy and planning purposes?

- _____
- _____
- _____
- _____
- _____

What approaches and methods are likely to be the best way to obtain the information for in the impact assessment?

- _____
- _____
- _____
- _____
- _____

<i>Impact information</i>	<i>Enough information</i>	<i>Not enough information</i>	<i>Notes/key information needs or issues to consider</i>
1. Internal impact			
HIV/AIDS knowledge, attitudes, practices and behaviour; risks related to work and living circumstances			
Levels of HIV infection			
Access to effective prevention interventions e.g. condoms			
Illness and attrition rates			
Current and future death and attrition rates of employees			
Current and future rates of illness and absenteeism			
Causes and levels of absenteeism and staff loss for reasons other than HIV/AIDS or illness			
Skills availability			
Adequacy of supply of skilled staff			
Appropriateness of current training and skills development approaches			
Expected training costs			
Employee medical and pension benefits			
Type, scale and delivery mechanisms for healthcare requirements for employees with HIV/AIDS			
Expected costs of healthcare options			
Pensions and other benefits costs and options for staff who are sick or die and their dependents.			
Absenteeism			
Cost and quality impacts of HIV/AIDS and other causes of absenteeism			
Adequacy of sick and compassionate leave systems			
Cost, feasibility and efficiency of relief systems or alternatives to cover for absent staff			
Work processes and places			
Critical posts and processes vulnerable to disruption			
HR systems			
HR information systems' adequacy at each level to track and manage impact			
Adequacy of systems such as recruitment, appointment, deployment and transfer			
Managers' skills and support to manage staff with illness or other crises			
Overall impacts			

<i>Impact information</i>	<i>Enough information</i>	<i>Not enough information</i>	<i>Notes/key information needs or issues to consider</i>
Overall impact on costs, accessibility and quality of education			
Priority of HIV/AIDS responses and consistency or competition with other education priorities			
2. External impact			
Infection and illness of learners			
Risks faced by learners			
Levels on infection and illness among learners			
Scale of potential loss of investment in education due to premature death or illness of learners/graduates			
Access to effective prevention interventions			
Systems to promote equitable access to education by infected or ill learners			
Affected learners			
Numbers of OVC			
Priority needs and indicators of vulnerability of OVC			
Implications for access, quality and efficiency of education and priority of various obstacles and vulnerabilities			
Effectiveness, efficiency and equity of current responses for addressing OVC needs			
Options for response to OVC needs			
3. General and cross-cutting issues			
Vulnerable institutions and groups			
Institutions, regions, communities or groups where impact is more severe than average.			
Protection of rights of infected and affected staff			
Gender differences in susceptibility and vulnerability of staff or learners			
HIV/AIDS response analysis			
Efficiency, effectiveness and appropriateness of HIV/AIDS programme to meet needs at each level			
Where and how to integrate HIV/AIDS issues into general education, development and poverty reduction plans			
Where to mainstream HIV/AIDS response into operations of other programmes and sub-sectors			

Dealing with uncertainty

Since all sources of information and methods have limitations, remaining uncertainty is inevitable. No programme response can be perfect. It is vital that decision-makers consider the decided responses appropriate despite any remaining uncertainty.

Fortunately, there are a number of approaches to dealing with such uncertainty.

- Conducting sensitivity analyses and scenario planning (as covered above) are possible ways to limit uncertainty in assessments. These analyses give a sense of what is feasible and which response options seem most appropriate, even if impact levels are higher or lower than estimated.
- Prioritizing HIV and AIDS-related interventions that are in-line with other priorities is another approach that can be adopted. In many areas, HIV/AIDS may highlight issues that needed attention prior to the onset of HIV and AIDS. In this way, HIV and AIDS responses can be thought of as *opportunities* for education ministries and institutions.
- Establishing specific teams or units to monitor the programme progress and adjust responses accordingly can also lessen uncertainty.
- Improving data collection informing the priority areas as identified by impact assessments. This strategy may involve more in-depth analysis of available data, as well as better collection and monitoring of information in priority areas.

3. Presenting results

Key considerations for impact assessment presentations and reports

- The impact assessment team should be given a clear idea of which target audiences should be reached, and should develop a strategy with the ministry of education to ensure that the reporting process and materials are effective in reaching them.
- Presentations and/or reports should be tailored to their target audience. Impact assessments can result in reports and presentations that are too technical or detailed for some audiences or too superficial for others.
- Exaggeration of the scale and significance of impact should be avoided so that credibility is not undermined.
- Care must be taken when making recommendations to decision makers. This may require a greater or lesser emphasis on various perspectives on a problem, including human and societal impact, education implications, costs and cost effectiveness of proposed responses. Arguments are also often more persuasive when they are accompanied by 'solutions' and/or practical recommendations.

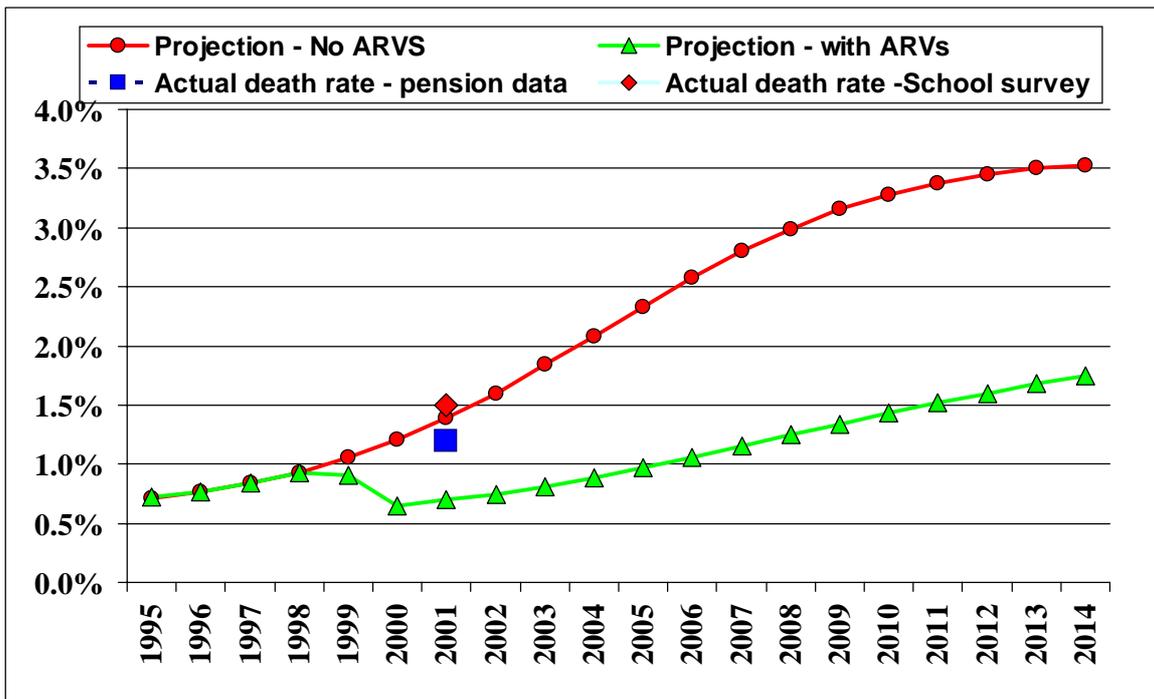
Activity 2

Data interpretation

The questions below are intended to help you develop confidence in identifying what kinds of data can be produced by impact assessments and how to interpret information/data that can be generated by assessments using various methodologies. Look carefully at each of the following five data slides and answer these three questions for each one.

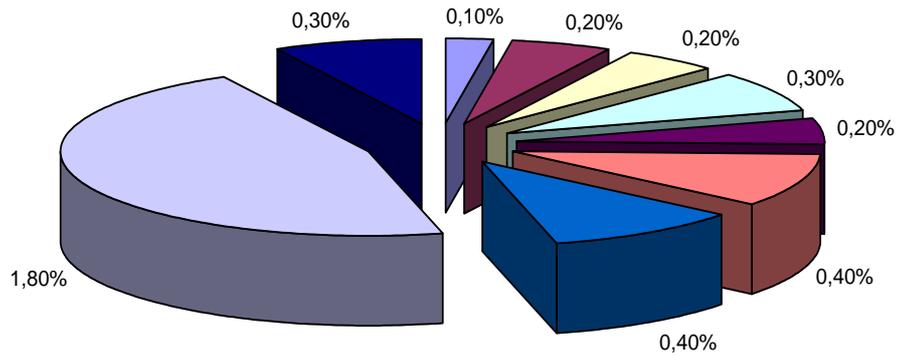
1. What important things do the data tell you?
2. Who could use the data?
3. Are there limitations of the data that you would need to keep in mind?

Data slide 1: Total teacher deaths as a percentage of teachers (Namibia)



Source: Republic of Namibia, 2002.

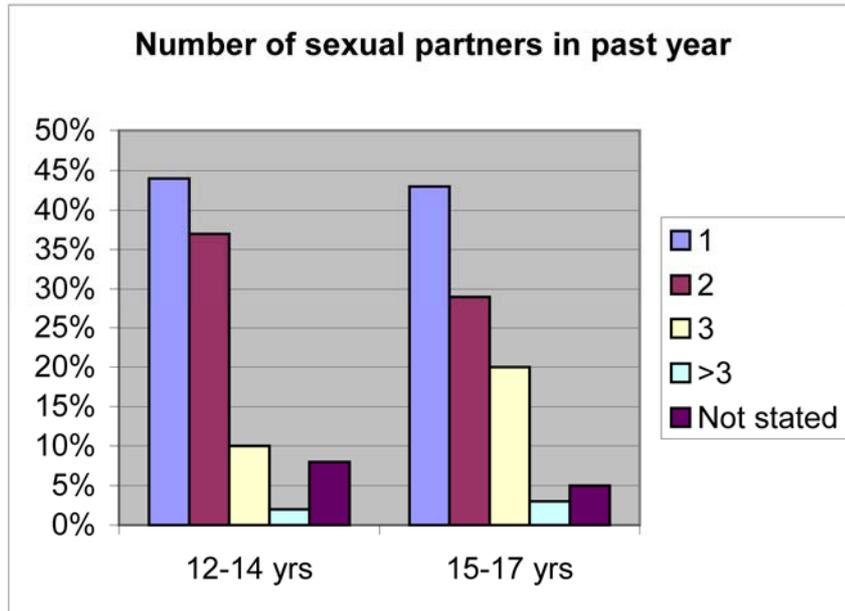
Data slide 2: Reasons for educators leaving school in 2002



■ Died after accident/violence - (0,1%)	■ Left because of illness- (0,2%)
■ Unknown reason- (0,2%)	■ Early retirement- (0,3%)
■ Died after short illness- (0,2%)	■ Died after long illness (>3mths)- (0,4%)
■ Reached retirement age- (0,4%)	■ Left to work elsewhere- (1,8%)
■ Other- (0,3%)	

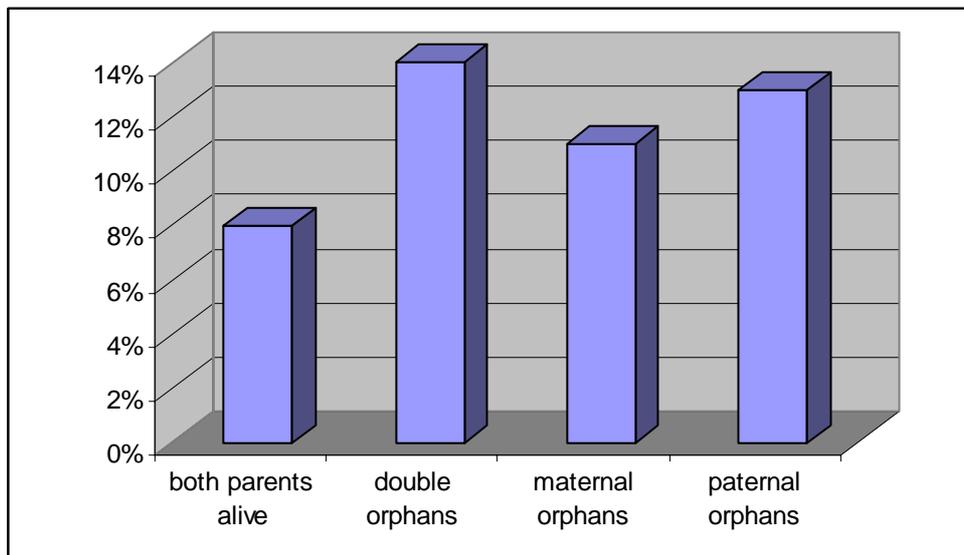
Source: Schierhout, Kinghorn, Govender, Mungani, and Morely,2003.

Data slide 3: Number of sexual partners in the past years reported by sexually active teenagers (National probability sample survey of 2,204 12-17 year olds, Johannesburg).



Source: Africa Strategic Research Corporation, 2001.

Data slide 4: Proportion of grade 10 learners who had experienced school interruption of a year or more



Source: Schierhout et al., 2003.



Summary remarks

Previously, impact assessments produced a range of information on the implications of HIV and AIDS for education that assisted in advocacy, informed policy and planning, and helped to identify the key issues that needed to be investigated further. However, assessments were criticized for consuming substantial resources and taking too much time. It was also felt that they did not always provide the information or momentum for responses that had been hoped for.

To improve efficiency and usefulness of impact assessments, there has been an increasing focus on ensuring that objectives (in relation to planning and/or advocacy) are clear and that assessment scope and methodologies serve these stated objectives. Assessments of HIV and AIDS impacts are also being more thoroughly integrated with investigation of other core educational planning agendas, such as employee attrition and absenteeism due to causes other than HIV/AIDS.

Previous experience has also highlighted the need to identify where exhaustive research and assessment of impacts is really likely to be cost effective. In some cases, processes that draw mainly on previous research and 'informed intuition' may be adequate and less expensive. Increasing focus has been turned to improving the quality, analysis and use of routine data from EMIS, DEMMIS and other systems (see [Module 3.2 - HIV/AIDS challenges for education information systems](#)), rather than conducting formal impact assessments.

Nevertheless, impact assessments remain important sources of information for policy and planning decisions within the education sector, and when done properly can be useful for planning actions within the sector related to HIV and AIDS as well.

Before impact assessments are commissioned, it is important to ensure that their objectives are clear and that an assessment is required to achieve them. The methodology and scope of assessments need to be appropriate to achieve the objectives. Prior attention needs to be given to defining the key target audiences, presenting results with greatest effect and ensuring that the assessment feeds effectively into a process that can result in action.



Lessons learned

Lesson One

Assessments can be very influential when designing programme responses and interventions to HIV and AIDS impact on the education sector. However they must have well-prioritized objectives, a sound methodology, and make efficient use of resources.

Lesson Two

There must be a clear understanding of the key information to be collected and the anticipated needs and uses of the impact assessment.

Lesson Three

When planning an assessment, an understanding of implications and limitations of methodologies and how to manage them within the context of the study, is vital.

Lesson Four

Successful impact assessments do not focus specifically on HIV and AIDS, but rather consider and link to general education challenges, contexts and strategies.

Lesson Five

The 'presentation' or 'packaging' of reports and findings needs to be carefully considered to make them accessible and credible for key target audiences.

Lesson Six

Process is critical.

- For impact assessments to be successful, it is vital that there be active involvement of education officials in the assessment for buy-in, efficiency, quality and skills transfer.
- It is also imperative to ensure that the impact assessment is clearly situated in a process that leads to action. For example, it could lead directly to a defined process to develop or review HIV and AIDS plans, or for advocacy.

Lesson Seven

Assessments should also be seen as *part of the response* to HIV and AIDS. Waiting for assessment results should not become a reason to delay action in areas where it is clearly required.



Answers to activities

Activity 1

Part A and B

These answers will vary according to groups, countries and institutions.

Part C

Another way of phrasing this question is: Once you have decided what impact to measure, what information should be collected? What will the results be used for? To whom should the information be presented? How should the information be presented to be most effective? And for what results? (Examples may include advocacy to top leadership; educational planning; other)

Part D

For this question, use the section on page 10 concerning methodologies for impact assessments to determine the best way to collect data on the impact you are focusing on. (e.g. comprehensive, detailed impact assessment; rapid appraisal; focused in-depth investigation of the key area; school survey; strengthen routine data collection and analysis; other)

Activity 2

Model answer to data slide 1:

Important information provided:

- The graph provides estimates of teacher deaths from unspecified causes (as a *percentage of all teachers* in the system) and gives us some idea about where we are in terms of the death rate among teachers in the Namibian education sector.
- Two types of data are represented here: the projected estimates of teacher deaths (in ARV and no-ARV scenarios) and real estimates from pension data and school survey data.
- Without ARVs death rates among teachers could be expected to almost double in comparison with 2002 levels, i.e. they *could get a lot worse* than at the time of the study.
- ARVs can dramatically reduce death rates. But the projection reminds us that deaths cannot be avoided completely. *Some people may begin treatment too late and in others the treatment may be ineffective (due to a resistant virus or not taking the treatment properly).*
- Overall, the death rates are not overwhelming for any single year (and so they can be overlooked). However, it would be worth remembering that ongoing losses do add up. Some workplaces may also still be hard hit if they do lose a teacher.

Who could use it:

- HR managers and planners; teacher training institutions; education sector unions and staff associations; HIV and AIDS programme and advocacy initiatives.

Limitations to keep in mind:

- School survey data from 2001 suggest that the total percentage of teacher deaths was approximately 1.5 per cent. Pension data points to teacher deaths sitting at about 1.2 per cent. Projected estimates – in a no-ARV scenario – put teacher deaths at about 1.4 per cent, so projections seem to be reasonably realistic.
- However, pension and school survey data are collected over one year, so the accuracy of estimations may not be sustained. Generally, one would need to monitor data over several years to actually know what the situation is. Actual levels of uptake for ARV treatment are likely to be a major determinant of actual death rates.

Model answer data slide 2:

Important information provided:

- This school survey gives quite a detailed understanding of the reasons why educators have left the education system in a sample of schools in two provinces of South Africa. Such data are not always available from routine information systems.
- This information helps give an idea of the level of illness and death that might be AIDS-related, and how their contribution compares to those of other causes of attrition among educators. This helps develop AIDS response strategies that are integrated with broader HR management and planning challenges.
- Controversially, the graph also cites finding another job as a the number one reason for leaving teaching. This could be an interesting item to explore, especially since these people could be replacing other people that are leaving work in other parts of the education sector due to HIV- or AIDS-related illnesses.

Who could use it:

- HR planners and managers; teacher training institutions.

Limitations to keep in mind:

- Surveys can provide unreliable information if they are not well designed, executed and analyzed. In many cases, for example, informants do not reliably recall cases or causes of death or illness that happened over one year ago.
- Surveys often do not report cause of death or illness with certainty. However, certain responses to high levels of illness, death or attrition will be useful regardless of the specific cause. So absolute certainty may not be critically important.
- With surveys of this nature, there is no way of assuring that informants are telling the truth. Sometimes it is clear their reasons for wanting to keep information veiled, as is often the case when dealing with HIV and

AIDS, so questionnaires must be developed in a specific manner to assure that the research is really getting to the core of the assessment.

Model answer data slide 3:

Important information provided:

- The graph shows the number of partners of young adults in Johannesburg, by age. For example, of the young adults questioned, approximately 43 per cent of 12-14 year olds have had one partner in past year or during the year 2000-2001.
- The graph shows that many children in the younger age groups are already sexually active with at least one partner.

Who could use it:

- Planners of prevention, care and support programmes; managers monitoring the effectiveness of programmes; advocacy groups, unions, educators, school headmasters, parent-teacher groups.

Limitations to keep in mind:

- There is no information on the sample of young adults, i.e. their background, race, sex.
- There could be considerable variations of informants not telling the truth.
- There is no way to know if and how the study clearly explained the notion of sexual partners to the informants. It can be assumed that they were referring to relations involving sexual intercourse, as this is the most prevalent way of transmitting HIV, but it is not stated.

Model answer data slide 4:

Important information provided:

- The information in this graph shows the percentage of grade 10 learners in two provinces of South Africa that have interrupted their schooling for a period of more than one year.
- It shows that double orphans have the highest percentage of interruptions, followed by paternal orphans.
- Non orphans have lower interruptions overall.

Who could use it:

- Planners of prevention, care and support programmes; managers monitoring the effectiveness of programmes; advocacy groups, unions, educators, school headmasters, parent-teacher groups.

Limitations to keep in mind:

- The information does not prove a direct link to the impact of HIV and/or AIDS.
- This graph cannot represent the children who have never attended school.



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Module

3.2

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HIV/AIDS challenges for education information systems

About the authors

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Module 3.2

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Table of contents

	Introductory remarks
1.	Impact of HIV and AIDS on education
2.	Annual data collection processes
3.	The need for complementary and local-level EMIS
4.	District-level education management and monitoring information system (DEMMIS)
5.	Data availability and reporting options
6.	DEMMIS implementation planning
7.	Prerequisites for successful DEMMIS implementation
8.	Management checklist
	Summary remarks
	Lessons learned
	Answers to activities
	Appendix



Aims

The aim of the module is to:

- alert participants to the challenges that HIV and AIDS pose to Education Management Information Systems (EMIS);
- provide illustrative examples of how EMIS can be adapted to meet this challenge;
- consider complementary systems for providing HIV and AIDS-sensitive data for educational planning.



Objectives

At the end of this module you should be able to:

- identify and describe the function of EMIS in an AIDS era;
- identify suitable data elements, sources and collection strategies to support a HIV and AIDS-sensitive EMIS, or its development;
- integrate HIV and AIDS-sensitive data into routine EMIS procedures;
- identify appropriate tools and techniques to analyse the impact of HIV and AIDS on the education sector at school and district levels.

Before you begin...



Questions for reflection

Take a few minutes to think about the questions below. You may find it helpful to make a note of your ideas in the spaces provided. As you work through the module, see how your ideas and observations compare with those of the author.

How does HIV and AIDS impact on the education sector?

How can the education sector collect data on the impact of HIV and AIDS on teachers, managers and learners?

What suitable HIV and AIDS data are currently available for educational planners?

What data should be collected to regularly monitor, measure and report on HIV and AIDS impact?

Module 3.2

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HIV/AIDS CHALLENGES FOR EDUCATION INFORMATION SYSTEMS



Introductory remarks

Traditionally EMIS (education management information system) is considered to be the means by which all within the education sector are provided with the data and information required to support their functions. For example, district managers need to know to what extent learner enrolment is increasing or decreasing in particular schools to enable them to plan how many teachers are needed. Regional or national managers also need to know how fast learner enrolment is growing so as to ensure correct resource planning.

This module should be studied in conjunction with [Module 1.2](#), *The HIV/AIDS challenge to education*; [Module 1.3](#), *Education for All in the context of HIV/AIDS*; [Module 2.1](#), *Developing and implementing HIV/AIDS policy in education*; [Module 3.1](#), *Analyzing the impact of HIV/AIDS in the education sector*; and [Module 4.3](#), *An education policy framework for orphans and vulnerable children*.

Activity 1

What data are required and what are they used for?

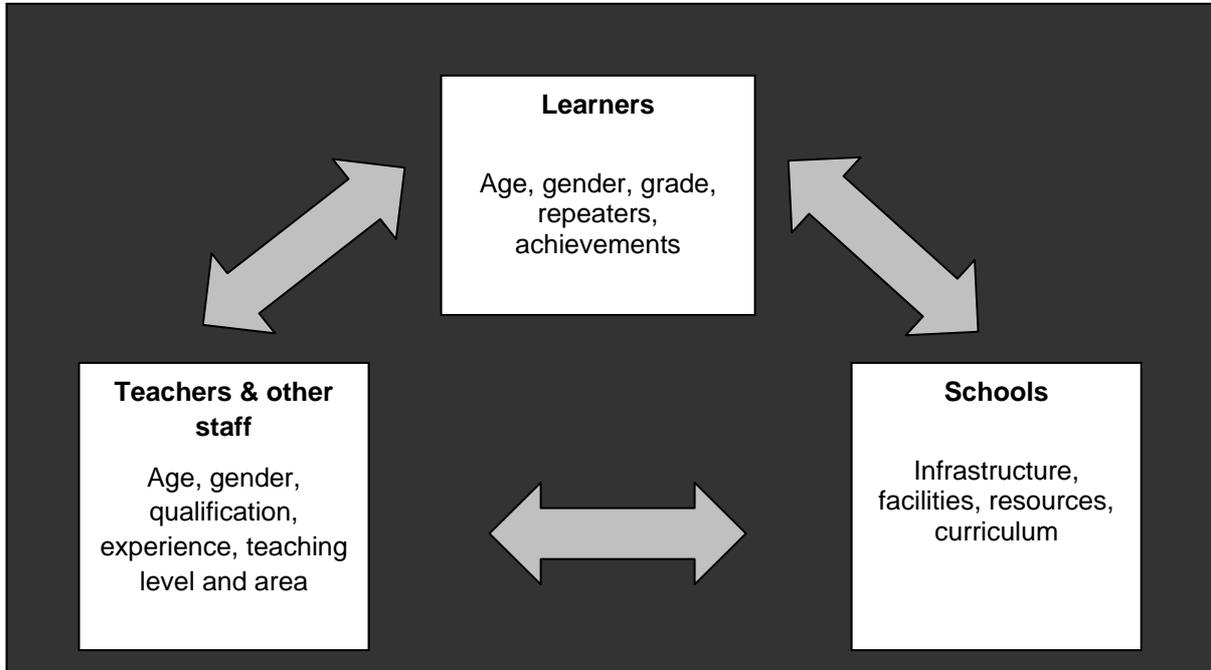
Consider what data are used for in the education sector and then indicate five or six applications of these data. Write your responses in the table below.

In the education sector data are used to:	
1	
2	
3	
4	
5	
6	
7	
8	
9	

It should be clear after completing Activity 1 that data are used for a wide range of applications and these all have implications for educational planning and management. Data are generally used to improve planning and reporting; to measure, monitor and evaluate; to identify trends, to show the extent of impact, to predict or project trends and scope; and to support advocacy. Educational planners, human resource directors, finance and system managers – at every level – need regular input, performance and output data.

EMIS strives to provide information on whether all eligible learners are receiving a quality curriculum from suitably qualified teachers within a reasonable timeframe and in a healthy and stimulating environment.

Figure 1 The data EMIS provides



Consider how EMIS collects data in these three areas? How much detail is collected? How are questions asked? How often are data collected? Do you receive the data or information needed to equip and support you to effectively do your work?

1. Impact of HIV and AIDS on education

Through EMIS, all those working within the education sector are informed of what the real situation is. Educational planners and managers need to be provided with data to support their functions and assist with informed decision-making. They need regular data to inform planning, monitor the system, implement policies, and inform areas requiring new policies or policy reform. This is demanding enough, but is further complicated by AIDS and all the challenges it brings. Managers and planners also need key indicators on the impact of HIV and AIDS in order to inform system management and project implications over time. Quality data and value-added information would alert managers to the issues raised by the impact of HIV and AIDS. Information that is easily accessible and presented in a usable format not only creates political awareness but also has a role to play in mobilizing commitment and support for an effective response to challenges and needs.

EMIS needs to consider how HIV and AIDS is impacting on learners, schools and teachers and other staff as well as how it affects the demand, supply, cost and quality of education.



Activity 2

Looking at how HIV and AIDS impact on different groups within the education sector.

For each of the three groups (learners, teachers and other staff, and schools) in the table below, make a list of how HIV and AIDS impact on that specific grouping.

LEARNERS	TEACHERS AND OTHER STAFF	SCHOOLS

The AIDS impact is broad and far-reaching. HIV and AIDS tend to explode the scale of existing problems such as access to education, increased absenteeism amongst learners and teachers, increased drop-out and increased poverty, leaving fewer resources for educational needs.

A systemic response is required which includes a comprehensive prioritized plan of action based on dependable data, monitoring evaluation and regular review. Seen as a systemic management problem, HIV must be measured and monitored as a 'routine' problem to inform sustained strategic responses.

EMIS within ministries will need to be adapted to take account of the impacts and provide data to feed into the planning and costing cycles. The challenge related to EMIS is adjusting or amending it to take into account HIV and AIDS:

- Can EMIS ask different questions?
- Should EMIS ask questions differently?
- When and how often should questions be asked?
- Can data be drawn from different sources?
- Do we need to monitor and report more frequently?

Activity 3

Data required to track the HIV and AIDS impact on education

Using the results from Activity 2, consider the area of impact and compile a list of data elements that are required to measure and monitor the HIV and AIDS impact across all levels. Once the data elements are identified, indicate the frequency with which they are to be reported – annually, quarterly, monthly, every two to three years? When considering the frequency, remember that there is a trade-off between cost, capacity and need for the data, so try to strike a balance and consider the utility and utilization of the data.

Learners

IMPACT	DATA ELEMENT	FREQUENCY

Teachers and other staff

TEACHERS AND OTHER STAFF	DATA ELEMENT	FREQUENCY

Schools

SCHOOLS	DATA ELEMENT	FREQUENCY

Activities 2 and 3 indicate that HIV and AIDS have added new challenges to EMIS. Additional datum items that need to be regularly reported upon have been identified and it is also apparent that annual data collection processes may not be entirely adequate. HIV and AIDS reporting can be complex and sensitive given the issues of stigma and discrimination, privacy and confidentiality. For instance, there is almost no other way of confirming whether teacher attrition is due directly to AIDS without conducting HIV-testing – which comes with its own difficulties. It is, however, argued that the education sector does not need to rely on detailed and accurate HIV and AIDS reporting, nor 'the exact number of teacher or student deaths due to AIDS', but it does need to consider issues of impact. The issue is gross attrition and trends, not the actual number of AIDS deaths. For EMIS, the key issue is the loss of a resource, not necessarily how it was lost. HIV and AIDS have provided the opportunity to reconsider how EMIS functions, what data are collected, and how they are collected, processed and disseminated. The EMIS reform may not necessarily mean asking more EMIS questions, but rather asking the important ones or posing them correctly.

2. Annual data collection processes

EMIS generally relies on schools to complete a questionnaire on an annual basis. The data provided by schools are generally compiled into a database and these data are then used to report on the status of education within the given academic year. Some countries across Africa are already incorporating HIV-sensitive questions into these school-based questionnaires or censuses. These may include reporting on the number of orphans or children receiving targeted grants, teacher and learner mortality, or the introduction of AIDS-clubs or other related activities.

Box 1 Does the data collection tool administered by your ministry currently include HIV-sensitive questions?

The following website www.mtt aids.com has a document posted that provides illustrative examples of how countries are introducing HIV- and AIDS-sensitive questions into their annual data collection tools. Visit the site to download the document and consider if any of the questions can be adopted and adapted by your ministry.

At best, a conventional EMIS captures annual snapshots of the education system and often there are delays in providing feedback to the data suppliers and sharing information with the different levels of educational management, including regional and district offices. If an EMIS were populated with the required information at the necessary intervals, it would generate a set of early warning signals in terms of impending system malfunction or failure. Unfortunately this is not the case with most EMIS in developing and under-resourced countries. Often very little value is added to data or serious analysis undertaken or shared with stakeholders or the information providers. However, education management and the implementation of new policies or strategies must continue, and the lack of reliable data and monitoring means that these processes are often based on estimations, unfounded assumptions or projections.

Several ministries are engaged in the process of decentralization where tasks are being delegated to managers at a more local or decentralized level in an attempt to improve service delivery. However, all too often it is these managers who have no access to data or information provided from schools and consequently they are left to their own devices. EMIS is failing to provide the local-level manager with direct access to data and information needed for management, let alone information with reliable evidence of the impact of HIV and AIDS or that which is required to guide response to any crisis in time to avert large-scale systemic failure (Badcock-Walters, 2001).

3. The need for complementary and local-level EMIS

There is a real need to develop and introduce HIV-sensitive data-collection systems to allow for more regular reporting. In addition, these should be decentralized in order to provide local-level managers with direct access to data and information to effectively manage the schools for which they are responsible. Much of the data that are needed to report on HIV and AIDS impact are readily available at schools; the information simply needs to be systematized and regularized. Improved EMIS and decision-support information are good for education in the broadest sense, as well as for HIV and AIDS management and mitigation in particular.

The need for current, accurate and complete data is probably the greatest motivation for considering a local-level EMIS. Data collected and processed closer to the source of the data are more accurate and complete. The issue of school enrolment lies at the centre of most educational policy and planning decisions. It is the enrolment figure that drives the need for teachers, school buildings, facilities, curriculum, and management structures. Learner enrolment is the single most important education statistic for system managers and planners.

Learner enrolment figures are provided by schools and are best collected and collated at district level. They are crucial for the district-level manager. It is therefore imperative that a district-level manager has direct access to detailed, accurate and up-to-date information on learner numbers, since this is the pre-eminent cost driver of the education system. The manager needs to be able to measure the effect this has on the demand for and supply of teachers and the general provision of education. It is therefore proposed that a simple and accessible district-level education management and monitoring information system (DEMMIS) be implemented to supply information that will assist the district manager to understand and manage issues at a local level.

Box 2 Advantages of decentralization

- a) The work of EMIS will attract more attention and coverage. Districts can collect more data than the centre requires and use them to their own advantage.
- b) The quality of data should improve.
- c) The routine workload of the central EMIS unit will be lower, thus allowing them to provide more assistance to the districts and co-ordinate the work.
- d) The central EMIS will only require summary statistics, and districts will have the details they require.

4. District-level education management and monitoring information system (DEMMIS)

A DEMMIS has been developed to capture a limited number of key management and AIDS proxy indicators on a monthly basis in schools. DEMMIS is designed to facilitate the processing and analysis of these data at the local level and guide immediate management response at the school, circuit and district levels. This system has already been piloted in a district in KwaZulu-Natal, the South African province most affected by AIDS, as well as in Zimbabwe, Zambia and Kenya.

DEMMIS focuses on systematically collecting and using information that is routinely available and maintained by schools. It is a purpose-built information system designed to capture statistics on learners, teachers and other staff on a monthly basis.

These statistics provide data (by gender and grade in the case of learners) on:

- enrolment;
- absenteeism and permanent attrition (including reasons for this);
- loss of contact time due to absenteeism – both of teachers and learners;
- drop-out;
- pregnancy and other rates;
- incremental orphaning rates;
- reduction in school fees.

Schools are required to work from class registers, teacher log books, leave applications and financial records maintained at the school. The data are captured at month-end in the school, using simple forms that provide a two-page summary for submission via the district manager to the district office. The school retains a copy to reinforce institutional record-keeping and management. The district office is then informed on a monthly basis of changes occurring within the schools, and from this data initial crude estimates of the impact of AIDS impact can be developed and areas requiring management intervention highlighted.

DEMMIS is supported by comprehensive sets of HIV and AIDS fact sheets and a management checklist. The fact sheets aim to provide accurate information on HIV and AIDS and can be presented in a question-and-answer format that provides answers to the most frequently asked questions. The management checklist provides guidance on management options and responses to indicators of irregularity, dysfunction or even crisis in the monthly data, and the trends emerging from these.

A well-maintained DEMMIS is an invaluable management tool. District managers can have complete monthly figures for the learning sites they manage. These figures provide a useful set of time-series data for the analysis of trends on a monthly rather than a yearly basis. This facilitates a rapid-response mechanism which, in view of the growing threat to the system, is clearly required.

EMIS is often criticized for providing information that is inaccurate or incomplete. By introducing DEMMIS, the district (typically much closer to the schools) is able to

check and verify the figures provided. Often the suppliers of information (such as the school management team) have little consideration of the value of the information that is provided for capture in EMIS and therefore forms may be completed in a haphazard or rushed manner. With DEMMIS, this information can be checked more easily and measured against more regular reporting trends. The management is also far closer to the data source and is in the best position to judge the accuracy and completeness of the data provided.

Through this local-level tool, a range of basic education indicators, as well as AIDS-sensitive indicators, is made available, alerting management to possible problems and failures within the system. Management can in turn respond rapidly and provide the necessary assistance to stop further degradation of the system.

The capture of local-level information is a process that should both complement and supplement the EMIS processes. The central EMIS system will be enhanced by the provision of timely and strategic information that has been validated and checked by local-level managers.

5. Data availability and reporting options

DEMMIS asks schools to report on a monthly basis on the following listed items (see below), which can then easily be turned into a simple summary sheet.

Table 1 Proposed data items for the introduction of DEMMIS

LEARNERS	TEACHERS AND OTHER STAFF
<ul style="list-style-type: none"> ▪ Number of learners (by grade and gender) ▪ Number of days lost through absenteeism (by grade, gender and reason for absenteeism) ▪ Number of learners who left school (by grade, gender and reason for leaving). ▪ Number of learners who entered the school (by grade and gender). ▪ Number of learners newly orphaned (by grade and gender) ▪ Number of learners who did not pay fees or were exempt from fees (by grade and gender). 	<ul style="list-style-type: none"> ▪ Number of members of staff (by gender, source of remuneration and post held) ▪ Number of days lost through absenteeism (by gender and reason for absenteeism) ▪ Number of days' leave taken (by gender and category of leave granted) ▪ Number of staff who left school (by gender and reason for leaving, including resignation and retirement). <p>Number of new members of staff (by gender, source of remuneration and post held)</p>
<p>Additional questions on curriculum or co-curricular options as well as financial grants or support offered may be included.</p>	<p>These questions could also be modified to track members of the school governing body or parent-teacher association if required.</p>



Activity 4

Possible questions to be included in a monthly DEMMIS

Using the results from Activity 3, consider what questions are to be asked of schools in order to collect the required data elements. Structure the questions so that they can be included in a standard monthly data collection instrument. Group your questions under the headings below:

Learners

Teachers and other staff

Schools

Through the monthly collection of these data, the district office, educational planners and managers will have access to a time series of basic school-level indicators, including proxy indicators of HIV and AIDS impact, to guide interventions, measure and monitor impact, and consider areas of intervention that may be required.

Some of the management reports that could be generated are:

- enrolment patterns within an academic year;
- temporary and permanent absence of teachers and learners by reason;
- reason for children leaving or dropping out of school;
- loss of contact time between teachers and learners;
- orphan rates within schools;
- pregnancy rates of learners;
- reduction in school-fee income;
- teacher attrition at school;
- mortality rates of teachers and learners.

All of these reports could be disaggregated by gender and grade, if appropriate, and tracked month by month across the academic year.

6. DEMMIS implementation planning

There are basic principles that should guide the introduction of DEMMIS:

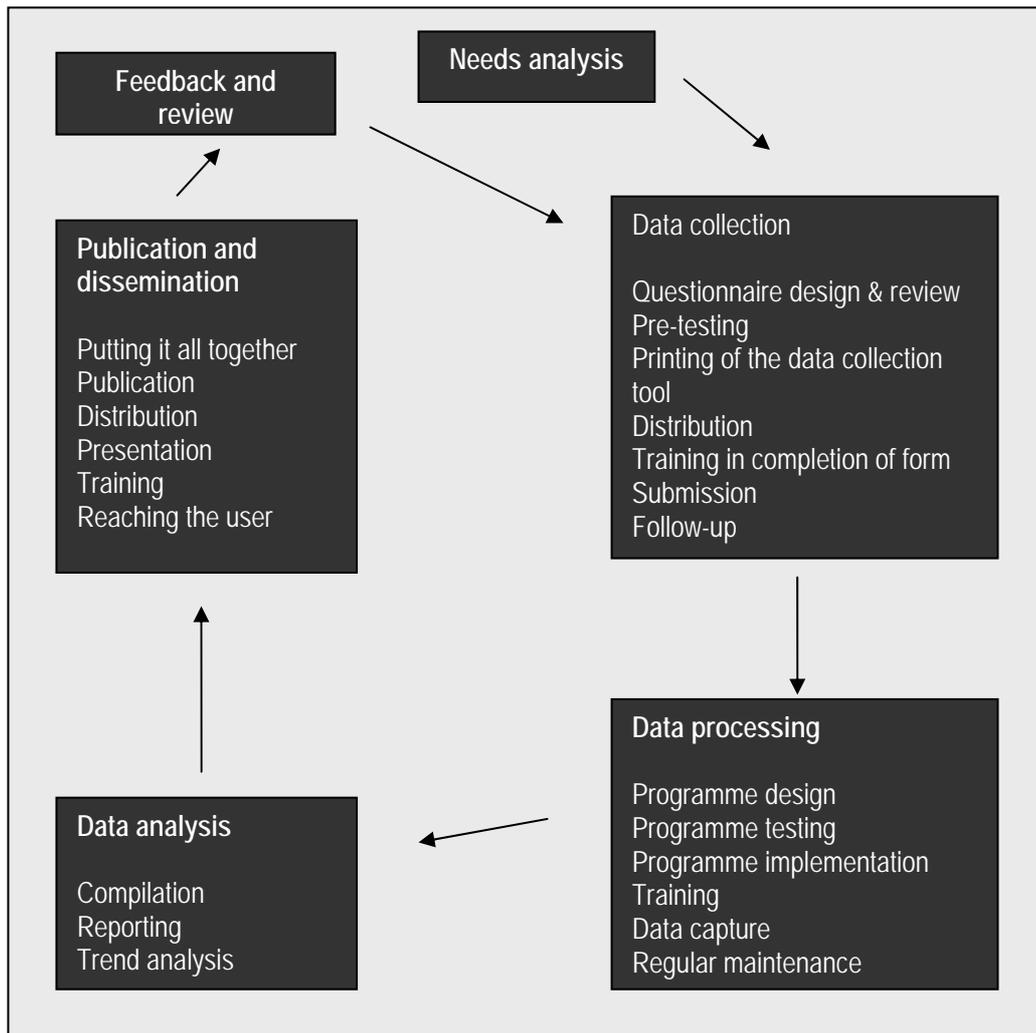
- Expected tasks must neither be unnecessarily duplicated nor onerous.
- It should dovetail with existing functions of officials concerned.
- It should generate locally relevant and useful information.
- Data should inform and direct district management interventions.
- Information must be readily available in the average school.
- Indicators must not be hard to capture.
- Information produced by DEMMIS must be readily consumable by local-level officials and communities.
- Information must be able to be fed back into EMIS.

When considering the implementation of DEMMIS, it is important to begin with the end in mind. That is to say, be clear on what you want the system to deliver.

- What decision-making is to be supported?
- What aspects need to be tracked and monitored?
- What are the reporting requirements?
- How often does the required information change, and how frequently does it need to be collected?

The answers to each of these questions will assist in identifying the required data elements and the frequency of data collection. DEMMIS, like any other MIS (management information system), needs to follow the accepted cycle of management information systems development.

Figure 2 Management information system implementation



Activity 5

Planning for DEMMIS

Consider all the steps for implementing a management information system. Draw up an action plan for the implementation of a DEMMIS pilot. Use the template provided below.

ACTIVITY	TIME FRAME		LEAD PERSON	DEPENDENCIES	RESOURCES REQUIRED	COST	MEASURABLE INDICATOR
	START	END					

The human resource requirements for the successful implementation of DEMMIS, as with any management information system, should not be overlooked. The key persons are those required to assist with the survey design, the design of the data capture and reporting system, and the monthly data capture of the returns. The survey, the DEMMIS data capture and the reporting system design require a specific level of technical expertise and should be done with the central EMIS unit. The monthly data capture requires that the designated official be familiar with the keyboard (a skill that can easily be acquired) if a computerized system is to be used. While DEMMIS can be purely a paper-based system, the introduction of computers to assist with data capture and analysis is recommended given their flexibility in manipulating data and generating reports.

7. Prerequisites for successful DEMMIS implementation

In reviewing the experiences of DEMMIS pilot schemes and the implementation of general EMIS, some conditions for success should be taken into consideration.

- **An enabling environment:** It is critical to the success of DEMMIS implementation that there be general support from all those involved and a climate of positive political will. Schools must be willing to co-operate and provide the data regularly; teachers within the school should be willing to play their part; district officials must understand what will be required of them and also the benefits they will reap. EMIS officials need to also understand and consider the benefits of DEMMIS. In short, everyone will be required to work together to ensure the success of DEMMIS. Central to creating and ensuring an enabling environment is a basic understanding of what the data are to be used for and also what value there is for individuals and the education sector as a whole.
- **School record-keeping:** Since DEMMIS is dependent on the data provided by schools, it is important that the systems used to collect the required data elements be in place and effectively implemented. School-level managers should be encouraged to implement daily maintenance of the records, i.e. this should not be left to the last day of the month. It is recommended that standardized forms are used in the schools as this avoids any confusion and limits errors in reporting. DEMMIS also has as its purpose to strengthen record-keeping.
- **Detailed working procedures and guidelines:** There needs to be clarity in terms of what is expected of the various role players. Within the bureaucracy of the education sector, persons at different levels rely on detailed working procedures and guidelines that describe their functions and responsibilities.
- **Data utilization:** Only collect data that are to be utilized and required to feed into the planning and management needs. Do not collect data just for the sake of it and do not be tempted to expand the data collection instrument unnecessarily.
- **Archiving and filing:** At school and district-office levels it is important that effective filing systems be implemented and maintained. In seeking clarity at a later stage it may be important to refer to the original documents, and for this reason these should be easily accessible.
- **Accuracy and completeness of data:** Schools should be encouraged to provide accurate and detailed data. When training in the completion of the DEMMIS form is provided, these aspects should be highlighted. Before submitting the return, schools should check that all totals tally. Much time is lost in following up on questions with regard to inaccurate or incomplete returns.

- **Information sharing:** It is critical that information be shared as soon as possible. This process has several benefits: evidence is made available showing that the submissions are being processed and the data are being utilized; it allows feedback on a process and assists in addressing issues of data quality, among others.

Central to the implementation of DEMMIS is the need to consider that effective EMIS has specific users who demand specific information in order to inform decisions for which they are accountable.

8. Management checklist

HIV and AIDS have compromised the ability of system managers to guide and direct the business of education at all levels. Because of HIV and AIDS, education is no longer *business as usual*. Given the far reaching impacts of HIV and AIDS, it will be a key factor in every aspect of planning and administration and will have to be considered in almost every management decision.

The local and district levels of management are critical since they are more directly linked to the provision of teaching and learning. It is at these levels that managers are directly in touch with the realities of the classroom and the communities from which teachers and students are drawn. It is important that these managers be empowered with factual information and data on how HIV and AIDS affect classroom activities and the impact felt in their local area. While the DEMMIS data may indicate an understanding of how HIV and AIDS are affecting schools, managers need to consider what can be done to address the issues.

A management checklist should be designed to identify the areas of HIV and AIDS impact and provide practical ideas about how they should be tackled rapidly and responsibly. Managers at the local level are to be encouraged to be more creative in problem solving. Many of the issues that these managers face will be new or unique, but more often than not they will be confronted by old problems on a new scale. Sometimes there are no simple or obvious answers, and new and innovative approaches are required.



Activity 6

Management checklist to provide early warning signals

Consider the management of teachers at district level and for each specific area listed below. Consider and present your findings as a composite district-level management checklist

What signs or signals would point to an impending problem?

What checks and controls need to be put in place?

What action is required?

What are the broad planning and management issues?

The management checklist, together with the DEMMIS data, aims to provide early warning signals that all may not be well within the district and that specific interventions are required. The checklist will also assist in report preparation,

contingency planning, providing counselling and general communication as well as monitoring. The demand for information is to be stimulated by sustained evidence of useful, value-added information and enhanced capacity to make informed decisions.



Summary remarks

HIV and AIDS are constant companions to the management of education and other social systems; however the impact on education can be mitigated through better management practices. Educational planners need to be made aware of management issues and provided with the tools and techniques to obtain the data they need to control and pursue with greater effectiveness what they are trained to do. The role of EMIS and the provision of data through complementary systems such as DEMMIS allow local-level management to be informed of broad management issues that will also generate proxy indicators of the HIV and AIDS impact to warn of impending system failure and areas of concerns that need addressing.



Lessons learned

Lesson One

EMIS/DEMMIS can help educational planners by providing them with data to support their functions and assist with informed decision-making. Quality data on the demand, supply, cost and quality of education can alert managers to the issues raised by the impact of HIV and AIDS and allow them to plan effective responses.

Lesson Two

Much of the data that are needed to report on HIV and AIDS impact are already available in schools; the information simply needs to be systematized and regularized.

Lesson Three

DEMMIS is designed to facilitate the processing and analysis of these data at the local level and guide immediate management response at the school, circuit and district levels.

Lesson Four

The advantage DEMMIS has over EMIS is that the district (typically closer to the schools themselves) is able to verify the figures provided against a comparatively intimate knowledge of the schools and district environment. This can contribute to and enhance the quality of EMIS data, as well as enrich it with additional elements and the validation of time-series trends.



Answers to activities

The solutions provided in this section are provided as illustrative examples. Solutions are subject to country-specific details and experiences.

Activity 1

In the education sector data are used to:	
1	improve educational planning
2	measure
3	monitor and evaluate
4	identify trends
5	show the extent of impact (of a programme or problem)
6	predict or project trends and scope
7	improve or support reporting and accountability
8	support advocacy
9	assign resources – teachers, materials, schools and finances

Activity 2

LEARNERS	TEACHERS AND OTHER STAFF	SCHOOLS
Change in enrolment	Absenteeism	Change in enrolment
Absenteeism	Increased drop-out	Change in curriculum
Increased drop-out	Increased morbidity	Difficult to predict – uncertainty
Increased morbidity	Increased pressure – extended families	Financial pressures
Increased pressure – household chores and responsibilities	Less money available	
Less money available	Support to orphans	
More orphans	Increased need for providing counselling	
Child-headed households	New curriculum	
Change in curriculum	Increasingly need to take on the role of parent/s	
	Filling in for colleagues	
	Change in staff	

Activity 3

Learners

IMPACT	DATA ELEMENT	FREQUENCY
Change in enrolment	Enrolment by grade and gender over time	M
Absenteeism	Number of days lost through absenteeism	M
	Cause for absenteeism	M
Increased drop-out	Number of children who stopped schooling.	M
	Reason for stopping school	M
Increased morbidity	Covered in # 2 and #3	
Increased pressure – household chores and responsibilities	Not feasible to be collected at school level – rather conduct sample study with individual students	
Less money available	School fees or levies not paid	M
More orphans	Number of orphans by gender and grade	M/A
	Type of orphaning	M/A
Child-headed households	Number by grade and gender	M/A
Change in curriculum	Curriculum offered	M/A
	Co-curricular activities	
	Participation in subjects and activities	

Teachers and other staff

TEACHERS AND OTHER STAFF	DATA ELEMENT	FREQUENCY
Absenteeism	Number of days lost through absenteeism	M
	Cause for absenteeism	M
Increased drop-out	Number of teachers/staff that left school.	M
	Reason for leaving school	M
Increased morbidity	Covered in #1	
Increased pressure – extended families	Number of teachers/staff supporting extended families	M
Less money available	Number of teachers/staff facing financial pressure	M
Support to orphans	Number of teachers/staff supporting orphans	M
Increased need for providing counselling	An indication of numbers or reported cases	M/A
New curriculum	Details of curriculum	M/A
Increasingly need to take on the role of parent/s	An indication of numbers or reported cases	M/A
Filling in for colleagues	Linked to #1	
	Number of temporary members of staff appointed/required	
Change in staff	Number of new members of staff	M

Schools

SCHOOLS	DATA ELEMENT	FREQUENCY
Change in enrolment	Enrolment by grade and gender	M
Change in curriculum	Details of curriculum	M/A
Financial pressures	Reduction in fees and levies collected	M/A

N.B.: M=monthly; A=annually

Activity 4

Learners

- Report on learner enrolment by grade and gender
- Report on days lost through absenteeism
- Report on causes of/reasons for absenteeism
- Report on learner leaving school
- Report on cause of/reason for leaving school
- Number of learners not paying fees or levies
- Number requiring/receiving financial assistance
- Number of orphans – by different category of orphanhood
- Number of child-headed households
- Learner-involvement in curriculum or specific subjects and/or co-curricular activities

Staff and teachers

- Report on staff numbers by grade and gender
- Report on days lost through absenteeism
- Report on causes of/reasons for absenteeism
- Report on staff leaving school
- Report on cause of/reason for leaving school
- Number of orphans supported
- Number of learners being counselled

School

- Enrolment numbers by grade and gender
- New curriculum and co-curricular activities offered
- Reduction in fees or levies collected

Activity 5

ACTIVITY	TIME FRAME		LEAD PERSON	DEPENDENCIES	RESOURCES REQUIRED	COST	MEASURABLE INDICATOR
	START	END					
Design and test instrument for user needs analysis							Tool used for user needs analysis Evaluation report on pilot test of tool
Conduct user needs analysis							Report on findings of user needs analysis
Agree on data elements and reporting requirements							Listing of data elements Document of consultation process
Design data collection tool							Data collection tool
Approval of data collection tool							Approval granted
Popularization of DEMMIS							Reports on information sessions
Agree on pilot schools/districts							List of schools/district
DEMMIS orientation training and completing DEMMIS form							Training material Persons trained
Distribution of DEMMIS forms							Forms reach schools
Design and testing of DEMMIS system							System tested
System installation and training							System installed Staff trained in system administration
Capture of DEMMIS return							Return submitted and captured
Data analysis and generation of reports							Reports available

Activity 6

For illustrative purposes, a management checklist for teacher absenteeism is provided.

Signs

Increase in absenteeism amongst teachers?	Yes	No
Increase in multi-grade classes?	Yes	No
Loss of contact teaching time?	Yes	No
Increase in sick-leave taken by teachers?	Yes	No
Increase in applications for compassionate leave?	Yes	No
Extended sick leave taken by teachers?	Yes	No
Members of school staff attending more funerals?	Yes	No
Loss of family members amongst school staff?	Yes	No
Staff experiencing family trauma?	Yes	No
Increase in applications for possible early retirement or medical boarding?	Yes	No

Checks and controls

Application for leave completed, approved, submitted and processed	
Check reported absenteeism rates	
Secondment of teachers if required and appropriate	
Track how delivery of curriculum is being affected	

Action required

Process leave form	Consult leave regulations for teachers	
	Ensure that leave is available.	
	Ensure that teacher completes required leave form/s.	
	Submit application form to regional office, personnel section	
	Application for leave is logged in PERSAL system.	
Report absenteeism in excess of 10 working days	Inform personnel section within region of extended absenteeism	
Make application for secondment of teachers	Investigate how curriculum offered at the school is being affected. Does this involve specialist teachers? Are schools required to introduce multi-grade classes?	
	Consult regulations as to when secondments can be put in place.	
	Submit detailed report together with full motivation for appointment of secondment to provincial office	
	Contact personnel section within province to follow up on application	
	Keep school management team informed of progress	

Planning and management issues:

Required to keep detailed and accurate attendance records for all teachers

Resource: Introduction of monthly DEMMIS return

Develop a detailed register of teachers available for secondment or relief work

Resource: Introduction of register of teachers

Encourage the use of voluntary counselling and testing (VCT) services

Resource: Local VCT services

Implement AIDS awareness and education programme

Resource: Work with the departmental HIV and AIDS team and the Department of Health

Appendix

Example of a DEMMIS form for secondary schools in Kenya

REPUBLIC OF KENYA				MINISTRY OF EDUCATION, SCIENCE AND TECHNOLOGY														
												Form B/S -DEM MIS <u>Month</u> Sec						
District Education Management & Monitoring Information System Form B: Monthly Summary–Secondary Schools																		
Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Number of school days in this month					
School Name											TSC School Code							
District Name																		
STUDENT INFORMATION – provide student details for this month																		
Student Enrolment this month	Form 1		Form 2		Form 3		Form 4		Form 5		Form 6		Total					
	M	F	M	F	M	F	M	F	M	F	M	F	M	F				
1. Total Enrolment																		
Total																		
2. New entrants																		
Total																		
3. Number of students who stopped or dropped out of school during this month	Form 1		Form 2		Form 3		Form 4		Form 5		Form 6		Total					
	M	F	M	F	M	F	M	F	M	F	M	F						
Caring for the sick/siblings																		
Cultural /Religious practises																		
Death																		
Desertion																		
Drug or Substance abuse																		
Early marriage																		
Employment / child labour																		
Expelled																		
Financial reason																		
Illness																		
Lack of commitment																		
Orphan/child headed household																		
Peer influence																		
Poor academic achievement																		
Pregnancy																		
Relocation/transfer/move																		
Suspension																		
Other reasons (specify)																		
Total																		

4. Number of school days lost through student absenteeism during this month	Form 1		Form 2		Form 3		Form 4		Form 5		Form 6		Total
	M	F	M	F	M	F	M	F	M	F	M	F	
Attending funeral													
Compassionate (excl attending funeral)													
Cultural /Religious practices													
Employment/Child labour													
Financial reasons													
Illness													
Poor academic achievement													
Pregnancy													
Student unrest													
Transport problems													
Weather problems													
Other reasons (specify)													
Total													

5. Number of newly registered disadvantaged/vulnerable children	Form 1		Form 2		Form 3		Form 4		Form 5		Form 6		Total
	M	F	M	F	M	F	M	F	M	F	M	F	
Orphaned- mother died													
Orphaned- father died													
Orphaned-both parents died													
Child-headed household													
Neglected/ Abandoned													
Sick parents													
Sick student													
Poverty													
Street Children													
Children with Special Needs													
Other (specify)													
Total													

Draft Nov 2004

Page 1 of 2

Draft Dec 2004 (v3)

Page 2 of 2

EMIS Code

6. Number of new students receiving bursaries during this month	Form 1		Form 2		Form 3		Form 4		Form 5		Form 6		Total
	M	F	M	F	M	F	M	F	M	F	M	F	
Community													
Government													
Institutional													
NGOs and FBOs													
Other:													
Total													

STAFF INFORMATION – Provide details regarding the staff at the school for this month

7. Number of staff at the school this month	MOEST/TSC Remunerated			Board of Governors Appointed		
	Male	Female	Total	Male	Female	Total
Teachers						
Support Staff						
Total						

8. Staff who left the school this month	MOEST/TSC Remunerated Teachers						Board of Governors Appointed					
	Number of Teachers			Number of Support Staff			Number of Teachers			Number of Support Staff		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Cultural/political influence												
Death												
Desertion												
Discipline												
Dismissed												
Resigned												
Retired												
Retired on medical grounds												
Transfer/promotion												
Other (specify												
Total												



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Module

O. Akpaka

3.3

Qualitative research on education and HIV/AIDS

About the author

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Module 3.3

..... QUALITATIVE RESEARCH ON EDUCATION AND
HIV/AIDS

Table of contents



Questions for reflection



Introductory remarks

1. Conducting qualitative research to better manage the situation

Why is the qualitative approach particularly appropriate in the context of HIV/AIDS?

How may qualitative research help educational planners and administrators deal better with the effects of the epidemic?

2. Collecting, processing and analyzing qualitative data in the context of education and HIV/AIDS

Data collection techniques

Sorting, processing and analyzing qualitative data

3. Associating qualitative and quantitative research



Summary remarks



Lessons learned



Answers to activities



Bibliographical references and additional resource materials



Aims

The aims of this module are to:

- explain the value of qualitative research for educational planners and administrators in the context of education and HIV and AIDS;
- introduce you to use of the different techniques applied in qualitative research.



Objectives

After completing the module, you should be able:

- to explain the relevance of qualitative research in the context of education and HIV/AIDS and its usefulness for educational planners and administrators;
- to identify the various techniques that can be used in a qualitative research assignment;
- in collaboration with researchers, to apply these techniques for collecting, processing and analyzing data that contributes to improved management of education when faced with the AIDS epidemic;
- to determine how quantitative and qualitative research should complement each other.

Before you begin...



Questions for reflection

Take a few minutes to think about the questions below. You may find it helpful to make a note of your ideas in the spaces provided. As you work through the module, see how your ideas and observations compare with those of the author.

What difficulties are you confronted with when trying to find out how the AIDS epidemic impacts on the education system in your country and how it reacts?

Can you identify the benefits of greater insight into action undertaken in education in your country to cope with the situation brought about by HIV and AIDS?

What methods of research/investigation do you know that enhance understanding of what occurs in education systems confronted with the AIDS epidemic?

Do you consider that the data in your possession enable you to understand problems such as that of orphans and vulnerable children (OVC)?

What do you think would be the most useful to understand the impacts of HIV and AIDS on education systems: a statistical survey or qualitative research?



Introductory remarks

The AIDS epidemic constitutes a real development problem from which no country is immune and which affects sub-Saharan Africa in particular. According to UNAIDS statistics (December 2004), 39.4 million people were living with HIV in the world in 2003. According to the same source, AIDS-related deaths were put at 3.1 million. HIV and AIDS affect supply and demand in education no less than its quality. It compromises the attainment of various aims and especially the provision of quality education for all (see [Module 1.2](#), *The HIV/AIDS challenge to education*, and [Module 1.3](#), *Education for All in the context of HIV/AIDS*).

It is thus urgently necessary for education ministries and, in particular, for educational planners and administrators, to give due attention to HIV and AIDS in their work. The challenge is both **to limit the impact of HIV and AIDS to satisfy the educational needs of learners more effectively, and to develop innovative educational solutions**. This presupposes that planners and administrators in education have at their disposal data taken, for example, from periodic administrative reports, school statistics and studies, and, in particular, qualitative research.

Supposing that you wish to examine HIV- and AIDS-related initiatives in your region, you may do so in different ways: using a statistical questionnaire; counting the activities carried out in a given period; interviews; or classroom observation of a lesson on HIV prevention. While the first two methods are essentially quantitative, the last two are qualitative.

So what do we mean by **qualitative research**? According to the definitions proposed by different researchers, qualitative research is a **scientific approach to information gathering, which is designed to observe social interaction and understand individual perspectives**. It provides information on the experience of individuals, why they adopt certain attitudes, and the kind of incentives that may lead them to change. **Qualitative data are non-numerical**; they may consist of detailed descriptions of situations or types of interaction, personal testimony and statements obtained directly from individuals about their experience.

As in the case of any research, qualitative research is conditioned by its own **goals and concerns and by working hypotheses**. Its findings cannot be regarded as generally applicable to the national context, but it provides much information relevant to the understanding of phenomena. It is no easier for the fact that it is based on non-numerical data. It calls for the scientific discipline required in any kind of research.

In this module, we shall study together in turn:

- why qualitative research may contribute to improved management of the education situation caused by HIV and AIDS;
- how to collect, process and analyze qualitative data in the context of education and HIV/AIDS; and
- the benefits that may be gained from associating qualitative and quantitative research to obtain the data needed to improve planning and management in such a context.

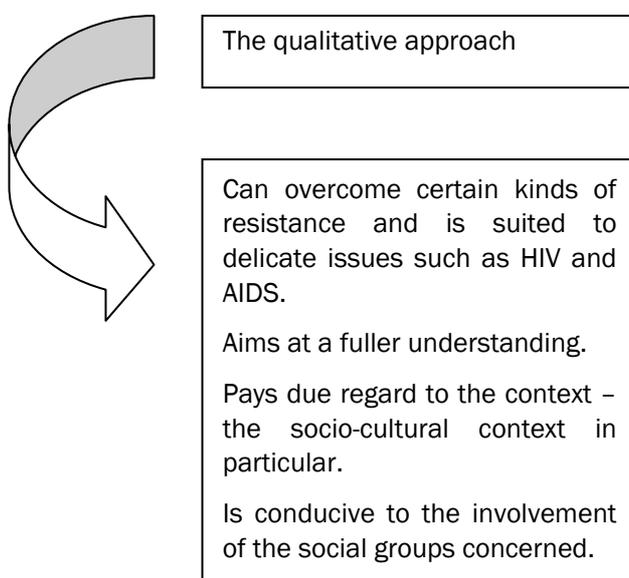
In the course of the module, we shall use the term 'approach' to refer to the strategic emphasis of research and the term 'techniques' to describe the means used to carry it out.

1. Conducting qualitative research to better manage the situation

In this first part, we shall begin by seeing how the qualitative approach is especially appropriate in studies concerning HIV and AIDS, and then how it may help educational planners and administrators to deal better with the effects of the epidemic.

Why is the qualitative approach particularly appropriate in the context of HIV/AIDS?

Figure 1 The qualitative approach



Overcoming certain kinds of resistance

HIV is a sensitive issue. Fear of stigmatization or shame may block all communication. However,

- the qualitative approach is especially suited to delicate issues;
- it is responsive to the complexity of situations and human behaviour;
- it is attentive to different modes of communication (spoken language, body language, written records, etc.).

In a qualitative research assignment, for example, it will be easier for school heads to acknowledge that certain persons living with HIV are absent, whereas with other approaches they might not disclose such absences to avoid bringing shame upon these persons or their school.

Fuller understanding

Qualitative research is concerned with the 'why' and the 'how', and seeks to grasp what is actually happening rather than just regulations and norms:

- It studies knowledge and insights regarding HIV and AIDS.
- It makes it possible to identify the needs and anxieties of the persons involved and unlock the real experience of others; it explores the concerns of all interested parties affected in one way or another by the epidemic.
- It distinguishes, like Randall (1988), between what people say they have to do (the rules), what they say they do (the norms), and what they actually do (reality).
- It takes account of the constant interaction between points of view and processes, and accepts contradictions.
- The qualitative approach provides for the study of persons and essential elements as a single whole and not as variables.

The aim of **understanding** lies at the heart of the qualitative approach with a far greater emphasis on **processes** and the **significance** of attitudes, points of view and actions than on their frequency.

Typical questions that may very well be addressed in a qualitative approach to research are "Why do teachers, although well informed, continue to have high risk sexual behaviour patterns?"; "What sense do families who take in OVC have of their responsibilities with regard to the education of these children?"; and "Is HIV/AIDS-related absenteeism perceived in schools as something different from absenteeism in general?".

Due regard paid to the context – the socio-cultural context in particular

- Qualitative research is intended to **give meaning to phenomena studied in their context**, which may, for example, differ in an urban as opposed to a rural environment, or depending on whether socio-cultural groups are more or less responsive as regards matters relating to sexuality.
- It is especially recommended for analyzing AIDS-related social representation, whose crucial significance in processes involving the stigmatization of people living with HIV and their entourage is fully acknowledged (see [Module 1.4](#) on *HIV/AIDS-related stigma and discrimination*).
- Qualitative research offers a better grasp of the changing social experiences of different groups and of attitudes *vis-à-vis* seropositivity and the illness.

The techniques used in qualitative research (discussed in the following section), such as personal testimony, interviews, and accounts of past experiences help ensure that due regard is paid to this cultural context. Thus information obtained from people living with HIV and members of the community will be of assistance in providing contextual data that can help to answer the questions addressed by research, which are important in establishing a programme for preventive education, such as "What are the attitudes of parents and communities *vis-à-vis* teachers living with HIV, and how open are they in discussing HIV-related sexual issues with young people?"

Social groups that are affected are more likely to be involved.

- In qualitative research, the relation between the researcher and the persons asked to contribute to the research is often of a personal nature.
- It provides those concerned with an opportunity to say why they think and act as they do, and they feel more appreciated for who they are.
- The groups concerned are not mere objects but **real protagonists** of research.

Thus evaluation of the work of peer educators via a qualitative approach will involve them and lead them to consider both their relations with their companions and with adults (school authorities, teachers, parents) and the restrictions that they encounter.

Ready adaptability to varied and unorthodox situations

The qualitative approach is an open and flexible process as has been indicated above.

- It offers opportunities for exchanging tools or the sample to adapt to a situation which, when work began, was not considered to be so important.
- It provides for the study of a restricted number of groups (micro-observation).
- It offers **freedom to use several techniques to capture the reality of a given situation.**
- Each of these techniques allows for a certain degree of flexibility, in order to adapt to the individuals or groups that are the subject of research.

Indeed, when confronted with an issue as delicate as HIV, the ability to be very flexible is often required: if necessary, this may involve disregarding interview guidelines prepared beforehand to concentrate on listening to a teacher living with HIV or his/her partner, or to conduct the interview in several stages if the interviewee feels tired. However, this kind of adaptability is not tantamount to lack of order or selection criteria as we shall see below (see Section 3).

How may qualitative research help educational planners and administrators to deal better with the effects of the epidemic?

Qualitative research provides information needed for national, regional and local planning in the context of education and HIV/AIDS. Such research:

- may help to establish the goals and aims of national/regional/sectoral programmes on the basis of the real life experiences of those concerned;
- contributes to the identification of needs (that are not solely quantitative), such as those of students that are being discriminated against or teachers obliged to replace sick colleagues (see [Module 4.2](#) on *Teacher education and development in the context of HIV/AIDS*);
- describes and examines social phenomena such as stigmatization that planners have to take into account in their work;

- provides a multidimensional perspective on a social situation – an aspect that is essential in the context of HIV and AIDS.

Qualitative research supports the implementation of strategies and plans, in that it

- identifies sources of blockage in the current situation, for example in the implementation of strategies for the education of OVC;
- provides a basis for taking up the ideas of different players in education with a view to improving a programme or service, such as care of educational staff living with HIV;
- contributes to the identification of positive strategies, and useful models for expanding and/or duplicating them, such as the involvement of community radio in preventive education.

Activity 1

A regional work plan A has been devised on behalf of OVC in primary education. Improve this plan A using data derived from qualitative research.

Plan A provides for:

- the delivery of school materials for OVC in primary schools in the region at the start of the school year;
- exemption from payment of the financial contribution to the association of pupils' parents;
- the donation of clothes at the end-of-year festive season.

Under the plan, OVC normally receive school materials and clothes from NGOs or associations.

Some data obtained from qualitative research are that:

- teachers do not always know which children in their class are OVC;
- the lack of school materials is glaring in the case of OVC, but also noted among other pupils;
- families that take in OVC ask some of the boys and, above all, many girls to stay at home to help with the housework;
- the death of parents has a psychological and social impact often reflected in acute anxiety, loss of self-confidence, a sense of stigmatization and apathy in the classroom;
- the work of the NGOs or associations involved in the support offered to OVC is compartmentalized.

Recommended exercise: Spend 15-20 minutes preparing a plan B that takes into account the data derived from qualitative research. When you have finished, you can compare the result with the answers suggested by the author at the end of this module.

Qualitative research makes it easier to monitor the impact of the epidemic on the education system and on the quality of education in particular.

The importance of monitoring and evaluation for planners and administrators is fully acknowledged. In the context of education and HIV/AIDS, the qualitative approach may:

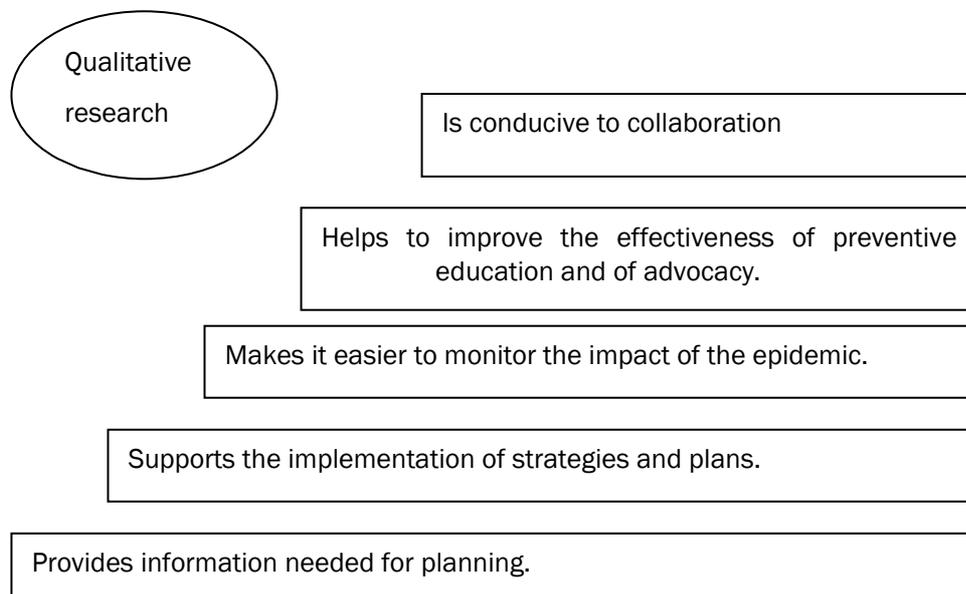
- provide information on trends in the side effects of HIV and AIDS which hamper the provision of education and/or the quality of the services offered;
- identify practices in managing the absence of sick teachers and the solutions offered by various players in the system;
- explore changes in attitudes *vis-à-vis* school education in families affected by the epidemic;
- look for relations between difficulties experienced by pupils at school and their OVC status;
- identify changes that have occurred in school management which might be profitable for the system in general.

Qualitative research is conducive to collaboration with other sectors.

- Depending on the problems that become apparent during research, educational administrators may be justified in establishing an inter-sectoral team for joint actions.
- With information derived from qualitative research, it is easier to clarify the roles of various agencies, for example in caring for educational staff affected by HIV and AIDS (social and health services, NGOs and associations involved in preventive action, elected representatives and religious officials).

The foregoing points are summed up in the diagram below.

Figure 2 The role of qualitative research



Activity 2

Are you convinced that qualitative research is relevant and helpful to educational planners and administrators in the context of education and HIV/AIDS?

If you feel that the qualitative data derived from research may assist you with your work and consider that this type of research is interesting, notwithstanding certain limitations (see below), it is suggested that we progress to Section 2 on Collecting, processing and analyzing the data concerned.

If you are sceptical, try to analyze your reservations in terms of the following two questions:

List the reasons for your scepticism.

Imagine the arguments that someone in favour of qualitative research might use to counter them.

2. Collecting, processing and analyzing qualitative data in the context of education and HIV/AIDS

Data collection techniques

Individual interviews, group discussions and observation are the techniques most frequently used and referred to in the literature on the qualitative approach. However, there are many others that we shall now review in brief.

Individual interviews

- Aim: elicit personally expressed detailed observations regarding the subject of research
- Target groups: of special interest for use with policy-makers and those who have been personally and substantially affected by the existence of HIV and AIDS (such as people living with HIV or those close to them).
- Different approaches depending on whether the interview is
 - structured (or directed) with a list of predetermined questions, some of them closed (as in quantitative research), others open;
 - semi-structured (or semi-directed) with a list of topics or important points for discussion. Here, the principle is to let the interviewee talk freely and then return to points that have not been covered or need to be explored further;
 - free (or non-directed), in which the person is asked to speak very freely on a topic while the interviewer intervenes solely to make a fresh start or rephrase something in order to facilitate communication and get the interviewee to expand on what has been said.

None of these kinds of interview should be confused with either a conversation or any form of therapeutic exercise.

- Advantages: confidentiality, flexibility, a wide variety of interesting information on complex situations, interest on the part of those who are encouraged to express themselves and who feel listened to. Thus during an interview of this kind, a teacher living with HIV in private education in Togo was able to explain the discrimination to which he was subject.
- Limitations: time-consuming (ranging from around 15 minutes to 2 hours), calls for training in listening and is language dependent (though it is also important to observe body language which is sometimes more communicative than words, and to be attentive to what is not said and consider the meaning of this kind of silence). Certain interviewees may not tell the truth, especially where a subject such as HIV is concerned. Tape-recorded interviews are not often willingly accepted and call for lengthy transcriptions, while note-taking requires training so that interviewers remain attentive to what is said. It is vital not to rely on one's memory and to write notes on completed interviews immediately or every evening.

Focus-group discussions

- Aims: **gather a broad range of ideas, opinions and experience** relating to the focal points of the research.
- Target group: a group with a certain degree of homogeneity (in terms of age, sex, social status or professional activities), such as mothers of pupils asked to talk about school drop-out among girls, one of whose parents is sick. No more than 15 persons.
- Approaches: these are semi-structured discussions in which the group moderator possesses a guide prepared in advance containing the topics or important points for discussion (as in the case of a semi-structured individual interview). Moderators use the guide very flexibly (topics may be added or left out depending on the group concerned). They are meant to encourage the development of group dynamics in which interaction between participants is direct and to the point so that everyone will want to contribute. **Discussion should be focused on the group**, and not on the moderator who merely encourages the group members to elaborate on what is said.
- Advantages: flexibility, the emergence of fresh ideas, intensive provision of a variety of data in a relatively short period (usually between one-and-a-half and two hours), the participants occupy centre stage and are thus likely to contribute later to the implementation of a plan or programme. Thus focus groups with teachers in Burkina Faso revealed how they could contribute, alongside peer educators, to the preventive education of pupils.
- Limitations: certain dominant individuals may prevent others from speaking or significantly influence them; even in a homogeneous group, some members may be reluctant to share their experience; the skill of the moderator is a key factor in creating group dynamics. If discussions are not tape-recorded (considering the attendant difficulties already indicated), an assistant should note what is said and by whom.



Activity 3

Prepare the main outlines of a guide for a group discussion with heads of area education authorities on problems encountered in managing teacher absenteeism caused, among other things, by HIV and AIDS.

Participant or non-participant observation

Two kinds of observation techniques can be distinguished, participant or non-participant, depending on whether the researcher is observing with or without intervening directly or indirectly. Here are two examples: the activities of AIDS clubs organized in schools and life in families that take in OVC. Depending naturally on the aims of the research, the first example might be the focus of non-participant observation and the second of participant observation.

- Aim of the observation: to record (in writing or with a tape-recorder or camcorder) the proceedings seen or heard in real life situations occurring in the presence of the researcher.
- Target situation: any situation relevant to the issues addressed by the research. In non-participant observation (also referred to as 'uninvolved' or 'external'), the situation is in general arranged beforehand, as in the case of talks on preventive education organized in AIDS clubs.
- Approaches: non-participant observation involves structured and methodical observation of behaviour and conversation in a natural environment. While observation is selective solely in terms of its relevance to the focal points of the research, it is not totally all-inclusive, so, where it is written, there is something to be gained from a table that:
 - notes the elements for observation,
 - specifies the successive periods of time involved,
 - distinguishes between the actions/involvement of the various players, depending on circumstances.

In participant observation (practised notably in anthropological research), in which researchers are fully involved in the life of the group being studied and assume an active role over and above that of their research function, tables are also used but on a less regular basis. What is observed is often recorded in the researcher's log book.

- Advantages: the subjects of the research can readily be viewed from very close range, and **behaviour and situations recorded just as they occur without the need for an intermediary.**
- Limitations: the presence of the researcher exerts a greater or lesser influence that depends on circumstances but is rarely non-existent. The role of the researcher in the group being studied requires careful thought.

Projective composition

- Aim: elicit personal observations regarding subjects about which people might be reticent or even totally uncommunicative.
- Target group: may be used with any group capable of writing short essays (corresponding roughly to at least initial secondary school level). Pupils accustomed to written composition are particularly at ease with this kind of technique.
- Approaches: ask group members to write an essay on a given subject as spontaneously as possible, explaining that it is not a school exercise and that mistakes do not matter, but without elaborating further on the subject concerned (which might influence the outcome). The activity

should be kept anonymous with a request for just some items of information – age, sex, locality and class (in the case of pupils).

- The subject text should be short and readily understood by those for whom it is intended, and describe a situation well-known to them – or at least not one they have never experienced: the environment is familiar, but those surveyed are not questioned directly. All members of one class may be given the same subject, or two or even three different subjects.

Here are two examples of projective composition given to pupils in their second year of secondary school in Burkina Faso:

1. On a rainy day, a girl in your class accepts when a man offers to drop her off at school. In the evening, she is glad to see that he is waiting for her again with his fine car. Before she gets in he says, "I have a nice present for you but I've forgotten it at home. Come with me and I'll give it to you. My wife is not there". Say how the girl will react and the advice you would give her.
2. A pupil in your school often misses lessons. It is rumoured that he may have AIDS. Imagine how pupils in his class might react and their reactions to him.
3. One variant of projective composition exists in the form of sentences for completion, such as: "One associates AIDS with.....". The respondent is expected to answer quickly.
 - Advantages: a technique for fast information gathering requiring no special form of training, which costs little in terms of time or money and **enables members of the group concerned to express attitudes and opinions of which they are not always aware.**
 - Limitations: the technique has to be used almost exclusively with young school pupils, and calls for lengthy processing and analysis.



Activity 4

Prepare an exercise in projective composition for pupils in their third year of secondary school. The subject of composition will be sexual relations between teachers and pupils (of either sex).

Visualization in participatory programmes (VIPP)

This method is customarily employed to stimulate a group. It may also be used during a qualitative research assignment.

- Aim: to enable each member of the group to take part in the process of reflection, identification of problems and research, and elicit the views of each.
- Target group: any group of school pupils (at initial secondary school level at least). The method may be used with seven or eight persons, though ideally there should be 15-20 participants. It is possible with 40 participants divided into sub-groups of two or three persons who discuss and agree to prepare two or three cards.
- Approaches: ask an appropriate question, such as "What perceptions do teachers have of AIDS?". Distribute the same given number of cards (two or three) to each participant or group of participants. Comply with certain rules when filling in cards (just one idea per card in no more than three lines). Gather in the cards, display them and ask participants which cards go with which others, discuss the outcome and rearrange them in accordance with the group's wishes. Each idea counts and no card should be rejected. The group should agree on a title for each set of cards. It is possible to elaborate on one of these sets by repeating the exercise afresh or using another technique.
- Advantages: everyone is involved and **has a say, including the shyest, while a rich variety of ideas are expressed on which it is possible to expand, with scope also for a focus on 'taboo' subjects.**
- Limitations: the interest and variety of the discussions if not somehow recorded may be lost once a title is agreed; some apathy may set in if the moderator wishes to elaborate on group discussions several times. As in the other methods described above, there is no substitute for a good moderator.

Other techniques

Many other techniques may be used to collect qualitative data that provide greater insight into the real life experience and perceptions of various people as regards HIV and AIDS, the significance of their attitudes and the processes at work in the context of education and HIV/AIDS. Among them are the following:

- Case studies and stories providing a basis for further thought and discussion inspired by particular cases.
- Accumulating songs or drawings that encourage understanding of social representation in a given socio-cultural context.
- Collating minutes of meetings or a variety of texts, analysis of which will help, for example, to clarify trends in managing people living with HIV in the education system.

Appropriate techniques should be selected **in accordance with the issues addressed by research, the target group** and the human, organizational and financial means available. It is also possible to **combine several methods** to study the same phenomenon (this is known as 'triangulation') and corroborate the findings.

By means of the different techniques described above, you are going to gather a mass of information. The aim is not to gather it for the sake of doing so but to achieve the goals of the research and answer the questions confronting it. For this purpose, the data collected have to be sorted, processed and analyzed.

Sorting, processing and analyzing qualitative data

In the interest of clarity, there is a need to distinguish between data sorting, processing and analysis. In reality these different operations overlap, especially in qualitative research in which the process is continuous and progresses frequently back and forth, and are always closely related to the focus of research and its working hypotheses.

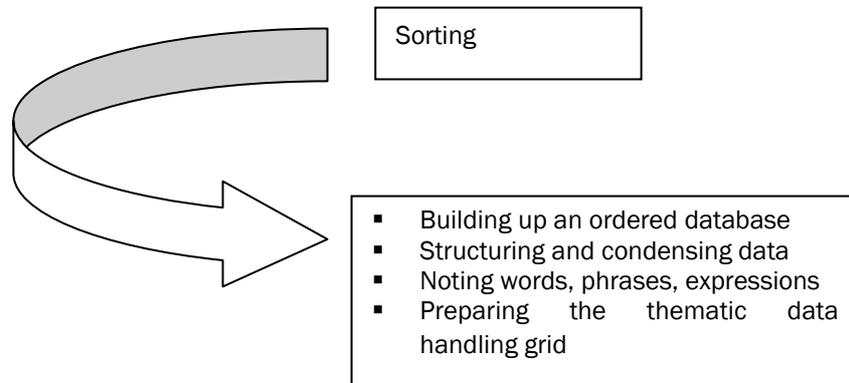
Stages in the sorting of data

This sorting involves:

- looking for information concealed in the database;
- causing data to reveal information that validates or invalidates something, or gives rise to doubts or further questions concerning the research topics at issue;
- clarifying acquired knowledge.

Sorting of data may begin when it is being collected and continues when collection has finished. Work on codes begins with the preparation of guides for interviews or group discussions, but qualitative data sorting is a continuous process and it is possible to add codes or discard some of them in the light of information obtained during data collection. Encoding always takes place when collection has been completed.

Figure 3 The sorting process



- Building up an ordered database: establishing the list of documents and interviews, entering the different kinds of output (individual interviews, group discussions, observation, personal testimonies, etc.).
- Structuring and condensing data:
 - identifying important topics for the issue under consideration or recurrent topics;
 - classifying data in accordance with research already carried out in the same area, and with the central questions underlying it and the expected outcomes;
 - drafting summaries and rearranging data;
 - developing visual methods of condensing data: graphs, diagrams.
- Noting words, phrases and expressions used by those active in the research, which provide for greater insight into social, interpersonal and behavioural dynamics and which will help you, when presenting the results, to report verbatim what has been said by protagonists in the field.
- Preparing the thematic data handling grid, which will normally consist of several columns and several rows (even though there is only one in the following example!):

Issues	Variables	Code	Information
Screening	Fear Access difficult Wish to participate	F AD WTP	Screening remains uncommon. Of interest to those who wish to know their status but still gives rise to fears The test is for those at risk or who have been exposed to risk.

From these various starting points you may prepare codes and encode the various forms of output. **A fundamental rule is that codes must no longer be changed once encoding has begun**, although you may take different data classified under the same code and establish sub-categories within that heading.

For example, code 3 = support offered to children affected by HIV and AIDS. Within that category you may take code 3 data and distinguish between the support provided by school heads and teachers (31), support offered by other pupils (32) and that available from agencies external to the school, such as health services, NGOs, etc. (33).

Limitations and advantages of the various types of processing

Two main types of processing may be envisaged:

- Processing by hand: use of different coloured highlighters, cards for grouping together texts specific to each issue, summaries for interviews, use of the thematic data handling grid, and encoding by hand. A computer and word processing software might be used for part of the work.
- Computerized processing with qualitative data processing software (MAXqda, Atlas, Nud*Ist/NVivo, SAS, Anthropac, etc.), entering codes for words (or topics, paragraphs), picking out relevant passages, data management and organization, constructing links between the codes or textual content.

Processing	Advantages	Limitations
By hand	Easy to perform Very good knowledge of the topic Great flexibility for analytical purposes Low cost	Lengthy, painstaking work Comparative analysis is more difficult if groups are diversified. Preservation of the analysis is somewhat complex.
Computerized	Takes less time Possible to combine qualitative / quantitative Better data management for the future Facilitates classification and analysis	Cost of entering data is painstaking. Need to learn about the software and, of course, how to access it It is not possible for communities to take part in this stage of the research

Software for qualitative data processing and analysis may be very helpful, but the quality of the analysis still depends today on the person who performs it.

Some basic rules for sound qualitative analysis

- Follow the plan for analysis that was drawn up at the outset, when the questions for research were first devised, hypotheses were formulated, techniques were decided on and resources (such as guides and tables, etc.) were prepared.

- Note all significant facts and not just those that correspond to the expectations of the researcher. The discipline required in qualitative and quantitative research is the same.
- **Establish the relations between various elements (whether in an interview or a text) and link up elements derived from several methods or groups.** Creating these associations is essential to the analysis and provides for an accurate record of the complexity and dynamics of situations.
- Arrange and **interpret non-numerical data to identify trends enabling the phenomenon studied to be understood and explained.** In this interpretation, it is important to be aware of its limits and ready to cast doubt on any prior assumptions in the analysis.
- Proceed in a repetitive manner, as in the whole qualitative research process: from the initial findings return to the research issues and hypotheses formulated at the outset, reformulate the latter if necessary, identify new areas for investigation and examine matters in greater depth, etc.
- Compare and contrast data derived from different sources or by means of different techniques, and undertake comparisons between material obtained from observers or interviewers if several such sources have contributed to data collection, so as to eliminate as far as possible any subjectivity on the part of the one or more persons who have collected data.
- As much as possible, get results checked by those who took part in the research, which will help to ensure the credibility and validity of the findings.

Three attributes that should be developed during sorting, processing and analysis:

- Scientific discipline
- Ability to establish associations
- Imagination

You will undoubtedly agree that these three skills are also required by educational planners and administrators, so you are already developing them in your daily work.

Even though qualitative research may contribute substantially to the understanding of social, health-related and economic phenomena, and especially to the attention paid to HIV and AIDS in education, it does however have certain limitations. Those most frequently cited relate to:

- the lack of statistical representations of the population on the basis of such research;
- the fact that the conclusions reached by such research cannot be regarded as generally applicable;
- the difficulty to replicate the research.

Associating the two kinds of research thus seems increasingly instructive. It is this association that we shall study in the final section.

3. Associating qualitative and quantitative research

In either kind of research, there is a need for:

- a clear definition of the aims of the research and the questions it should address;
- a search for information on research/studies already carried out;
- the formulation of hypotheses;
- a research plan with precise indications concerning the approach, the sample, the instruments, the framework for analysis, the training of research assistants: (moderators, interviewers, investigators) and the plan for presenting the results;
- considerable scientific discipline and an essential lack of any value judgement or moral appraisal, mainly as regards HIV and AIDS.

However, some consider that the differences between the two types of research are such that they are incompatible.

Different processes

We shall restrict ourselves here to a description of the two processes conducted differently in quantitative and qualitative research, namely the formulation of hypotheses and the constitution of samples.



Activity 5

Can you think of other processes that are carried out differently in the two kinds of research? Note them below.

In the formulation of hypotheses

Quantitative research: hypotheses are formulated before the beginning of the work, in which the main aim of the established process is to test them and invalidate or confirm them.

Qualitative research: the hypotheses are the outcome of initial activity (bibliographic research, initial information gathering); they guide the work, but the purpose of the data obtained is not necessarily to confirm or invalidate hypotheses and/or preconceived theories. Because of the repetitive nature of the process, fresh hypotheses may be formulated as work proceeds.

In the constitution of samples

In the quantitative approach, the sample is based on statistical calculations, the main concern being to achieve a statistical representativeness in which it is highly probable that each individual in the population under consideration will be included in the sample.

In the qualitative approach, there is a very wide variety of samples as follows:

- homogeneous;
- 'snowball' samples: the selection of new persons, depending on the information obtained (for example, the discovery of key players);
- samples that depend on the criteria that one wishes to study;
- samples based on quotas (the identification of major sub-groups, followed by selection);
- case or deviant samples, etc.

Concern for sociological representativeness is greater than for statistical representativeness, but certain qualitative samples may also be constituted as a matter of course, like quantitative research samples. The constitution of the sample is closely related to the aims of research and the questions addressed by it. Thus in a study in Burkina Faso on the impact of HIV and AIDS on the education system, schools were identified for the study in accordance with certain criteria: urban/rural environment; primary/secondary and technical schools; and public/private education. Comparisons were thus possible with reference to these various criteria.

The factor that determines the size of the sample (aside from the budget and the duration of the study) is often 'saturation': information becomes repetitive and confirmatory, and no new information is derived from fresh interviews.



Activity 6

Establish a sample for individual interviews in the capital, as part of a qualitative approach, on the impact of HIV and AIDS on the education system in your country.

However, the boundaries between the two types of approach are not always distinct and relations between the two are no longer viewed in the same terms as some 15 years ago. They are increasingly regarded as complementary.

Complementary approaches

The current question asked in much research concerns its main thrust – qualitative or quantitative – which does not preclude reliance on both types. Any particular research model or combination of models that is selected should be geared to the goals of research.

What are the advantages that one can expect from different approaches to understand better the impact of HIV and AIDS on the education system?

Different and complementary insights are possible as a result of combining these two approaches. The strengths of one compensate for the weaknesses of the other so that the strengths of both have a combined impact.

It is of interest to turn to qualitative research for a better understanding and interpretation of quantitative findings.

For example the estimated prevalence rate on the basis of a campaign to screen HIV in schools in a region has decreased, and the quantitative approach will seek to assess the differences from one year to the next with respect to the sex of those concerned, the environment (rural or urban), and exposure to preventive education, while the qualitative approach will be concerned to understand the attitudes of young people *vis-à-vis* the preventive education they receive, with due regard for the variables targeted by the quantitative approach (sex, age, etc.).

- Qualitative research may give rise to hypotheses for a quantitative study or a quantitative study may be necessary after qualitative research;
- The association between the two types of research provides for a **better grasp of the complexity of the real situation** and thus for strategies and decisions that are appropriately geared to the situation created by the AIDS epidemic in the field of education.

How are these associations and dovetailing of the two kinds of research to be achieved?

- In the light of the aims of the research, formulate the questions that you intend it to address.
- Identify those questions that will involve the quantitative approach and those calling for a qualitative approach; for example, when planning a campaign to screen young people, the quantitative approach will help answer questions such as the following:
 - What is the proportion of pupils in lower secondary education who have already undergone screening?
 - What is the proportion of those who would do so if it were free of charge?
 - Does willingness to undergo screening vary according to sex, the type of school, the environment, etc?

On the other hand, to answer questions concerning attitudes *vis-à-vis* the prospect of the test, the fear to which this may give rise and the expectations of young people if the test proves positive, a qualitative approach is essential.

- Identify the types of information that are easier to obtain with a particular approach.
- Use techniques characteristic of both types with different samples: for example, a questionnaire (with closed questions and a few open ones) with a representative sample of teachers, and semi-structured interviews with inspectors and educational advisers.
- Turn to one particular group if necessary to obtain an answer to a particular research question, using means characteristic of both approaches, such as a questionnaire with closed (or multiple choice) questions and group discussions with parent associations, for example, to study their role in preventive education.
- Plan to quantify certain findings obtained using qualitative techniques, for example in the case of projective compositions for all second-year classes in selected secondary schools; in such a situation, it is important to specify clearly how the interpretation of the information will be circumscribed.
- Make experimental processes part of a qualitative research assignment: select cases that are similar but different in terms of operational variables (variables that clarify differences such as sex, age, socio-professional category, place of residence) or, in a predetermined experimental context, amass decisive qualitative evidence (via interviews or observation); integrating material in this way calls for very considerable research experience and the establishment of a complex set of research conventions in order to reach scientifically valid conclusions.
- Include observations made at different times (for example, before teacher training and afterwards).

Other combinations may be envisaged provided that qualitative and quantitative techniques form part of a continuum in line with the aims of the research.



Summary remarks

It is not possible to make do with quantitative data if the impact of HIV and AIDS on the education system is to be addressed comprehensively. Qualitative research yields **data that are important for improving educational management in the context of HIV/AIDS**. It constitutes an essential foundation for effective work by educational planners and administrators, by enabling:

- the real social and educational situation to be perceived in terms of the outlook and experience of different players in the education system disrupted by the epidemic;
- greater understanding of how and why these players are affected by HIV and AIDS;
- proposals for action to be gathered that emanate from interested parties who will be expected in certain cases to implement them.

A **qualitative approach does not imply methodological imprecision** or non-scientific research. Drawing up aims and issues for research, as well as the formulation of hypotheses (even if they do not serve the same purpose as in quantitative research), and the preparation of a research plan all have to be performed with the same discipline in order to yield results that are fully valid. However, the desire to understand the processes and context underlying the issues addressed by research and to elaborate on information are such that qualitative research is special, among other things for its flexibility, which is particularly helpful when examining a delicate subject such as HIV/AIDS and for the **repetitive nature of the process involved**. Those engaged in qualitative research are constantly retracing their steps to examine more closely topics that emerge from information gathering, reformulating questions and hypotheses as appropriate, or modifying their sample.

HIV and AIDS have a clearly perceptible impact on the organization of the education sector, the quality of services and the educational requirements of communities, but also on many other sectors (health, the economy, etc.). The **qualitative approach is conducive to the involvement of different sectors**, breaking down the isolation in which the education sector and those responsible for it might otherwise become entrenched, and may also be combined with quantitative approaches.



Lessons learned

After working with this module, you should have assimilated the following lessons:

Lesson One

Qualitative research is especially appropriate in the context of HIV/AIDS.

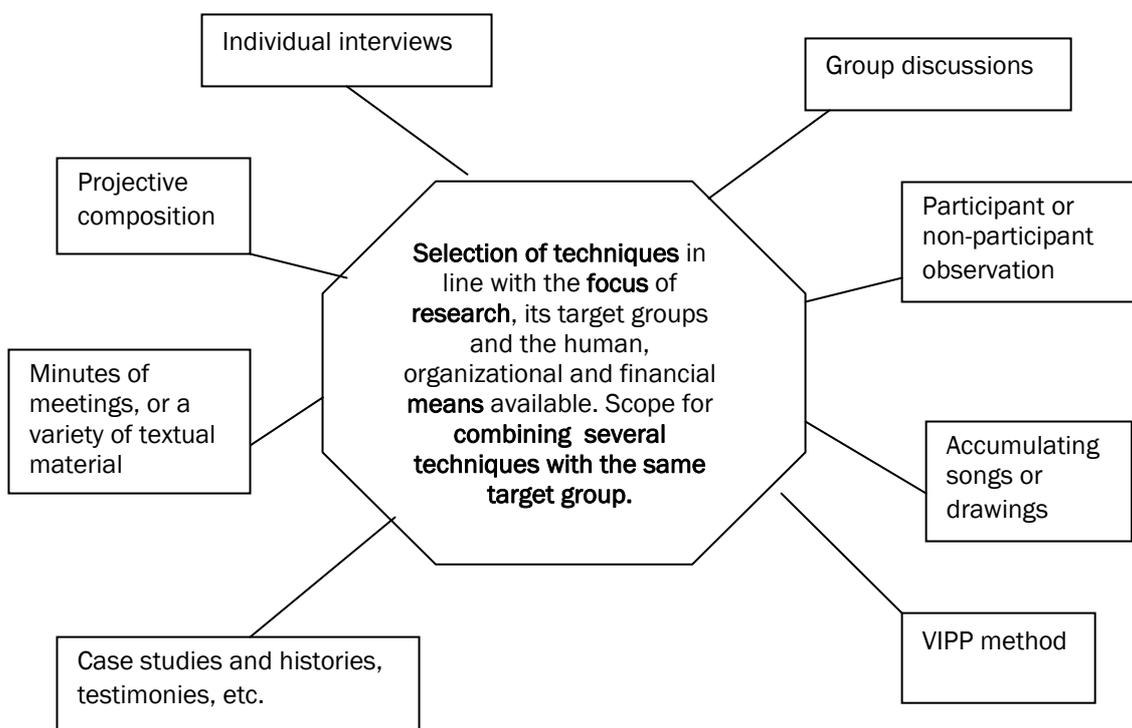
- It is suited to the treatment of delicate issues, and enables certain forms of resistance to be overcome.
- It seeks a deeper understanding of what others actually experience, the processes and the significance of their attitudes, behaviour patterns, etc.
- It pays due regard to the context – and in particular the socio-cultural context – and is especially recommended for analyzing social representation associated with AIDS.
- It is conducive to the involvement of the social groups concerned, who are regarded as real protagonists and not mere objects of research.
- It is easily adaptable to varied and unorthodox situations.

Lesson Two

Qualitative research helps you to deal better with the effects of the epidemic in the following ways:

- By providing information required by national, regional and local planning in the context of education and HIV/AIDS.
- By contributing to the implementation of strategies and plans.
- It makes it easier to monitor and assess the impact of the epidemic on the education system, and especially on the quality of education.
- It contributes to better preventive education among young people and more effective advocacy at different levels.
- By encouraging collaboration with other sectors.

Lesson Three



Lesson Four

Data sorting, processing and analysis are in most cases overlapping operations in qualitative research. Three kinds of skills are essential in carrying them out, namely scientific discipline, the ability to establish associations, and imagination. Among the rules for quality analysis, remember that you should first and foremost:

- establish relations between constituent elements (whether in an interview or a text), as well as between elements derived from several methods or groups;
- proceed in a repetitive fashion;
- compare and contrast data obtained from different sources or by means of different techniques;
- interpret non-numerical data in order to identify trends from which it is possible to understand and explain the phenomenon studied.

Lesson Five

In spite of the undeniable differences between quantitative and qualitative research, in terms of both purpose and processes the current tendency is to regard them as complementary. Different insights are possible when they are combined. **In combination, they provide for a better grasp of the complexity of real situations, especially in the case of HIV and AIDS.**

Strategies and data collection instruments may be combined in different ways, such as:

- using both types of technique with different samples;
- using resources characteristic of both approaches to focus on the same group;
- providing for the quantification of certain results obtained by means of qualitative techniques;
- incorporating experimental processes within qualitative research.

These combinations are used in accordance with the goals of research and the questions underlying it, and are envisaged when the plan for research is first drawn up.



Answers to activities

Questions for reflection

1. Difficulties often encountered: a total or partial lack of statistical data; HIV/AIDS = a taboo, a wall of silence that prevents information from circulating; difficulty in distinguishing between what is attributable to HIV and AIDS and what is attributable to other problems (for example in the case of absenteeism); lack of co-ordination between bodies involved in fighting HIV and AIDS, lack of familiarity with the action of NGOs, etc.
2. With better understanding it is possible to evaluate work already carried out, to avoid duplication, to identify and repeat fruitful initiatives, to strengthen the capacity of those who take action, to determine what action is best, to mobilize funds, to optimize management of disruption caused by the HIV epidemic, and to improve planning, etc.
3. Questionnaire surveys, individual interviews, group discussions, minutes of meetings, reports by inspectors and educational advisers, beginning-of-school-year reports, school statistics, testimonies, case studies, observation and many other techniques to be described in the module.
4. Statistical data concerning OVC are neither very reliable nor conducive to an understanding of the problems experienced by such children, irrespective of whether the former are school or family related, economic, psychological or health related, etc. It is possible to conduct qualitative research that is geared to getting a better grasp of these problems.
5. It is possible to combine these two types of research (quantitative and qualitative), as will be seen in Section 3.

Activity 1

The improved plan A will take account of the data derived from qualitative research, while also providing for actions already identified, such as:

- measures in schools that enable teachers to identify OVC in a way that avoids discrimination or prevents them from becoming stigmatized;
- action targeting families that take in OVC so that the former become fully aware of the importance of education and school provision for these children, and if possible collaboration with NGOs that develop programmes of income-generating activity;
- psychological support for those who may need it, which in turn presupposes the training – or even intensive training – of staff able to provide such support;

- the introduction of decentralized formal arrangements for a co-ordinated consistent drive to combat HIV and AIDS, which will establish mechanisms for monitoring the various actions entailed.

The foregoing are no more than mere proposals, and everyone may visualize measures geared to the context in which they work.

Activity 2

Doubts, misgivings

Possible reasons for your scepticism:

1. Qualitative research is not scientific, lacks objectivity and the data collected are not reliable.
2. Not all these data are required for a constructive plan and excessive concern for the views of the various protagonists confuses the issue
3. The findings of qualitative research cannot be taken to apply to the entire population.
4. People living with HIV are unwilling to identify themselves through fear of being stigmatized or rejected, so it will not be possible to involve them in research.
5. Too much time and energy are required and the results are not exploited for a variety of reasons, particularly financial reasons.

Arguments of those who support qualitative research

1. Such research calls for the same scientific discipline as the quantitative approach in the various stages of preparing, collecting, sorting and analyzing data (for further details, see the beginning of the third section and the reference bibliography).
2. Many plans are devised but only rarely carried through because they have been 'imposed' and do not take account of the real life experience of the protagonists and the reasons for their behaviour/attitudes.
3. It is true that the results of qualitative research may not apply to all circumstances and this is indeed one of its real limitations. It is for this reason that it is helpful to combine the two types of research (qualitative and quantitative).
4. Involving people living with HIV in a research undertaking relevant to them is possible provided that this occurs on a firmly confidential basis and that they can reasonably hope that they will be better provided for as a result of the research carried out.
5. Any research calls for time, energy and a minimum of resources. The results of qualitative research may help to mobilize financial support.

Activity 3

Guide for a group discussion with heads of area education authorities on teacher absenteeism due, in part, to HIV and AIDS.

Topics	Examples of questions for discussion
Causes of absenteeism among teachers	What are the various types of absenteeism and the reasons for each?
Reactions from the environment <i>vis-à-vis</i> absences due to health problems	How do heads/other colleagues react? How do pupils react? What do the parents of pupils/parent associations say/do?
Administrative and education/teaching measures in the event of a health problem	What are the main concerns of heads when dealing with these absences? What administrative measures are most frequently adopted and why? What is the opinion of the heads of area education authorities regarding the measures introduced? What difficulties do they face in dealing with this absenteeism?
What are the consequences of the absenteeism	For pupil attainment? For the school's image among parents and teachers? For life at school?
Possible improvements	How can the community help? What organizational arrangements can be established by area education authorities? How should one involve the entire educational community in managing absenteeism due to health problems and how may other kinds of absenteeism be reduced?

Activity 4

An exercise in projective composition on the subject of sexual relations between teachers and pupils (of either sex) to be given to pupils in their third year of secondary school.

A friend of yours tells you that one of his professors probably has AIDS. Imagine what your friend thinks about this situation, how does the class behave and what measures do the school authorities take?

A young male teacher has noticed a particularly attractive girl in his class. He would very much like to go out with her. Some time later, you learn that they are going out together. What do pupils in the class think and say about this intimate relationship between them?

Clearly, these are no more than two examples. Don't forget the instructions regarding the subject: the text should be short and readily understood by those for

whom it is intended, with simple vocabulary and syntax. Ensure that it describes a situation familiar to the person writing it, or at least not totally unfamiliar.

Activity 5

Other customary differences in the processes of quantitative and qualitative research:

Quantitative research	Qualitative research
The data collected are always in numerical form.	As a rule, data are not numerical.
Data collection is by means of predetermined closed or multiple-choice questions.	Collection may be based on numerous techniques, with open questions.
Emphasis on causal relationships	Emphasis on processes and meaning
Interpretation of data by means of statistical operations to assess the reliability of the associations observed	Interpretation of data on the basis of comparisons, and by relating one element to another to discover underlying explanations

Activity 6

Sample for individual interviews in a qualitative approach, on the impact of HIV and AIDS on the education system.

There are five categories of persons with whom individual interviews might be conducted in the capital:

- Authorities and officials at the ministries of education, health and social Affairs, ministerial committees to combat AIDS and sexually transmitted diseases, the capital city regional (or provincial) director.
- Associations, NGOs, teacher unions.
- School heads.
- Other resource persons: religious leaders, researchers, persons living with HIV.
- Technical and financial development partners.



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Module

P. Dias Da Graça

3.4

Projecting education supply and demand in an HIV/AIDS context

About the author

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Module 3.4

..... PROJECTING EDUCATION SUPPLY
AND DEMAND IN AN HIV/AIDS CONTEXT

Table of contents



Questions for reflection



Introductory remarks

1. Using projections, forecasting, simulation models and scenario building

- Projecting
- Forecasting
- Simulations and simulation models
- Scenario-building

2. Simulation models: projecting enrolments

- Projecting enrolments at ministry level
- Projecting enrolment at local level

3. Simulation models used in education

- Tailoring simulation models to country needs

4. Supply and demand in projections and simulations: taking HIV and AIDS into account

- Demand for education
- Supply of education
- Quality and quantity of data
- Collecting the data

5. The bigger picture: what are the strengths and limitations of a simulation model?

- Simulation models as a policy dialogue tool
- Limited data, limited indicators, limitations of the simulation model

6. Types of education models

7. Incorporating HIV and AIDS into education models

- Pupil projection models in the context of HIV and AIDS
- Integrating the impact of HIV and AIDS on pupils in the simulation model
- Student mortality
- Orphans
- Absenteeism and drop-out
- Selecting the criteria

8. Integrating the impact of HIV and AIDS on teachers in the simulation model

- Planning versus awareness



Summary remarks



Lessons learned



Answers to activities



Appendix



Bibliographical references and additional resource materials



Aims

This module has been developed for educational planners and other ministry staff involved in the management and prevention of HIV in the education system. It is designed to be 'non-technical' and does not attempt to teach users to develop simulation modules or to use computer software programs or tools. This course is concerned primarily with understanding the methods of projecting school enrolment, human, physical and financial resources within an education system operating under the impact of AIDS. It will help you to establish hypotheses that take into account the impact of the AIDS epidemic and thus create scenarios to contribute to policy analysis.



Objectives

At the end of the module you should be able to:

- explain the usefulness of simulation models in education planning and policy analysis, as well as in the organisation of policy dialogue;
- assess the strengths and weaknesses of projection models for education under AIDS conditions;
- understand the difference between the types of education models used in planning and policy development;
- explain how assumptions about the supply and the demand of education in an AIDS environment can affect policy decisions.

Before you begin...



Questions for reflection

Take a few minutes to think about the questions below. You may find it helpful to make a note of your ideas in the spaces provided. As you work through the module, see how your ideas and observations compare with those of the author.

What methods/tools does your ministry currently use to plan for future:

- enrolments
- teachers
- budgets
- class construction

Discuss the strengths and weaknesses of these tools.

How do they inform education policy development?

How could the impacts of the AIDS epidemic be integrated into the projections and simulations?

With respect to your country, what would be some important aspects to take into account to evaluate the evolution of HIV prevalence?

Module 3.4

..... PROJECTING EDUCATION SUPPLY AND DEMAND IN AN HIV/AIDS CONTEXT



Introductory remarks

This module introduces enrolment projections and simulation models and discusses how they can be used to create likely scenarios integrating HIV and AIDS conditions in order to help planners and decision-makers implement effective response policies and plans. It explains what a simulation model is and how using such models to effectively plan and monitor student flows and financial resources can help to improve the management of education systems affected by the AIDS epidemic. For more in-depth technical work on projections/simulations throughout all the modules, you are invited to refer to the IIEP training materials on projection techniques and simulation models (see Bibliographical references and additional resource materials).

In the first part, we discuss the practice of using projections, forecasts and simulation models. We then focus on using these projections and models in terms of education, while taking into account the impacts of HIV and AIDS on the supply of and demand for education. We then explore the strengths and limitations of enrolment projections and simulation models when considering the availability and quality of data needed for school enrolment, human, material and financial issues particularly integrating HIV- and AIDS-related factors. In the final section, we evaluate the usefulness of simulation models in informing policy dialogue.

Ministries of education must be familiar with the specific impacts of HIV and AIDS on the students, educators and school staff in their education system at all levels. It is important to understand the general percentage of teachers being lost due to AIDS, and the approximate number of children being orphaned each year, or the number of children that have been forced to drop out of school due to AIDS affecting their home lives.

The role of the planner is to inform the decision-maker of the medium- and long-term consequences of letting the education system develop as it has done in the past under the strain of HIV and AIDS and to demonstrate the impact of various decisions and policies that could be envisaged. Projections of student enrolment, teachers and school buildings are essential in this process. The simulation model is a very useful instrument to develop enrolment projections and for discussing policy and strategy options with the various partners concerned. When trying to estimate the impact HIV and AIDS is having on school enrolments and resources, these simulations and projections can be extremely helpful.

1. Using projections, forecasting, simulation models and scenario building

Projecting

Strictly speaking, projecting means extrapolating on the basis of past trends. Enrolments are projected on the assumption that the trend – whether growth or decline – will continue to evolve as it did in the past.

A simple and rapid method to creating a projection is to estimate, on the basis of past statistics, an arithmetical or geometrical rate of increase (or decrease), which is then extended into the future by applying it to the most recent data values.

Projections do not attempt to describe what will happen in the future. They only try to present what would happen if such and such conditions were to prevail.

Typical examples of projections are:

- population projections;
- enrolment projections;
- economic projections;
- manpower projections.

Forecasting

Forecasts, contrary to projections, try to estimate the most likely future. Their objective is to provide information on future trends, with a fairly high confidence level. But, of course, the future can never be certain.

The methods used can be similar to those outlined for projections. Greater care, however, is normally taken in the analysis and interpretation of past trends over a longer period of time, with a view to identifying possible changes in the trend, and the ‘seeds of change’ or those changes which are hardly visible in the present but which could become very significant in the future.

Some common examples of forecasts include:

- the weather forecast (note that nobody is interested in weather projection).
- economic forecasts and manpower forecasts. These differ from manpower projections in the sense that only one scenario is proposed. However, in the present times of high economic uncertainty, globalization and rapid technical change, preparing manpower forecasts has become a very difficult exercise and very few planners risk making them. In fact, manpower forecasts have been replaced by manpower projections, working with different, contrasted assumptions (i.e. simulations).

Simulations and simulation models

A simulation model is the representation of the behaviour of a system through a set of mathematical formulae which allow the development of one variable, or set of variables, to be linked to the development of another. Simulations aim at exploring the consequences of different policy options on one variable. In other words, simulation models allow planners to test different assumptions or hypotheses on certain conditions or variables in a school system to see how the results improve or affect the system.

Box 1 Simulation models: what they can do?

Just like projections, simulations and simulation models do not attempt to predict what will happen in the future.

Their purpose is to inform decision-makers and other major players in society of what would happen if such and such developments were to take place, or if such and such measures were to be taken.

By highlighting the consequences of different options, they can contribute to the selection of the most desirable one, bearing in mind all the conditions and constraints.

For example, a range of assumptions or hypotheses regarding the evolution of drop-out rates for a particular school or grade may be explored in order to see how each of the options would affect trends in school completion. Assuming these rates remain constant gives one result, while assuming that these rates will evolve in line with past or future trends may give quite another. Box 2 shows another example using an assumption made concerning HIV prevalence in order to measure workforce needs.

To give an HIV-specific example of a simulation model, we can explore the consequences of making different assumptions on flow regulation after basic education (assumptions made on the transition rate to secondary general education, to vocational education or to working life) in order to determine how they affect enrolment growth.

Box 2 Determining recruitment needs and costs for the teacher workforce

We can make assumptions based on the HIV prevalence rate of the teaching workforce in a given country. It is possible to simulate the impact of HIV and AIDS on teachers by varying the HIV prevalence rate within the model, thus resulting in different scenarios. This exercise can be useful in determining the recruitment needs (and costs) of replacing teachers who have left the system due to AIDS-related illness or death.

It is possible to develop a model of enrolment projections which links school admissions to the school-age population, and the number of pupils enrolled in the

different grades to enrolment in the lower grades the previous year. It is then possible to incorporate a hypothesis of the increase in drop-out due to HIV and AIDS¹.

Once enrolment has been projected it is possible to estimate the number of teachers required by applying a pupil-to-teacher ratio then the number of new classrooms required. This used to take a long time to compute by hand but it has now become very easy and quick, thanks to computers, particularly micro-computers.

It is customary when creating simulation models to develop several variables. However, although the rapidity of computers makes it possible, it is not advisable to prepare too many of them or to try and combine all possible options. Each variant should have its own logic and coherence, and represent a certain philosophy of the development of the system as a whole. This 'whole' we can also refer to as a 'scenario'. We will now talk about scenario-building.

Scenario-building

A scenario is a series of events that we imagine happening in the future and a description of what it would be like then. The starting-point of a scenario is: "What would happen if...?"

The ultimate aim of scenario-building is to provide information in a consistent and coherent way, in order to assist policy-makers in formulating strategies and options and to feed a public debate, and to influence policy decisions. It involves the following steps:

- *Identifying the key variables:* Choose variables that are of the most importance to your HIV policies, e.g. percentage of dropouts, absent pupils due to HIV and AIDS, orphans and teachers in long-term illness; teachers' absenteeism due to illness; HIV prevalence of teaching staff, etc.
- *Performing an explanatory analysis of major evolutionary trends:* Think about what has been happening over the past few years, e.g. does a link exist between student absenteeism and drop-out or the orphan's status? What is the trend of the evolution of these links? What are some strategies for improving these situations?
- *Making fundamental hypotheses on key variables and players' strategies:* Decide what actions the ministry can take to improve conditions, e.g. how are strategies for supporting school attendance improving attendance? Will the expenditures on orphans improve their educational opportunities at school?
- *Making the choice of possible futures:* Determine whether the trend will keep the same pace or accelerate in the future, etc.

¹ In countries with adult HIV rates above 5 per cent there are rapidly growing numbers of orphans and vulnerable children. In cities they may be considered street children. In highly affected areas, these children make up a substantial portion of the school-aged population. However, in the absence of support for school fees, nutritional support and other basic needs, many of these children fail to enrol in school or drop out before completing the cycle.

- *Constructing the scenarios*: Translate the chosen variables and their expected links into the model using specific values for the projected year based on the hypothesis proposed in step 4.

The various decisions and assumptions made at each level should be coherent, thus producing a coherent scenario. It should be relevant and realistic, exploring worthwhile and reasonable options, and it should be transparent, easily readable and understood by the concerned stakeholders.



Activity 1

Has any prospective projection work been carried out recently in your country or region? How was education taken into account in such work?

2. Simulation models: projecting enrolments

Projections of enrolment are an integral part of the educational planning process. Taking place just after a thorough diagnosis of the current conditions of education in a country, simulation models and projections play a crucial role in policy analysis and decision-making. Projecting enrolment takes place both upstream, i.e. at the ministry level, as well as downstream, or at the local or district level for the most important educational policy decisions.

Projecting enrolments at ministry level

Upstream, simulation modules demonstrate the effects on school enrolment of different strategic options available to the political authorities. For example, what would be the effect on the number of pupils to be enrolled if the decision was taken to declare primary education universal by the end of the decade, or to extend the duration of compulsory basic education? How many pupils would have to be accommodated? What would be the likely effect of such developments on the demand for further schooling, and the number of pupils to be accommodated at the secondary and even higher education levels? Considering enrolment in an area with high HIV prevalence levels, ministry staff could use simulations to know the number of students the school system will have to accommodate in future years, or calculate the number of teachers, the number of classrooms, and the budgetary resources required.

Projecting enrolment at local level

Downstream, the projection of enrolment serves as a means of verification and evaluation, using the most recent and up-to-date data to adjust assumptions and work out any remedial or additional action which may be needed.

AIDS is a long-wave epidemic. The epidemic and its impact will last for the foreseeable future. This makes it necessary for planners and managers to be conscious of the future impact and its implications in terms of demand (demographical impact on the school-age population), supply (teacher attrition) and education quality (pupil drop-out, financial and human resources allocation). This epidemic is making forward planning very important.

Most education simulation models cover a period of 15 to 20 years. They contribute to the development of different scenarios, which can form the basis for a policy dialogue with the various stakeholders – those who decide, those who finance, and those who implement. Significant changes in past trends provoked by actions proposed are more likely to be felt in the long term because of the time it takes to implement certain measures and to change behaviour patterns of parents, students or teachers.

The effects of many events or decisions cannot be seen immediately, and it may take as much as 10 to 15 years before their full impact is felt. In education, the effect of a decision regarding admission policy will start to have a significant

impact on the number of pupils enrolled at that level only three or four years later. Furthermore, it may take 10 to 15 years before the consequences of such a measure on the entire education system can be fully assessed, and a whole generation (some 20 to 25 years) before the educational profile of the active population will start changing and the impact on development will be felt. In the same way, the consequences of adopting a *laissez-faire* attitude and not making decisions may turn out to be disastrous some 10 to 15 years later.

3. Simulation models used in education

Several simulation models have been developed specifically to be used in education. Some examples of their uses are below:

- To estimate the future number of pupils enrolled by level of education.
- To assess the number of teachers to be trained and the number of schools to be built each year.
- To estimate the cost of the development of the education system in the future.
- To estimate the number of pupils graduating at different levels with a view to comparing this to the planned manpower requirements of the society.
- To assess how HIV and AIDS will affect teacher workforce needs or pupil enrolments.

Using a simple spreadsheet software (such as Excel or Lotus), educational planners can build their own model of enrolment projections (IIEP, 2005), and project relatively simple scenarios to determine the number of teachers required by educational level, the number of schools that will be required, as well as future recurrent and capital expenditures.

Tailoring simulation models to country needs

Building a model of your own to analyze policy choices for your education system can be time-consuming and challenging, and fortunately you do not have to build it yourself. Models already exist and they can easily be adapted to suit the specific conditions of your country. These models differ according to:

- *scope*: the educational levels covered (basic education and teacher training, or all educational levels, including higher education);
- *number of sub-models*: these can include sub-models for enrolment, teachers, recurrent expenditure/total expenditure, outputs;
- *constraints incorporated*: satisfaction of the social demand for education, the level of resources allocated to the education sector (the whole sector or to primary and secondary education), or the satisfaction of manpower needs.

The most common models are those which evaluate the impact of various assumptions concerning the demand for education, such as the evolution of admission rates and flow rates on the number of pupils at different levels, and then on current expenditure as well as total educational expenditure (considered demand-driven). Other models include assumptions on the supply side of education or the resources available for education and establish the extent of possible expansion of the education system at different levels (these are resource-driven). The choice of model depends on the planner's objectives and needs (IIEP, 2005) and can be created according to the specific requirements.

When developing a national AIDS strategy for education, these models are essential for promoting a dialogue between the senior officials and the financial

backers, as well as between those who are responsible for preparing the major orientations (senior officials), those who decide on policies, those responsible for funding (ministry of finance, funding agencies), and all those who are responsible for implementing the selected strategies (regional and local administrators, teachers, parents and their representatives, and communities).



Activity 2

Does an educational simulation model exist in your ministry?

Is it specially built to reflect the functioning of your education system, or is it a generic model proposed by external consultants?

Has it been adapted or used to reflect assumptions and scenarios related to the impact of HIV and AIDS?

Who currently uses the simulation model in the ministry?

According to you, who should have access to it? For what reasons?

4. Supply and demand in projections and simulations: taking HIV and AIDS into account

Demand for education

The different assumptions made about admissions, flow rates and HIV impact on students will each have a different effect on the following:

- the total number of students in school;
- the number of graduates expected to leave the system;
- the internal efficiency of the system;
- equality or disparity in the educational opportunities of different regions and population groups.

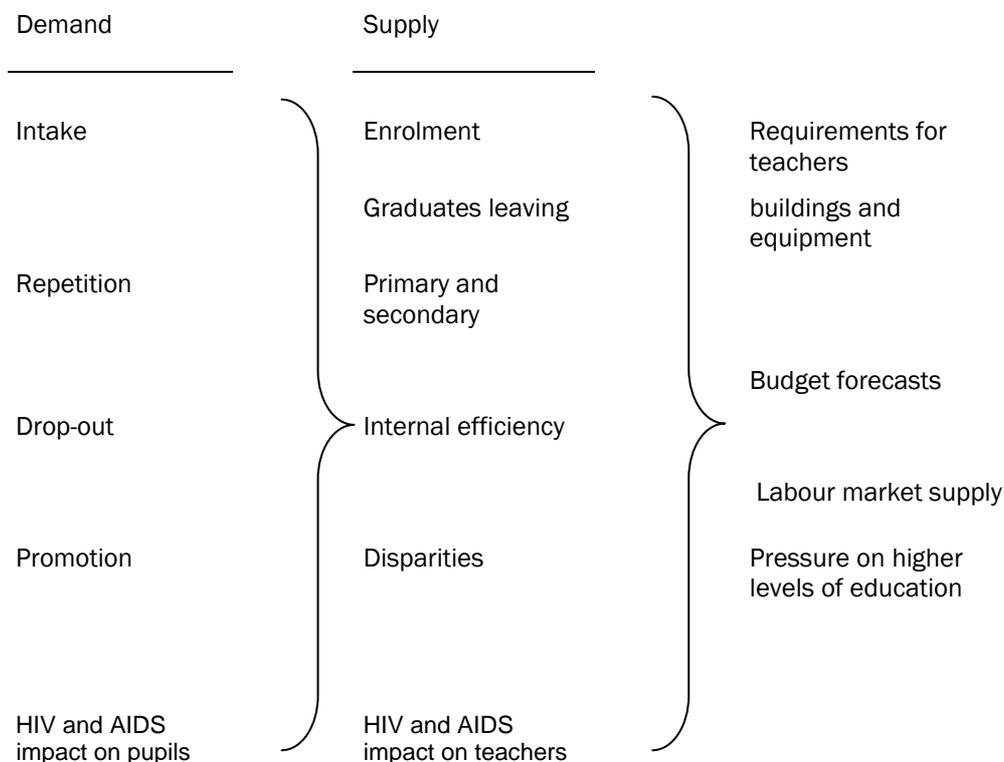
Supply of education

These, in turn, together with the impact of HIV and AIDS on teachers, determine such factors as:

- the requirement for teachers, buildings and equipment, and teaching and learning materials;
- the pressure on higher levels of education;
- budget forecasts;
- the labour market supply.

The effects of the different trends are illustrated in Figure 1. What the policy-maker wants to know is the specific effect of the possible alternatives within this roughly illustrated complex set of relationships. It means entering data on these different domains, *as well as* factoring in the impacts HIV and AIDS may be having on pupils and teachers.

Figure 1 The effects of changes in new admissions, flow rates and impact of HIV and AIDS on students, from a supply and demand perspective



The chain of operations to be executed in order to estimate resource requirements is shown in Figure 2. Necessary human resources or material means are projected from the number of students enrolled, based on certain assumptions, and from assumptions about teaching conditions (class organization, monitoring or material conditions). Subsequent recruitment has to be determined by making a hypothesis about the teacher attrition rate (retirement, long-term sickness, death, including proportions due to HIV and AIDS). The funding needs are then projected with regard to the necessary resources and a cost system.

Figure 2 Estimation of resource requirements

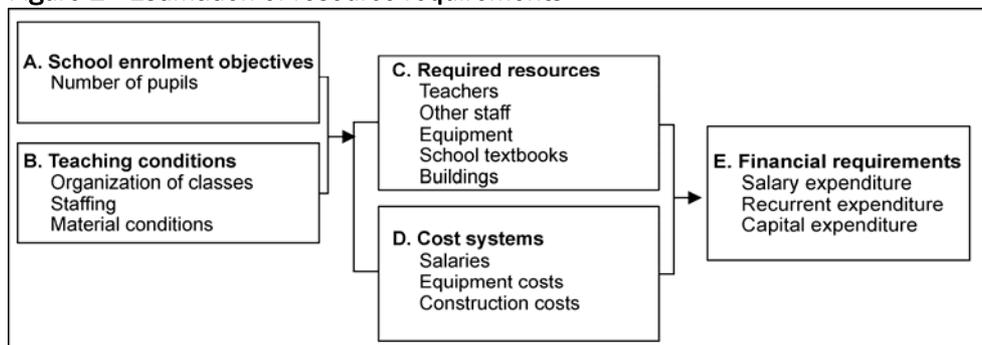


Figure 2 shows the important number of variables needed to feed the simulation model. The question then becomes: "What should you do if there is no data or not enough?" In the face of HIV, ministries must try and strengthen the national as well as local EMIS in order to integrate information on schools' functioning in the particular contexts of the AIDS epidemic.

Quality and quantity of data

A simulation model like the one depicted in Figure 1 can require a lot of data. Using correct and accurate data is not always an easy task, and it is obvious when doing simulations that the availability of the data is an essential issue. Be cautious when choosing your variables. A projection model becomes more complex the more variables are built into it. This may make it more realistic, but it also increases the demands for specific data.

The data, therefore, must be reliable and precise. It is already a challenge to put common educational variables into a mathematical model. HIV and AIDS issues will be even more complicated due to a higher complexity of factors as well as lack of data. There is little use in constructing a sophisticated model containing a lot of variables and linkages if it is then too difficult to collect this particular data or quantify qualitative issues.

Box 3 The importance of data

The validity and usefulness of a projection model depends on:

- the validity of the assumptions made and how closely they correspond to real conditions;
- the quality of the data available for the base year and for the other past years;
- whether or not the mathematical construction of the model takes into consideration all the variables and factors that influence the variables to be estimated.

The lack of accurate data on HIV- and AIDS-related impacts on schools and education systems makes it difficult to develop accurate simulation models. For example, when analyzing teacher attrition, calculating the number of teachers who have not reached retirement but have left the system due to long-term illness or death can give an approximate picture of the impact of HIV and AIDS on teachers, because it shows us how many teachers will need to be replaced.

Collecting the data

Of course in some countries this data may not be complete or is not available, while in others HIV- and AIDS-specific data cannot be found. By using even the basic population census data, teams can develop simple projections and models that can be manipulated according to different assumptions. These assumptions can then produce scenarios that will inform the policy decisions to be taken and hopefully implemented.

How should the data collection be performed then? First, you must decide if you are interested in supply or demand data. Try and take variables that are easily collected or that you can access. Some possibilities are listed below:

- *School census*: this is an annual information collection process concerning all educational establishments;
- *Surveys based on a sample*: even small budgets can allow for sample surveys and they can be useful to collect additional, more complex, and more qualitative data (for example on the reasons for dropping out);
- *Data from other departments in the ministry of education*: for example information on graduates to be used for exams, on staff in the human resources department or on education budgets in the financial department;
- *Surveys and/or data from other ministries or organizations*: think outside the ministry to partners and other organizations responsible for collecting data such as population census for literacy rates, teacher trade unions, or national AIDS programmes.



Activity 3

What data do you need for your own national simulation model? On pupils, teachers, the conditions of teaching and the HIV context?

What is available? Is it reliable?

From which other sources other than the statistics service can you acquire data on teachers, deaths and movements?

Which recent surveys could contain relevant data for your model?

5. The bigger picture: what are the strengths and limitations of a simulation model?

Simulation models as a policy dialogue tool

Simulation models should be used to inform decision-makers and other stakeholders of what would happen if a particular development were to take place, or if a particular measure were to be taken or decision made.

The assumptions in your projection model are more than numerical alternatives. They actually stand for alternative educational policies. When used and presented properly, simulation models can stimulate discussion around certain issues or promote awareness for particular challenges facing the education system, like how HIV and AIDS are affecting schools.

Depending upon the specific measures chosen, each policy will have an impact on the intake of students into the system, student flow, the availability of teachers, or the budget. For the educational policy-maker, projections are useful in that they help to provide an understanding of what the results of policy measures are likely to be or, conversely, what type of policy measures will be needed to bring about politically desirable results.

Limited data, limited indicators, limitations of the simulation model

An indicator is a combination of raw data. In order to develop complex models, much raw data will be needed. A simulation model is only as good as the indicators that are found in it. The indicators you will use, therefore, depend upon:

- the availability of raw data to combine to make specific indicators;
- the difficulty to design a formula conceptualizing how this indicator or variable will function within the whole system, or in the case of HIV and AIDS how to concretely formalize the impact.

Activity 4

Following a big teacher management reform, the ministry needs to have the estimation of the cost of the education system for the next ten years (in particular to guarantee replacement of teachers in long-term sickness), integrating HIV and AIDS impact on teachers' attrition.

Give an example of indicators that you want to produce in order to meet the needs of the ministry. If possible, discuss in the group on their relevance and the way to formulate it in the model.

6. Types of education models

Your choice of model will depend on the defined objectives of the forecasts, on the type of expenditure, and on the links among the variables.

One should always look for a method that:

- is close to the current system of organization and management of the country;
- explicitly takes into account the political objectives in its estimates;
- is simple.

This means that a generic model usually is not the best approach to select. At the same time, however, in a case of lack of expertise, it can be feasible to use an existing straightforward model as the technical base on which the national model will be built. When there is a choice, it is recommended to build the model within the country and with educational experts that know perfectly their system, its functioning and its objectives.

The educational models integrating the impact of HIV can be grouped into two main categories. The first one can be considered a sort of *sensitization model*, which can be an important tool for raising awareness on the impact of AIDS. The objective of this model is to study the consequences of HIV on teachers and enrolment without a planning purpose. It is based on a set of hypotheses about HIV, which gives the projected number of orphans, teachers and the cumulative loss of teachers due to AIDS, the methodological approach being to focus on comparing scenarios 'with AIDS' and 'without AIDS' and the gaps between the expected number in each one. A typical question would be "What is different about the education sector (in particular the number of pupils, of available teachers) due to HIV and AIDS than would have otherwise been the case?", not "What will be the teachers' requirements according to the school functioning and the requirements for other resources?"

The second type of model is a *planning oriented model*. A planning oriented model projects the needs of teaching staff and physical and financial resources based on hypotheses on enrolment and school conditions. This can then allow planners to simulate the different conditions of improving the quality of education, whether they are pedagogical or organizational conditions. In the country context, the planning oriented model can give information for the resource needs estimates, the breakdown between public and private sectors, and in all cases the evaluation of all means necessary for the functioning of the system.

The population projection used in the model should be given to the educational planners by the national statistics bureau or other demographic specialists. Educational planners are not expected to prepare population projections as if they were demographers and should use population projections built by the latter². When integrating HIV and AIDS impacts into the models, the Metropolitan-Doyle model has been "extensively used in Southern Africa by many sectors for the past

² For some examples of projection models on population and HIV/AIDS, see the Assa 2000 model (www.mrc.ac.za/bod/complete.pdf), Doyle/Metropolitan Life Model, Spectrum/AIM, UNAIDS (www.epidem.org/publications.htm), UN projections etc.

eight years and have performed well when used in practical applications at the sub-group and general population level. The model is continually reviewed in the light of new demographic and population statistics, as well as interventions that may influence the course of the epidemic and result in changing incidence of infection, morbidity and mortality. The model is able to consider various interventions into the epidemic. These include behavioural changes (increased condom usage, reduced numbers of partners, etc.) and medical interventions (improved treatment, vaccinations, treatment/cure of HIV positive and AIDS sick individuals)" (Coombe, 2002: 43 [footnote 18]). The job of the planner is to run different simulations using the various available projection models and bearing in mind the possible variation of the estimates.

7. Incorporating HIV and AIDS into education models

Pupil projection models in the context of HIV and AIDS

The component on pupil projection built into the training simulation model is based on the *flow model*. Projection by means of the flow model is not the only method used in educational planning. Other methods can be used, such as linear regression³ or enrolment rate trends. Some of these may be more convenient, less time consuming and require fewer data. However, none possesses the great advantage of student flow analysis – that of introducing and highlighting the factors of population growth, higher intake rates, and variations in promotion, repetition and drop-out rates. It best explains enrolment trends within a given cycle or between cycles of the education system and provides sufficiently detailed results for our planning purposes while allowing planners to build linkages within the level of education but also between the cycles, showing the interplay of the factors that explain changes in enrolment.

When developing student flow simulation models to measure the impacts of HIV and AIDS on the system, we must integrate the impacts on pupils into the model.

Integrating the impact of HIV and AIDS on pupils in the simulation model

The first issue to be dealt with in measuring the impact on the education sector is that of the demographic effect of the epidemic on the number of children before they even reach school age. As already stated above, this issue has to be already integrated in the population projection used in the model and given to the educational planners by the national statistics bureau. The school-age population will be calculated taking into account the demographic impact of AIDS.

Student mortality

The model then has to tackle the issue of the impact of the disease on students. As many studies demonstrate, school-age children are not dying of AIDS until they reach upper secondary level or even higher education. This is due to the incubation period of the disease, which last seven to ten years. “In Botswana, fewer than 1 per cent of primary schoolchildren are likely to be infected (1 per cent in Uganda, 0,44 per cent of the less than 15 years-old in Sub-Sahara Africa) and no more than 0,2 per cent have AIDS-related sicknesses” (Bennell, Hyde and Swainson, 2002: 48). It means that the incidence of HIV-positive pupils on enrolment will not often be integrated in the education models unless it appears to be an important issue in the country.

Orphans

3. Linear regression is based upon the straight line that best corresponds to the scattered data points on a graph. In this case, the data points represent past enrolment rates, and the trend for future rates is estimated by extending that line.

On the other hand, the impact of the disease on students can be measured through the first intake or the admission rate of children into the early grades. Children who become orphans or who have one or both parents living with HIV may have less opportunity to go to school due to an increased burden of household responsibilities, reduced financial support and health, i.e. experience nutritional and psychological effects.

Absenteeism and drop-out

Another result of the impact on students living in HIV-affected households is increased pupil absenteeism. As it is well-known, absenteeism results in low school achievement, grade repetition and subsequent drop-out. As for intake rate, specific country studies may be needed to help planners propose a link between the numbers of pupils living in HIV-affected households and the evolution of drop-out rates.

Selecting the criteria

It is difficult to obtain information on how many children are concerned, and how much they are affected by these situations compared to those who are not. Furthermore, in some countries and regions where a significant share of children are suffering from poverty, orphans do not stand out and can even be seen as no more of a burden than the non-orphans. Therefore it is not easy to select the important criteria to be used in the model, or to find complete and accurate data of such specific circumstances, and to build the mathematical link with the evolution of enrolment. Planners have to be aware of the possible wide margins of error of the projections. A critical eye is therefore essential when interpreting the results.

The model we will use in this training material is a fictitious exercise where we have to assume that the selected criteria are the relevant ones and are available in the country. The impact of HIV and AIDS on first intake is taken into account through the *admission rate* stated in the hypothesis of a specific projection. The second impact on absenteeism is translated into two variables: *the percentage of students affected by HIV and AIDS in their family* and the *drop-out rate* of those students.

8. Integrating the impact of HIV and AIDS on teachers in the simulation model

The impact of HIV and AIDS on teachers is manifold: absenteeism, morbidity and mortality. All schools suffer from these impacts. However, one or two teacher-schools are certainly the most vulnerable and should receive particular assistance.

With respect to the teachers themselves, they can be differently affected by the epidemic according to the country and even to the regions within the country. The various criteria that can be used in models to highlight differently affected groups are: sex, level of school, age, educational background, marital status, and teacher attrition rates.

As for enrolment projections, the simulation model selects a specific situation where it estimates the number of HIV-positive teachers for each year, the number of new HIV infections, how many are entering long sickness, and attrition because of death or other reasons. Then, the number of teachers to be replaced is calculated, and finally the number of new teachers to be recruited is projected. A separate part of the model on staff expenditures takes into account the salary cost according to the status of the teacher ('active' or 'inactive' due to long-term sickness).

Box 4 Examples of educational simulation models integrating the impact HIV and AIDS

Two examples of educational models integrating the impact of HIV and AIDS on enrolment and teachers⁴, and that are complementary to the planning oriented model are presented below.

The EdSida model

The EdSida model is an Excel-based spreadsheet focusing on the supply and demand of education that may be modified to produce HIV impact analyses relevant to a particular country. Country-specific projections on school-age population produced by UN Population Division are integrated in the model as well as the projection of the number of school-age children who have lost their mother or both parents due to AIDS (UNAIDS methodology).

With this model, you have the possibility to manipulate such factors as:

- relative risk of HIV infection in teachers versus general population
- teacher attrition due to AIDS-related illnesses as well as other causes
- chance of a teacher taking up other vacated jobs compared to other professionals

According to plans for recruitment, you must enter the number of new teachers by age, and sex. Then you can enter the school-age population and the enrolment rate by sex to obtain the total enrolment, the pupil-to-teacher ratio and the number of orphans due to AIDS. The projection of such expenditures can estimate the future cost of new teacher training and of absenteeism due to HIV-related illness.

Consulting Assistance on Economic Reform (CAER)

This is a slightly modified version of the model developed by Al-Samarrai (1997). "The demographic data can (...) be used to calculate the flow of students and teachers under two scenarios: the absence of the AIDS epidemic and the presence of the epidemic" (Malaney: 2000). This model has two parts.

Part A in the model template estimates enrolments by grade, based on information on the estimated projected population of the official first school intake age for every year of the projection. Due to lower reproductive age population, lower fertility rates among HIV-infected women, and higher infant and child mortality rates, the with-AIDS scenario will have a lower population in this first school intake age. Gross enrolment rates for Grade 1 for the base year and flow rates for each grade will enable the calculation of changing enrolments over time.

Part B focuses on teachers and is based on assumptions about their numbers entering the system every year, their mortality rate and their attrition. As with the previous model the results are compared to the primary and secondary enrolments through the pupil-to-teacher ratio.

⁴ Another example can be studied with the model of the Department of Agricultural Economics (Purdue University) where the impact of the AIDS pandemic for educational attainment and human capital accumulation is translated by a simple education and skills transition matrix. Channing Arndt, HIV/AIDS and Macroeconomic Prospects for Mozambique: An Initial Assessment. 2002. www.agecon.purdue.edu/staff/arndt/mozam_AIDS_dp.pdf

Planning versus awareness

These two models presented in Box 4 are very interesting and important tools; they can be used to alert decision-makers and make them aware of the educational components affected by the HIV virus. As stated above, these tools are complementary to the planning-oriented models, which planners will use to anticipate actions in order to meet the necessary resource requirements.

With the same examples presented above we can now explain in further detail why the first type of projection, or the *sensitization model*, is not a planning tool:

- There is a lack of direct links between the projection of pupils and the teachers component – the pupil-to-teacher ratio is the only one.
- The pupil projection method used in EdSida (*Education et VIH/Sida*) is not the best technique if one wants to simulate the different conditions (classes, examination, graduation etc.) for improving the quality of education; in the CAER study, flow rates are taken into account, but the other conditions are not.
- EdSida deals only with primary level.
- There is no breakdown between the public and private sectors, important information for the resources needs estimation.
- No simulation is possible on the conditions of schooling (pedagogical and organizational).
- With the exception of the human resource element – i.e. the teachers – there is no information given on resources necessary for the functioning of the system, preventing any exhaustive evaluation.



Summary remarks

This module presented the technical issues of the architecture of education projections. The main elements highlighted were the complex relationships within the educational model, the tricky question of modelling or quantifying qualitative issues and the difficulty of data collection, especially in an AIDS-affected context.

It also identified how a simulation can measure the effect of changing the decision variables; in particular that which HIV incidence would hypothetically have on future enrolments and teacher requirements. It is this ability to change the factors and their relative weightings, affecting the evolution of enrolment and teacher numbers that is the necessity of using simulation modules. It becomes possible to identify realistic policy options to meet the objectives of the education system.

In light of HIV and AIDS, the educational planner therefore increasingly needs to engage in the preparation of simulations to test the impact of various possible measures to increase prevention and awareness of HIV.

The option or scenario to emerge from the policy dialogue as being the most desirable will be the one that is not only – or not necessarily – the best technically, in view of the known constraints, but the one which has the support of the majority of the players, and therefore has the best chance of being implemented.



Lessons learned

Lesson One: Simulation is not a prediction of the future.

The purpose is to inform decision-makers and other major players in society what would happen if such and such developments were to take place, or if such and such measures were to be taken.

Lesson Two: Simulation is a tool for educational development strategies.

For the educational policy-maker, projections are useful in that they help to provide an understanding of what the results of policy measures are likely to be or, conversely, what type of policy measures will be needed to bring about politically desirable results.

Lesson Three: Simulation is a tool for policy dialogue.

Models can indeed be useful for promoting a dialogue between the senior officials and the financial backers, as well as between those who are responsible for preparing the major orientations (senior officials), those who decide on policies, those responsible for funding (ministry of finance, funding agencies), and all those who are responsible for implementing the selected strategies (regional and local administrators, teachers, parents and their representatives, and communities).

Lesson Four: Simulation models are demanding in the quality and quantity of data.

The availability of the data is an essential issue. A projection model becomes more complex the more variables are built into it. This may make it more realistic, but it also increases the demands for different accurate data. This data, to be used in your model, has to be reliable and precise. Particular attention must be paid when creating simulations that integrate AIDS and its impact on the system.

Lesson Five: Selecting a 'good' model is based on clear objectives of the simulation, variables' relevance, and data availability.

It must be clear whether the model is to have a planning or an awareness goal. The relevant model needs to be close to the current system of organization and management and explicitly take into account political objectives. The planner has to verify carefully the validity of the assumptions made and how closely they correspond to real conditions, as well as the availability and the quality of the data for the base year and for the other past years.



Answers to activities

Activity 1

Answers to this activity will be specific to your country.

Activity 2

Answers to this activity will be specific to your country.

Activity 3

Answers to this activity will be specific to your country.

Activity 4

The following indicators could be discussed:

Teachers and HIV <ul style="list-style-type: none">- rate of sero-conversion- rate of starting extended sickness- death rate- attrition rate for retirement and other reasons- % of active HIV-positives teachers	Raw data: <ul style="list-style-type: none">- new HIV infections- number of teachers leaving their position- number of active teachers living with HIV- number of active HIV-negative teachers
Recruitment needs <ul style="list-style-type: none">- attrition rate for teachers living with HIV- attrition rate for HIV-negatives	Raw data: <ul style="list-style-type: none">- number of teachers to be replaced- new teachers to recruit, of which for HIV reasons
Teachers in long-term sickness <ul style="list-style-type: none">- death rate- attrition rate for retirement and other reasons- % of long-term sickness/active teachers	Raw data: <ul style="list-style-type: none">- new entrance in long-term sickness- number of teachers in long-term sickness
Teachers on the payroll <ul style="list-style-type: none">- active teachers- inactive teachers (long-term sickness)	Raw data: <ul style="list-style-type: none">- total teachers on the payroll

Appendix

Comparison of projections with and without the impact of HIV and AIDS

Two simulation results are proposed. The first one summarizes the results of a first simulation exercise, assuming everything remains equal, that is to say assuming all intake ratios, promotions and repetition ratios remain the same as in 2003. The second one has the same context, assuming everything remains equal, but integrates the impact of HIV and AIDS on pupils and teachers.

1. Model not integrating the impact of HIV and AIDS

Pupils Primary level	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gross intake rate grade 1	89,2%	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%
New intakes in grade 1	193,110	198,683	200,288	201,907	203,538	205,183	206,332	207,488	208,650	209,818	210,993	212,175	213,363
Total enrolment	989,620	1,000 886	1,012 616	1,021 048	1,029 383	1,037 318	1,045 051	1,052 456	1,059 454	1,066 027	1,072 179	1,078 221	1,084 266
Gross enrolment rate	93,2%	93,5%	93,9%	93,9%	93,9%	93,9%	93,8%	93,8%	93,9%	93,9%	93,9%	93,9%	93,9%

Classrooms	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Public classrooms	0	27,432	27,750	27,984	28,214	28,431	28,644	28,849	29,045	29,231	29,405	29,577	29,750
New classrooms to be built			318	234	230	217	213	205	196	185	174	172	173
To renovate			2,743	2,775	2,798	2,821	2,843	2,864	2,885	2,905	2,923	2,940	2,958
Teachers - primary level													
Number of public teachers	25,012	25,692	26,000	26,223	26,444	26,654	26,859	27,057	27,244	27,420	27,585	27,747	27,910
New teachers to be recruited			993	1 001	997	999	997	993	988	982	985	990	989
Budget (millions RD\$)													
01 Staff expenditures	1,807	1,981	2,053	2,123	2,195	2,268	2,343	2,419	2,496	2,575	2,656	2,739	2,824
02 Recurrent expenditures	2	13	13	13	13	13	14	14	14	14	14	14	14
03 Materials and supplies	86	54	54	55	55	55	56	56	57	57	57	58	58
Total recurrent budget	1,895	2,047	2,120	2,191	2,263	2,337	2,412	2,489	2,567	2,646	2,727	2,810	2,896
04 Machines and equipment	25	16	103	109	109	110	110	111	111	112	112	113	113
05 Construction and repairs	138	193	565	568	567	569	569	569	568	567	569	572	572
06 Current transfers	16	6	6	6	6	6	6	6	6	6	7	7	7
07 Other projects	-	-	-	-	-	-	-	-	-	-	-	-	-
Total investment budget	180	215	674	683	682	685	686	686	686	685	688	691	692
Grand total	2,075	2,262	2,795	2,874	2,945	3,021	3,098	3,175	3,252	3,331	3,415	3,502	3,588

2. Model integrating the impact of HIV and AIDS

Pupils - primary level	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Gross intake rate grade 1	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%	91,0%
New intakes in grade 1		198,683	200,288	201,907	203,538	205,183	206,332	207,488	208,650	209,818	210,993	212,175	213,363
Total enrolment	989,620	1,000,886	1,011,723	1,018,575	1,024,844	1,030,422	1,035,697	1,040,598	1,045,065	1,049,087	1,052,674	1,056,133	1,059,574
Gross enrolment rate	93,2%	93,5%	93,8%	93,7%	93,5%	93,2%	93,0%	92,8%	92,6%	92,4%	92,2%	92,0%	91,7%
Students with HIV in family	140,000	150,000	97,732	101,043	104,329	107,576	110,820	114,050	117,256	120,435	123,584	126,736	127,149
% students with HIV in family	8,9%	9,4%	9,7%	9,9%	10,2%	10,4%	10,7%	11,0%	11,2%	11,5%	11,7%	12,0%	12,0%
Drop-outs due to HIV	11,000	12,000	7,996	8,451	8,915	9,388	9,873	10,368	10,873	11,387	11,909	12,674	12,674
Impact on drop-out rate of all students	1,11%	1,20%	0,79%	0,83%	0,87%	0,91%	0,95%	1,00%	1,04%	1,09%	1,13%	1,20%	1,20%

Classrooms	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Required classrooms	0	27,432	27,727	27,923	28,102	28,262	28,414	28,558	28,691	28,813	28,924	29,033	29,141
Classrooms to be built			295	196	179	160	153	144	132	123	111	109	108
Classrooms to be renovated			2,743	2,773	2,792	2,810	2,826	2,841	2,856	2,869	2,881	2,892	2,903
Number of public sector teachers	25,012	25,692	25,976	26,159	26,327	26,477	26,619	26,752	26,873	26,984	27,083	27,179	27,274
% HIV-positive teachers		5,8%	7,5%	9,1%	10,5%	11,5%	12,2%	12,7%	13,1%	13,4%	13,6%	13,7%	13,8%
New entrants into long-term illness leave			705	726	721	713	707	703	701	700	700	701	702
Needed teachers			1,179	1,237	1,293	1,347	1,384	1,408	1,425	1,434	1,447	1,460	1,487
Needed teachers due to HIV/AIDS			245	299	364	420	461	493	516	532	545	555	562
Budget (millions RD\$)													
01 Staff expenditures	1,807	1,981	2,061	2,139	2,220	2,303	2,387	2,473	2,560	2,648	2,736	2,826	2,918
02 Recurring costs	2	13	13	13	13	13	13	13	14	14	14	14	14
03 Materials and supplies	86	54	54	54	55	55	55	56	56	56	56	56	57
Total recurrent budget	1,895	2,047	2,128	2,207	2,288	2,371	2,456	2,542	2,629	2,717	2,806	2,896	2,989
04 Machines and equipment	25	16	102	107	107	108	108	108	108	109	109	109	110
05 Constructions and repairs	138	193	550	546	542	541	541	538	537	534	535	537	545
06 Current transfers	16	6	6	6	6	6	6	6	6	6	6	6	6
07 Other projects	-	-	0	0	0	0	0	0	0	0	0	0	0
Total investment budget	180	215	658	660	655	655	655	653	652	649	651	653	662
Grand total	2,075	2,262	2,786	2,867	2,943	3,027	3,111	3,195	3,281	3,367	3,457	3,549	3,650

The differences are the following:

1. Pupils

Without AIDS

Without taking into account the impact of HIV and AIDS on the student flow, we obtain a gross enrolment rate in 2014 of 93.9 per cent, slightly higher than in 2004 (93.5 per cent).

With AIDS

When HIV and AIDS conditions are taken into account, we see that the gross enrolment rate in 2014 will be 91.7 per cent, a 2.3 per cent decrease of the expected rate.

2. Teachers

Without AIDS

In the first scenario, the system needs to recruit 989 teachers in 2014.

With AIDS

If the impact of HIV and AIDS is measured, we can see that (though the number of pupils decreases) there would be a need for 1,487 teachers would be, 50 per cent more than the expected number. This could be due to the higher teacher attrition rates.

3. Budget

Without AIDS

The current expenditures in 2014 would be 2,896 million.

With AIDS

The expenditures would be 2,989 million, a 3 per cent budget increase.



Bibliographical references and additional resource materials

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Useful links

Web sites:

Association for Qualitative Research/ Association pour la recherche qualitative:
www.recherche-qualitative.qc.ca

Bill and Melinda Gates Foundation:
www.gatesfoundation.org/default.htm

Catholic Relief Services:
www.crs.org

Centers for Disease Control and Prevention:
www.cdc.gov

The Department for International Development (DFID):
www.dfid.gov.uk

Eldis:
www.eldis.org/go/topics/resource-guides/hiv-and-aids

Family Health International:
www.fhi.org

Family Health International: Youth Area:
www.fhi.org/en/Youth/YouthNet/ProgramsAreas/Peer+Education.htm

Food and Agriculture Organization:
www.fao.org

GTZ: German Development Agency:
www.gtz.de/en/

Global Campaign for Education:
www.campaignforeducation.org

The Global Fund to Fight AIDS, Tuberculosis and Malaria (GFATM):
www.theglobalfund.org/en/

Global Service Corps:
www.globalservicecorps.org

The Henry J. Kaiser Family Foundation:
www.kff.org/hivaids/

International Bureau of Education:
www.ibe.unesco.org/

IBE-UNESCO Programme for HIV & AIDS education:
www.ibe.unesco.org/HIVAids.htm

International Institute for Educational Planning:
www.unesco.org/iiep

International Institute for qualitative methodology:
www.uofaweb.ualberta.ca/iiqm/

HIV/AIDS Impact on Education Clearinghouse:
hivaidsclearinghouse.unesco.org/ev_en.php

Kenya HIV/AIDS Business Council & UK National AIDS Trust. Positive action at work:
www.gsk.com/positiveaction/pa-at-work.htm

Mobile Task Team (MMT) on the Impact of HIV/AIDS on Education:
www.mttaids.com

OECD Co-operation Directorate:
www.oecd.org/linklist/0,3435,en_2649_33721_1797105_1_1_1_1,00.html.

The Policy Project
www.policyproject.com

Population Services International Youth AIDS:
http://projects.psi.org/site/PageServer?pagename=home_homepageindex

The United States President's Emergency Plan for AIDS Relief:
www.pepfar.gov/c22629.htm

UNAIDS Joint United Nations Program on HIV/AIDS:
www.unaids.org

UNESCO EFA Background documents and information:
www.unesco.org/education/efa/ed_for_all/background/background_documents.shtml

www.unesco.org/education/efa/know_sharing/flagship_initiatives/hiv_education.shtml

www.unesco.org/education/efa/index.shtml

UNESCO Institute of Statistics website:
www.uis.unesco.org

United Nations Millennium Development Goals:
www.un.org/millenniumgoals

UNICEF United Nations Children's Fund:
www.unicef.org

UNICEF Life skills:
www.unicef.org/lifeskills

UNAIDS Joint United Nations Program on HIV/AIDS:
www.unaids.org

United States Agency for International Development: USAID:
www.usaid.gov/

School Health:
www.schoolsandhealth.org/HIV-AIDS&Education.htm

World Bank EFA Fast Track Initiative:
www.fasttrackinitiative.org/

World Bank Multi-Country HIV/AIDS Program for Africa (MAP):
<http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/EXTAFRHEANUTPOP/EXTAFRREGTOPHIVAIDS/0,,contentMDK:20415735~menuPK:1001234~pagePK:34004173~piPK:34003707~theSitePK:717148,00.html>

World Economic Forum:
www.weforum.org/globalhealth

World Health Organization:
www.who.int/en/

World Vision
www.worldvision.org/

HIV and AIDS glossary

by L. Teasdale

The terms below are defined within the context of these modules.

Advocacy: Influencing outcomes - including public policy and resource allocation decisions within political, economic, and social systems and institutions - that directly affect people's lives.

Affected by HIV and AIDS: HIV and AIDS have impacts on the lives of those who are not necessarily infected themselves but who have friends or family members that are living with HIV. They may have to deal with similar negative consequences, for example stigma and discrimination, exclusion from social services, etc.

Affected persons: Persons whose lives are changed in any way by HIV and/or AIDS due to infection and/or the broader impact of the epidemic.

Age mixing: Sexual relations between individuals who differ considerably in age, typically between an older man and a younger woman, although the reverse occurs. Diseases can be treated, but there is no treatment for the immune system deficiency. AIDS is the most severe phase of HIV-related disease.

AIDS: The Acquired Immune Deficiency Syndrome is a range of medical conditions that occurs when a person's immune system is seriously weakened by HIV, the Human Immunodeficiency Virus, to the point where the person develops any number of diseases and cancers.

Antibodies: Immunoglobulin, or y-shaped protein molecules in the blood used by the body's immune system to identify and neutralize foreign objects such as bacteria and viruses. During full-blown AIDS, the antibodies produced against the virus fail to protect against it.

Antigen: Foreign substance which stimulates the production of antibodies when introduced into a living organism.

Antiretroviral drugs (ARV): Drugs that suppress the activity or replication of retroviruses, primarily HIV. Antiretroviral drugs reduce a person's viral load, thus helping to maintain the health of the patient. However, antiretroviral drugs cannot eradicate HIV entirely from the body. They are not a cure for HIV or AIDS.

Asymptomatic: Infected by a disease agent but exhibiting no visible or medical symptoms.

Bacteria: Microbes composed of single cells that reproduce by division. Bacteria are responsible for a large number of diseases. Bacteria can live independently, in contrast with viruses, which can only survive within the living cells that they infect.

Baseline study: A study that documents the existing state of an environment to serve as a reference point against which future changes to that environment can be measured

Care, treatment and support: Services provided to educators and learners infected or affected by HIV.

Clinical trial: A clinical trial is a study that tries to improve current treatment or find new treatments for diseases, or to evaluate the comparative efficacy of two or more medicines. Drugs are tested on people, under strictly controlled conditions.

Combination therapy: A course of antiretroviral treatment that involves two or more ARVs in combination.

Concentrated epidemic: An epidemic is considered concentrated when less than one per cent of the wider population but more than five per cent of any key population practising high risk behaviours is infected, while, at the same time, prevalence among women attending urban antenatal clinics is still less than 5 percent.

Condom: One device used to prevent the transmission of sexual fluid between bodies, and used to prevent pregnancy and the transmission of disease, HIV and sexually transmitted infections. Consistent, correct use of condoms significantly reduces the risk of transmission of HIV and other STDs. Both male and female condoms exist. The male condom is a strong soft transparent polyurethane device which a man can wear on his penis before sexual intercourse. The female condom is also a strong soft transparent polyurethane sheath inserted in the vagina before sexual intercourse.

Confidentiality: The right of every person, employee or job applicant to have their medical information, including HIV status, kept private.

Counselling: A confidential dialogue between a client and a trained counsellor aimed at enabling the client to cope with stress and take personal decisions related to HIV and AIDS.

Diagnosis: The determination of the existence of a disease or condition.

Discriminate: Make a distinction in the treatment of different categories of people or things, especially unjustly or prejudicially against people on grounds of race, sex, social status, age, HIV status etc.

Discrimination: The acting out of prejudices against people on grounds of race, colour, sex, social status, age, HIV status etc; an unjust or prejudicial distinction.

Empowerment: Acts of enabling the target population to take more control over their daily lives. The term 'empowerment' is often used in connection with marginalized groups, such as women, homosexuals, sex workers, and HIV infected persons.

Epidemic: A widespread outbreak of an infectious disease where many people are infected at the same time. An epidemic is *nascent* when HIV prevalence is less than 1 percent in all known subpopulations presumed to practice high-risk behaviour for which information is available. An epidemic is *concentrated* when less than one per cent of the wider population but more than five per cent of any so-called 'high-risk group' is infected but prevalence among women attending urban antenatal clinics is still less than 1 percent. An epidemic is *generalized* when HIV is firmly established in the population and has spread far beyond the original subpopulations presumed to be practising high-risk behaviour, which are now heavily infected and when prevalence among women attending urban antenatal clinics is consistently one percent or more.

Heterosexual: A person sexually attracted to or practising sex with persons of the opposite sex.

High-risk behaviour: Activities that put individuals at greater risk of exposing themselves to a particular infection. In association with HIV transmission, high-risk activities include unprotected sexual intercourse and sharing of needles and syringes.

Highly active antiretroviral therapy (HAART): A combination of three or more antiretroviral drugs that most effectively inhibit HIV replication, allowing the immune system to recover its ability to produce white blood cells to respond to opportunistic infections.

HIV: Human Immunodeficiency Virus, the virus that causes AIDS, this virus weakens the body's immune system and which if untreated may result in AIDS.

HIV testing: Any laboratory procedure – such as blood or saliva testing – done on an individual to determine the presence or absence of HIV antibodies. An HIV positive result means that the HIV antibodies have been found in the blood test and that the person has been exposed to HIV and is presumably infected with the virus.

Homosexual: A person sexually attracted to or practising sex with persons of the same sex.

Immune system: The body's defence system that prevents and fights off infections.

Incidence (HIV): The number of new cases occurring in a given population over a certain period of time. The terms prevalence and incidence should not be confused. Incidence only applies to the number of new cases, while the term prevalence applies to all cases old and new.

Incubation period: The period of time between entry of the infecting pathogen, or antigen (in the case of HIV and AIDS, this is HIV) into the body and the first symptoms of the disease (or AIDS).

Informed consent: The voluntary agreement of a person to undergo or be subjected to a procedure based on full information, whether such permission is written, or expressed indirectly.

Life skills: Refers to a large group of psycho-social and interpersonal skills which can help people make informed decisions, communicate effectively, and develop coping and self-management skills that may help them lead a healthy and productive life.

Log frame or logical framework: A matrix that provides a summary of what a project aims to achieve and how, and what its main assumptions are. It brings together in one place a statement of all the key components of a project. It presents them in a systematic, concise and coherent way, thus clarifying and exposing the logic of how the project is expected to work. It provides a basis for monitoring an evaluation by identifying indicators of success, and means of assessment.

Maternal antibodies: In an infant, these are antibodies that have been passively acquired from the mother during pregnancy. Because maternal antibodies to HIV continue to circulate in the infant's blood up to the age of 15-18 months, it is difficult to determine whether the infant is infected.

Mother-to-Child Transmission (MTCT): Process by which a pregnant woman can pass HIV to her child. This occurs in three ways, 1) during pregnancy 2) during childbirth 3) through breast milk. The chances of HIV being passed in any of these ways if the mother is in good health or taking HIV treatment is quite low.

Micro-organism: Any organism that can only be seen with a microscope; bacteria, fungi, and viruses are examples of micro-organisms.

Orphan: According to UNAIDS, WHO and UNICEF an orphan is a child who has lost one or both parents before reaching the age of 18 years. A double orphan is a child who has lost both parents before the age of 18 years. A single orphan is a child who has lost either his or her mother or father before reaching the age of 18.

Opportunistic infection: An infection that does not ordinarily cause disease, but that causes disease in a person whose immune system has been weakened by HIV. Examples include tuberculosis, pneumonia, Herpes simplex viruses and candidiasis.

Palliative care: Care that promotes the quality of life for people living with AIDS, by the provision of holistic care, good pain and symptom management, spiritual, physical and psychosocial care for clients and care for the families into and during the bereavement period should death occur.

Pandemic: An epidemic that affects multiple geographic areas at the same time.

Pathogen: An agent such as a virus or bacteria that causes disease.

Peer education: A teaching-learning methodology that enables specific groups of people to learn from one another and thereby develop, strengthen, and empower them to take action or to play an active role in influencing policies and programs

Plasma: The fluid portion of the blood.

Post-exposure prophylaxis (PEP): As it relates to HIV disease, is a potentially preventative treatment using antiretroviral drugs to treat individuals within 72 hours of a high-risk exposure (e.g. needle stick injury, unprotected sex, rape, needle sharing etc.) to prevent HIV infection. PEP significantly reduces the risk of HIV infection, but it is not 100% effective.

Post-test counselling: The process of providing risk-reduction information and emotional support, at the time that the test result is released, to a person who is submitted to HIV testing.

Pre-exposure prophylaxis (PREP): The process of taking antiretrovirals before engaging in behaviour(s) that place one at risk for HIV infection. The effectiveness of this is still unproven.

Pre-test counselling: The process of providing an individual with information on the biomedical aspects of HIV and AIDS and emotional support for any psychological implications of undergoing HIV testing and the test result itself before he/she is subject to the test.

Prevalence (or HIV prevalence): Prevalence itself refers to a rate (a measure of the proportion of people in a population infected with a particular disease at a given time). For HIV, the prevalence rate is the percentage of the population between the ages of 15 and 49 who are HIV infected. The terms prevalence and incidence should not be confused. Incidence only applies to the number of new cases, occurring in a given population over a certain period of time, while the term prevalence applies to all cases old and new.

Prevention of mother-to-child transmission (of HIV): Interventions such as preventing unwanted pregnancies, improved antenatal care and management of labour, providing antiretroviral drugs during pregnancy and/or labour, modifying

feeding practices for newborns and provision of antiretroviral therapy to newborns – all of which aim to reduce the risk of HIV transmission from an infected mother to her child.

Prophylaxis for opportunistic infections: Treatments that will prevent the development of conditions associated with HIV disease such as fungal infections and types of pneumonia.

Rape: Sexual intercourse with an individual without his or her consent.

Retrovirus: An RNA virus (a virus composed not of DNA but of RNA). Retroviruses are a type of virus that can insert its genetic material into a host cell's DNA. Retroviruses have an enzyme called reverse transcriptase that gives them the unique property of transcribing RNA (their RNA) into DNA. HIV is a retrovirus.

Safer sex: Sexual practices that reduce or eliminate the exchange of body fluids that can transmit HIV e.g. through consistent and correct condom use.

Serological testing: Testing of a sample of blood serum.

Seronegative: Showing negative results in a serological test.

Seroprevalence: Number of persons in a population who tested positive for a specific disease based on serology (blood serum) specimens.

Seropositive: Showing the presence of a certain antibody in the blood sample, or showing positive results in a serological test. A person who is seropositive for HIV antibody is considered infected with the HIV virus.

Sex worker: A sex worker has sex with other persons with a conscious motive of acquiring money, goods, or favours, in order to make a fulltime or part-time living for her/himself or for others.

Sexual debut: The age at which a person first engages in sexual intercourse.

Sexually Transmitted Infections (STIs): Infections that can be transmitted through sexual intercourse or genital contact such as gonorrhoea, chlamydia and syphilis. In many cases HIV is a sexually transmitted infection. Untreated STIs can cause serious health problems in men and women. A person with symptoms of STIs (ulcers, sores, or discharge) 5-10 times more likely to transmit HIV.

Sexually transmitted infection management: Comprehensive care of a person with an STI-related syndrome or with a positive test for one or more STIs.

Socio-behavioural interventions: Educational programmes designed to encourage individuals to change their behaviour to reduce their exposure to HIV infections in order to reduce or prevent the possibility of HIV infection.

Stigma: A process through which an individual attaches a negative social label of disgrace, shame, prejudice or rejection to another because that person is different in a way that the individual finds the stigmatized person undesirable or disturbing.

Stigmatize: Holding discrediting or derogatory attitudes towards another on the basis of some feature that distinguish the other such as colour, race, and HIV status.

Symptom: Sign in the body that indicates health or a disease.

Symptomatic: With symptoms

Sugar Daddy/Mommy Syndrome: Comparatively well-off older men/women who pay special attention (e.g. give presents) to younger women/men in return for sexual favours.

T- Cells: A type of white blood cell. One type of T cell (T4 Lymphocytes, also called T4 Helper cells) is especially apt to be infected by HIV. By injuring and destroying these cells HIV damages the overall ability of the immune system to reduce the reproduction of the virus in the blood or to fight opportunistic diseases. A healthy person will usually have more than 1,200 T-cells in a certain measure of blood, but when HIV progresses to AIDS the number of T-cells drops below 200.

Treatment education: Education that engages individuals and communities to learn about anti retroviral therapy so that they understand the full range of issues and options involved. It provides information on drug regimen and encourages people to know their HIV status.

Tuberculosis (TB): Tuberculosis is a bacterial infection that is most often found in the lungs (pulmonary TB) but can spread to other parts of the body (extrapulmonary TB). TB in the lungs is easily spread to other people through coughing or laughing. Treatment is often successful, though the process is long. Treatment time averages between 6 and 9 months. TB is the most common opportunistic infection and the most frequent cause of death in people living with HIV in Africa.

Universal precautions: A practice, or set of precautions to be followed in any situation where there is risk of exposure to infected bodily fluids, such as blood, like wearing protective gloves, goggles and shields, or carefully handling potentially contaminated medical instruments.

Vaccine: A substance that contains antigenic or pathogenic components, either weakened, dead, or synthetic, from an infectious organism which is injected into the body in order to produce antibodies to disease or to the antigenic components.

Viral load: The amount of virus present in the blood. HIV viral load indicates the extent to which HIV is reproducing in the body. Higher numbers mean more of the virus is present in the body.

Virus: Infectious agents responsible for numerous diseases in all living beings. They are extremely small particles, and in contrast to bacteria, can only survive and multiply within a living cell at the expense of that cell.

Voluntary counselling and testing: HIV testing done on an individual who, after having undergone pre-test counselling, willingly submits himself/herself to such a test.

Workplace policy: A guiding statement of principles and intent taking applicable to all staff and personnel of an institution. This can often be part of a larger sectoral policy.

The series

Wide-ranging professional competence is needed for responding to HIV and AIDS in the education sector. To make the best use of this series, it is recommended that the following order be respected. However, as each volume deals with its own specific theme, they can also be used independently of one another.

Volume 1: Setting the Scene

- 1.1** The impacts of HIV/AIDS on development
M. J. Kelly, C. Desmond, D. Cohen
- 1.2** The HIV/AIDS challenge to education
M. J. Kelly
- 1.3** Education for All in the context of HIV/AIDS
F. Caillods, T. Bukow
- 1.4** HIV/AIDS-related stigma and discrimination
R. Smart
- 1.5** Leadership against HIV/AIDS in education
E. Allemano, F. Caillods, T. Bukow

Volume 2: Facilitating Policy

- 2.1** Developing and implementing HIV/AIDS policy in education
P. Badcock-Walters
- 2.2** HIV/AIDS management structures in education
R. Smart
- 2.3** HIV/AIDS in the educational workplace
D. Chetty

Volume 3: Understanding Impact

- 3.1** Analyzing the impact of HIV/AIDS in the education sector
A. Kinghorn
- 3.2** HIV/AIDS challenges for education information systems
W. Heard, P. Badcock-Walters.
- 3.3** Qualitative research on education and HIV/AIDS
O. Akpaka
- 3.4** Projecting education supply and demand in an HIV/AIDS context
P. Dias Da Graça

Volume 4: Responding to the Epidemic

- 4.1** A curriculum response to HIV/AIDS
E. Miedema
- 4.2** Teacher formation and development in the context of HIV/AIDS
M. J. Kelly
- 4.3** An education policy framework for orphans and vulnerable children
R. Smart, W. Heard, M. J. Kelly
- 4.4** HIV/AIDS care, support and treatment for education staff
R. Smart
- 4.5** School level response to HIV/AIDS
S. Johnson
- 4.6** The higher education response to HIV/AIDS
M. Crewe, C. Nzioka

Volume 5: Costing, Monitoring and Managing

- 5.1** Costing the implications of HIV/AIDS in education
M. Gorgens
- 5.2** Funding the response to HIV/AIDS in education
P. Mukwashi
- 5.3** Project design and monitoring
P. Mukwashi
- 5.4** Mitigating the HIV/AIDS impact on education: a management checklist
P. Badcock-Walters

The present series was jointly developed by UNESCO's International Institute for Educational Planning (IIEP) and the EduSector AIDS Response Trust (ESART) to alert educational planners, managers and personnel to the challenges that HIV and AIDS represent for the education sector, and to equip them with the skills necessary to address these challenges.

By bringing together the unique expertise of both organizations, the series provides a comprehensive guide to developing effective responses to HIV and AIDS in the education sector. The extensive range of topics covered, from impact analysis to policy formulation, articulation of a response, fund mobilization and management checklist, constitute an invaluable resource for all those interested in understanding the processes of managing and implementing strategies to combat HIV and AIDS.

Accessible to all, the modules are designed to be used in various learning situations, from independent study to face-to-face training. They can be accessed on the Internet web site: www.unesco.org/iiep Developed as living documents, they will be revisited and revised as needed. Users are encouraged to send their comments and suggestions (hiv-aids-clearinghouse@iiep.unesco.org).

The contributors

The International Institute for Educational Planning is a specialised organ of UNESCO created to help build the capacity of countries to design educational policies and implement coherent plans for their education systems, and to establish the institutional framework by which education is managed and progress monitored.

The EduSector AIDS Response Trust (ESART) is an independent, non-profit organisation established to continue the work of the Mobile Task Team (MTT), originally based at HEARD, University of KwaZulu-Natal from 2000 to 2006, and supported by USAID. ESART is designed to help empower African ministries of education and their development partners, to develop sector-wide HIV&AIDS policy and prioritized implementation plans to systemically manage and mitigate impact.
