



MINISTRY OF EDUCATION

Information Communications Technology (ICT) in Education and Training Policy - 2014-2019

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Forward

Information Communications Technology continues to bring about profound changes to almost all facets of our lives. It continues to transform activities as basic as how we work, communicate with each other, travel, shop, and enjoy our leisure time.

The pace of change shows no sign of slowing, indeed, the development of Information Communications Technology and its applications to certain areas like the media are continuing at even faster rates than anticipated. In a relatively short period of time Information Communications Technology skills have become as fundamental to the quality of living as being able to read, write and compute.

Seychelles has within a very short time made significant advancements, in the integration of Information Communications Technology in various aspects of economic development as recognised by various Information Communications Technology-related regional and international organisations.

With the realisation of the Seychelles East Africa System (SEAS) Project, which is connecting Seychelles to the rest of the world, the platform is set for further information communications technology related developments.

Like other countries, we have also recognised that if our young people are to accommodate to living in a world being transformed by Information Communications Technology, they need to have affordable opportunities to acquire and develop information communications technology skills during their education and training.

Since 1999, with the launching of the **Information Technology Master Plan** by the then **Information Technology Commission**, the Ministry of Education has made considerable investments, in collaboration with local and international partners, at the level of both government and private, in various aspects of the integration of Information Communications Technology in education and training and its institutionalisation within the Ministry. Whilst much has been accomplished through these initiatives, we recognise that considerable challenges remain.

This Policy reaffirms the engagements that government, through the Ministry of Education and its public and private partners at national and international levels, share to ensure that our young people have improved access to affordable opportunities presented by the information age, to better assist them in acquiring important ICT-related competencies for personal and national development.

I look forward to working with all our committed partners in seeking to deliver vis-à-vis the important vision, goals, principles and values that have been elaborated in the Policy over the next five years.

It is with great pleasure that I give my full support to the Policy on Information Communications Technology in Education and Training.

MacSuzy Mondon
Minister for Education

Acknowledgments

The Ministry of Education Policy on Information Communications Technology (ICT) in Education and Training has been formulated following consultations in the process of identifying relevant pertinent issues through the contributions of a Core Team, a Lead Focal Person and workshop participant from government ministries and other stakeholders to whom, on behalf of the Ministry of Education, I express my heartfelt gratitude and appreciation.

I am also grateful for the invaluable support of the Commonwealth of Learning (COL) expressed through their financial and technical assistance to this important Policy Initiative.

The Ministry of Education is appreciative of the inputs of the consultant, Mr. Andrew Moore, who facilitated the three-day workshop and shared information to the Seychellois participants and who also played a catalytic role in the development process of the Policy.

The Ministry of Education recognises and appreciates the contribution of the Project Leader towards the validation workshop and the formulation process of the Policy.

The Ministry of Education further recognises the hard work of the personnel of the International Relations Unit in ensuring the smooth administration of the logistics and the consultant's participation in the workshop.

I am confident that the effective implementation of the Policy will further enhance the process of integration of Information Communications Technology in education and training and its institutionalisation at all levels of the Ministry of Education.

I would like to avail of this opportunity to enlist everyone's ownership and engagement to the provisions of the Policy, in the collective process, of transitioning from Policy to Action.

Mrs. Merida Delcy
Principal Secretary
Ministry of Education

Definitions

Competence:

Knowledge, skills, attitudes and personal attributes combined with the underlying understanding to perform all or some the functions of an occupation or profession.

Education Management Information Systems (EMIS):

Centralized computerised system designed to organised information related to education and training. The functions of EMIS include the collection, processing, publication, dissemination and rendering of information services on important parameters of education and training such a data related to student numbers, human resources, institutional assets, and student progression. The processed data provide diagnostic information to a centralised authority to facilitate effective planning, decision-making, implementation, monitoring and evaluation of the education and training system.

Education Portal:

Web based technology that provides a number of education and training services and access to education and training resources. While it might act as a repository for curriculum resources and education news items, it can also offer more sophisticated services such as provision of an online platform for teaching and learning and also social network facilities.

Information & Communication Technologies (ICT):

A diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information. These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony (including mobile phones) and other portable devices.

Learner- Centred Education and Training:

Learner-Centred Education (also referred to as child-centred learning) is an approach to education and training focusing on the interests of the students, rather than those of others involved in the educational and training process, such as teachers and administrators.

This approach is in contrast to traditional education and training methodologies and focuses on each learner's interests, abilities, and learning styles, placing the teacher as a facilitator of learning.

Learning Areas:

Dimensions of learning that are broader than subject contents and that contribute to a broad and general education and training, laying foundations for lifelong learning and specialised education and training.

Open Educational Resources (OER):

Open educational resources (OER) are educational and training materials, usually in digital form, that are shared freely and openly for anyone to use under some type of licence. OER materials can be repurposed, improved and redistributed.

Open CourseWare (OCW):

Open CourseWare (OCW) are course lessons created at universities and published freely via the internet.

Policy:

An official commitment of the authority to the vision, mission, principles, goals and objectives expressed in a document which an organisation adopts for a given area and strategically intends to implement.

Strategy:

The adopted course of action considered necessary to defined components of a policy. It is a specific way of combining institutions, time, staff, laws, regulations, procedures, etc. in order to achieve the policy components. It may be further detailed resulting in an implementation plan involving numerous objectives, time periods, resources and outcomes.

UNESCO ICT Competency Framework for Teachers (CFT):

A Framework intended to inform educational policy makers, teacher-educators, providers of professional learning and practicing teachers on the role of ICT in educational reform, as well as to assist Ministries of Education in developing national ICT competency standards for teachers.

Abbreviations and Acronyms

ALDEC	Adult Learning and Distance Education Centre
BYOD	Bring your own device
CC	Creative Commons
CCATS	Centre for Curriculum, Assessment and Teacher Support
CCNA	Cisco Certified Network Associate
CCTI	Commonwealth Certificate for Teacher ICT Integration
COL	Commonwealth of Learning
DICT	Department of Information and Communications Technology
EMIS	Education Management Information System
ICT	Information and Communications Technology
ICT CFT	Information and Communications Technology Competency Framework for Teachers
IMF	International Monetary Funds
ITU	International Telecommunication Union
LMS	Learner Management System
MCITP	Microsoft Certified IT Professional
MCSE	Microsoft Certified Solutions Expert
MoE	Ministry of Education
MTS	Medium Term Strategy
OCW	Open Courseware
OER	Open Education Resources
PIL	Microsoft's Partners in Learning Programme
PTA	Parent Teacher's Association
SEAS	Seychelles East Africa System
S.I.T.E	Seychelles Institute of Teacher Education
SPC	Secretariat for Professional Centres
SQA	Seychelles Qualifications Authority
TEC	Tertiary Education Commission
UNESCO	United Nations Educational, Scientific and Cultural Organization
UIS	UNESCO Institute of Statistics
UniSey	University of Seychelles
UNPAN	United Nations Public Administration Networks

Section One

1.1 Overview of ICT and National Development

Seychelles has made great strides in ICT development, and this is reflected in its recent ranking in Africa in the United Nations Public Administration Network's (UNPAN) e-Government Index (2012) and the International Telecommunication Union's (ITU) ICT Development Index (2012). Seychelles' performance with regards to ICT infrastructure developments, usage, affordability and access has been ranked first in Africa and 70th out of 155 countries in the world.

Major improvements in government information systems, infrastructure, and integration of thematic services in finance, health, and many other sectors have contributed Seychelles performance where ICT is concerned and helped improved its world ranking.

The 2010 population and household survey indicates that there is marked increase in the use of modern telecommunication technology by the local population. Mobile telephones have penetrated 90% of households compared to 57% in 2002, while the penetration of computers in 2012 has more than tripled since 2002.

One of the major accomplishments the country has made is to become connected to the international submarine cable system. Through successful public-private partnership, the Seychelles Public System Ltd, represented by the Government and the country's two largest communication service providers; Airtel and Cable & Wireless, has managed to realise the Seychelles East Africa System (SEAS) Project, which is connecting Seychelles to the rest of the world in ways never experienced before. This major milestone in the ICT development has been welcomed by the telecommunication industry and business community as it offers a wide selection of new opportunities for e-commerce, faster communication as well as business and technologies innovation.

This new development has generally improved the quality and performance of interest services in terms of bandwidth as speed.

The draft Medium Term National Development Strategy 2013-2017 (2013) which is expected to be finalised in September 2014 identifies the development of ICT as one of the four important pillars of the economic infrastructure for sustaining Seychelles overall development goals.

It further establishes the development vision for this strategic area below, as Seychelles journeys towards a more global and modernised economy.

The ICT infrastructure needs to be able to meet the needs of the population, the public and private sectors, providing access to a wide range of services that will enable effective economic and social participation at an affordable price.

The draft Medium Term National Development Strategy recognises the following challenges to achieving this vision:

- High pricing of ICT service and equipment
- Limited institutional capacity and expertise
- Growing threats including data breaches, identity theft, and criminal misuse of financial information
- Limited capacity and connectivity in Seychelles.

1.2 Overview of ICT in Education and Training

The importance of the development of ICT in education and training to better respond to the vision, goals, objectives and challenges of ICT in National Development and the beneficial role that it can play in enhancing and improving both administrative processes and teaching and learning, has long been acknowledged and expressed through a number of strategic documents and decisions including the following:

The Ministry of Education's **Information Technology Master Plan (1999)** and the establishment of the Information Technology Division in 2003 to provide strategic leadership to the implementation of the Plan.

The *National ICT Policy (2007)* besides calling for the provision of accessible, universal, affordable, reliable ICT facilities and services also states that ICT should be used to 'enhance education and skills development and build a growing ICT-savvy nation.'¹ In addition it stipulates that the teaching of ICT should be included in both formal and informal education as well as shape distance education and activities relating to lifelong learning.²

The Education Circular No 1 of 2007 on guidelines for use of the Ministry of Education and Schools ICT facilities with a view to ensure their safe and secure use, whilst staff and student enjoy their benefits.

The *Education Sector Medium Term Strategy 2013-2017 (2013)* states specifically that ICT should be used in the 'delivery of curriculum and learning and management across all levels with a view to improve educational delivery, learner performance and system's management performance.'³ It goes on to identify certain priority interventions that include the development and implementation of an ICT Policy for the Education Sector to better coordinate the integration of technology into education processes. In addition it claims that ICT should be used to foster lifelong learning, enable learners to live full and productive life in society and the world of work. Furthermore it states that ICT should support learner-centred learning through a competency-based curriculum and assessment strategy. These directives have shaped the development of this policy.

The ICT in Education Plan for Primary and Secondary Schools (2011-2015) envisage the provision of ICT to schools for use in teaching and learning and to provide learners with ICT skills for a knowledge-based economy. To realise this vision the Plan called for an improvement in school ICT infrastructure, ICT being incorporated into the curriculum, staff training, establishment of a technical support unit, a Centre for Excellence and a Ministry of Education Portal.

The National Curriculum Framework (2013) identifies ICT as one of the nine essential learning areas and acknowledges the importance of ICT as a subject matter as well as a tool for teaching and learning.

The National Qualifications Framework Regulations (2008) establishes ICT as one of the four essential generic knowledge, skills, attitudes and values necessary for all qualifications.

The National Employment Policy and Strategies (2014) establishes the promotion of an information technology-literate and competent labour force of as one of its seven (7) policy objectives.

¹ *National ICT Policy* p.4

² *Ibid.* p.7

³ *Education Sector Medium Term Strategy* p.13-14

Additional to the policy frameworks and plans, a number of ICT in education related agreements have been signed and projects implemented in collaboration with local and international partners which further illustrates the Ministry of Education's commitment to the integration of ICT in education. These initiatives which did not always emanate from a given policy framework or plan included the following:

Memorandum of Understanding with Iceland Seychelles Group (2006) covering cooperation and cooperative activities in several areas of ICT in particular with regards to primary education;

Memorandum of Understanding with Microsoft Partners in Learning (2007) focusing on enabling educators and education leaders to better use technology to enhance learning by providing professional development and training for educators and educational leaders, engaging educators and schools in research on teaching and learning, building global educator networks and professional communities, providing professional-level designer tools, platforms and servers to students, and giving exposure, recognition, access to materials, training and job opportunities to students.

The Microsoft PiL Education Transformation Agreement covers the period 2013-2015;

Microsoft School Agreement (2007) and Volume License Subscription (2014) an academic licensing program which provides volume-based pricing at substantially lower costs for legally compliant software. The Microsoft School Enrolment is a subscription licensing option for primary and secondary schools, which enables the licensing all of school computers, with the benefits of easy compliance, work at home rights and student licensing.

The School Agreement period covers 2013-2015;

Microsoft IT Academy Agreement (2014) a comprehensive academic program which provides institutions with a full curriculum solution for delivering technology courses, learning tools and educator resources, supporting industry-recognized technology education and certification for students, educators, and staff. Educational institutions can offer training ranging from basic technology skills through to advanced technical courses mapped to industry recognized certifications for students interested in pursuing a career in information technology (IT) or business technology after graduation.

The Microsoft IT Academy Program is an annual, subscription-based membership program licensed on a per-campus or per-school site basis;

Memorandum of Understanding with Cable and Wireless on Free Broadband Internet for School Programme (2007) focussing on providing free internet access to primary, secondary and post-secondary educational and training institutions. The Memorandum initiated in 2006 now covers the period 2014 – 2017.

Memorandum on the Sheikh Khalifa ICT Project for Seychelles Primary Schools (2011) aimed at providing primary schools with ICT facilities and training for in-service teachers with the local expertise of University of Seychelles (UniSey) and international expertise of Knowledge Point and Intel.

Memorandum of Understanding with Intelvision for DTV for all Schools Project (2014) to provide free access to selected DTV programmes to crèche, primary and secondary schools.

Other engagements of the Ministry of Education in ICT-related initiatives include:

- Participation since 2012 in ‘*EDUTech@Seychelles*’ a yearly ICT-related initiative;
- Participation in regional and international forums, conferences, and workshops related to ICT in education;
- Participation in the *Commonwealth of Learning (COL) Open Schooling Project in 2008* together with five (5) other countries – Botswana, Lesotho, Namibia, Zambia and Trinidad and Tobago;
- Participation in May 2013 in the Southern African OER Policy Forum under the E-learning Initiative as part of the Commonwealth of Learning (COL) Seychelles Country Action Plan 2012-2015.

1.3 Rationale for an ICT in Education Policy

Seychelles is in the process of further establishing itself as a member of the ‘Information Communication Society’ seeking to further promote the development of a knowledge-based economy within the context of its vision of becoming a knowledge-based society.

To more effectively contribute to this national process, the education and training system will have to be transformed in order to better take advantage of the opportunities that the present and future information and communications technologies can bring in achieving its goals and objectives and to better respond to the scale and speed that the re-skilling the ‘information society’ will entail for sustainable human resources needs and development.

The effective integration of Information Communications Technologies into education and training and the promotion of its uses will greatly facilitate this process given the following recognised potential benefits of ICT:

- *Social* – the potential of equal access by all, to new technologies regardless of socio-economic background to reduce the digital divide between community groups;
- *Vocational and Economic* – the potential that knowledge and familiarity with technologies on important dimensions of employability;
- *Pedagogical* – the potential of new technologies to improve the quality of educational and training experiences, by providing rich, exiting and motivating environments for learning and administrating;
- *Catalytical* – the potential of use of technological devices to accelerate positive trends such as handling of data and problem-solving, and the promotion of collaborative environments for learning both within and outside of the country.

Furthermore, most of the ICT in education initiatives have tended to evolve as ‘stand-alone’ initiatives in the absence of an official education sector framework to ensure their effective co-ordination and the non-existence of an established institutional mechanism to provide institutional leadership to the initiatives.

The results and recommendations of the recent Audit Reports (2013) on ICT related issues in educational and training institutions further justify the need for a clear and comprehensive policy framework to promote a co-ordinated and harmonised approach to the sustainable development of information communications technologies in education and training.

1.4 Structure of the Policy

This document sets out the Ministry of education's vision, goals / objectives and principles / values to provide strategic direction to the integration of ICT in education and training at all the stages recognised in the legal frameworks on education and training, and its institutionalisation at the level of the education sector.

It also establishes the following nine (9) strategic policy areas for co-ordinated and harmonised interventions, to enable the necessary transformation in education and training to better contribute to the national goal of a knowledge-based economy within the context of the vision for a knowledge-based society.

- Infrastructure and Connectivity
- Teaching and Learning
- Open Education Resources
- Licensing
- Administration and Management
- Human Resources
- Governance, Implementation and Organisational Arrangements
- Monitoring and Evaluation
- Actioning the Policy

Section Two

2.1 Vision Statement of the Policy

The long-term vision for ICT in education is to:

- Provide leadership in the institutionalisation of ICT into all educational processes;
- Encourage through safe and affordable access to ICT learner-centred education in all learning areas and at all the stages of education and training;
- Promote lifelong learning and a digital educational and training culture amongst the education community and national and international partners;
- Utilize ICT to optimize human, physical and financial resources whilst still enhancing quality and improving efficiency of educational and training processes.

2.2 Purpose and Goals of the Policy

Guided by the context and the vision of ICT in education, the goals of the Policy are to:

- Provide the necessary framework to optimise the co-ordination of diverse opportunities for the process of integration of ICT in education and the institutionalisation of an ICT culture;
- Provide an agreed enabling mechanism where ICT in education interventions can be considered in a transparent, objective and collaborative manner;
- Provide an agreed framework to strengthen partnership and collaboration amongst stakeholders attending to defined priority areas for action in the process of integration of ICT in education and the institutionalisation of an ICT culture;
- Provide an agreed framework to enhance of the institutional capacity and empower individuals to address the identified demands of the strategic priority areas for action in the process of integration of ICT in education and the institutionalisation of an ICT culture;
- Provide an agreed framework to clarify the roles and responsibilities of key partners and stakeholders in the process of integration of ICT in education and institutionalisation of an ICT culture;
- Enhance and transform teaching and learning by embracing student-centred approaches and lifelong learning through the use of ICT;
- Encourage the use of ICT in all learning areas, where appropriate, and not only within the subject of ICT domain, and the development and demonstration of emerging digital skills;
- Improve access to quality digital resources by identifying, storing and distributing relevant Open Education Resources with Creative Commons licencing through an Education portal;

- Coordinate ICT in Education Initiatives in order to improve cost-effectiveness and efficiency;
- Take appropriate steps to enhance access to ICT and connectivity amongst all education and training stakeholders;
- Streamline educational institutional administration and reporting through the use of ICT and the development of a centralised EMIS platform;
- Take appropriate steps to provide education and training stakeholders with opportunities to develop and refine requisite ICT skills to ensure they are competent and efficient users of educational technology.

2.3 Scope and Target of the Policy

This policy has been designed to shape ICT in education initiatives over a five (5) year period, following its approval.

However, given the rapid developments within this sector the policy may be revised in the light of new advances before the end of this period.

The policy relates to all education stages that are coordinated under the Ministry of Education in accordance with the legal frameworks on education and training.

2.4 Guiding Principles and Values

The implementation of this Policy will be guided by the following principles / values.

Quality and Relevance:

Interventions shall be characterised by the highest standard of delivery and relevance.

Openness & Learner Protection:

Interventions shall seek to reduce barriers to access to all to ICT experiences for identified target audience while providing for adequate protection from the potential negative impact of such experiences;

Flexibility and Responsiveness:

Interventions shall seek to promote flexibility in the provision of ICT experiences and also seek to ensure that necessary services are dynamic and that they adequately respond to the ever changing needs of the target audience;

Audience Centeredness and Empowerment:

Interventions shall seek to ensure that identified target audience remain the focus, learning opportunities take place in the most enabling environment, and that the target audience have access to resources necessary to facilitate the learning experiences. It shall further seek to prepare the audience to develop responsible use of ICT in all instances.

Cost-Effectiveness and Sustainability:

Interventions shall seek to promote cost effective access to learning opportunities in ICT and shall consider the long-term nature of diverse experiences needed and not be limited to particular project life cycle.

Efficiency:

Interventions shall seek to ensure that the goals/objectives of the Policy are attained in the most efficient manner in order to optimize returns from investment in this area;

Professionalism:

Decisions-makers at all levels of the institutional mechanism shall be characterized by high standards of ethics, accountability, and transparency.

Integrity:

Decisions taken at all levels of institutional mechanism shall be in accordance to established criteria and shall demonstrate the highest standard of fairness and honesty.

Partnership & Collaboration:

The interventions shall seek strategic partnership and collaboration where stakeholders are supportive to one another and leverage resources for action to bring about improvement in the learning environment and learning experience of ICT.

Discerning:

The interventions shall give due consideration to sensitivity, circumstances and context in decision on options for improving learning experiences for target audience;

Participation & Ownership:

Stakeholder participation and engagement shall be central to the process of implementation the policy.

Access and Inclusivity:

Interventions shall seek to ensure diversity of quality access without discrimination.

Gender Equality:

Implementation of the policy shall seek to ensure that gender equality is observed.

Rationalisation and Coherence:

Interventions shall seek to undertake a co-ordinated and coherent engagement to dimensions of ICT experiences.

Section Three

Strategic Policy Goals and Statements

3.1. Strategic Policy Goal One - Improving Infrastructure and Connectivity

Through the Ministry of Education's previous ICT in Education initiatives all primary and secondary schools are equipped with computer laboratories. Schools also benefit from an agreement with a local telecom that supplies connectivity. Reliability of these services and learner and educator access to ICT over and above learners studying the subject of ICT remains a concern. Hence this policy calls for the optimal use, care, maintenance, timely replacement, and environmentally responsible disposal of obsolete ICT infrastructure. This policy seeks to encourage the development of cost effective strategies to improve access to ICT through the following commitments:

- 3.1.1. Reliable connectivity and Internet access will be expanded and improved across the education system on an ongoing basis.
- 3.1.2. The Department of Information and Communication Technology (DICT) which has the mandate for the development of ICT nationally will provide the appropriate cost-effective hosting infrastructure for key systems. These systems will include a central Education Management Information System (EMIS), a Learning Management System (LMS) to be used in supporting school learning, an open educational resource (OER) repository, and appropriate communication and social networking tools to facilitate interaction between key education stakeholders. These platforms will be populated with content and online interactions facilitated by the Ministry of Education.
- 3.1.3. The Ministry of Education through the appropriate institutional mechanism will be tasked with the installation of new ICT, maintenance and upgrading of existing ICT facilities and will submit annual projections of costs for review and be allocated an annual budget that allows it to perform these tasks.
- 3.1.4. To ensure safety, health, and security across educational institutions, through appropriate strategies which will include:
 - 3.1.4.1. Development of an infrastructural standard for all teaching & training venues;
 - 3.1.4.2. Improvement of basic infrastructure at the classroom level, electrical outlets, physical security facilities where necessary, and flexible furnishing arrangements to enable use of ICT in a wide range of educationally innovative and varied ways;
 - 3.1.4.3. Development of a suitable, environmentally responsible ICT replacement and e-waste disposal policy.

- 3.1.5. Improve access to ICT within school communities the Ministry of Education will develop strategies that encourage ownership of individual mobile devices. Strategies such as subsidisation of devices, encouraging a bring-your-own-device (BYOD) culture and offsetting the cost of the devices by preloading Open content in lieu of textbooks will be explored. Consideration will also be given to mobile furniture to facilitate classroom re-arrangement and implementation of diversity of teaching styles.
- 3.1.6. Establishment of a set of standards to ensure purchases, donations and contributions of ICT equipment and services comply with set standards.
- 3.1.7. Current human resources for the maintenance of ICT infrastructure will be re-organized to streamline maintenance of ICT equipment, through the following interventions:
 - 3.1.7.1. A Ministry of Education infrastructure management plan will be developed and updated annually.
 - 3.1.7.2. DICT will focus on connectivity, network, and central systems hosting.
 - 3.1.7.3. A structured focus will be placed on integrating school ICT coordinators and learners into maintenance teams to increase maintenance capacity and offer learners grounded learning opportunities.
- 3.1.8. At the level of individual educational and training institutions the Policy calls for the following strategies with regards to the following aspects of infrastructure and connectivity.
 - 3.1.8.1. **Budgeting for ICT** - adequate annual budget allocation to ensure the sustainable operation, maintenance and development of ICT systems.
 - 3.1.8.2. **Location of ICT and Access** - as resources permit to:
 - Work towards providing all teaching and learning spaces with ICT facilities and maximising access by all;
 - Explore ways and means to facilitate students' access to ICT facilities outside the classroom time through such activities like computer clubs.
 - 3.1.8.3. **Development ICT Resources** - as opportunities arise, to explore the range of ICT peripherals **and** software available that can enhance teaching and learning and promote awareness of such resources at the level of the institutions, in particular amongst staff members.
 - 3.1.8.4. **ICT facilities for teachers / lecturers** - explore ways and means to provide members of staff with adequate access to ICT facilities both within and outside the institution for the purpose of planning and preparing for their teaching.

3.2. Strategic Policy Goal Two - Facilitating Student Centred Teaching and Learning

The Ministry of Education advocates a student centred learning environment that encourages independent learning. This can be facilitated by leveraging benefits afforded by the use of ICT in teaching and learning. To this end the policy calls for:

- 3.2.1. The ongoing review and revision of the national curriculum at all levels, with strong emphasis placed on adjusting assessment strategies to assess wider range of competences rather than just content recall. In this process, specific account will be taken of the ways in which ICT can, when used effectively, be harnessed to enable different methodologies of teaching, support, and assessment in all learning areas and at all levels.
- 3.2.2. Pre and in-service teachers, trainers, curriculum & assessment developers and school managers to be provided with professional development opportunities that empower them with knowledge and skills allowing the implementation of methodologies that embrace ICT mediated independent learning.
- 3.2.3. This goal recognises that without appropriate ICT-related pedagogies, ICT will only be used to replicate existing teaching and learning contexts rather than adopting pedagogies that build on the advantages of ICT. Due consideration will therefore be given to reinforcing pedagogical strategies that can take advantage of ICT such as project-based learning, inquiry-based learning and problem-based learning.
- 3.2.4. The Ministry of Education will develop an Education Portal aimed at learners, educators, parents and the wider education community. The Portal will have the following functionalities:
 - 3.2.4.1. A repository of openly licensed education resources aligned to the national curriculum. These resources will be sufficiently comprehensive to enable learners to successfully meet the requirements of the national curriculum framework.
 - 3.2.4.2. A learning management system (LMS) that will structure the above resources into curriculum based e-learning courses and programmes that provide for self-study and/or revision. The LMS will provide a platform that allows users to interact with multimedia resources and receive immediate interactive feedback. The LMS can also be used to track individual student development and identify specific study needs.
 - 3.2.4.3. Communication channel to allow online social interactions between different categories of education stakeholders, with a view to support ongoing professional development.
- 3.2.5. ICT to be harnessed, particularly at the secondary level, to enable more effective use of face-to-face interaction at schools, so that teachers are both empowered and provided with the necessary time to shift their focus away from teaching content. This allows them to support and mentor learners who work in increasingly diverse and flexible ways including self-paced study using ICT infrastructure during the school day. Teachers will provide both extension and remedial work to learners based on diagnostic statistics generated by the LMS.

- 3.2.6. National Quality Assurance standards used to evaluate education programmes, courses and materials to be adjusted to include criteria for the evaluation of digital materials and e-learning content including ICT-based pedagogy issues in evaluation / inspection of teachers and educators.
- 3.2.7. The Ministry of Education to harness suitable ICT tools and software to support its goal of providing universal access to quality education for all, at all levels, commencing from the early childhood level.
- 3.2.8. The Ministry to prioritize the procurement of specialised technologies and software for learners with special educational needs.
- 3.2.9. At the level of individual educational and training institutions, the policy calls for the following strategies with regards to the following dimensions of ICT in teaching and learning:

3.2.9.1. Integrating ICT in Teaching and Learning

- a) The ongoing institutional-based review on how best to improve the quality of student centered teaching and learning through the learning areas of the national curriculum through ICT and the institutions potential to optimise the use of available ICT resources by the students;
- b) The on-going teacher-self review/assessment on how best to maximise the potential of available ICT resources to develop as wide a range of student competences including the higher order skills.

3.2.9.2. **ICT and Students with Special Educational Needs** - The optimising of the potential of ICT to support learning needs of students with special educational needs within the context of the '*Policy on inclusive Education*'.

3.2.9.3. **ICT and Student Assessment** - The harnessing of the benefits of ICT in student assessment procedures and practices beyond the administrative level to include the tracking and analysis of student progress.

3.2.9.4. **ICT and Institutional Culture** - Developing strategies for the on-going evaluation of the impact of ICT at the different levels of the institution with a view to build staff confidence in the integration of ICT in education and training.

3.3. Strategic Policy Goal Three - Facilitating Cost-Effective Access through Open Education Resources

Open Education Resources (OER) and Open Courseware (OCW) can be used where possible to improve access to quality materials for learners and educators. If used thoughtfully they could also be used to reduce the cost associated with providing learners with study materials. Savings can be derived by reducing costs associated with the annual textbook replacement process, populating the education repository/portal with free content and preloading OER textbooks on learner mobile devices. A further potential advantage of using OCW for teacher education is to offer online courses adapted from existing courses to improve the number of new teachers trained each year. In the light of the above, the Policy calls for:

- 3.3.1. The on-going advocacy and training in OER/OCW for educators, Ministry of Education officials and curriculum and assessment developers to develop/adapt relevant OER/OCW.
- 3.3.2. The licencing of original digital content developed by the Ministry of Education, including courses or programmes, under an appropriate Creative Commons (CC) open licence agreements and share them through distribution from the Ministry of Education's education portal.
- 3.3.3. Seeking out of OER equivalents for existing textbooks and provide the digital versions that can be accessed on learner and staff digital devices and therefore minimise the purchase of paper based textbooks.
- 3.3.4. The Seychelles Institute of Teacher Education (SITE) to develop/adapt an ICT in Education online course from existing OCW that achieves the competencies described in the UNESCO ICTCFT.

OCW and OER can also be adapted to offer a wider set of teacher education online programmes on non ICT in Education areas to improve the numbers of teachers graduating and entering the profession as well as up-skilling those already in the profession.

- 3.3.5. The Ministry of Education's authority responsible for Curriculum and Assessment to investigate, collect, store and distribute quality open digital education materials that match the curriculum objectives and use the education portal to disseminate them. The use of OER will ensure that the collection, storage, alignment with the curriculum, and dissemination processes are more cost effective.

3.4. Strategic Policy Goal Four - Exploring Licensing Possibilities to Improve Access to Learning and Teaching Materials

Given the strong commitment articulated to the use of OER, the Government of the Seychelles through the Ministry of Education is expressing its commitment to opening access to educational materials produced in the country. Consequently, the Policy calls for the following commitments pertaining to government investments in educational and training materials, all within the framework of the Copyright Act (1991) as well as international copyright laws:

- 3.4.1. The Ministry to maintain the use of and access to licensed copyrighted software based on recommendations from and in consultation with the national ICT regulatory authority on infrastructure and connectivity related matters.
- 3.4.2. Educational and training materials produced with Government funds – including both research resources and teaching and learning resources to be released under a suitable Creative Commons licence, to facilitate their use, electronic sharing, and adaptation by others. This will include resources of all media types, including print/text, audio, video, and computer-based multimedia.
- 3.4.3. The Ministry of Education to adopt, as a default licence for all teaching and learning materials produced through government funding, a Creative Commons (Attribution) licence.

Likewise, it will encourage its cooperating partners to adopt a similar licence for all materials produced within the cooperation Agreement.

- 3.4.4. Authors of education and training materials produced with government funds will be entitled to apply additional licence restrictions from the Creative Commons licence framework if desired, but will then need to make this explicit by inserting chosen licence in materials they have developed.
- 3.4.5. Authors or institutions to be entitled to insert a traditional, All-Rights Reserved Copyright licence, following the submission of a justification for this restriction submitted to the specific agency funding the work and approval having been granted for this in writing by the agency in question, where a case can be made for the commercial exploitation of the teaching and training resources.
- 3.4.6. The Ministry of Education to work to ensure that every education and training document released for distribution via the Internet (through its national repository) to indicate the licensing conditions of the resources clearly on the resource itself, using properly marked, machine-readable Creative Commons licences, to facilitate the sharing of its educational and training resources.
- 3.4.7. Responsibility to reside with authors of works to ensure that any third-party materials incorporated in resources produced with government funds do not breach any relevant copyright laws, either nationally or globally.

3.5. Strategic Policy Goal Five - Enhancing the Collection, Administration, Analysis & Management of Education and Training Data

ICT has the potential to greatly enhance the efficiency of an organisation with regards to the collection management and usage of relevant data. In recognition of this potential, the Policy calls for the following commitments:

- 3.5.1. The development and deployment of an online multi-level Education Management Information System (EMIS) to measure and track outcomes at class, school, zone and Ministry levels required by the Ministry, other Ministries and external partners / agencies. The EMIS will include management tools at school level to facilitate the day to day management of schools and automated uploading of data on the system.
- 3.5.2. The continuous training of data handlers to analyse information and generate necessary reports that can be used by decision-makers across the system to assist in the development of new policies, guidelines and other key strategic decisions;
- 3.5.3. The Ministry of Education to encourage the greater ownership, planning, and accountability from educational and training institutions in the optimal use of currently available ICT resources under their responsibility for the integration of ICT in educational and training through the development and implementation of an annual ICT Integration Plan with agreed defined parameters and procedures.
- 3.5.4. The Plans, which should include and Acceptable Use Guidelines, to be submitted to the Ministry of Education as per an established time-frame and reviewed by the appropriate authority, to ensure that they are realistic and to enable monitoring to determine the relative success of educational and training institutions in achieving set goals.

3.6. Strategic Policy Goals Six - Enhancing Capacity Building and Professional Development of Relevant Stakeholders

The Ministry of Education is committed to developing personnel to use and support ICT in Education and Training through a process of regular training and professional development to expand their core competencies. These stakeholders include Ministry of Education officials, head teachers and principals, management teams, administrators, teacher educators, educators at all levels, learners, parents, and the general public. The Policy calls for the following commitments:

- 3.6.1. Advocacy to ensure educators and ICT support officers are aware of the ICT in Education and Training policy and its implications.
- 3.6.2. The development of a Professional Development Strategy for identified categories of stakeholders relating to the integration of ICT drawing from international practices.
- 3.6.3. The Ministry of Education to conduct a comprehensive audit on a regular basis to determine training needs. This baseline data and regular updates will provide data to ascertain national training requirements and continuous professional development (CPD) needs. In the process due consideration will be given to recommendation from relevant available international sources.
- 3.6.4. The adoption of an established acceptable ICT in Education and Training set of standards or ICT competencies for teachers across all levels and stages. To this end the UNESCO ICT Competency Framework for Teachers (CFT) will be considered to guide the professional development of educators. The framework encourages training beyond basic ICT skills and addresses issues of policy, curriculum, assessment, pedagogy, organisation and professional development at three levels deepening sophistication.
- 3.6.5. Professional development of teachers to focus on all teachers of all subjects and all levels to ensure effective ICT use from the early childhood level. The UNESCO ICT CFT to be used as a framework to govern both pre-service training and continuing professional development (CPD), to ensure that there are pathways for ongoing capacity building and refresher courses.
- 3.6.6. Curriculum and assessment developers to receive training in changes in pedagogical practices involving ICT tools, competencies and digital content.
- 3.6.7. The Ministry of Education to use the UNESCO ICT CFT, to seek to align and integrate all relevant current ICT-related professional development courses in the country into a broader national framework of competence. This will include courses offered by the Seychelles Institute of Teacher Education, the Ministry itself (through its training initiatives), and other support agencies such as the Commonwealth of Learning or external service providers such as Microsoft and Intel. Where necessary, existing courses will be reviewed to ensure alignment with the UNESCO ICT CFT.
- 3.6.8. The Ministry to work with the Commonwealth of Learning to incorporate ongoing use of the Commonwealth Certificate for Teacher ICT Integration (CCTI) in the Seychelles. This Advanced Certificate in Education will primarily be aimed at teacher educators initially, although it will also be made available for enrolment by any interested teachers. The Ministry to also consider other external partners to assist with ICT in Education training and certification.

- 3.6.9. In line with Strategic Policy Goal 5.0, a rolling series of professional development activities, including development of an agreed national template for ICT Integration Plans, to be implemented to support head teachers and principals in this work.
- 3.6.10. In recognition that ICT support technicians require an in-depth knowledge of networking, hardware and software to assist non-technical users, diagnose and resolve software and hardware problems, the Ministry of Education will work in partnership with service providers, with local and international Training Centers to provide certification training programmes for support technicians in areas of maintenance and networking. Cost-effective strategies will include consideration for the establishment of an ICT Academy.
- 3.6.11. The Ministry of Education to ensure that the personnel responsible for providing ICT advisory and support services to educational and training institutions and the Ministry headquarters are competent in the areas they are to provide such services so that institutions can benefit from having a secure and reliable ICT system that will facilitate the integration of ICT in education and training.

3.7. Strategic Policy Goal Seven - Effective and Co-ordinated Governance, Implementation and Organisational Arrangements

In operationalizing this policy, it is essential to facilitate collaboration and effective co-ordination between government Ministries, most notably between the Ministry of Education and the Department of ICT and structures within the Ministry of Education. The Policy calls for the following commitments:

- 3.7.1. The authority responsible for ICT nationally, to be responsible for ICT infrastructure (connectivity and networking) nationally, including provision of servers and the hosting of infrastructure for centralized platforms (including a content repository, EMIS, learning management system, and suitable social networking tools).
- 3.7.2. The Ministry of Education through the competent authorities to be responsible for installation, after care and maintenance of equipment in educational and training institutions, development of curriculum & assessment content, as well as the training of educators. Moreover it will be responsible for the population of databases, loading content and facilitating online interactions with users.
- 3.7.3. Seychelles Institute of Teacher Education (S.I.T.E) to provide capacity building support to educational and training institutions through validated programmes for in-service professional development and pre-service training in alignment with the UNESCO ICT CFT and in partnership with other key agencies as appropriate.
- 3.7.4. The authority responsible for Curriculum and Assessment to be responsible for the creation of the online content for Early Childhood, Primary and Secondary stages of education and training.
- 3.7.5. The Professional Centres, including the Adult Learning and Distance Education (ALDEC), the Seychelles Institute of Teachers Education (S.I.T.E) and the University of the Seychelles to be responsible for facilitating access, online programmes beyond the secondary stage, in partnership with the Seychelles Qualifications Authority (SQA).
- 3.7.6. An ICT in Education Steering Committee to be established at the level of the Ministry with defined Terms of Reference to be chaired by a senior official of the Ministry
- 3.7.7. The institutionalisation of a position of responsibility at the level of education and training institutions with clearly defined responsibilities with regards the integration of ICT in education and training.
- 3.7.8. The establishment of an ICT Steering Committee at the level of educational and training institutions to assist in managing the development of the ICT Plan and in monitoring and reviewing its continuing implementation.

3.8. Strategic Policy Goal Eight - Effective Monitoring & Evaluation

The successful implementation of the Policy commitments will to a large measure depend on an effective monitoring and evaluation structure that ensure the agreed identified strategic objectives, result indicators and time-frames of the resulting Strategic Plan are achieved. The Policy calls for the following commitments:

- 3.8.1. The establishment of an appropriate body with defined Terms of Reference to monitor the implementation of the Policy as per defined monitoring framework.
- 3.8.2. The monitoring framework to include strategies and measures that are both quantitative and qualitative in nature.

3.9. Strategic Policy Goal Nine - Actioning the Policy

The Ministry of Education will seek to operationalise the Policy intentions / commitments through an agreed Strategic Framework to map out the strategic direction to guide the Ministry's efforts towards the vision, mission and goals of integrating ICT in education and training, and the process of institutionalisation of an ICT culture within the period of the Policy implementation.

In developing the Strategic Framework due reference will be given to relevant international documented sources.