



# ETSIP

## INFORMATION COMMUNICATION TECHNOLOGY (ICT) IN EDUCATION

[N\$344.7 million]

### Background

1. The Namibian Government has clearly and positively identified in *Vision 2030* that ICT skills and competencies are regarded as core elements of living and participating in the 21<sup>st</sup> century and in the development of a dynamic KBE. The knowledge society is now more about skills, social networks and leading people to greater economic participation. Education has a key role to play in providing these skills and competencies.
2. As we move towards a knowledge-based development paradigm, as stipulated in Namibia's *Vision 2030 "Integrating ICT education and training into education and training system"*, issues of access to the local and global pool of knowledge and information become paramount.
3. Namibia recognises the importance of Information and Communications Technology (ICTs) as a tool in the development of the country. ICT has a role to play in education both directly as a subject and indirectly as a tool to assist in educational delivery and management. As such, ETSIP has rightly designed ICTs in education as a cross-cutting theme which will demand capacity building and expertise at all levels.
4. Notwithstanding the relative success of the education sector, the new century brings a fresh set of challenges and demands for which educational institutions, in their present form, are not prepared. Even the best of these educational institutions have served a different set of demands for a different age. These challenges in the context of the Information Age have put educational institutions across the world under tremendous pressure to provide every educational institution (if not every learner) with information and communication technologies (ICT), including computers and their accessories and connectivity to the internet. At the very least, educational institutions are expected to establish and utilise fully equipped media centres containing more than just printed materials and are required to provide access to global information by electronic means. The pressures are coming from stakeholders, educational partners, vendors, parents, businesses, and technology advocates. Namibia is no exception.
5. ETSIP aims to embed ICT at all levels of the education system and to integrate the use of ICT as a tool in the delivery of curriculum and learning, thereby leading to a marked improvement in the quality of the learning and teaching process across all levels. ICT skills and specialisations are required if Namibia is to make the transition to a KBE and the ICT skilled workforce it demands.
6. The initial focus will be on building a firm foundation in general education in order to provide these skills and competencies, from which other sub-sectors such as Vocational Education and Training, Tertiary Education and Training and Information and Adult and Lifelong Learning can benefit. Developing ICT as a cross-cutting theme will support the

creation and distribution of knowledge to communities in a more equitable manner. In doing so, ICT will act as a tool in driving the development of knowledge and innovation, strengthening the quality and relevance of Tertiary Education and Training and providing access to information in a more integrated and comprehensive manner across the sector.

7. The role of ICT in the battle against the HIV and AIDS pandemic is an invaluable tool to enhance disease monitoring, drug distribution systems (for generic ARV's), training of caregivers, patient education and monitoring and facilitation of the development of support networks for people living with HIV and AIDS and their caregivers. Comprehensive ICT strategies are required where ICT as a cross cutting tool can add real value to prevention, treatment, awareness raising and enhance access to knowledge on treatments.
8. International experience shows that integrating technology effectively into learning systems is extremely complicated. It involves a thorough analysis of educational objectives and changes, a realistic understanding of the potential of technologies, considering the pre- and co-requisites of successfully implementing ICT for education and the prospects of this process within the dynamics of educational change and reform.
9. It is the view of the MoE that ETSIP does not only serve to complement government initiatives to entrench the integration of ICTs in the culture of primary, secondary and tertiary education, but it outlines the issue of ICTs for Education in the context of the educational sector's struggle to be relevant, responsive and effective in meeting the challenges of the 21<sup>st</sup> century as well as those identified in Vision 2030.

### **Achievements**

10. International case studies on ICT integration indicate the necessity of a coherent national policy on ICT in education as a catalyst for successful ICT integration and training. As long ago as 1995, Namibia was fully aware of the importance of ICT when the first ICT Policy for Basic Education was adopted by the government through the National Institute for Educational Development (NIED). To keep up with the rapid changing nature of ICT and education, this policy was revised in 2000. In 2003, an ICT Steering Committee for Education was constituted to provide a current and comprehensive document. This process culminated in a new ICT Policy for the Education Sector in 2004 which was approved by Cabinet during March 2005 and launched in June 2005. This policy is informed by already existing national frameworks and blueprints which recognise the unlimited possibilities that ICTs hold in promoting sustainable national development and are therefore in line with Vision 2030, the Public Service Informative Technology Policy, the National ICT Policy, the second National Development Plan (NDP 2), the Strategic Plan for the Ministry of Basic Education (2001-2006) and Information for Self-Reliance and Development – a policy framework for libraries and allied information agencies in Namibia. The educational goals outlined in the policy put more emphasis on the pedagogical use of ICT as an integrated tool in the teaching-learning process at all levels in the educational system.
11. An ICT for Education Steering Committee, comprising of representatives from diverse sectors of the economy, including the MoE and other line Ministries/Offices, civil society, agencies/donor/development partners, pre-tertiary and tertiary educational institutions and volunteer organisations, was formed. The central function of the committee is to provide the overall vision, coordination and management of the policy as well as all ICT projects and activities supporting education in Namibia. To ensure functionality and effectiveness of this crucial body, different working groups were established to provide specific guidance to ICT

related projects and activities. These include development of curricula, content, training and usage, technical support, ICT for educational management and monitoring and evaluation.

12. Over the past year, members of the ICT Steering Committee developed a detailed draft implementation schedule. This implementation schedule articulates the timelines and actions of how and when certain activities are to be conducted in pursuit of the overall national targets agreed by the stakeholders on the ICT for Education Steering Committee.
13. A detailed set of targets have been developed for each component of the ICT in Education sub-programme and the Implementation Schedule. These include a phased approach to the deployment of ICTs to educational institutions throughout the country, the timing of the development of curriculum and content, the numbers and timing of training provided to teachers and learners in ICT skills and the development of a sustainable Education Support Centre to provide maintenance and technical support. (Summary targets are included in the outputs and indicators section of each component below, but please refer to the Strategic Implementation Plan Targets document for a more comprehensive list.)
14. A division of Information Technology has been established within the MoE (Head Office) and most Ministry staff have access to internet and e-mail through the government's intranet. The Education Management and Information System (EMIS) and National Examination and Assessment System (NEAS) are in place and operational and use large databases.
15. It is noteworthy to mention that drastic improvements in telecommunications infrastructure connecting the rural communities to the main capital have been attained since independence. For instance, the number of fixed lines has increased, the mobile network covers most of the populace, internet services can be accessed countrywide and over 600 leased lines are in operation. The 2003/4 Household Income and Expenditure Survey found that 33.5% of Namibians own a telephone or cell phone while a further 33.3% have access to one. With funding, this makes it easier to provide ICT equipment such as computers and connectivity in schools and other educational institutions countrywide.
16. The PoN, the colleges of education, NAMCOL and UNAM have expanded their ICT facilities. UNAM has an information, learning and resource centre with videoconferencing facilities. The Namibian Open Learning Network (NOLNet), serving over forty open learning centres, supports the distance learning activities of UNAM, the PoN and NAMCOL.
17. NIED has developed a website with very useful resources for teachers. The subject Integrated Media Technology Education (IMTE), which includes some ICT literacy, is offered to trainee teachers. Technology related elective subjects currently offered at school level include Keyboarding and Word Processing and Computer Studies at junior and senior secondary schools. At primary school level the non-promotional subject, Basic Information Science includes a minor component on ICT literacy. Other initiatives include those of the PoN and UNAM which offer courses online.
18. SchoolNet Namibia was started in 1999/2000 as non-profit ICT service provider with the assignment to introduce affordable computer technology and internet access to all schools in Namibia. It strives to be a leading, internationally-acclaimed and innovative not-for-profit ICT service provider to the education sector, committed to fulfilling the educational, social and environmental responsibilities in Namibia through the promotion of free and open source technology solutions which offers an indigenous infrastructural solution to schools including the provision of affordable 24/7 internet access toward Namibia's educational advancement.

19. The Community Education Computer Society Namibia (CECS) is a registered IT Academy. It is also a non-profit organisation which aims to become self sustainable by offering good quality computer literacy education within the community at a competitive price. The primary motivation of CECS Namibia is to teach teachers and communities to become computer literate. Currently focused on Basic Computer Literacy skills, CECS plans to offer more advanced computer courses as both teachers and communities become more and more computer literate.
20. During June 2005 the National Computer Refurbishment Centre was inaugurated. This day marked the completion of a two-year collaboration between the Namibian Parliament, MoE and Microsoft to create a new approach to provide Namibian schools and communities with access to technology and computer-related training. The joint initiative, named the African Pathfinder, comprises a broad range of programmes which, together, enable information and communication technology (ICT) to be procured and put to use for African society. As part of the evaluation process, the African Pathfinder initiative equipped 13 pilot schools in Namibia with a comprehensive learning solution, incorporating technology infrastructure, telecommunications, teacher-training programmes and innovative software solutions.
21. In 2005, the Global eSchools and Communities Initiative (GeSCI) established a presence in Namibia in recognition of the vital role that new information and communications technologies (ICTs) can play in creating long-term, sustainable development. GeSCI has been instrumental in facilitating a major group of stakeholders in Namibia during 2004/2005 to come together and create a national e-schools strategy and implementation plan for the MoE. The objective was to create and implement a comprehensive, demand-driven, efficient and coordinated 'end-to-end' e-schools strategy and implementation plan. Such a plan will address the development of curricula, deployment of the ICT solution, creation of relevant and local content, user training and support, technical support and maintenance, as well as monitoring and evaluation. Making the ICT solution a reality for large numbers of schools in Namibia – at a reasonable cost – will require the implementation of such a system.
22. Whereas significant improvements have been made to provide Namibian schools with ICT infrastructure and teacher support, much remains to be done to support the integration of ICT into Namibia's schools. Utilising ICT in the classroom as an effective learning tool for all learners and assessing progress is another challenge. Tertiary education institutions including the University of Namibia and the colleges of education are to be strengthened to train more teachers at levels of education ICTs to help achieve overall vision and educational objectives of the Namibian ICT Policy. While Namibia is in the upper bracket of e-readiness countries and has policies in place to advance ICTs in the curriculum, more energy and resources are required to expand access and equity to ICTs in schools in rural areas which currently remains a major challenge. There are new possibilities for modern ICTs which incorporate and extend the range of older technologies by which teachers can be supported. Altogether, these ICTs can help motivate and empower educators, assist them with day-to-day situations and provide avenues for lifelong professional development. With careful planning and innovative design, Namibia can realize the new promises presented by ICTs.

### **Challenges**

23. Despite the achievements to date, Namibia still faces many challenges in realising its policy on integrating and using ICT effectively in the education system and in reducing the digital divide among all communities. Curriculum is one such challenge. Currently there is almost nothing in the curriculum for mathematics, science and English at secondary level which

addresses the use of ICT as a cross curricular tool. A rigorous review of the curriculum to strengthen opportunities for practical use of ICT is necessary. A developmental framework of ICT skills and competencies at all levels is required as educators are unclear as to what skills and competencies are relevant to develop. In addition, the provision of relevant digital content, for both teachers and students, to support and realise the potential of the revised curriculum is essential.

24. In parallel, the training of teachers in using ICT is crucial as they are the key activators in this process. The colleges of education need to strengthen their capacity to incorporate the curriculum developments and ensure that these teachers will have the knowledge and skills required to deliver the curriculum. In addition, the delivery of in-service training needs to find a way of addressing ICTs. A further challenge lies in the need to motivate principals and heads of departments to use ICTs and see their value in teaching and learning. ICT needs to be guided by strong leadership.
25. Underpinning the developments in curriculum and training models there is an absolute need to have access to the hardware, software, technical support and other infrastructure. At present access is patchy, in some cases unreliable and expensive Bandwidth access is also prohibitive.
26. A further challenge exists for educational management to improve on the existing EMIS in serving all educational partners and in capturing major indicators for the sector at large. The decentralisation of EMIS would assist in moving this forward. In addition, the on-line availability of information on learner examination results from the DNEA needs to be more accessible at regional level.

### **Priorities**

27. Since the adoption of the *ICT Policy for Education*, the priority areas have evolved slightly and been amended to reflect to changing needs of the education sector. The revised priority areas, as amended and approved by the ICT and Education Steering Committee, and endorsed by the Ministry of Education and all stakeholders, are:
  - (a) Pre-service and In-service teacher education at Colleges of Education, tertiary institutions, and other related institutions;
  - (b) Schools with secondary grades (combined schools, junior secondary schools, and senior secondary schools);
  - (c) Vocational training at Vocational Training Centres and COSDECs;
  - (d) National, Regional, and Community Libraries and Community and Adult Education; and
  - (e) Primary Schools.

Learners with special needs are integrated within all priority areas.

28. The *ICT Policy for Education* attempts to deal with the difficulty of addressing the twin goals of equity and excellence and prioritises schools and institutions according to how close their learners and students are to entering the workforce. For example, learners in pre-service teaching establishments are about to enter the workforce and will be passing on their skills to others. This makes them a higher priority than learners in primary schools that have many years ahead with further opportunities to develop their ICT skills.

29. Within this overall structure, the priority will be to develop ICT based on a number of factors. A model is being developed that will guide the MoE and its partners in selecting priority sites for ICT investment. Factors such as Cluster Centre Status, partnerships with distance learning organisations, learner:teacher ratios, power and telecommunication availability and teacher skills profiles are some of the criteria which will be used. The operation of the model will be transparent (published) and open to public scrutiny and review.
30. In order to empower teachers, priority will initially be given to providing access for teachers before installing systems for learners and students. This will give teachers an opportunity to develop e-confidence and to use the tools to support teaching thus producing sufficient numbers of qualified teachers to meet these challenges.
31. Priorities will show no regional bias and will be based on the proportion of students per region i.e. if a region has 10% of the students then it gets roughly 10% of the resources.
32. In the end-to-end process, priority will be given for the revision of curriculum for secondary grades in science, mathematics, English and ICT. This will require careful planning to ensure that practical and relevant use of ICT is incorporated. Secondly, priority is to develop and implement training programmes for colleges of education and teachers attending in-service training to develop their skills and competencies. In parallel, the third priority will be to plan for the provision of access to the infrastructure and technical support required to implement developments in curriculum and training in colleges of education, secondary schools and comprehensive schools. The fourth and final priority is to continue to build on the effective use of ICT in education management with a view to improving efficiency and dissemination of information at regional level.

### **Priority Components**

- Component 1:* Review and develop curriculum and content
- Component 2:* Review, develop and implement training
- Component 3:* Develop and deploy ICT services and support
- Component 4:* Strengthen education management through the use of ICT
- Component 5:* Monitoring and evaluation

### **Component 1: Review and develop curriculum and content [N\$6.2 million]**

33. *Challenges:* At present there is a lack of practical guidance on *how* to use ICT to support curriculum delivery and improve learning outcomes. In addition, implementation of curriculum changes is ineffective if there are insufficient relevant resources and content available.
34. *Objectives:* Curricula are developed for (a) ICT as a tool across the curriculum; (b) ICT Literacy; (c) ICT as a subject; and (d) an e-learning centre is established to develop and distribute relevant content.
35. *Component Description:* The main activities required to achieve the objective of this component are as follows: (a) the development of a methodology to integrate ICTs as a cross curricula tool by identifying themes within the subject areas (mathematics, science and English) where ICT can add value to the learning outcomes. Group work, project based learning and problem solving should be addressed in the themes selected. The aim is to

provide standard solutions for ICT integration in all schools, e.g. standard software for science selected using a transparent evaluation instrument which will be developed. Teacher guidelines and support materials will be developed. (b) a competency framework for ICT literacy skills will be developed to incorporate skills at three levels (Foundation, Intermediate and Advanced) based on cross curricula themes. Clear attainable outcomes will be aligned with international standards. Certification, *Namibian ICT Literacy Competency (NIC)* will be offered towards the end of grade 10 and grade 12. Approval for the certification will be required from the necessary regulatory and administrative bodies. Relevant support materials will be developed to implement the framework. (c) the syllabus for teaching ICT as an examinable subject, Computer Studies, will be reviewed, revised and implemented for grades 8-10. Grades 11-12 will continue to borrow from Computer Studies from Cambridge International Examinations (CIE) until this subject has been reviewed by NIED. Computer Studies will be offered as a major study option in the BETD as part of the review of teacher education<sup>1</sup>. The subject, Integrated Media Technology Education (IMTE), offered by colleges of education will be revised to strengthen the component on ICT literacy. (d) development of an e-learning centre will begin during the first phase, to support e-learning activities in all educational institutions in Namibia. The purpose of the e-learning centre will be to coordinate the training of e-content developers, provide a common platform and basis for all future e-content training and act as a common digital content library for all e-content developed by stakeholders. This will be achieved by providing access to locally relevant content including resources for training programmes.<sup>2</sup> An Memorandum of Understanding will be negotiated with InWEnt, a German development partner, to assist in the creation of the e-learning centre with terms to be agreed by all stakeholders. Instruments to evaluate content (online and software) will be designed. Firstly, a review of existing relevant content will be undertaken. Where gaps in content are identified, a strategy and plan for the development of content will be implemented. Dissemination of best practice models and ideas for adapting ICT in schools will also be presented.

36. *Implementation:* NIED will lead the first activity in collaboration with a number of stakeholders. International experiences in this area will be examined and approved by the National Examination and Assessment Board. In parallel, the revised curriculum will be incorporated in the curriculum of the colleges of education currently under review. NIED will also lead the second activity in co-operation with a number of stakeholders. While the framework is under development, schools, colleges and others will continue to use the existing guidelines on ICT literacy as a stop gap solution. The third activity, the revision of the Computer Practice syllabus, will be led by NIED in coordination with UNAM. The process of replacing the typing syllabus with that of Keyboarding and Word Processing will continue to be implemented in schools. The layout and presentation of these classes will be reviewed to ensure that the facilities are being used to maximum benefit in the school. The fourth activity will be led by NOLNet and international practice will be examined. Training will be offered to content developers, instructional designers, e-learning managers and virtual learning communities. Prior to universal internet access, the use of CDs as a means of delivery will also be employed. In order to develop a bottom up model and greater ownership, teachers will be invited to partake where possible.
37. *Outputs and indicators:* (a) Revised curriculum with ICT opportunities for science, mathematics and English made available to colleges of education and during in-service training. Based on the priorities established by the Steering Committee, the initial focus shall

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<sup>1</sup> See Component 3 of Tertiary Education and Training

<sup>2</sup> The development of this e-learning centre will serve as a great resource to the wider community

be secondary school curriculum; (b) Distribution of revised curriculum and incorporation in the development of training modules; (c) Curriculum revised for ICT as a subject in schools and colleges of education; (d) ICT offered as a major option in colleges of education; (e) A Namibian ICT Literacy Competency Certification (NIC) developed and implementation initiated; and (f) e-learning centre developed with relevant content reviewed and made available for users.

## **Component 2. Review, develop and implement training [N\$84.8 million]**

38. *Challenges:* There is insufficient support and expertise at regional level to implement training. Participation in ICT in-service training is not high. Within the colleges of education, staff and students are still lacking in the skills and knowledge enabling them to use ICT more effectively. Currently there are no effective pre-service training programmes for computer studies and computer practice. The pivotal role of leaders in schools has been inadequately addressed.
39. *Objectives:* Appropriate training models for educators, lecturers and pre-service teachers are developed that enable them to access the necessary skills, competencies and understanding in the use and application of ICTs in learning environments.
40. *Component description:* The underlying principle of all training programmes should be educational and pedagogy, not the technology itself. The ICT steering committee will oversee and coordinate the teacher education activities in co-operation with the teacher education task force established under component 3 of the Tertiary Education and Training sub-programme. Priority will be given to colleges of education and related in-service training programmes. Access to training will be made available for education managers, teacher advisory services and inspectors and to underserved groups where appropriate. The use of the internet will be promoted and encouraged in all training programmes.
41. Firstly, an assessment of needs and skills of teacher educators will be conducted in all colleges of education. Secondly, the provision of initial training programmes for ICT-based subjects will be reviewed. Thirdly, training programmes will be developed with set standards and a coordinated plan will be put in place to deliver and manage the implementation. The existing IMTE course will be revised and Computer Studies will be introduced as a major specialisation. Fourthly, an assessment instrument will be developed to establish the skills and competencies among the students in colleges and UNAM in order to determine the appropriate entry level for training and the development of standards. Certification will be explored by the relevant stakeholders. Online training models will continue to be enhanced and explored.
42. An audit of existing ICT availability, working condition of equipment and knowledge among teachers in all schools will be conducted. Based on the audit, a strategy will be developed for the delivery of training. Training opportunities will be provided at cluster centres for the use of ICT as a cross curricular tool and in basic troubleshooting. Engagements with local training partners such as CECS Namibia have begun to provide the first level of training to advisory teachers and others.
43. The role of the teacher advisory service in supporting ICTs in schools at regional and cluster level will be enhanced. Teachers with abilities in ICT will be invited to support the in-service training programmes. Access to ICT facilities in public libraries and multi-purpose youth

centres will provide opportunities for teachers to encourage their learners to use the ICT facilities for project work.

44. The influence of education managers, teacher advisory services and inspectors on the uptake of ICT at school level cannot be underestimated. The needs of these groups will be reviewed and a programme developed to improve their skills base and ability to plan for ICT usage.
45. The needs of underserved groups cannot be ignored. A mapping exercise will be conducted to ascertain the facilities available for training. An implementation plan serving the needs of these groups will be developed and operationalised.
46. *Implementation:* NIED in collaboration with colleges of education, PQA and the regional supports will be responsible for guiding and implementing these activities. International expertise will be examined in the development of the training programmes. The implementation of training for underserved groups will be implemented under the direction of the ICT Steering Committee.
47. *Outputs and indicators:* (a) Needs analysis conducted for the respective groups; (b) training programmes revised and developed according to needs; (c) implementation of training programmes initiated (actual training of teachers and learners will be based on the schedule upon which ICTs are deployed). Training is intended to occur simultaneously with deployment. Assuming the targets agreed by the ICT Steering Committee on deployment are achieved, the targets for ICT literacy skills training are: all teacher educators in the colleges of education by 2008, approximately 6,500 teachers by 2008 and 10,000 teachers by 2010; and (d) regional ICT training support structures identified and measures taken to strengthen them.

### **Component 3. Develop and deploy ICT services and support [N\$225.4 million]**

48. *Challenges:* No plan currently exists to implement the procurement of infrastructure and technical support, neither do facilities at regional level to implement and support training.
49. *Objectives:* An effective ICT services strategy is in place to acquire, deploy and support the technology infrastructure in educational institutions.
50. *Component description:* An ICT services and support structure will be developed which can provide the necessary technology and support to facilitate the implementation of revised curricula and training and to ensure that these are synchronised. This must be sustainable to ensure that learners and students have access to the technology which will enable them develop the relevant skills and competencies at all levels of the education system but in particular in colleges of education and in secondary grades.
51. *Implementation:* The ICT Steering Committee will coordinate the activities which involve (a) acquisition of hardware, software and internet access; (b) deployment of infrastructure; and (c) technical support (including training) and maintenance.
52. There are a number of measures to be taken in this respect and a critical path to follow. A task force (including representatives from industry) will be set up and terms of reference developed to devise an optimal technology standards and specifications plan for hardware and software. In doing so due consideration will be given to benchmarks in other countries

and data collected on existing operations in Namibia. The task force will ensure the standards selected allow for reasonable inter-operability (open standards), diversity, vendor independence, functionality and value for the education community. Refurbishment centre costs will be reviewed regularly to ensure that they are economically viable. The standards will address issues of security including that of internet safety. The plan will be approved by the ICT Steering Committee and a TCO (total cost of ownership) model developed. A procurement process will then be developed for hardware and software based on the TCO model.

53. Priority levels for deployment of services have been developed but an audit is necessary to determine what is already available before any deployments occur. This will take the shape of a national audit to determine the existing level and type of access, service providers and technical support and will assist in determining levels of readiness among schools and institutions of learning thereby enabling the delivery of pre-service and in-service training. This audit will also identify institutions and schools which do not meet the readiness criteria and a plan will be put in place to establish readiness for deployment.
54. As mentioned earlier, the priority levels and the national audit will result in a clear and transparent deployment schedule that is phased by education institution type as well as e-readiness criteria within each institution type.
55. Technical support will be provided through the following mechanisms: (a) a task force to determine the level and type of technical assistance required and how best to deliver it; (b) a National Educational Help Desk (c) technical manuals and guidelines. (d) a plan for training to build human capacity at local level and strengthen first line support, troubleshooting and maintenance focusing on colleges of education, cluster centres and teacher resource centres at regional level; (e) the development of an internship scheme for youth and volunteers to provide support and maintenance;<sup>3</sup> (f) the creation of regional posts for computer technicians; and (g) a policy for e-waste disposal and recycling.
56. *Outputs and indicators:* (a) Procurement process put in place based on agreed specifications of hardware and software; (b) carefully planned, phased deployment schedule, based on priorities and e-readiness criteria, developed; (c) plan developed to establish readiness of schools and colleges of education for continued deployment; (d) deployment initiated for colleges of education and secondary grades who meet the readiness criteria (Assuming the targets agreed by the ICT Steering Committee on assisting educational institutions on meeting e-readiness criteria are achieved, the targets on deployment are to deploy 1-3 computer labs in each college of education per year and equip 150-250 secondary and primary schools with ICTs per year); (d) a National Educational Help Desk established to provide technical support in late 2006; (e) provision of technical support and training at regional levels; and (f) policy for e-waste and recycling developed

#### **Component 4. Strengthen education management through the use of ICT [N\$26.3 million]**

57. *Challenges:* The existing ICT systems in use do not meet the needs of users at regional level.
58. *Objectives:* Education managers are able to use ICT to enhance their work. Management systems improved at all levels. Enhanced collection of and access to educational information throughout the system.

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<sup>3</sup> Vocational Education and Training

59. *Component description:* This component is designed to improve the efficiency of educational administration and management, through a variety of means such as increased use of electronic means of communication; Integrated Financial Management Systems (IFMS); enhanced EMIS to facilitate the capturing of data at regional level and throughout the sector and the implementation of a web based system for the more efficient registration of learners for examinations at regional level by the DNEA. In parallel, the scoping and implementation of a web based portal will continue with a view to regional deployment where the technology and expertise is available. The availability of these data will provide school managers; inspectors, etc. with critical information on learner performance and allow them to develop more strategic plans for improvement.
60. *Implementation:* This component will be implemented by PAD (EMIS) and the IT division.
61. *Outputs and indicators:* (a) Enhanced EMIS reaching regional level and all elements of the sector; (b) implementation of a web based system by DNEA for registration of learners at regional level for national examinations; (c) national and regional telecommunication links for all regions and educational institutions enabling the provision and improved use of email and internet; and (d) IFMS in place.

**Component 5: Monitoring and Evaluation (M&E) [N\$2.1 million]**

62. *Challenges:* Currently no monitoring and evaluation system exists to track development and progress and support the ICT in education initiative.
63. *Objectives:* Clear and detailed monitoring and evaluation mechanisms and frameworks are in place.
64. *Component description:* Under this component, the framework of a national M&E structure will be established to oversee implementation of the ICT in Education Implementation Plan in line with global trends. M&E support will be provided to the curriculum development process and performance will be measured against stated targets.
65. *Implementation:* The ICT Steering Committee will be responsible for monitoring and evaluation.
66. *Outputs and indicators:* Monitoring and evaluation mechanisms and frameworks are in place and functioning.



**REPUBLIC OF NAMIBIA**

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