

Ministry of Higher and Tertiary Education

Case Study Report on Tertiary Record Keeping Systems

ZIMBABWE



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Acronyms

1. ADEA Association for the Development of Education in Africa
2. AU African Union
3. EMIS Education Management Information Systems
4. GZU Great Zimbabwe University
5. HOD Head of Department
6. HTEI Higher and Tertiary Education Institutions
7. ICT Information and Communication Technology
8. LIC Lecturer-in-charge
9. MHTE Ministry of Higher and Tertiary Education
10. NUST National University of Science and Technology
11. REC Regional Economic Community
12. SADC Southern African Development Community
13. UNESCO United Nations Educational Scientific and Cultural Organisation
14. UZ University of Zimbabwe
15. VC Vice-Chancellor
16. VP Vice-Principal
17. VTC Vocational Training Centre
18. WGEMPS Working Group on Education Management and Policy Support
19. ZIMSTAT Zimbabwe National Statistics Agency
20. ZIMDAT Zimbabwe Statistics Database

Executive Summary

Institutional record keeping is an important aspect of management in institutions of learning. Properly kept records are a valuable source of statistical information required for the management of education systems. Well-maintained and organised records provide the foundation for accurate and reliable statistical information which is a vital tool for the organization of Education Management Information Systems (EMIS). Quality information is the keystone for planning, monitoring, and decision-making. It is also an essential element in strengthening governance, leadership and management of higher education institutions.

Many African nations are faced with numerous challenges in the collection, compilation and analysis of statistical data in higher education institutions. There is a huge data gap, as evidenced by international reports such as the African Union (AU) outlook reports and the United Nations Educational Scientific and Cultural Organisation (UNESCO) Institute for Statistics' World Education Digest. Without quality statistical information, however, no sound planning, monitoring or decision-making can be ensured. Thus, a systemic approach and the management of quality, statistical information is the basis for educational development. Information is vital for measuring progress and identifying problems on time. It was in this context that this project was initiated.

Between 2010 and 2012, the Zimbabwean Ministry of Higher and Tertiary Education (MHTE), in collaboration with the Association for the Development of Africa (ADEA), embarked on an institutional record-keeping and management project with the hope of revitalizing the EMIS system of the MHTE. A sample of twelve tertiary institutions, including four teachers' colleges, four universities, two polytechnics, one industrial training centre and one private college, were visited. The main objectives of the study were as follows: to assess the current situation of record-keeping, data collection, information utilization and reporting practices of the institutions in order to formulate intervention strategies for reviving EMIS; to review the annual data collection instrument and align the same with information at the level of these institutions and to determine whether the records kept at the institutions were sufficiently able to contain the required information from the central ministry.

The overall research finding is that there are a number of factors that impact negatively on the quality and coverage of higher education statistics that could be addressed by national standardized record keeping systems for tertiary institutions. Critical enabling conditions for an effective higher education information management system are also found to be lacking. The conditions that need to be addressed include the provision of sufficient and qualified staff to support statistics, the establishment of information communication technologies and connectivity within institutions and with the Ministry of Higher and Tertiary Education (MHTE) and the institutionalisation of an organisational culture that relies on evidence based decision making.

In more detail the research undertaken reveal the following findings:

Legal framework on Higher Education Statistics

At all the institutions visited, officials were aware of legal instruments like manpower development act, education act and University Act which all ensure the provision of information by the institutions to relevant authorities, such as MHTE head office, Parliament and Office of the President and Cabinet. The legal instruments do not explicitly spell the need for the submission of statistics because there are no major legal consequences for not doing so.

Inadequate ICT software and infrastructure

There is weak Information Communication Technology (ICT) infrastructure at the surveyed institutions. There are limited funds for the maintenance of existing equipment and the purchase of new equipment, particularly in government institutions. The database software currently being used by some universities is outdated and there is a lack of support services in this area because trained personnel have left the institutions in search of improved working conditions.

The limited number of computers in institutions hinders the effective collection and processing of statistics on record. Institutions resort to manual ways of storing information, which means that records are likely to be lost or misplaced and the storage of information becomes a time-consuming exercise. The few computers that are available in most institutions tend to be affected by computer viruses and funds are frequently unavailable to purchase anti-virus software. Data retrieval using this out-dated data-base software is also time-consuming and difficult.

Some private and public universities use integrated systems for storing student data. Some institutions have acquired software known as Navision, for the easy access and storage of statistical information. Institutions which were visited and which uses Navision software have indicated that this programme makes data management very convenient.

Insufficient and inadequately qualified statistical staff

A higher education management information system relies on a central functioning unit in the Ministry itself. This study confirmed that the central Ministry lacks a qualified statistician to manage this system and this hinders the implementation of an effective system. Although in 2009, the MHTe with the assistance of ADEA, a prototype EMIS was developed with a first national census undertaken, in subsequent years this process has deteriorated in terms of coverage and reporting.

At the institutional level, staff members responsible for statistical information and record-keeping are often inadequately trained in statistical record keeping systems and procedures. Most staff in these institutions indicate that they struggle to generate data and reports aligned with MHTe requirements. In some institutions that have a computerized system in place, the staff may have inadequate skills required to manipulate the system. Hence, staff records tend to be incomprehensive in their coverage of ministerial needs, particularly in the areas of age and qualifications of staff.

Record keeping systems lack alignment with national requirements

The research indicates that there is a lack of harmonization of institutional record keeping with the planning, monitoring and evaluation needs of the Ministry of Higher Education. This is particularly so among universities which have a higher degree of autonomy than other higher education institutions, as a result the rate of response is much slower compared to teachers and polytechnical colleges. The legal instruments governing the collection of statistics need to be revised in order to enforce the timely submission of data to the Ministry of Higher Education head office by all HTEIs.

It is noteworthy that the research indicates a high degree of functionality of record-keeping on finances in all institutions. All the 12 institutions surveyed used registry officers to capture and store data. Three polytechnics use both manual and electronic systems for their institution's record keeping. Two out of

the four universities visited rely on an institutional dedicated server, individual computers and the manual system for their record keeping. The remaining two use the manual system and stand-alone computers for their record storage. All the four teachers colleges visited use mainly manual systems and to a lesser extent the individual computers for record keeping.

It is interesting to note that all the universities and polytechnics have some electronic form of back up of all stored data. Institutions such as the University of Zimbabwe and National University of Science and Technology use advanced methods like off shore back up , data tapes and external hard drives, which they frequently routine. Teachers colleges tend to generally use the manual system of data storage. One major impediment in data storage is that computers are affected by viruses which some of the institutions cannot afford to purchase the anti-viruses.

There is tendency for institutions to under report information on finances since they fear having their budget allocations from the Ministry reduced substantially, this is evidenced by some well-known projects whose financial to the specific institutions not recorded under finance information. However, there is a need to advocate for a financial record keeping format that aligned to the Ministry's annual census questionnaire. This is envisaged to improve the recording of financial statistical information.

Archives

It is important for institutions to archive information after a specific period of time so that data which is not needed on a daily basis is effectively stored, but is referred to when the need arises. In all the Universities, Polytechnics and Teachers colleges visited, the registry departments is responsible for the storing and management of archives. These are normally kept as documents in hardcopy and in external hard drives and the institutions keep such records for periods ranging from three to five years. After five years, information is then sent for storage at the National Archives of Zimbabwe.

Dissemination of higher education and training information.

Marketing and dissemination strategies are important as they give information on how the institutions are running. All the four universities consulted use websites, brochures, press releases, exhibitions, and outreach programmes for informing the public on their institutional activities. NUST has a Director of Public Relations and Information responsible for disseminating information about this institution. All Teachers colleges and Polytechnics have no websites, nevertheless, they are in their final stages of procuring one.

In most institutions surveyed, seldom is the practice of publishing annual statistical bulletins profiling the institution and its performance for either internal or public consumption. Some universities are able to produce some internal summary statistical printouts. This is unfortunate because statistical are essential both for managers and users of higher education and training services. Moreover, comprehensive summary statistics are essential for planning and decision-making, and allocation of resources among other uses.

Study recommendations.

1. Develop a system of record keeping aligned to the ministry's annual census questionnaire for all tertiary institutions that reports to the Ministry. Develop an action plan for the

- development of higher education record management systems that takes into account the development stages of different institutions and their resource constraints.
2. Adopt a human resource strategy which will address the current challenges facing the implementation of an effective higher education information system.
 3. Invest in training for institutions in basic record-keeping, production of summary statistics, the use of statistical information, computing (including networking) and other areas.
 4. Encourage strong collaboration between institutions in information sharing, system development, maintenance and networking.

1. Introduction

In the past decade, there has been spectacular growth in the size of the higher and tertiary education sector with increasing enrolments and diversified programmes being offered. During this period, enrolment doubled in most regions, including sub-Saharan Africa¹. However, the need for systemic information collection, processing and use has not been strengthened enough to meet the growing demand for informed planning, monitoring and decision-making. The use of information to compare tertiary education systems; measuring their outputs (the graduation rates by field of study by demographic profiles); reviewing their efficiencies and the quality of programmes are critical challenges for the sector, particularly in Africa where there is a dearth of accurate and comprehensive statistics from tertiary institutions. The current initiative is to attempt to reverse this situation by organising and systematising the collection, processing, analysis and use of information on higher and tertiary education.

As revealed by the evaluation of the First Decade of Education (1996-2006) for Africa by the African Union, cross-country, comparative education statistics are scarce on the continent. The African Union's Plan of Action for the Second Decade of Education (2006-2015) has made the development and production of country and regional education information systems one of its key priorities.

In the 2009 AU's Outlook on Education report, education statistics related to higher and tertiary education were notably scarce. Analysis of the tertiary sector was affected by lack of data from the majority of African countries. Data was generally unavailable, particularly for member states in the SADC, ECCAS, ECOWAS and EAC regions².

According to the 2012 SADC report for The Council of Ministers of Education in Africa, availability of education statistics for Zimbabwe is the lowest in the region reporting 15 per cent coverage for all the AU priority areas. The situation worsens in Higher and tertiary Education as they are extensive blanks for Zimbabwe.³

In order to address this developmental challenge, the ADEA Working Group on Education Management and Policy Support (WGEMPS) proposes to develop a generic model on promising practices of Education Management Information Systems for Higher and Tertiary Education using two case studies made in Zimbabwe and Burkina Faso. It is hoped that the two studies will make quite contrasting contextual realities as case studies.

2. Background

Zimbabwe represents a country whose tertiary sector, widely recognized in the region as one of high quality, and has suffered a dramatic decline as a result of the country's economic challenges in the last few years⁴. Burkina Faso, on the other hand, has seen a substantive growth in its tertiary sector, with a 15.8% increase of students relative to a 3.9% continental average for years 2006 and 2007⁵ and has

¹ Global Education Digest (2006) p7.

² AU Outlook on Education Report (2009) p23

³ COMEDAF Report SADC (2012) P35

⁴ Baseline Study on the Status of Human Capital Development and Training Institutions in Zimbabwe, 20, pg 6

⁵ ECOWAS Report: AU Outlook on Education, February 2010, p36

diversified its tertiary sector across a number of ministries. Each country provides unique challenges to producing a sustainable and robust higher education management information system. A careful analysis of appropriate systems for these two case studies will go a long way in informing core principles and approaches of promising practice that can be advocated in other countries.

The current report is based on the pilot study made in higher and tertiary education in Zimbabwe in 2010 to revitalize the EMIS system of MHTE - Zimbabwe. The context of this initiative is a growing need to revitalize the EMIS system of MHTE. This is as a result of the recognition of the need for systematised collection, processing, and use of statistical information for educational development.

The reliability of education statistics playing a meaningful role in decision-making and policy formulation depends on its data quality. Assessing the ministry of higher education's statistical records requires reviewing the conditions of their production, the collection methodology used and the strength of the ministry's verification of collected data processes. This will inform on the quality of the data published and how useful it will be in informing policy implementation.

In most African countries, education statistics are largely sourced from administrative census surveys carried out annually by the Planning Department of the Ministries of Education. Traditionally, these census survey instruments request information on the profile of the institutions, facilities, resources, demographics of its students, staff and sometimes the institution's finances. The surveys involve sending questionnaires to heads of educational institutions, which are responsible for supplying the appropriate information requested, and then forwarding these questionnaires to the ministry's headquarters through a statistical chain established for monitoring, checking, compiling and processing the data for the production of yearbooks or any other analytical document.

The origin of this process begins with the institutional record. The quality of data produced at the national level is determined by the degree to which it reflects reality on the ground – the institution. The institution is the supplier of the source data and hence it is imperative that human capital and tools are in place to ensure the good quality of statistical information. Statistical information is kept on record at the institutions. Therefore, it is necessary that the institutions and the central ministry work together to come up with information requirements and the necessary format required that could meet the needs of all.

Maintaining quality records is, then, the first step in the statistical value chain for producing sector-wide, quality information that will support evidence-based decision-making. The quality of record-keeping at the institutional level will determine the quality of national educational statistics. Moreover, it is essential that the data compiled reflects the needs of all stakeholders: the collectors, custodians and consumers of the data produced.

Zimbabwe has faced serious economic challenges for a number of years which have impacted on tertiary education. Realizing this fact, the Ministry of Higher and Tertiary Education conducted a baseline study in 2009, with the support of ADEA and UNESCO. The objective was to make a situational analysis of the tertiary education sector to initiate a sector-wide approach in order to revitalize the recovery and development of the sector. Essential to this analysis was the need for the establishment of a Higher Education Management Information System (H-EMIS) that would allow the MHTE to promote evidence-based decision-making by policy makers, managers, planners and other key partners. A baseline study report on the Status of Human Capital Development and Training Institutions in Zimbabwe was

produced in 2010. One of the key findings was that Zimbabwe's tertiary institutions have limited institutional, student and staff records which have an adverse effect on the quality of statistical information. This has negatively affected the functions of H-EMIS in the ministry in general. Moreover, professionals have left for greener pastures, equipment are not kept up-to-date, and recruiting more professionals seems impossible.

To revive the EMIS system, the ministry has taken a number of initiatives: the annual census questionnaire was redesigned; a process to hire new statistician is on-going and a guideline that requires private institutions to report regularly on annual statistics is in the process of being approved.

3. Objectives of the study

1. To assess the level of demand for information among users and producers (internal and external) in the Ministry of Higher and Tertiary Education (MHTE) (including the degree of information shared between two Ministries of Education) thereby determining the current information demand in the ministry.
2. To assess the current situation of records in a sample of higher and tertiary education institutions.
3. To assess the awareness of legal framework that exists to enable the collection of statistical information from institutions.
4. To assess and recommend the minimum hardware and software solutions in which to manage the institutional record-keeping systems in different institutional contexts.
5. To build the capacity of officials from representative tertiary institutions and the ministry to systematise record-keeping methods in higher and tertiary institutions in the best practises of record-keeping and management.
6. To establish additional areas of need for the upcoming training for professionals of the Ministry of Higher and Tertiary Education and its institutions.
7. To gain an overview of the problems institutions may have in compiling statistics for ministries and the possible solutions they may propose.
8. To suggest, based on the study findings, the best ways of re-establishing H-EMIS for the Ministry of Higher and Tertiary Education.

4. Methodology

The first task of the study was to set up a team of staff from MHTE and ADEA Working Group on Education Management and Policy Support (WGEMPS) to undertake the project. The team attended several meetings to discuss terms of reference and draft a plan of action, which included the sample selection and other logistics related to the fieldwork.

An interview guide was developed by the research team which was used by the researchers to obtain information from the institutions. It was pilot-tested in four types of institutions namely a polytechnic, a secondary school teachers college, a primary school teachers college and a state university. The interview guide was then reviewed by incorporating all the changes suggested in the pilot study.

The interview guide was used in all the interviews conducted. The interviews were divided into two sections, an interview with the head of institution which includes Vice Chancellors for universities and Principals for Polytechnics and teachers colleges. Focused group discussions were also held with all key staff members at all institutions surveyed. At most universities visited, the information technology and

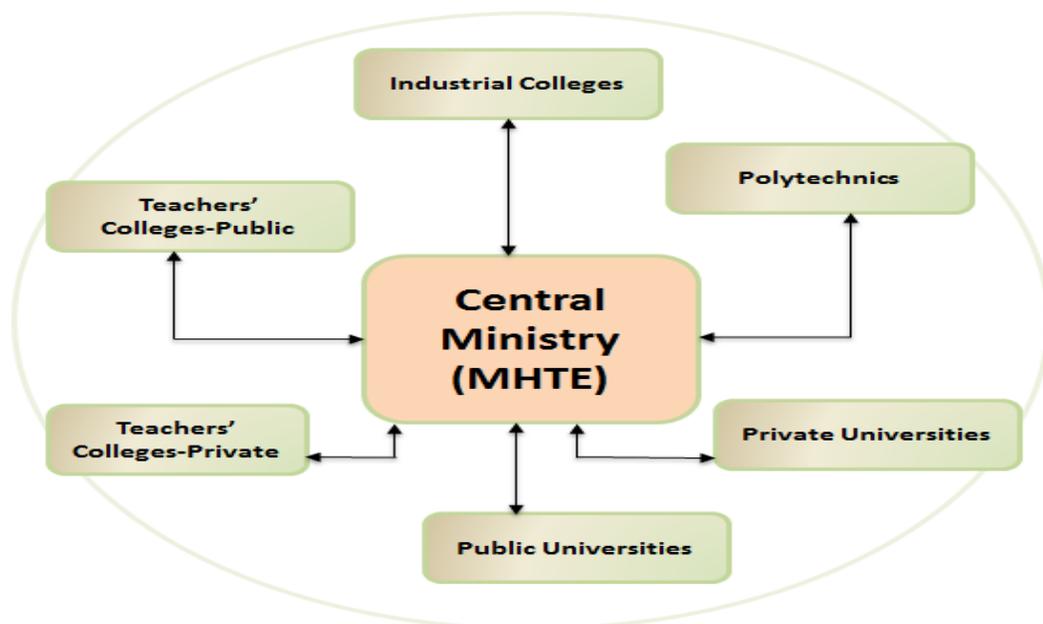
the bursary department were additionally visited. The key information sought was generally on the processes of record keeping, the collecting and compiling of statistics, availability of computer equipment, human resources requirements and the challenges which institutions may have in organizing the completion of the annual census questionnaire and statistical reports. Registrars, Deans of students, Principals and Vice Principals, IT staff, department heads and lecturers were included in the focused group discussions. To avoid issues of weak response, the researchers chose to complete the interview guide on behalf of the institutions.

The study's focus on institutional records reviewed those related to students, staff, finance, materials, facilities, buildings, and other assets of the institutions. All other records relating to different types of services rendered by the institutions were also reviewed where they were provided. After the production of the first draft report, the team decided to consult three more institutions namely, a private university, an industrial training centre and an independent college in order to increase the sample size and to gather some information not gathered in the initial sample.

5. Composition of the sample

There are three categories of higher and tertiary institutions in Zimbabwe. These are universities, polytechnics, and teachers' colleges. Other sub-categories are industrial training centres which fall under the classification of polytechnics and teachers colleges which are split as secondary and primary. All institutions, except polytechnics, can be further classified as public or private institutions.

A sample of four universities (one of them a private university), three polytechnics (one of them is an industrial training college and a rural polytechnic), four teachers' colleges (inclusive of one private college drawn from a rural area) were selected for the study. State and privately owned institutions were deliberately included in the study. The records at the main office of the Ministry's (MHTE) Central Registry Department were also reviewed for consistency and the identification of gaps in the data received from institutions. Further details on the sample are found in appendix 2.



7.1 The Ministry's information management needs

Over the years, the Ministry has maintained a regular flow of information between itself and among its institutions. Government subsidies for enrolled students, allocations for the cadetship scheme, provision of budgets for equipment and maintenance, reporting on examination results, constitute part of the information tertiary institutions have regularly provided the MHTE for its planning and decision-making processes.

In 2009, the MHTE's Baseline Study noted that there was an urgent need for it to revitalise its higher education management system. In the same year, tertiary institutions received an updated annual census questionnaire. In subsequent years, a similar census of the profile of all tertiary institutions under the MHTE took place.

Despite this initiative the MHTE's higher education management information system is still relatively weak. Internally, the ministry struggles to appoint a statistician to manage the statistical methodologies. The MHTE database system contains essentially the required variables for international reporting, as this is modelled on the UNESCO Institute of Statistics tertiary questionnaire that is distributed internationally for the collection of education statistics. However, it does not collect tertiary statistics such as enrolment data by age and full-time equivalences. Internal data verification processes are seldom followed, annual statistical yearbooks have not been published in recent years.⁶

At another level, many challenges were encountered in obtaining accurate and speedily returns from institutions on the census data collection instruments. In a number of instances, the institutions fail to provide complete information and face challenges in compiling statistics in the requested format. The quality, comprehensiveness and accuracy of the statistics of the MHTE are compromised by these challenges. This affects its ability to strengthen its efficiency in management and support its leadership.

At all the institutions visited, officials were aware of legal instruments like manpower development act, education act and University Act which all ensure the provision of information by the institutions to relevant authorities, such as MHTE head office, parliament and office of the President and Cabinet. The legal instruments do not explicitly spell the need for the submission of statistics because there are no major legal consequences for not doing so.

7.2 Tertiary Institutional Records

In all the institutions surveyed, it was noted that there were strong similarities in the formats, methods, use and coverage of records on students, staff and assets. All institutions track students for the duration of their programme with detailed information on their student profile by gender, origin and programme of study. Similarly, most institutions followed the same pattern of updating and reporting their records. All reported significant challenges in maintaining their ICT infrastructure and systems to support an electronic based record keeping system.

All the 12 institutions surveyed used registry officers to capture and store data. Three polytechnics use both manual and electronic systems for their institution's record keeping. Two out of the four universities visited rely on an institutional dedicated server, individual computers and the manual system for their record keeping. The remaining two use the manual system and stand-alone computers

⁶ Data Quality Assessment Framework Zimbabwe 2010 page 27

for their record storage. All the four teachers colleges visited use mainly manual systems and to a lesser extent the individual computers for record keeping.

It is interesting to note that all the universities and polytechnics have some electronic form of back up of all stored data. Institutions such as the University of Zimbabwe and National University of Science and Technology use advanced methods like off shore back up , data tapes and external hard drives, which they frequently routine. Teachers colleges tend to generally use the manual system of data storage. One major impediment in data storage is that computers are affected by viruses which some of the institutions cannot afford to purchase the anti-viruses.

It was revealed that in all the Universities, Polytechnics and Teachers colleges visited the registry departments are responsible for the storing and management of archives. These are usually kept as documents in hardcopy and in external hard drives and the institutions keep such records for periods ranging from three to five years. After five years, information is then sent for storage at the National Archives of Zimbabwe.

7.2.1 Student Records

In terms of the information requirements of the MHTE, there is a need for statistics on students' enrolment by gender, year of study, type of programme and mode of study. The MHTE also tracks the outputs of its institutions by faculty, programme, number of graduates by gender and level of accreditation. One of the challenges, MHTE has is assessing the full-time equivalence of its part-time and modular enrolled students and this impacts on the financial formulas for budget allocations to institutions.

Polytechnics and Teacher Colleges

Students' admission records are kept in the accounts office. The dean of students also keeps these records of all students in the institution for the processing of student identification cards. Meal card records are compiled by the catering supervisor. In the academic departments, the lecturer in charge keeps records of students in their section, which includes the year of study and the programme under study, and submits copies to the head of department. The warden keeps a record of students in residence per hostel.

The lecturer-in-charge keeps records of each individual student which include personal files covering profile issues, marks for coursework and examinations. The lecturers compile necessary statistics as required and pass them on to the department heads (who, in turn, compile the statistical information at the departmental or faculty level). The vice-principal summarises the statistical report for the institution and forwards it to the ministry.

Universities:

The office of the deputy registrar of academics keeps student records as it is responsible for student admissions and deals with student applications and selections. The students' records and registration department uploads all the information from the student enrolment form into the database which is linked to all faculties and departments and other registry offices. Medical aid is mandatory for every student attending university and their records are kept in the student affairs' offices.

The individual lecturers also keep records of students attending their courses/modules, such as information on coursework and examination marks, degree programmes and course names. These are

usually kept in lecturers' personal computers. At the private university visited called Women's University in Africa there is currently an online registration facility but a hardcopy application form is also used for application purposes. This information is entered manually into the system. In most universities, the turnaround time on student registration is between two and four weeks largely because the process is manual. Student records track examination successes and failures, illness applications and deferments for examinations.

A summary statistical report is produced hierarchically – through lecturers, department heads, faculty deans and the registrar. It has been indicated that, although there is currently a computer system in place, some statistical inconsistencies have occurred.

Cadetship Scheme:

The cadetship scheme is an intervention by the government of Zimbabwe to assist students at all government owned tertiary institutions that are unable to pay their fees. The government pays the tuition fees for the student, but once the student, completes studies, they must work for the number of years equivalent to the duration of study programme in order to pay back the funds. Accurate records of this programme are crucial in order to record the number of students who are being assisted so that decisions to increase or decrease the amount of cadetship funding is based on accurate statistics. The MHE accepts all the final selections of all the cadetships applications that are submitted by the institutions. Information on the cadetship scheme for teachers' colleges and polytechnics is found in the offices of the dean of students, the vice-principal and accounts. For universities, this information is kept by the dean of students, the bursar and the student records office. Records on cadetship scheme are well kept in all institutions surveyed so that they can follow up on payments for students on the scheme from the Ministry of Finance through the Ministry of higher Education.

Examination and graduates' records:

All the visited institutions reported that they keep records of examination results as they are critical in evaluating the progress of the students as well as ascertaining the number and quality of the programmes produced by the institution. The major motive of any institution is to produce graduates who will feed into the nation's workforce. All the visited colleges keep examination records in the registry office, except for Bondolfi Teachers' College, where examination records are kept by an assistant secretary to the principal. At some institutions the master hardcopy of examination results is kept by the vice-principal. Graduates' records are centrally kept by the registry but are also available in the offices of the vice-principal, the heads of department and the lecturers in charge. At other institutions such as polytechnics the examination records are kept by the accounts office. These records are made readily available to stakeholders, including government ministries and the public, by relevant authorities at the institution.

Issues arising from findings made at Independent colleges

The following observations were made during visits to some independent colleges which offer special types of programmes.

1. Some students are enrolled in online courses. The private college is responsible for administering the registration of the University of South Africa (UNISA) online students yet it does not have current records of the number of graduates as these records are kept by UNISA. This makes it difficult to ensure statistical accuracy and reliability, which is required by the ministry for the calculation of indicators such as in-bound and out-bound mobility.

2. Students who are registered for some international programmes including ACCA (Association of Chartered Certified Accountants) enrol and receive tuition at the college then write their exams somewhere else. Their certificates are sent to the candidates directly and the private college is ignorant of the students' results, and cannot evaluate the success of their teaching programme. The college is given no information on the number of graduates for that particular programme.
3. It is clear that the MHTE requires statistical information from all campuses. The private college that was visited has campuses in different towns and cities. There is a need to agree on the appropriate procedure for administering the necessary instructions to colleges who have campuses in different locations
4. There are different durations of study for national certificates in independent colleges, ranging from one month to one year. The collection of data is a challenge because this could lead to a mix of statistics across all programme durations.
5. The private college which was visited has a secondary school which offers tertiary courses. There is a need to separate statistics accordingly when reporting to higher bodies: the secondary sector falls under the Ministry of Education , Sport, Arts and Culture and the higher and tertiary education sector under the MHTE. There may be challenges in attributing assets, such as materials, facilities and equipment that are commonly used, to both or either ministries. This may give rise to double counting.

7.2.2 Staff Records

Information on human resources is vital for any institution because it provides an important link between the teaching and learning processes at the institutions. The MHTE is interested in tracking the numbers of teaching and non-teaching staff by level and qualifications.

In all of the institutions visited, the human resources department is responsible for keeping detailed records on staff records which generally cover their post establishment, qualifications, salary level, disciplinary issues and leave. However, in all the twelve teacher training colleges/polytechnic and universities visited, it was reported that there are significant gaps in the staff records in these institutions with respect to accurate information on qualifications and gender.

Additionally, it was observed that in all institutions it was difficult to access summary information on the number of lecturers with postgraduate or doctoral degrees. This lack of information impacts on the quality of the records produced, making it difficult, when necessary, to simply retrieve the required information from the records. As a result of this, stakeholders, such as the ministry head office, face difficulties in using this information, even though the required staff information is available.

It was noted that one or two institutions despite having a policy on HIV and Aids and special needs, does not track information related to staff or students in this regard. Others have made concerted efforts to define the size of the challenge in order to organize the provision of ARVs for tested individuals and the creation of special needs committees.

7.2.3 Finance Records

Quality education is largely determined by the availability of sufficient resources to create the appropriate teaching and learning environment. The funding for higher education institutions currently

comes overwhelmingly from government subsidy and student fees. In terms of planning and accounting for its financial allocations to tertiary institutions, the MHTE is interested in tracking expenditure on salaries, infrastructure maintenance and running costs.

All income and expenditure records are managed either by the bursar's office in the case of most institutions or an accountant allocated to the task. Student fees paid and amounts owing are tracked by individual student records. Income records at universities include information on the hiring of facilities, external research grants, income generated from production units and research consultancies in some instances. In instances where the tertiary institution has a production unit, sometimes in the form of a farming enterprise, this also brings in substantial flows of income to the institution.

There is tendency for institutions to under report information on finances since they fear having their budget allocations from the Ministry reduced substantially, this is evidenced by some well-known projects whose financial contribution to the specific institutions are not recorded under finance information. However, there is a need to advocate for a financial record keeping format that is aligned to the Ministry's annual census questionnaire. This is envisaged to improve the recording of financial statistical information.

The Human Resources office manages the information related to the payment of salaries which are sourced from the MHTE. Some tertiary institution informants noted that it is difficult to harmonise the payroll information kept by the ministry with that of the institution, particularly with regard to issues like leave days. Procurement in the universities surveyed, is often undertaken by a specific buying section.

This information is not accessible to the general public unless they have permission from the MHTE head office.

7.3.4 Assets, facilities and material

The MHTE requires all institutions to provide annual updated information on its assets and facilities. In order to access additional funds for materials, equipment and maintenance of facilities, it requires an assessment of institutional information on maintenance of buildings as well as sports grounds, teaching and learning materials which are then submitted to the Ministry of Public Works for their consideration.

At teachers' colleges and polytechnics, the records on infrastructure and equipment are found in the administrative assistant's office (master asset register), with the exception of Bondolfi Teacher's College where this information is kept in the accountant's office.

Most institutions reported they have in place a system for updating their inventories of materials and equipment on an annual basis. The exception was the independent college which reported this was not a necessary requirement for its functioning.

The inventories of equipment and materials are decentralized to various internal tertiary institutional departments. The university librarian is responsible for maintaining inventories of the library materials and in most instances these are in electronic databases. Faculties track learning materials and their associated equipment. The central services of administration manage information on furniture whereas the IT department has responsibilities for all ICT equipment.

7.3 Data collection

The Ministry's annual census questionnaire, introduced in 2010 which collects institutional information on student, staff, financial and infrastructure records, was used by the study as the basis for assessing alignment of institutional records with that of the ministry's information needs. The team evaluated the institution's ability to quickly compile the annual census with the information requirements.

The study findings on this are as follows:

- Feedback indicates that there are issues to discuss concerning some conceptual understanding of definitions of the data collection instrument and the calendar of information requests. Tertiary institutions report that information requests for statistics from the MHTE are "haphazard" and "random" and mitigate against effective information flows and quality.
- The institutions indicated that the deadline given to complete and return the annual census questionnaire to the ministry was too short to correctly complete and verify the information collected at the institutions. Each different type of institution has different suggestions for the date of submission of the annual census, Universities have proposed October while teachers colleges and polytechnics suggested February/March. This issue needs to be discussed and agreed upon in order to provide consistency.
- The ministry seldom provides information feedback to institutions through the sharing of the aggregated statistics which allows for a higher degree of error to enter the information produced. The visited institutions indicated that they have not encountered any conceptual or definitional problems when completing these questionnaires.
- All the surveyed institutions indicated the value of record keeping for for planning purposes and evaluating the operations and progress
- The institutional records of the surveyed institutions include all the data required by the annual census questionnaire but it is often not in the required format which then critical impacts on the accuracy and speed with which the institution can provide the required information. It was mentioned by some institutions that there is a lack of clarity on the terminology used in the census and definitions on the use of adult education, part-time and continuing education are not included by the census.
- A key step in producing the required information for the tertiary annual census is the production of aggregated or summary statistics by the institution. In most instances, the surveyed institutions produce such summaries but they seldom comply with the format required by the Ministry. This makes the completion of the data collection instrument from the ministry a time consuming task.
- There is no regular practice of producing comprehensive statistical summaries by institutions.

- The consulted institutions reported that there was lack of co-ordination by the ministry as the same statistical information is sometimes requested by different departmental section of the ministry.
- All the institutions visited, except the private college, indicated that, by the time of the visits, they had received the data collection instrument sent by the Ministry of Higher and Tertiary Education in 2010, indicating effective coverage of the census.
- Some institutions mentioned the need to retain the statistics at the institutional level, as, in addition to ministerial requests, as these statistics assist them to make informed decisions and to formulate organizational policies.
- The institutions appreciated the need for data-collection and record-keeping but are challenged by constant changes in the information requests, lack of anti-virus computer software, old ICTs and power outages.

7.4 Data processing

There is variation across tertiary institutions in terms of the system used for capturing statistics and generating statistical reports. .

The main findings on this are:

The data processing system

- All the universities visited, and two polytechnics, have computer programmes in place for data collection and retrieval purposes. The remainders rely on a manual system of record keeping which tends to hinder the quality and degree to which information can be used for reporting and data mining.
- The most promising computer based system for record keeping was found at the Women's University in Africa and the National University of Science and Technology (NUST) which uses an integrated system called Navision. The Midlands State University (MSU) has further customized Navision to suit its own modules and then re-named it 'Changamire'
- A recommendation is to consider modifying Navision to incorporate the inclusion of annual census questionnaire in its report format. This would save time in manually completing the annual large questionnaire.
- This is particularly useful point which MHTE could use to strengthen collaboration and promote internal capacity among the institutions as some institutions, especially teachers' colleges, appear to lack the capacity to develop a system for their own use. The teachers' colleges and the polytechnics that were surveyed have insufficient and obsolete computer equipment. The majority of computers observed were mainly Pentium 3s and 4s. No customised software was used for data processing. Most records were kept in Microsoft Excel which is an analytic tool and not an appropriate data storage and processing application.

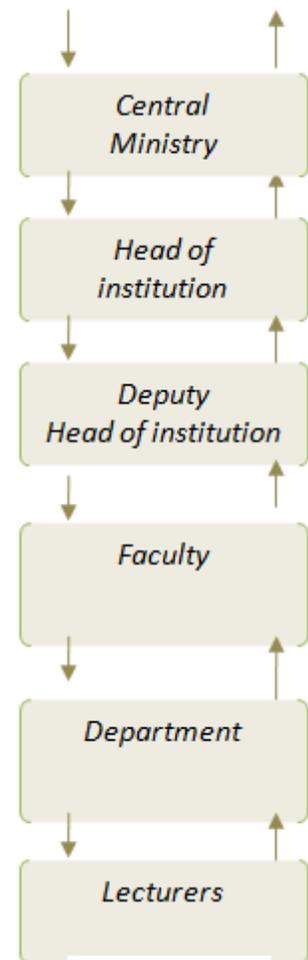


Figure 1: hierarchy of information flow

Data verification procedures

- The maintenance of records is irregular in some institutions which then affect the quality of the information generated for the annual census.
- Staff whose responsibilities include the production of statistics, often lack the basic skills to verify the same data from different sources which affects the quality of those statistics.
- The question of tallying statistical tables was raised, especially from those institutions which used computer programs to collect and retrieve data. The observation is that data verification procedures are not properly built into the system. In the absence of statisticians dedicated to looking into the different options of data verification, the quality of the data becomes questionable.
- There is wide variation in data consistency in the National MHTE database which indicates poor data verification processes are followed. Totals of statistical tables do not tally within a particular year and they are not coherent across years.

Storage of Records:

- There is no centralized system of records storage at any of the teachers' colleges visited.
- In addition, none of the surveyed teacher colleges have dedicated servers for electronic data storage, with most data being kept in manual form or in individual computers within different departments and sections.
- Similarly polytechnics do not have a centralised system of records storage or dedicated servers for the electronic storage of records. One polytechnic visited, however, has data which is centrally stored across five dedicated servers supported by an information technology unit.
- At all universities visited, record storage is centralized, some with dedicated servers for electronic storage. Some data, however, is kept in manual form and within individual computers in different departments. The old manual records are kept in the archives. The use of external hard drives, main servers, flash disks, duplicate hard copies and data tapes are used as backup.
- Accessing information is difficult in most universities because of the shortage of ICT material such as computers and the decentralised method of storing the information as often there is no single information centre
- In addition, requests for information may not be fulfilled in a timely manner.

Materials requirement:

- All institutions have 'asset registers' which are used to register assets like equipment and furniture. Seldom were timely answers are given to questions raised in interviews, concerning the number of computers, desks and chairs that institutions own. This is because this information is not summarised and is not readily found in other offices in all institutions.
- All institutions reported that they do not have enough computers or storage facilities such as file cabinets for effective record keeping. This affects the systemic archiving of files. The sharing of computers or the use of a pool arrangement is common among institutions.
- Some software used by institutions such as the DataEase software used by the University of Zimbabwe (UZ) and Great Zimbabwe University (GZU) is old and outdated, and there are no

support services available for this software since the company left the country some time ago. Data retrieval using this software is time-consuming and difficult.

7.5 Data Analysis

Institutions need evidence to assist in decision making for internal purposes. The ministry requires a different perspective on the statistics for monitoring and evaluating the implementation of national policies.

- Most institutions surveyed reported limited data analysis of their records for internal monitoring, planning, and resource allocations. Often there are limitations on the articulation among the different decentralised record keeping systems which slow down the requests for value added data analysis on records.
- Where data analysis is taking place it is specific to the institution and there is no standardized format common to all tertiary institutional types.
- Simple indicators such as the percentage of female students, the percentage of female teachers and the percentage of graduates are not used in statistics to the Ministry and internally. There is a need to assess the internal and external data analysis requirements and align them accordingly. This will then affect the content of the annual census questionnaire and the collection of source data for calculating indicators.
- It was indicated that ZIMSTAT collects data from the ministry for calculating indicators for a ZIMDAT statistical output. Moreover, Zimbabwe is also one of a few African countries who report on World Education Indicators (WEI), and there is a need to take the inventory of indicators and establish the source data requirement.

7.6 Distribution and dissemination of information

- Among the surveyed institutions although some produce brochures and maintain web sites, there is no practice of publishing annual statistical bulletins for internal or public consumption on a regular basis. The absence of regular, published, statistical information means that there is little or no publicised data to either distribute or disseminate. The purpose of such publications is to share information among colleges, other ministries, and the general public for their own use, including a comparison between institutions. Such publications could be used as an input to the national publications.
- There is little evidence of the practice of sharing statistical information in a meaningful way among the surveyed institutions. Ideally information should flow upwards from the classroom internally through the hierarchies within the institution out to the ministry. Similarly, information should flow out from the ministry to the institutions on national aggregated statistics and indicators on the profile and performance of the sector. This allows feedback from stakeholders on the accuracy and relevance of the statistics.
- In many countries tertiary institutions respond to clients seeking statistical information through an arrangement to distribute the publication, annual reports, and custom-made statistical information among clients. However, in the absence of a regular annual publication, there seems to be little arrangement for such services within the surveyed institutions. Further, permission must be granted, however, to visitors wishing to access information by the MHTE

head office. Marketing an institution is important in that it facilitates an increase in enrolment. In fact, most citizens will only be aware of the programmes an institution is offering if such information is marketed. The institutions visited use a number of marketing strategies, including press releases which advertise programmes available at the institution.

- They also notify the public about vacancies and graduation dates through the press.
- All the universities visited have a website where they post information concerning the institution. It should be noted, however, that websites alone are not enough as a means of disseminating information as they only target those who have access to the internet.
- The institutions facilitate outreach programmes within various communities and participate in national exhibitions such as Agricultural Shows and ZITF (Zimbabwe International Trade Fair)

7.7 ICT Infrastructure and Networking

ICT equipment and networking is crucial to the management of information in any institution, since the availability of computers enables the storage and quick retrieval of data when the need for information arises.

- The limited number of computers in institutions hinders the effective collection and processing of statistics on record. Institutions resort to manual ways of storing information, which means that records are likely to be lost or misplaced and the storage of information becomes a time-consuming exercise.
- The few computers that are available in most institutions tend to be affected by computer viruses and funds are frequently unavailable to purchase anti-virus software. The data-base software currently being used by some universities is out-dated. Data retrieval using this data-base software is also time-consuming and difficult.

“The challenge of accessing information is that we are not networked and we have to move around with hard copies (of records) and its difficult to retrieve information systematically” (UZ)

- The Ministry ultimately plans to link institutions to the central ministry electronically so that information can be easily shared and timely reporting can be facilitated. This requires the individual institutions to be equipped with modern tools and professional personnel. The costs of connectivity limit this plan currently.
- In most instances institutions, particularly those other than universities, seldom have internally networked an administration system which hinders an effective institutional information management system.

It was revealed that there was SAP integrated data management software company that intended to install SAP at all universities and offer free technical support for the past six years, but no permission has been granted to date, despite the fact that institutions are in desperate need for specialized software for their record keeping and management systems. However, only some institutions can afford to establish their ICT infrastructure, whilst the majority cannot because of financial constraints. Teachers colleges, particularly, have neither the necessary human resources nor the finance to put a system in place. The Msasa Industrial Training Centre has a plan to develop an integrated system for data retrieval and processing. Most institutions do not have internet connection.

7.8 Human resources

Allocation of statistical staff

- In all institutions there is someone responsible for compiling statistics when needed. However, seldom is there a dedicated statistician responsible for the production of the institutional statistics. This means that the task of compiling statistics is an added assignment or additional activity for a staff member..
- In teachers' colleges and polytechnics, the vice-principal is in charge of the production of statistics but the lecturers in charge are responsible for collecting data at the various levels.
- In universities, the registrar is responsible for the completion of the annual census questionnaire at the institutional level. The chairpersons and deans of departments, the deputy registrars' academic and human resources departments are responsible for collecting data at the faculty and departmental levels, which mainly consists of coursework, examination results and staff information.

Training

- There is a definite need for training within all institutions, from simple orientation training to structured and intensive hands-on training. Institutions report a lack of skills in the following areas: basic record keeping, data compilation, data processing, basic statistical analysis and use and the generation of reports.
- The central ministry itself lack sufficient skills in this regard to train personnel responsible for statistics in all institutions.

8. Conclusion

The assessment of twelve higher learning institutions in Zimbabwe includes teachers' colleges, polytechnics and universities. The assessment was completed by MHTE in collaboration with ADEA Working Group on Education Management and Policy Support. Most institutions have challenges in organizing the collection, processing, and analysis, the storage and maintenance of their record systems. Currently this is done manually in twelve surveyed institutions. Many institutions do not have an integrated computer system in place that can meet the current demand. These institutions do not have dedicated, qualified personnel responsible for the collection, compilation, analysis and use of statistical information and which are required for better planning, monitoring and decision-making.

Some institutions have computer systems in place for collecting, processing and reporting statistical information. However, facilities, equipment and materials are not part of the integrated system and the institutions need to be internally networked. Moreover, an inventory of materials and equipment, and the updating of records is not carried out on a regular basis. The work of producing summary statistics aligned to the data collection instrument is not practiced effectively, and is limited to the production of summaries which are written when required.

Universities use various types of software for managing records but some universities use software that is out-of-date and does not meet the current demand. A number of universities, including some private

universities, are in the process of adopting new software which makes data processing and analysis much easier.

In most of the visited institutions, the collated statistical data is not aligned to the annual census questionnaire. Institutions face challenges in compiling statistics for the head office because the information is not summarised. No dedicated personnel are assigned to this task, resulting in institutions failing to meet deadlines. In most of the visited institutions, statistical yearbooks are not published and there is limited sharing of statistical information among institutions.

Training and capacity development is essential for continuous institutional improvement and efficiency. However, these are rarely practiced in institutions or the central office. There is a need to support institutions to adopt the best practices of collection, processing, analysis and use of statistical information by encouraging regular in-house, hands-on training.

9. Recommendations

1. It is imperative that a standardized system of record keeping for all tertiary institutions is developed. This requires that an agreed format for all areas of records are developed for institutions which enables them to systematize their records, summarize, use and deliver statistical reports to the central Ministry in terms of agreed guidelines.
2. A master plan for the development of higher education record management systems needs to be developed that takes into account the development stages of different institutions and their resource constraints. It also demands that performance and accountability for resource allocations are based on statistical evidence at institutional and central levels.
A human resource strategy needs to be adopted which will address the current challenges facing the implementation of an effective higher education information system. There is an urgent need for the hiring of a statistician at the central ministry. Arrangements should also be made for hiring data collectors and statistical clerks. There is a need to create establishments for the post of statistician, in tertiary institutions, to be responsible for compiling and analysing statistics in the institutions. In the interim, it is critical to devise a strategy whereby a responsible person may be this role. .
3. It is critical to invest in hands-on training in the areas of basic record-keeping, production of summary statistics, use of statistical information, computing (including networking) and other areas.
4. There is a need to find ways to expand the use of existing systems to other colleges and universities who cannot afford to acquire these computer systems.
5. A strong collaboration needs to be encouraged between institutions in information sharing, system development, system maintenance and networking so that these institutions may be able to support each other.

Appendix I: Types of records stored in institutions

The table below summarises the type of records that are kept at polytechnics. It must be noted that both the teachers' colleges and technical teachers' colleges also keep similar records to those of the polytechnics as some of their programmes are similar.

POLYTECHNIC STUDENT ADMISSION RECORDS	
PERSONAL DETAILS	Students registration number, name of student, date of birth, gender, nationality, citizenship, disability status, other special illnesses, marital status, national ID or passport number, residency requirements, home address, sponsorship details, need for application for the cadetship scheme, phone number, name and address of next of kin, student ID photo.
ACADEMIC DETAILS	Mode of study (part time or full time), course level, period of study of the programme, work details (if applicable), contact details.
ACADEMIC REGISTRATION	Course code, course description, department, section, academic results (O and A levels), fees (term one , term two and term three).
Next of Kin details	Full name, address, relationship, telephone number, ID number.

UNIVERSITY STUDENT RECORDS	
PERSONAL DETAILS	Student's registration number, name of student, date and place of birth, gender, nationality, citizenship, religion, disability status, other special illnesses , marital status, dependents' information, bank account number, national ID number, residence status (permanent or temporary), home address, term address, vacation address, phone number, name and address of next of kin, student's ID photo.
ACADEMIC DETAILS	Details of full /part time enrolment, academic year of study, application procedure (normal, special, mature or repeat), mode of study (part time, full time,

	parallel or conventional programme).
REGISTRATION DETAILS	Course code, course description, department, faculty, academic results (O and A levels, diploma, degree (if applicable), entry type (normal or mature entry), financial charges, schools attended (last and penultimate school attended), professional qualifications details, prospective sponsor details.

Appendix II: Sample institutions and team members

Information on the research teams and the places visited is given as in the table below

Place	Institutions Visited	Team Members
BULAWAYO and GWERU	National University of Science and Technology Hillside Teachers' College Gweru Polytechnic	Mr Brighton Mutasa (ADEA) Mr Takudzwa Nkomo (ADEA) Mr Tendai Makosa (MHTE) Mr Caleb Mharapara (MHTE) Mr Cuthbert Zoraunye (ADEA)
MASVINGO	Masvingo Teachers' College GZU Bondolfi Teachers College	Mr B Mutasa (ADEA) Mr T Nkomo (ADEA) Mr C Zoraunye (ADEA) Mrs E Mushati (MHTE) Mrs D Zivanayi (MHTE) Mr S Magonde (MHTE)
MARONDERA	Kushinga Phikelela College	Mr B Mutasa (ADEA) Mr T Nkomo (ADEA) Mr C Zoraunye (ADEA) Mrs E Mushati (MHTE)

		Mrs D Zivanayi (MHTE) Mr S Magonde (MHTE)
HARARE	University of Zimbabwe	Mr B Mutasa (ADEA) Mr T Nkomo (ADEA) Mr C Zoraunye (ADEA) Mrs E Mushati (MHTE) Mrs D Zivanayi (MHTE) Mr S Magonde (MHTE)
HARARE	Women's University in Africa	Mr Brighton Mutasa (ADEA) Mr Takudzwa Nkomo (ADEA) Mr Tegegn Nuresu Wako Mr Caleb Mharapara (MHTE) Mr Cuthbert Zoraunye (ADEA)

Appendix III: Types of institutions visited

Institution	Type	Status
Universities		
University of Zimbabwe	State University	Public Institution
National University of Science and Technology	State University	Public Institution
Great Zimbabwe University	State University	Public Institution
Women's University in Africa	Private University	Private Institution

Teachers' Colleges		
Morgan Teachers College	Primary School Teachers' College	Public Institution
Hillside Teachers' College	Secondary School Teachers' College	Public Institution
Masvingo Teachers' College	Secondary School Teachers' College	Public Institution
Bondolfi Teachers' College	Primary School Teachers' College	Private Institution
Polytechnics		
Gweru Polytechnic	State Polytechnic	Public Institution
Kushinga Phikelela Polytechnic	State Polytechnic	Public Institution
Msasa Industrial College	State College	Public Institution
Specis College	Independent College	Private Institution

Appendix IV: Hardware and software used in institutions

HARDWARE AND SOFTWARE USED BY UNIVERSITIES		
UNIVERSITY	TYPE/CAPACITY OF COMPUTERS	SOFTWARE USED
NUST	Pentium 4 and Dual Core Processors (Majority)	Navision
UZ	Pentium 3 and 4	Dataease
GZU	Pentium 4 and Dual Core Processors	Dataease
HIT	Pentium 3 and 4	Access (HIT are due to purchase an integrated management information software)
Women University in Africa	Pentium 3 and 4	Navision



