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African Women
in Science and Engineering

Higher Education Science and Curricular Reforms: African Universities Responding to HIV and AIDSThrough Faculties of Science and Engineering

Evaluation Report for Universities in Ghana, Rwanda, Botswana and Kenya



MARCH – DECEMBER 2008



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FOREWORD

Between December 2006 and May 2007, In-country training of Trainers (ToT) workshops for the integration of HIV and AIDS into the curriculum for engineering, biological and physical sciences were held in Ghana, Rwanda, Botswana and Kenya.

As a follow-up to these workshops evaluation was carried out in all the four countries. All the participating universities were evaluated to determine progress in the following areas:-

1. Establish whether ToTs had been able to train faculty colleagues on how to integrate HIV and AIDS into their respective courses.
2. Identify challenges in the training of Faculty colleagues and to suggest possible solutions and strategies.
3. Establish the extent to which the Universities in general and the faculties of science and Engineering in particular have embraced the concept of mainstreaming and if anything had changed in their strategies as a result of the UNESCO/AWSE initiative on the integration of HIV and AIDS into the curriculum after the 2007 workshop.
4. Establish if the integrated courses are actually being taught and identify any challenges that might have been encountered by the lecturers.
5. Collect and compile engineering, mathematics and physics courses that have been integrated or where entry points for integration of HIV and AIDS have been identified from the education institutions.
6. There is a need for the Faculty Deans to sensitize management on HIV integration.
7. There is need to intensify HIV and AIDS awareness among students, staff and the local community.
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9. There is need to intensify HIV and AIDS awareness among students, staff and the local community.
10. There is need for the ToTs to lead by example and fully integrate HIV education into their own teaching programmes.
11. Staff members need to educate themselves on the basics of HIV and AIDS for effective incorporation. This will facilitate effective incorporation into their own courses and training of colleagues.
12. ToTs need to actively lobby for incorporation of HIV and AIDS into university's operation/agenda. This will facilitate allocation of funds for HIV and AIDS incorporation activities.
13. There is need for a focal point to coordinate university HIV integration
14. There is need for a monitoring system for success of integration.
15. UNESCO/AWSE should after the dissemination, report back to the Deans and management of the participating universities.

The result of the evaluation and dissemination workshops is compiled in this report.

- AWSE should communicate, at least once every three months with the trained ToTs. The communication should make it clear that:
 - It is an indication from AWSE to the ToTs that they have not forgotten about them.
 - The ToTs are expected to be working towards a certain specified goal.
 - UNESCO and AWSE will be back after a year to conduct an assessment of what has been achieved by the institutions and the ToTs since they last met at the training.
- 4. The ToTs should lead by example and integrate HIV into their own teaching. ToTs should also take the initiative to inform and educate themselves on HIV, AIDS and related issues. This way, ToTs will develop confidence and be in a better position to train colleagues on how to integrate.
- 5. The consultants should be available, and make it known to the ToTs that they are available to assist with any integration or mainstreaming technicalities, identification of entry points and the development of HIV integrated modules by the respective institutions.
- 6. There is a need for regular progress reporting on HIV and AIDS related activities that have arisen as a result of the UNESCO/ AWSE project and on HIV and AIDS incorporation in particular between AWSE and the Deans/ToTs.
- 7. There is need for continuous update/communication between ToTs and their respective Deans in the participating universities.

PREAMBLE

The HIV and AIDS pandemic is the most disastrous health and development event in the world today. The pandemic continues to ravage populations across the world and most particularly, in the resource strained countries in Sub-Saharan Africa. Despite efforts to curb the spread of the pandemic, there are reports of increased prevalence rates and deaths due to HIV and AIDS in the last two decades. It is estimated that the real impact of the scourge will only be felt in 2050.

Universities have not been spared by the scourge. The disease has the potential to impair institutional functions. The long lead time between initial HIV infection and AIDS has major implications for universities. This being the case, the mandate of service to society demands the engagement of every university with HIV/AIDS.

Every university should recognize that HIV and AIDS are vital university issues that demand a coordinated university response. Universities have a special responsibility for the development of human resource and are crucial agents of change and providers of leadership direction in society.

In an effort to help students address HIV and AIDS at personal and professional levels, universities must be involved in a proactive and sustainable manner in mitigation of the pandemic through the integration of HIV and AIDS in the teaching curriculum. This will ensure development of HIV and AIDS educated and HIV and AIDS competent graduates who will be adequately qualified to carry AIDS concerns into their subsequent lives, to address AIDS issues in their professions and to bring AIDS into the open within their societies.

In recognition of the above, the United Nations Educational, Scientific and Cultural Organization (UNESCO) Regional Bureau

for Science and Technology in Africa, organised a training of trainers workshop, jointly with the African Women in Science and Engineering (AWSE) for universities in Ghana, Rwanda, Botswana and Kenya during the 2006/2007 biennium.

The primary objective of the workshops was to provide training for lecturers in Engineering, Mathematics, Chemistry, Biological & Physical Sciences on how to mainstream and integrate HIV and AIDS into the engineering and science courses and also prepare them as trainers of trainers (ToT) in the respective faculties and the institution as a whole.

The following is an overall report after evaluation of the project one year after the ToT workshop for the participating universities in Ghana, Rwanda, Botswana and Kenya. This is an overall report of the findings in the four countries which were obtained through oral interviews and closed/open ended questionnaires with the ToTs.

2. For sustainability of the integration process:
 - UNESCO should continue to support the ToTs and institutions as they continuously liaise with one another to keep the fire burning, so to speak.

The ToTs have expressed a desire that UNESCO continue to support them.

- All who are involved should be prepared to actively play their roles beyond the ToT training.
3. The following modifications and enhancements should be incorporated or taken on board to accelerate and enhance the success of UNESCO's future activities in mainstreaming HIV and AIDS into the curriculum:

- UNESCO should communicate directly with the Deans and Management often.

This communication should be aimed at:

- Appreciating the Deans and Managements support for the integration process
- Soliciting the Deans and Managements continued support and cooperation
- Assuring the Deans and Management that UNESCO is prepared to assist their institutions with their integration and mainstreaming endeavours
- Update the Deans and Management on upcoming related UNESCO activities.

10. RECOMMENDATIONS

It is evident that much has been done by the universities in Rwanda, Kenya, Botswana and Ghana and the following are recommendations following from the evaluation workshops:

1. Some ToTs - engineering and physics in particular, are not integrating simply because the thought of looking for relevant HIV information that they can use as examples is daunting. The majority have simply not made time to look for such information.

It is therefore recommended that:

- UNESCO should provide initial basic HIV information (biology of the HI virus and its replication mechanism inside the cell) to the trainees to 'jump start' them into looking for more information later on their own.

This information can simply be an HIV and AIDS handbook as has been done by Masinde Muliro University of Technology in Kenya. Alternatively, this can be an educational CD as it has been done by the University of Pretoria in South Africa.

- This information should be compiled and ready to accompany any ToT training that UNESCO intends to undertake in future.
- For countries where ToT training has already taken place, UNESCO should consider embarking on a ToT HIV and AIDS education programme.

Besides empowering the previously trained ToTs, this will build capacity and ensure sustainability of the integration effort by UNESCO.

ACKNOWLEDGEMENTS

This overall evaluation report has benefited from the inputs of participants at the UNESCO/AWSE dissemination workshop for universities in Ghana, Rwanda, Botswana and Kenya. Further inputs came from Professors Mabel Imbuga and Caroline Langat Thoruwa of AWSE and Mrs. Alice A. Ochanda of UNESCO, Nairobi Office. All are greatly acknowledged.

We gratefully acknowledge the consultants; Dr. Mandu Jeffrey from the Electrical Engineering Department - University of Botswana, Prof. Zipporah Ng'ang'a from Department of Medical Laboratory Sciences - Jomo Kenyatta University from Agriculture and Technology and Prof. Xiahoua Xia from Department of Electrical, Electronic and Computer Engineering - University of Pretoria

Profound gratitude and acknowledgement is expressed to UNESCO for the financial support that made the hosting of the evaluation workshop possible.

AWSE also appreciates secretarial services offered by Mrs. Monica Gammimba in organizing and co-ordinating the Evaluation and Dissemination workshops.

Summary of activities since UNESCO/AWSE training by countries

Table 3: Summary of activities by participating countries.

	Participating Country			
	Kenya	Rwanda	Ghana	Botswana
Workshop following UNESCO/AWSE Training	8/12	0/3	3/5	3/6
HIV and AIDS integrated into current teaching	11/12	3/3	2/5	6/6
Development of Common HIV and AID Scourse	8/12	0/3	2/5	1/6
University with HIV and AIDS Policy	10/12	3/3	1/5	4/6
Evidence of commitment by University management to support integration	7/12	2/3	4/5	6/6
Specific budget for HIV and AIDS	0/12	0/3	0/5	1/6
Evidence of HIV and AIDS awareness creation	11/12	3/3	5/5	6/6
Evidence of Impact of the UNESCO/AWSE workshop training	10/12	3/3	4/5	6/6

- Almost all ToTs and Deans in attendance are convinced that this was the right thing to do – Even the engineers have embraced the mainstreaming concept and are prepared to work towards achieving that goal.
- Most of the ToTs and management just need time to prioritize and re-arrange their commitments so that they could place HIV integration at the top of their agenda.
- With integration underway, most institutions will have mainstreamed HIV into their curriculum another 1 year down the line.
- With HIV mainstreamed into the curriculum, all concerned will have acquired adaptive skills where they could now integrate or mainstream any issue of national concern – thus providing their nations with responsive and pre-emptive graduates.

Table 3 presents a summary by country, of the activities that have been carried out, advances made by the ToTs and participating countries in their endeavor to mainstream HIV and AIDS into the university curricular.

1. THE PARTICIPATING INSTITUTIONS OF HIGHER LEARNING IN THE FOUR COUNTRIES

Four countries had participated in the UNESCO/AWSE training on the integration of HIV and AID Seducation in the engineering, mathematics, physics and biological sciences curriculum. These countries are Botswana, Ghana, Kenya and Rwanda. A total of 25 institutions from these four countries participated in the evaluation exercise.

Table1 : Institutions that participated in the evaluation are:

Country	Name of Institution
Ghana	1) University of Ghana Legon 2) Kwame Nkrumah University of Science and Technology (KNUST) 3) University of Cape Coast (UCC) 4) University of Education, Winneba 5) Garden City University College (GCUC)
Kenya	1) University of Nairobi 2) Jomo kenyatta University of Agriculture and Technology 3) Kenyatta University 4) Egerton University 5) Moi University 6) Maseno University 7) Masinde Muliro University of Science & Technology 8) United States International University 9) Catholic University of Eastern Africa 10) Africa Nazarene University 11) Kenya Methodist University 12) Daystar University

Rwanda	1) National University of Rwanda (NUR) 2) Kigali Institute of Education (KIE) 3) Kigali Institute of Science & Technology (KIST)
Botswana	1) University of Botswana (UB) 2) Serowe College of Education 3) Lobatse College of Education 4) Tlokweng College of Education 5) Kanye SDA College of Nursing

A total of 98 participants from the four countries participated in the UNESCO/AWSE evaluation. The distribution of the institutions and participants per country was as follows:

- Kenya 12 institutions with a total of 40 participants
- Ghana 5 institutions with a total of 24 participants
- Botswana 5 institutions with a total of 12 participants
- Rwanda 3 institutions with a total of 22 participants

Kenya had the highest number of participating institutions at 12 and accounted for 48% of the institutions. Kenya also had the highest number of participants and accounted for 40.8% of all who participated in the evaluation. This information is as depicted in Figure 1 and Figure 2.

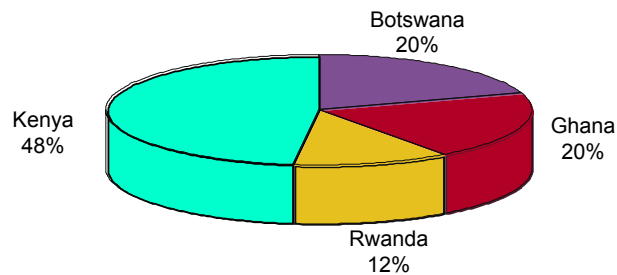


Figure 1: Representation by number of institutions per country

by ToTs. In these institutions, major advances and achievements in HIV integration and mainstreaming have been obtained.

Obstacles encountered by the universities are many and in most cases, similar. The common obstacles to integration that have been experienced or cited by most institutions are:

- Lack of basic HIV and AIDS knowledge that is worsened by the unwillingness of staff to educate themselves on HIV and AIDS basics.
- Initial resistance by some staff members – and sustained in some disciplines, to HIV integration into the curriculum.
- Rapid staff turnover and new uninitiated staff members who have no interest in HIV integration.
- Limited access to IEC material.
- An overloaded curriculum.

Some institutions are prepared to overcome the basic HIV information barrier, by compiling and making available to staff, HIV and AIDS information such as an HIV and AIDS handbook.

Overall, the UNESCO/ASWE project on HIV integration has raised awareness and interest among staff members on HIV and AIDS issues and ToTs have learnt valuable integration lessons. Examples of such lessons learnt are that integrated courses need to be examinable, the integration process needs to be documented and its impact should be assessed. Furthermore, there is consensus among ToTs that mainstreaming HIV into the curriculum is possible, but requires a concerted effort to be successful.

This integration project has been a worth while exercise for the following reasons:

9. SUMMARY

In summary, the objectives of the UNESCO/AWSE training workshops were understood by all who participated. ToTs from the majority (two thirds) of universities in participating countries have since being trained, held workshops where they trained or were utilized to train colleagues on integration of HIV into the curriculum, and on the identification of HIV integration entry points.

There is willingness by ToTs to integrate HIV and AIDS into the curriculum and courses they teach in particular. Major strides in identifying HIV and AIDS integration entry points have been made by most universities. Some universities have developed HIV mainstreamed courses that are being actively taught and almost all universities have a mandatory common HIV and AIDS course that is being taught to all 1st year students.

There is clear evidence that the majority of participating universities have embraced the concept of mainstreaming HIV and AIDS into the curriculum. Though good progress has been made by most universities, there is not much evidence of active HIV and AIDS research that is currently underway in these universities.

Almost all universities have an HIV and AIDS policy in place. However, management's commitment to integration for almost half of the universities is not convincing enough, as it appears to be more theoretic than practical. Though management has no problems with integration in principle, management in some institutions failed to facilitate training and capacity building of staff, and no university has reported having a specific HIV and AIDS budget. There are institutions though, where top management and teaching support staff have taken an active role by participating in training workshops

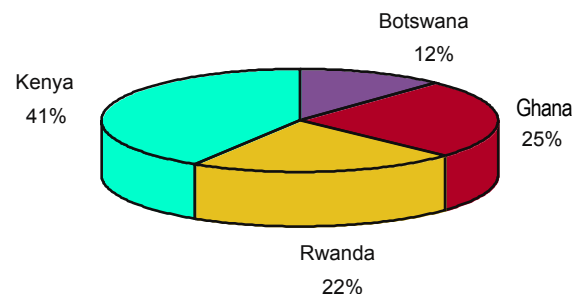


Figure 2: Representation by number of participants per country

Area of Specialization of Participants

Participants were categorized by area of specialization and a total of 14 areas were identified as follows:

- Biology 26
- Chemistry/Biochemistry 21
- Physics 11
- Mathematics 6
- Engineering 21
- Environmental Science 4
- Computer Science 2
- Library 1
- Foods and Nutrition 2
- Community Health 1
- Social Sciences 1
- Education 1
- Health Sciences 1

This information is presented in Table 2 and depicted graphically in Figure 3

Table 2: Participants and their areas of specialization

		Rwanda	Kenya	Botswana	Ghana	
Profession / Speciality of Participant	Biology	6	14	3	3	26
	Chemistry/ Biochemistry	6	6	4	6	21
	Physics	3	3	2	3	11
	Mathematics	4	1		1	6
	Engineering	3	10	3	5	21
	Environmental Science		3	1		4
	Computer Science		2			2
	Library		1			1
	Community Health				1	1
	Health Sciences				1	1
	Food/Nutrition Dietetics				2	2
	Education				1	1
	Social Sciences				1	1
Total for Country	22	40	12	24	98	

Overall Biological Sciences, Engineering and Chemistry were very well represented, while other disciplines such as Mathematics and Computer Sciences were poorly represented. Physics was adequately represented.

Follow up by implementing partners

- There is need for continued follow up by the implementing partners through regular communication with all the participating universities through their AIDS Control Units This was lacking throughout this project implementation.

8. WAY FORWARD

There is need to do the following for continuation and success of this project:

- Increase the capacity of teaching staff at the universities on HIV issues through establishment of resource centres.
- There is need to develop modules for HIV integration in the various courses that will guide the integration process. This will ensure a common approach by all.
- Establish networks collaborations or partnerships with agencies and organizations working on HIV and AIDS for information sharing.
- Seek funding from donors in order to intensify HIV and AIDS activities.
- UNESCO and the implementing partners need to ensure sustainability of the HIV integration initiatives by the participating universities. The tempo and enthusiasm among participating Universities particularly in Kenya and Botswana is extremely high. The wish by participants not to be abandoned needs to be recognized.
- Universities need to write grant winning proposals to sustain HIV research by lecturers and graduate students.
- There is need for universities to de-stigmatize HIV and AIDS through promotion of care and support of the infected and the affected within the University and the neighboring communities.

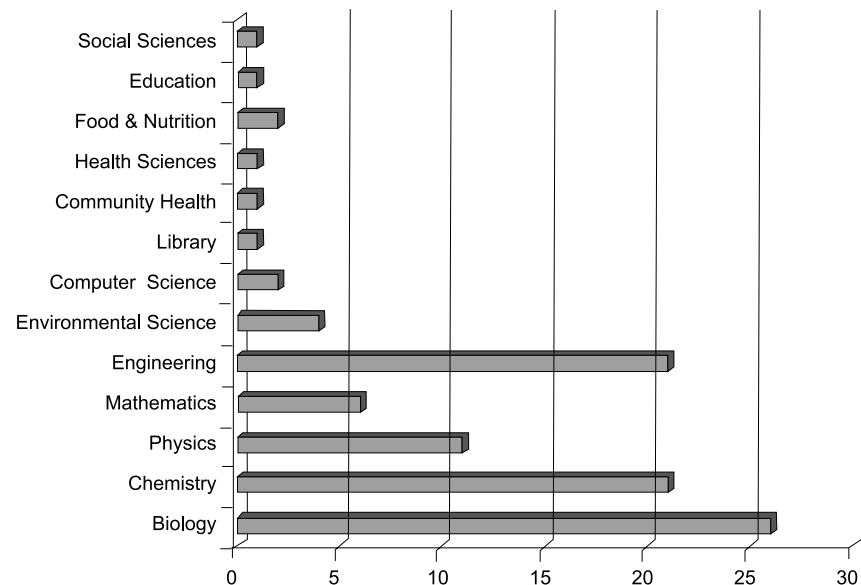


Figure 3: Participant representation by discipline

2. IMPLEMENTATION RATES

1.	Understanding if the UNESCO/AWSE training workshop objectives were understood by the ToTs.
Kenya Rwanda, Ghana, Botswana	ToTs in general, understood the objectives of the UNESCO/AWSE training workshop. The training contributed to their understanding of HIV and AIDS issues and they were inspired to understand more about HIV and AIDS issues and to likewise, train their colleagues to also incorporate HIV education into their teaching.
Observation	ToTs understood the workshop objectives. However: <ul style="list-style-type: none"> • The majority of ToTs were not really expecting the evaluation. • Some ToTs were mistaking integration with course overhaul and making major changes.

2.	Integration of HIV and AIDS into own teaching by ToT and training of colleagues.
Kenya	<p>Since being trained:</p> <ul style="list-style-type: none"> ▪ All ToTs have incorporated HIV and AIDS into their own teaching. ▪ Some have trained colleagues within the university. ▪ Others have informal discussions among colleagues. <p>The target groups were colleagues within the departments.</p>
Rwanda	<p>Since being trained:</p> <ul style="list-style-type: none"> ▪ Most of the ToTs have incorporated HIV and AIDS into their own teaching. ▪ ToTs have not trained colleagues within the university.
Ghana	<p>Since being trained:</p> <ul style="list-style-type: none"> ▪ The majority of ToTs have not incorporated HIV and AIDS into their own teaching. ▪ Only one ToT has trained colleagues within their university
Botswana	<p>Since being trained:</p> <ul style="list-style-type: none"> ▪ All ToTs have incorporated HIV and AIDS into their own teaching. ▪ Some ToTs have trained colleagues within the university. ▪ Others have had informal discussions among colleagues

- Overloaded curriculum, time and cost of training workshops.
- Inadequate instructional, physical and financial resources to support HIV integration.
- Shortage of funds for capacity building.
- Challenges of integration of HIV and AIDS without information fatigue and without compromising on the course content.
- Monitoring of integration and evaluation of the impact.
- Lack of harmonization of the integration process to avoid duplication and information fatigue.
- Lack of a specific budget for HIV and AIDS activities in all the universities.

7. COMMON CHALLENGES ENCOUNTERED IN IMPLEMENTING HIV INTEGRATION AMONG TOT'S

The integration process has definitely not been smooth sailing – there have been obstacles along the way and the ToTs have encountered many challenges. It is hoped that these challenges have strengthened the ToT's resolve to make a success of this project. These challenges are:

- Initial resistance by some academic staff – they did not appreciate the need for, or the benefits of mainstreaming HIV and AIDS into existing courses.
- Negative attitude from some lecturers particularly in the physical sciences and engineering.
- Lack of capacity, inadequate knowledge and facts on HIV and AIDS related issues by the ToTs. This made it difficult for some ToTs to integrate HIV into their own teaching, and even more so to train colleagues on how to integrate.
- Recruitment rate of un-initiated staff is high in most universities.
- Misunderstanding of the concept of integration among lecturers.
- There was concern for an increase in examinable courses by students.
- Perception among students that HIV and AIDS is not core to academic programs they were admitted in.
- Limited access to HIV and AIDS IEC materials.

3.	Utilization of ToTs by the University.
Kenya	The universities have utilized the ToTs in development of the teaching curriculum.
Rwanda	The universities have not utilized the ToTs in development of the teaching curriculum.
Ghana	The universities have not utilized the ToTs in development of the teaching curriculum.
Botswana	The universities have utilized the ToTs in development of the teaching curriculum
Observation	<ul style="list-style-type: none"> ▪ Most institutions were reviewing their programmes. ▪ This was a golden opportunity for them to formally integrate HIV and AIDS into their programmes. ▪ Ultimately, only one institution in Kenya has made integration of HIV and AIDS into all developed course mandatory.

4.	HIV and AIDS Policy
Kenya	Present
Rwanda	None
Ghana	None
Botswana	Present

5.	HIV and AIDS Common Teaching Unit
Kenya	Present
Rwanda	None
Ghana	None
Botswana	Present

6.	Initiatives by Students
Kenya	Present
Rwanda	Present though not vibrant
Ghana	None
Botswana	Present
7.	Availability of VCT Services
Kenya	Present
Rwanda	No VCT
Ghana	No VCT
Botswana	VCT present in most institutions
8.	Aids Control Unit
Kenya	Present
Rwanda	Absent
Ghana	Absent
Botswana	Present in most institutions
9.	Evidence of integration of HIV in research activities
Kenya	Present at post-graduate level
Rwanda	No evidence.
Ghana	Some evidence of research and publications in HIV and AIDS by staff members.
Botswana	A case of best practice.
10.	Follow-up and monitoring of initiatives
Kenya	No clear evidence.
Rwanda	No follow up.
Ghana	No follow up.
Botswana	Case of best practice in monitoring of HIV integration initiatives through the AIDS Control Unit at the University of Botswana.

- For harmonization in integration, the process needs to be documented.
- Engineers can provide some of the answers to medical concerns such as HIV/AIDS.
- Integration of HIV in the teaching of Engineering, Physics, Computer Sciences and Mathematics can be done.

- For effectiveness, integrated courses need to be examinable.
- Seminars on HIV integration should be continuous where new staff are inducted while the continuing staff are updated.
- There is need for a focal point to coordinate the university HIV integration activities.
- There is need for a monitoring system for integration to be successful.
- HIV is an important pandemic whose mitigation requires a coordinated effort. In this regard, team work is important if integration is going to be achieved.
- Integration of HIV into the university curriculum is vital for effective responses to the pandemic and can be done!.
- Stigma about HIV and AIDS exists within the university teaching staff.
- Mentoring of students through a participatory approach is required.
- There is need to use peer groupings for extension of impact championing.
- It is necessary to assess the impact of HIV integration i.e Behaviour change among the university community.
- There is need for passion to convey HIV and AIDS messages.
- There is need for an HIV and AIDS resource centre.

3. OVERALL OBSERVATION ON IMPLEMENTATION RATES

The implementation rate for HIV and AIDS integration into the teaching curriculum at the Institutions of Higher Learning is high in Kenya and Botswana and low in Ghana and Rwanda. The following observations hold:

- The economic status of a country seems to influence uptake of HIV initiatives. Countries with a high GDP have higher rates of uptake with Botswana having the highest implementation rate.
- The implementation rates by country are also related to the HIV and AIDS prevalence rates in the respective countries. In this regard, of the four participating countries, Botswana has the highest HIV prevalence rate and the corresponding high implementation rate.
- The background or area of specialization of the ToT has to some extent, made it easier for some ToTs to integrate HIV and AIDS into their own teaching. This is true for Biologists and Bio-chemists, since they are already familiar with concepts of virology and HIV is part of some of their modules in any case. In this regard, Biologists fared better than Physicists and Engineers in successfully identifying HIV integration entry points and integrating. However, if one excludes the so called ‘obvious’ courses in biology and bio-chemistry, then there is not much difference in implementation between ToTs in different disciplines.

These observations suggest that it is therefore not surprising that a country like Ghana is lagging behind with implementing the integration of HIV and AIDS into the curriculum of their universities, because HIV and AIDS prevalence has not yet reached disproportionate rates in that country as it has in Botswana. It is clear that those ToTs who had a background or information on HIV, AIDS and related issues used that information well. However, the majority of ToTs with no such background did not make any commendable effort to seek or look for relevant HIV and AIDS information that they can use in their teaching.

6. COMMON LESSONS LEARNT

Many valuable lessons have been learnt from this exercise in integrating HIV and AIDS into the curriculum. It is hoped that these lessons will be considered seriously by all involved in the integration and mainstreaming of HIV and AIDS in the curriculum. These lessons are:

- All teaching faculties at the university can be involved in mainstreaming HIV and AIDS in their curriculum.
- The support of university administration is required and vital for integration to be successful.
- The support of university support staff such as the Librarian is required and can accelerate the integration process.
- It takes interest of teaching staff to teach themselves on the basics of HIV and AIDS
- It is possible to mainstream HIV and AIDS in teaching at the University.
- Academic staff can be effective change agents in Behaviour Change Communication
- Students are eager to obtain HIV and AIDS information. However the approach must be carefully chosen to avoid information fatigue.
- Integration is a process that requires patience. It could be slow, but can be moved to the desired end.
- Multiple approaches can be used for integration: assignments, field work, classroom teaching and research. HIV and AIDS issues go beyond the classroom.

- The training provided direction and valuable information on an area previously thought impossible.
- The training generated interest in HIV and AIDS to professionals in Physics and Engineering who previously thought HIV was only a medical and biological concern
- The UNESCO/AWSE project has increased awareness of the need for education and facing the challenge of integration in Physical Sciences and Engineering in particular.
- Following the UNESCO/AWSE training, there have been outreach programmes in the neighbouring community to intensify awareness on HIV/AIDS.
- The UNESCO/AWSE training has been insightful and educational and has facilitated the development of the draft HIV and AIDS policy and mainstreaming in some universities.
- After the UNESCO/AWSE training workshop, the ToTs have influenced students to be more active in community outreach activities.
- There is more support by top management of universities through a league of activities.
- Staff has been encouraged to initiate and facilitate fundamental or applied research on HIV and AIDS particularly at post graduate level.
- There are student projects that have been initiated on HIV and AIDS and there is increased HIV and AIDS awareness among students.
- There is increased passion for HIV information among engineers.

4. UNIVERSITY'S POSITION ON MAINSTREAMING

The universities in general have fully embraced the concept of mainstreaming HIV and AIDS into the curriculum. This is evidenced by:

- Development of common university courses in HIV and AIDS in Kenya and in Botswana which are compulsory and examinable. The process is ongoing in Ghana.
- The process of curriculum review is in progress in most universities to identify entry points for HIV integration (Rwanda) while other Universities have already identified the entry points (Kenya, Botswana)
- There is a University wide HIV and AIDS policy in most countries (Kenya, Botswana, Rwanda) and a draft policy exists in Ghana.
- The University Administration participated in the workshops on HIV integration, (Kenya and Botswana) demonstrating support and commitment from the university administration
- The universities have appointed AIDS Control Units Coordinators to streamline HIV and AIDS activities (Botswana) and HIV and AIDS activities (Kenya). A mainstreaming document has already been compiled
- There are student led activities such as sports, games, community outreach as well as peer counseling that are supported by the Universities
- VCT services exist in most universities (Kenya, Botswana, Rwanda).

A closer examination of the role that management has played and the Deans in particular, in the integration process, indicates that there wasn't much training prior to the ToT workshops. Part of the problem is that communication between the Deans and ToTs/AWSE/UNESCO for the majority of institutions has been poor.

Role of AIDS Control Units (ACU'S)

There is need to establish Aids Control Units in all the participating universities and to actively involve ACU Coordinators in implementation of HIV integration. ACU coordinators are involved in organizing student led initiatives, awareness creation in Universities, monitoring of the integration process and follow up of the ToT's. This has proved very effective in Botswana where implementation rates of HIV integration in this project were highest. This needs to be replicated in other countries as a case of best practice.

5. IMPACT OF THE UNESCO/AWSE TRAINING

The UNESCO/AWSE training has had an impact on many fronts:

- This was a wake up call that created awareness on the role of Institutions of Higher Learning in mitigation of the spread of HIV and effective responses by the entire university community to those infected and affected.
- The training opened for discussion the all important, but sensitive and not so much talked about HIV and AIDS subject between lecturers.
- Staff at the universities have been made aware of the concept and importance of mainstreaming HIV and AIDS into the curricula.
- The training helped with the identification of HIV and AIDS integration entry points in Engineering, Mathematics, Chemistry, Biological and Physical Sciences.
- There has been increased awareness on the need to integrate HIV in every discipline of the university teaching curriculum.
- The role of Engineers in responding to the scourge of HIV and AIDS was clear after the training. HIV is an Engineering problem.
- There has been a positive impact observed by ToTs where they have integrated HIV into their teaching.
- The UNESCO/AWSE training served as a motivator and provided insight on how to mainstream HIV and AIDS into the university curriculum.