An ICT Professional Development Implementation Plan for Educators in Dominica

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1 Acronyms

CARICOM	Caribbean Community and Common Market
CC	Creative Commons
CCNC	Commonwealth Computer Navigator's Certificate
CCTI	Commonwealth Certificate for Teacher ICT Integration
COL	Commonwealth of Learning
CTPD	Continuing Teacher Professional Development
CSEC	Caribbean Secondary Education Certificate
CFT	Competency Framework for Teachers
CITE	Committee for Integration of Technology in Education
CST	Competency Standards for Teachers
CXC	Caribbean Examination Council
DSC	Dominica State College
ECD	Early Childhood Development
EMIS	Education Management and Information System
EU	European Union
IDB	Inter-American Development Bank
ICDL	International Computer Driver's Licence
ICT	Information and Communication Technology
ICT4D	Information and Communication Technology for Development
ISTE	International Society for Technology in Education
IT	Information Technology
LMS	Learning Management System
M&E	Monitoring and Evaluation
Mbps	Megabit per second
MoEHRD	Ministry of Education and Human Resource Development
NETS	National Educational Technology Standards
OAS	Organisation of American States
ODL	Open and Distance Learning
OER	Open Educational Resources
OLPC	One Laptop Per Child
SSTC	Student Support Technician Clubs
UNESCO	United Nations Educational Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UWI	University of West Indies
VLE	Virtual Learning Environment

2 Summary

Education lies at the centre of Dominica's national development effort. Establishing an innovative, entrepreneurial and technically smart workforce is considered essential in Dominica achieving its growth and diversification goals. In support of this, the Ministry of Education, Ministry of Education and Human Resource Development (MoEHRD) of Dominica believes that ICT can be a powerful catalyst in transforming education and creating new skills within the workforce. The goals of Dominica's ICT in Education Strategy are to:

- Utilize the power, versatility and reach of Information and Communications Technology to develop an innovative, inventive, and entrepreneurial society that contributes directly to Dominica's long-term national growth and prosperity;
- Create learning and personal development opportunities for everyone;
- Transform administrative efficiency and service delivery in the Ministry of Education and broader educational system.

Within the above context, this document presents a proposed three-year professional development strategy for educators in Dominica. The general objective of this Strategy is to 'Ensure that all education officers, school administrators, teachers, teacher educators, and Ministry officials are competent to harness ICT effectively to support high quality teaching and learning in Dominica schools'. Specific objectives are to:

- Implement a structured, coherent ICT Competency Framework for Educators in Dominica, providing clear learning pathways through to the Knowledge Creation level of the UNESCO ICT CFT;
- Design and operationalize all necessary courses and modules, with underpinning high quality educational materials, to provide necessary learning pathways to Dominica teachers and other key personnel;
- Deliver initial and ongoing professional development opportunities to drive ICT integration in Dominica.

Design of the ICT Professional Development Strategy for Educators in Dominica is based on the following key principles and assumptions:

1) It is expected that in design/selection of professional development courses:
   a) *All courses will be competency-based*;
   b) The courses will include *appropriate blends of face-to-face learning, in-school activities, and use of e-learning*.
2) This Strategy focuses on *integrating the United Nations Educational Scientific and Cultural Organization (UNESCO) ICT Competency Standards for Teachers (CST)* into the curriculum design of all courses.
3) The MoEHRD will seek to *submit relevant in-service courses and modules that it designs to the Virtual University for Small States of the Commonwealth (VUSSC) Transnational Qualifications Framework (TQF) for inclusion in the TQF*.
4) The ICT Professional Development Strategy for Teachers will *construct clear learning pathways for Dominican teachers* to move progressively from technology literacy to knowledge deepening through both pre-service teacher training and continuing professional development.
5) Courses and modules produced through the ICT Professional Development Strategy for Educators will *build on and adapt existing national and international courses and modules* wherever possible.
6) The Strategy will facilitate sharing of all courses/modules and associated educational materials by *releasing them as Open Educational Resources (OER) under an appropriate Creative Commons (CC) licence*.
7) Regarding future implementation of ICT in Dominican schools, it is assumed that:

a) School principals and management teams will be expected to develop ICT Integration Plans as a key component of their overall School Plans.
b) ICT infrastructure and connectivity at the Dominica State College (DSC) will be reviewed and upgraded to enable the College to implement an expanded mandate for professional development of educators in the use of ICT in education.
c) Curriculum Officers will be provided additional travel budget to enable them to function more effectively as a first line of support for ICT Integration in the country.

The Implementation Plan targets the following key audiences:
1) School and college administrators (principals, vice-principals, and heads of department);
2) Pre- and in-service teachers;
3) Teacher educators;
4) Students; and
5) Ministry Officials (in particular, Curriculum Officers and Education Officers).

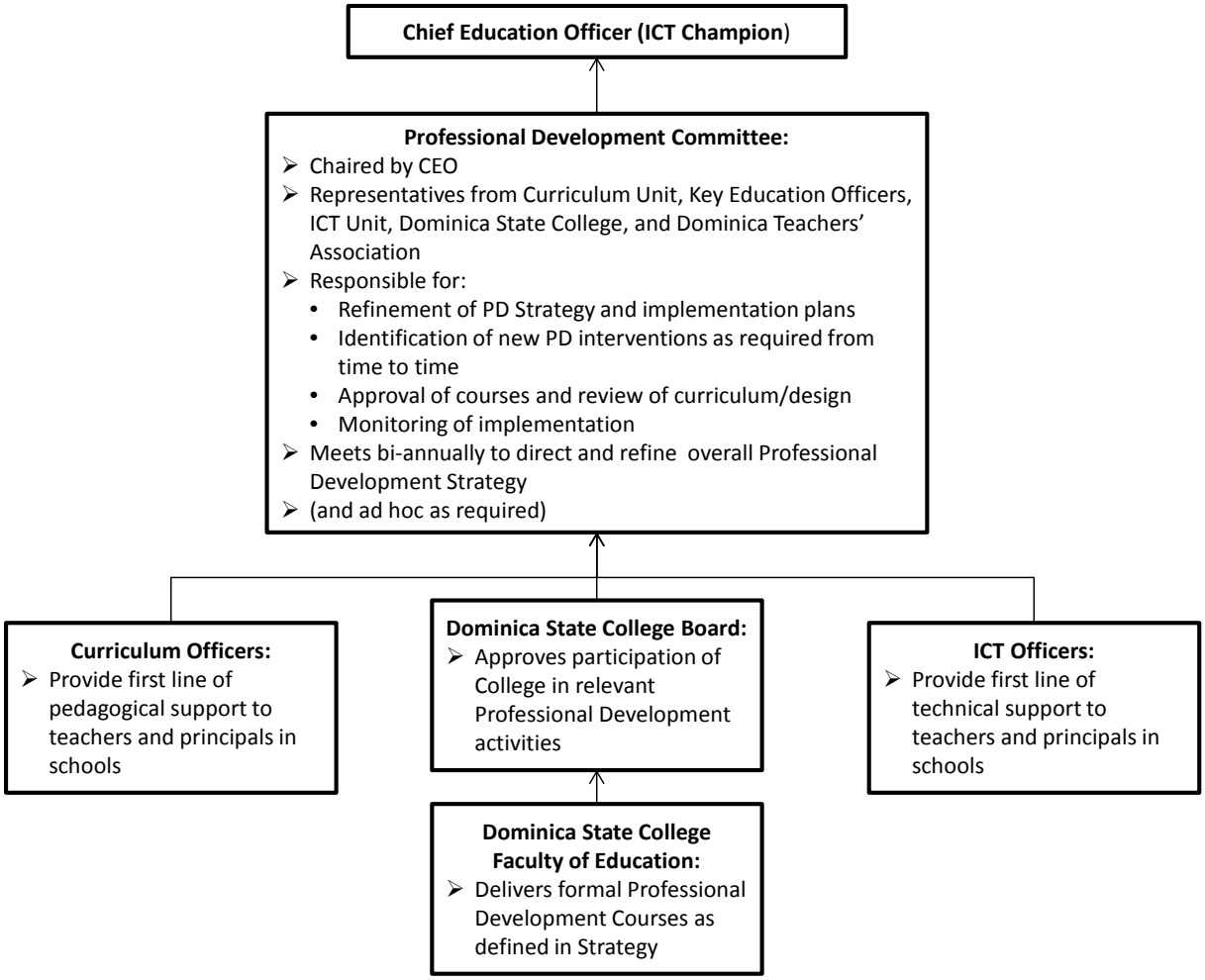
The Dominica ICT Professional Development Framework for Educators will incorporate various professional development courses. Notional targets for each in-service professional development course are presented below.

Table 1 Notional In-Service Course Enrolments

In-Service Course	2012	2013	2014	Total
CCTI	25	25	25	75
Associate Degree Programme Modules	80	80	80	240
Certificate Programme in ICT in Education	15	30	30	75
Technology Literacy for Teachers	75	100	100	275
Knowledge Deepening for Teachers	N/A	50	50	100
ICT Integration for Administrators	40	40	N/A	80
SSTC course	180	360	720	1,260

A simple management structure is proposed for the Professional Development Strategy, which envisages the MoEHRD assuming overall oversight responsibility for Implementation and is in line with structures already in place in the country. The management structure can be represented diagrammatically as follows:

Figure 1ICT Professional Development Management Structure



Provision has been made for ongoing monitoring and evaluation of the ICT Professional Development Strategy for Educators in Dominica. It is envisaged that this will comprise three key elements:

1) Completion of a detailed baseline survey to determine the level of ICT competence of teachers in Dominica during 2012;
2) Design, development, and maintenance of a Monitoring System designed to track delivery of capacity building in response to the gaps identified in the baseline survey, updated in real time by the agencies delivering professional development, so that progress in delivery can be monitored on an ongoing basis;
3) Commissioning in the second year of implementation of a comprehensive external evaluation study, with biennial formative evaluation reports designed to feed into and improvement implementation of the ICT Professional Development Strategy for Educators in Dominica.

3 A Professional Development Implementation Plan

3.1 Background

According to a presentation outlining 'Dominica's ICT in Education Strategy and Action Plan 2010 – 2015', education lies at the centre of Dominica's national development effort. Establishing an innovative, entrepreneurial and technically smart workforce is considered essential in Dominica achieving its ambitious growth and diversification goals. In support of this, the Ministry of Education, Sports, and Youth Affairs MoEHRD of Dominica believes that ICT can be a powerful catalyst in transforming education and creating new skills within the workforce. It can allow children to learn in fresh and innovative ways – discovering new knowledge, developing new abilities, stretching the imagination and encouraging collaboration. It can radically change the traditional classroom experience for children and teachers, and greatly improve and streamline educational administration. The reach and versatility of ICT can also assist in developing new skills and careers for those outside of the formal educational system – with distance and online learning providing greater flexibility for those who are working or not in full-time education.

The goals of Dominica's ICT in Education Strategy are to:

- Utilize the power, versatility and reach of Information and Communications Technology to develop an innovative, inventive, and entrepreneurial society that contributes directly to Dominica's long-term national growth and prosperity;
- Create learning and personal development opportunities for everyone;
- Transform administrative efficiency and service delivery in the Ministry of Education and broader educational system.

The Policy Objectives, originally defined in the National ICT Policy prepared in 2001 and re-affirmed in the 2010-2015 Strategy and Action Plan are as follows:

1) Dominica is to be a Smart, Innovative and Entrepreneurial Society that utilizes ICT as an integral part of everyday life.
2) Proficiency in using ICT to gather information; analyzing and sharing that information to create new knowledge; and then exploiting this new found knowledge for individual and collective benefit.
3) Introducing increased levels of ICT and supporting networks into primary and secondary education.
4) Specific attention is to be paid to ICT training and other related education; such as mathematics, science, business and engineering.
5) Utilizing ICT as both a classroom tool and as a subject in its own right - revising curriculum where appropriate.
6) Strengthening teacher training in ICT and related disciplines.
7) Development of a Smart workforce that is confident in using ICT to carry out their jobs and better serve their customers.
8) Increasing ICT education and training for those in tertiary institutions, adult education, and those outside the formal academic system.
9) TeleCentres are to be upgraded to provide ICT training.
10) Transforming administrative processes and procedures at MoEHRD.

Several achievements have been registered in implementing these policy objectives. An ICT Desk of five members has been established, and a revised National Curriculum has been developed which incorporates the use of ICT within lessons. As part of the latter, comprehensive curriculum guides

have been prepared to assist teachers with ICT integration in different areas of the curriculum, at both primary and secondary levels.

There has also been emphasis on both rollout of ICT infrastructure into schools and provision of connectivity. The dominant model of ICT provision has been supply of laboratories, although small, multi-grade schools sometimes have only one or a few computers, which are accessed and used by both teachers and students. Computer laboratories at secondary schools are predominantly used for teaching of ICT subjects as part of the Caribbean Examination Council (CXC) curriculum. Through an open-ended partnership with Lime, one of the key telecommunications companies operating in Dominica, all schools are provided free 2 Mbps Internet connections.

Over 200 teachers have received formal ICT training by attaining an ICDL (International Computer Driver's Licence) certification, although this training is no longer continuing (having been offered through a European Union-funded project). In addition, the Dominica State College offers a 3-credit course on Technology for Instruction as part of the Associate Degree Programme for Secondary Teachers. This course is designed to expose student teachers to the concepts, terms, and pedagogical applications of audio-visual and computer technologies, and provides opportunity for development of skills in the use of audio-visual and computer technology in the classroom. Given that high percentages of Dominican teachers are un- or under-qualified (estimated to be 60% of secondary teachers and 40% of primary teachers), this course is being delivered both to pre-service teachers and in-service teachers (as in-service teachers are also enrolled in the Programme). There is also a Basic ICT Literacy Course in the Associate Degree Programme for Early Childhood Development (ECD), but not yet any equivalent course for the Associate Degree Programme for Primary Teachers. Finally, a one-year Certificate Programme in ICT in Education is planned to be launched at the start of the next academic year (which is September, 2012) for secondary school existing ICT teachers.

Given the above, the State College is the key vehicle for delivery of formal professional development to educators in Dominica. Staff members are using ICT in different ways in their own teaching, but note a need for further professional development. The College has experimented with use of Moodle as a Learning Management System (LMS), and hopes to use it again as part of a strategy to increase the capacity of the College to enrol students in its Associate Degree Programmes for teachers (in order to reduce the backlog of untrained teachers). There has also been some pilot use of Digital Classrooms, where classes are recorded and uploaded onto YouTube. Expansion in e-learning on campus will, however, have to be accompanied by growth in ICT infrastructure and in connectivity. It is estimated that there are approximately 200 computers in four laboratories for the entire College, but these are overloaded. Likewise, there is only a 1 Mbps Internet connection, which is inadequate even for the current number of computers on campus.

Curriculum Officers also provide a critical aspect of support to teachers in Dominican schools, as part of which they seek to help teachers to infuse use of ICT across the Curriculum. A key constraint in this regard, though, is limited funds for travel to schools, so there would be merit in both increasing these limits and exploring provision of some support by virtual means.

Finally, during the July holidays, in partnership with the Dominica Teachers' Association and a Canadian University, two-week ICT training sessions are held in Dominica. This provides an excellent vehicle for ongoing professional development for in-service teachers, although the current courses would benefit from greater structure and formal recognition.

An Education Management and Information System (EMIS) programme has also been implemented, which has involved customizing an open source software application called OpenSys to enable schools to run their management systems via a central, online platform. Approximately 15 schools

are currently using this online platform to fulfil their EMIS requirements, and it is anticipated that it will be compulsory for all schools to use the platform by the end of 2012.

Within the above context, this document focuses on the sixth key policy objective of the MoEHRD, presenting a proposed three-year professional development strategy for educators in Dominica.

3.2 Key Principles and Assumptions

Design of the ICT Professional Development Strategy for Educators in Dominica is based on the following key principles and assumptions:

8) It is expected that in design/selection of professional development courses:
   a) *All courses will be competency-based*, both in design of the curriculum and materials and in terms of how assessment is conducted.
   b) The courses will include *appropriate blends of face-to-face learning, in-school activities, and use of e-learning* (with the latter combining both use of Virtual Learning Environments – VLEs – and existing social networking platforms, such as Facebook and YouTube). To minimize expenses, it is proposed that the MoEHRD consider deploying a single VLE to be shared by all participants in the process (particularly the State College and Curriculum Officers). This approach will serve to ensure that the professional development activities have a direct and measurable impact on classroom practices, with support provided to teachers at various levels to enable them to implement the skills they acquire through professional development activities as soon as they have learned them. This will also enable the Dominica State College to pilot a blended learning approach, with a view to possible expansion across the Associate Degree programmes in order to increase the capacity of the College to deliver teacher training.

9) This Strategy focuses on *integrating the United Nations Educational Scientific and Cultural Organization (UNESCO) ICT Competency Standards for Teachers (CST)* into the curriculum design of all courses, as this set of Standards effectively identifies the teacher as central in developing student ICT capabilities. The UNESCO ICT Competency Framework for Teachers (CFT) creates a common core syllabus that can be used to develop learning materials sharable at a global level, provides a basic set of qualifications that allows teachers to integrate ICT into their teaching; extends teachers' professional development so as to advance their skills in pedagogy, collaboration, and school innovation using ICT, and harmonizes different views and vocabulary regarding the uses of ICT in teacher education.

10) Following on from the above, once in-service professional development courses aligned to the UNESCO ICT CFT have been approved by the Dominican State College, the MoEHRD will seek to *submit relevant in-service courses and modules that it designs to the Virtual University for Small States of the Commonwealth (VUSSC) Transnational Qualifications Framework (TQF) for inclusion in the TQF*, in order to ensure that all professional development provided within the Dominican ICT Professional Development Framework for Educators is internationally recognized.

11) The ICT Professional Development Strategy for Teachers will *construct clear learning pathways for Dominican teachers* to move progressively from technology literacy to knowledge deepening through both pre-service teacher training and continuing professional development.

12) Courses and modules produced through the ICT Professional Development Strategy for Educators will *build on and adapt existing national and international courses and modules* wherever possible, in order to reduce the costs of development and to improve the quality of the courses

offered. Examples of sources of existing content that will be explored for possible use will include:

a) Resources and courses available through the Commonwealth of Learning, most notably within the Commonwealth Computer Navigator's Certificate (CCNC) and the recently re-designed Commonwealth Certificate for Teacher ICT Integration (CCTI), which is an Advanced Certificate in Education designed in accordance with the UNESCO ICT CFT and aimed at teachers and school leaders wishing to focus on ICT integration into school management, teaching, and learning;
b) Materials and courses from Microsoft's Partners in Learning Programme and the Intel Teach Programme;
c) Courseware and materials produced through the professional development activities already implemented in Dominica.

13) Extending the principle of harnessing existing content, the ICT Professional Development Strategy for Educators will also facilitate sharing of all courses/modules and associated educational materials by *releasing them as Open Educational Resources (OER) under an appropriate Creative Commons (CC) licence,* so that they are openly accessible and shareable between the key participating institutions, as well as being accessible to all schools in Dominica and to the broader global education community.

14) Regarding future implementation of ICT in Dominican schools, it is assumed that:
    a) School principals and management teams will be expected to develop ICT Integration Plans as a key component of their overall School Plans in order to demonstrate clearly how they expect to harness the extensive investments in ICT. This will provide a primary initial focus for professional development of principals in 2012.
    b) ICT infrastructure and connectivity at the Dominica State College will be reviewed and upgraded to enable the College to implement an expanded mandate for professional development of educators in the use of ICT in education.
    c) Curriculum Officers will be provided additional travel budget to enable them to function more effectively as a first line of support for ICT Integration in the country. Ideally, they should also receive laptop computers to enable them to run ad hoc and one-on-one training and support sessions in schools more effectively.

3.2.1 Overview of Professional Development Needs

It is possible to analyse the specific requirements of each of the target groups of this Professional Development Strategy, namely:

6) School administrators (principals, vice-principals, and heads of department);
7) Pre- and in-service teachers;
8) Teacher educators;
9) Students; and
10) Ministry Officials (in particular, Curriculum Officers and Education Officers).

The professional development requirements of each group are outlined below.

School Administrators (Principals, vice-Principals, and Heads of Department)

The growing consensus is that, for instructional technologies to be implemented successfully, leadership and administrative support are critical. This means that it is important that school principals are trained in educational technology and have the resources they require to make informed decisions.

To ensure effective use of ICT at school, it is imperative that leadership in schools is supported in the role of ICT leadership for the school. The principal need not be the ICT champion, but he/she does need to be aware of debates surrounding use of ICT in education and of the important role that leaders play in ensuring successful use. Leaders need to be aware of the consequences of working with and maintaining ICT facilities, as well as the financial implications thereof. It is imperative that, after initial training, leaders become part of a broader community of practice, attending ICT conferences, receiving quarterly circulars, e-mail newsletters, participating in online discussion forums, and sharing expertise and experiences.

In addition, there may also be requirements to include specific focuses on use of specialized platforms, including: human resource management systems; education management information systems; communication platforms; portals to access government and systems information and education content; administration and management systems; financial and accounting systems; security software; timetabling systems; and office productivity tools.

Using modules within the CCTI, the focus in professional development in Dominica will be on supporting school administrators to attain levels of competence as defined in the National Educational Technology Standards (NETS) for Administrators of the International Society for Technology in Education (ISTE)[1], with the next phase of professional development drive being to ensure that all schools develop and implement effective ICT Integration Plans. These plans should include, at least:

- A long-term vision for use of ICT in the school;
- Codes of conduct for ICT usage by learners, teachers, management and administration, and the wider community;
- Curriculum policies outlining how the school intends to use ICT to support teaching across learning levels and learning areas/subjects;
- A detailed assessment of ICT requirements;
- Timetables outlining how ICT will be integrated into the school's operations, and what levels of access will be made available to which learners;
- Professional development strategies on use and integration of ICT in educational, management, and administrative tasks;
- School strategies to cover operating costs of ICT; and
- Strategies for ICT support and maintenance.

Through this process, it is expected that:

1) All schools will, by the end of 2013, have prepared detailed ICT Integration Plans (based on a template to be supplied by the MoEHRD as an integrated component of their overall School Development Plans, implementation of which will be supported and monitored by the MoEHRD.
2) School administrators will receive ongoing support through online communities of practices, in-school visits from Curriculum Officers, and access to relevant professional development activities available from 2014 onwards to develop their capacity to manage implementation of their ICT Integration Plans.

Teachers

Teachers are at the heart of delivery of the curriculum. Teacher professional development in use of ICT is best introduced in a context of broader educational reform, which embraces a shift away from teacher-centred, lecture-based instruction toward student-centred, interactive, constructivist learning. Teacher professional development is essential if ICT in schools is to be used effectively. Thus, ongoing teacher training and professional development offerings are vital for successful use of

[1] See http://www.iste.org/standards/nets-for-administrators.aspx.

ICT in education. Teachers play a pivotal role in the adaptation and integration of ICT in education as they are a key element in curriculum implementation and innovation. Studies show that insufficient understanding of the scope of an ICT resource leads to inappropriate or superficial uses in the curriculum.

To harness ICT effectively in support of curriculum delivery, teachers require substantial support and stimulation to change entrenched practices. This support includes general approaches to integration of ICT within teaching and learning, support within specific areas of a subject specialization, and training and support on effective use of specific ICT applications and digital education content offerings. To support this, UNESCO's ICT Competency Standards for Teachers[2] are located within a broader policy context of educational reform and sustainable development which views education as a cultural relay that inculcates societal values including the role of the citizen in economic development.

For UNESCO, educational change through ICT encompasses three approaches: technology literacy, knowledge deepening, and knowledge creation, and these approaches have different implications for pedagogy, teacher practice and professional development, curriculum and assessment, and school organization and administration. In relation to pedagogy, the use of ICT requires teachers to develop skills to develop innovative ways of using technology to enhance the learning environment, and to encourage technology literacy, knowledge deepening and knowledge creation. As such, teacher professional development has to focus on developing teachers' knowledge and skills to develop technology literacy, knowledge deepening, and knowledge creation in relation to components of the educational system, that is, policy, curriculum and assessment, pedagogy, the use of technology, school organization and administration, and teacher professional development.

According to UNESCO, the three approaches to educational reform have different demands for teacher education, with the technology literacy approach being the most basic and requiring the most basic policy changes as the aim of this approach is to encourage and facilitate student uptake of new technologies to support social and economic development. Professional development aimed at supporting the technology literacy approach focuses on developing teachers' technological literacy to integrate basic ICT tools into the curriculum. This technology literacy approach requires a focus on equitable distribution of technological resources to enable access by as wide a population as possible to lessen the digital divide. The outlay of technological tools at this stage is a precursor for possible success of all three approaches to educational development.

Knowledge deepening educational changes are deeper and they are likely to have greater impact on learning. Knowledge deepening requires students as citizens to apply school knowledge for complex problem solving in the workplace to add value to national development, for example through innovation that provides solutions to national challenges. To achieve this approach to educational reform, teacher professional development should focus on providing teachers with the knowledge and skills to use more complex methodologies and technologies. Change in the curriculum should include establishing a complex relationship between school knowledge and real world problems and can involve collaboration between students at local and global levels with the teacher managing the learning environment.

The knowledge creation approach to educational improvement is the most complex as it aims to create a citizenry that engages in and benefits from knowledge creation, innovation, and participation in lifelong learning. Curriculum changes to achieve the aims of this approach are inculcating skills in collaboration, communication, creative thinking and innovation and critical thinking. Teachers can model these skills to their students through their own professional

[2] See http://cst.unesco-ci.org/sites/projects/cst/default.aspx

development where they develop more sophisticated skills on using technology and collaborate with peers to design projects that challenge students to exercise the aforementioned skills.

Given the nature of these above components, the focus in Dominica will be on:

1) Ensuring that all new teachers entering the system, as well as in-service teachers receiving their first qualification, have attained the 'Knowledge Deepening' level of competence through their pre-service training;
2) All teachers in Dominica have attained the 'Technology Literacy' level of competence by the end of 2014;
3) At least 25% of all teachers in Dominica have attained the 'Knowledge Deepening' level of competence by the end of 2014.

Teacher Educators

Given the above, there is an equivalent requirement to ensure that teacher educators attain equivalent levels of competence in ICT Integration. Again, here, the UNESCO ICT CFT provides a sensible framework for curriculum development, while the CCTI provides a helpful mechanism for providing professional development to this target audience, as it is an online programme that allows teacher educators to gain access to mentoring expertise that may not be readily available within Dominica. From this perspective, it will be ideal to have all 13 teacher educators at the Dominica State College, or at least a critical mass of these lecturers, enrolled on CCTI modules during 2012.

Students

The extent of ICT deployment in Dominica and current availability of central technical support suggests that formal technical support will be insufficient to ensure ongoing maintenance of ICT equipment. In addition, there are several emerging examples internationally (for example, in the United States of America, Macedonia, and Indonesia) that students can play an important role in supporting ICT maintenance and repair within schools. Such strategies have also been demonstrated to have significant positive educational and social outcomes for participating students. Consequently, there is merit in exploring development of Student Support Technician Clubs (SSTCs) at schools to provide technical support. This process can usefully be guided by a Computer Lab Sustainability Took Kit developed by AED, Cisco, and Qualcomm.[3] The process will aim to develop technical and leadership skills in selected students to support technology teachers to maintain computers, troubleshoot problems, and support classroom teachers to integrate ICT for teaching and learning.

MoEHRD Officials (particularly Curriculum Officers and Education Officers)

The leadership role of Ministry of Education personnel in changing their own practice and supporting and monitoring schools in their uptake of ICT is pivotal to the success of Dominica's plans to roll out ICT in education. The areas in which MoEHRD personnel require support include: leadership and vision; learning and teaching; productivity and professional practice; support, management, and operations; assessment and evaluation; and social, legal and ethical issues. As they constitute the first line of support to schools, it is essential to ensure that the capacity of Curriculum Officers in ICT Integration is systematically developed, while their job descriptions are simultaneously streamlined to provide them the necessary time to implement this support function effectively. Likewise, a focus on professional development of Education Officers will be essential to ensure that key education managers are knowledgeable in the area of ICT Integration.

[3] See http://aed.org/Publications/computer-system-sustainability-toolkit.cfm.

Summary

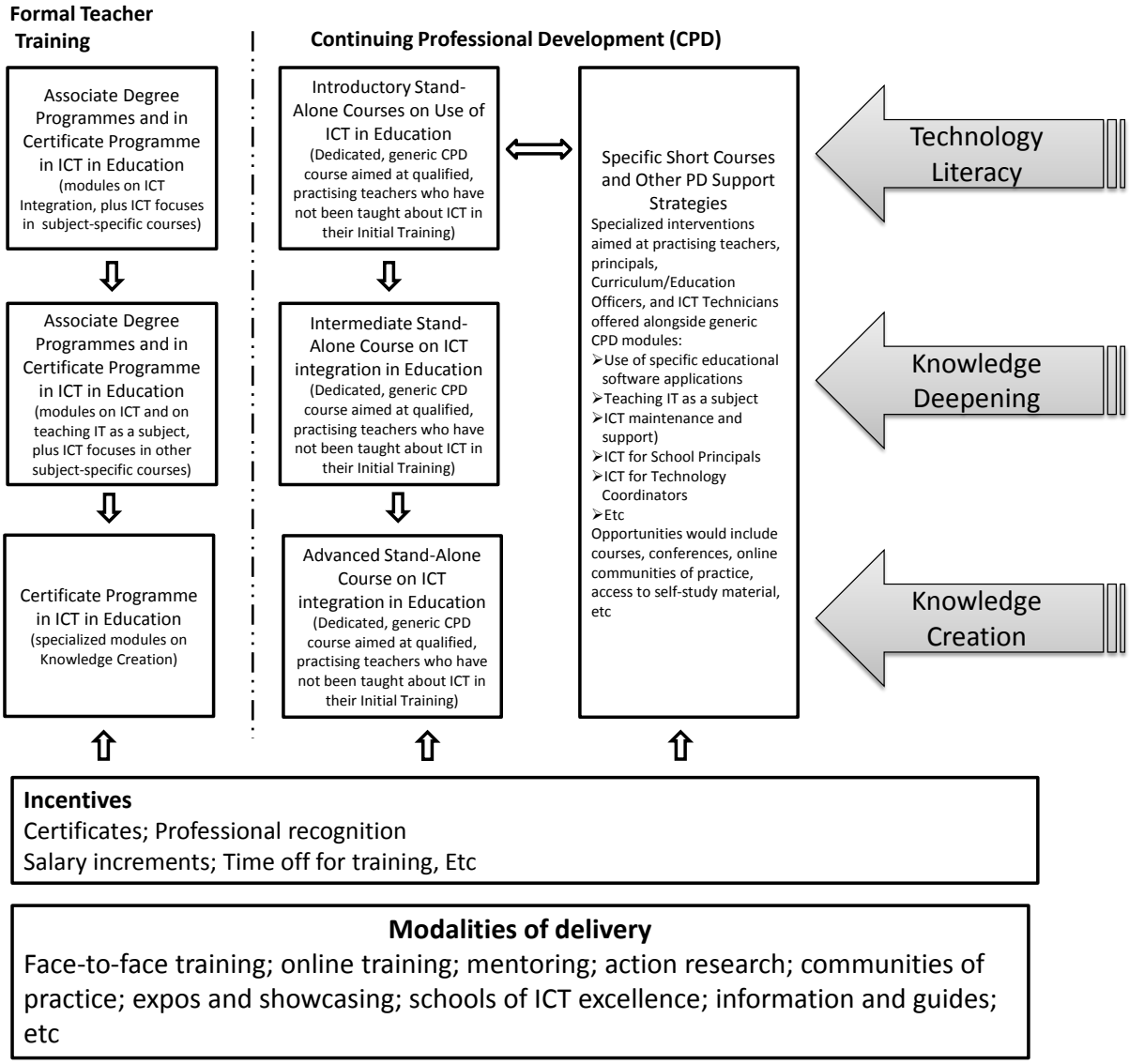
In summary, therefore, the immediate focus for professional development will be to develop a multi-tiered support structure for teachers, which provides the necessary support and monitoring to ensure effective use of the ICT infrastructure that has been deployed in Dominica. This support structure will comprise:

1) A supportive school environment, with a comprehensive ICT Integration Plan being developed by the ICT Integration Support Team in consultation with all key players, which serves to ensure that school administrators (and especially principals) are supportive of teachers' efforts to use ICT effectively in their classrooms and that school targets in this regard are formally monitored.
2) A first line of support for teachers being provided within the school through Curriculum Officers and SSTCs. Curriculum Officers particularly will be developed to provide ongoing pedagogical support to all teachers within schools regarding effective ICT Integration.
3) Access to three levels of professional development support for teachers, which seek to move them systematically from Basic ICT Readiness to Technology Literacy to Knowledge Deepening levels of competence (and, for some, beyond to Knowledge Creation). This professional development will be made accessible on an ongoing basis from the beginning of 2012, using the Dominica State College as the key provider.
4) A teacher supply system (through the relevant Associate Degree programmes) which ensures that all new teachers entering the system have already attained the Knowledge Deepening level of competence, so that the requirement for ongoing professional development declines systematically over four years.
5) Access to online communities of practice, through which educators in Dominica can share knowledge, resources, and experiences, as well as seeking support from their peers.

3.2.2 Dominica ICT Professional Development Framework for Educators

The Dominica ICT Professional Development Framework for Educators can be presented diagrammatically as follows:

Figure 2Dominica ICT Professional Development Framework for Teachers



The Dominica ICT Professional Development Framework for Educators will incorporate various professional development courses as outlined in Table 1 below.

Table 2 Professional Development Courses

Course and Launch Date	Target Audience	Provider	Methodology, Duration, Frequency	Outcomes
Commonwealth Certificate for Teacher ICT Integration	Curriculum Officers Education Officers State College Lecturers Selected Teachers who are ICT Champions (if feasible)	COL	320 Notional Learning hours over 18 months Predominantly online, with very limited face-to-face interaction New enrolments annually	Successful attainment of competences at Knowledge Deepening Level of UNESCO ICT CFT See curriculum of CCTI for detailed learning outcomes
Associate Degree Programme Modules (Primary, Secondary, and ECD teachers) September, 2012	Enrolled pre-service and in-service teachers	Dominica State College	180 notional learning hours over 2 years Blended learning – limited face-to-face workshops, combined with online learning, and follow-up in-class assessment activities	Successful attainment of competences at Knowledge Deepening Level of UNESCO ICT CFT
Certificate Programme in ICT in Education	Enrolled in-service teachers	Dominica State College	450 notional learning hours over 1 year Blended learning – limited face-to-face workshops, combined with online learning, and follow-up in-class assessment activities	Successful attainment of competences at Knowledge Creation Level of UNESCO ICT CFT
Technology Literacy for Teachers July, 2012	In-service teachers at Basic ICT Readiness level during two-week holiday courses (with in-school activities after course)	Dominica State College, Curriculum Officers, and Canadian Partners	90 notional learning hours over 6 weeks Blended learning – limited face-to-face workshops, combined with online learning, and follow-up in-class assessment activities	Successful attainment of competences at Technology Literacy Level of UNESCO ICT CFT Ideally, successful teachers will move onto to complete 'Knowledge Deepening for Teachers' the year after they complete this course
Knowledge	In-service teachers at	Dominica State	120 notional learning hours over 6	Successful attainment of

Course and Launch Date	Target Audience	Provider	Methodology, Duration, Frequency	Outcomes
Deepening for Teachers July 2013	Technology Literacy level during two-week holiday courses (with in-school activities after course)	College, Curriculum Officers, and Canadian Partners	months Blended learning – limited face-to-face workshops, combined with online learning, in-class assessment activities, and school support visits Twice annually	competences at Knowledge Deepening Level of UNESCO ICT CFT
ICT Integration for Administrators July, 2012	School Administrators	Dominica State College	60 notional learning hours over 6 months Blended learning – limited face-to-face workshops, combined with online learning, in-class assessment activities, and school support visits Once-off implementation, with multiple cohorts, to ensure that all schools develop ICT Integration Plans	Competences defined for principals in ISTE[4] All participating schools will be expected to produce a functional ICT Integration Plan as part of their overall School Plan as a core outcome of this course
SSTC course April, 2013	Students	Technology Coordinators	24 notional hours of learning over three days, with follow-up online support and support from ICT Technicians On demand at schools	See SSTC Toolkit

[4] See http://www.iste.org/standards/nets-for-administrators.aspx.

3.3 Targets for the Professional Development Implementation Plan

Notional targets for each in-service professional development course are presented in table two. It is important to note that a key constraint in enrolments is the number of mentors available to facilitate courses (numbers below are based on an assumption that each group of 20 students will require one mentor/facilitator).

Table 3 Notional In-Service Course Enrolments

In-Service Course	2012	2013	2014	Total
CCTI	25	25	25	75
Associate Degree Programme Modules	80	80	80	240
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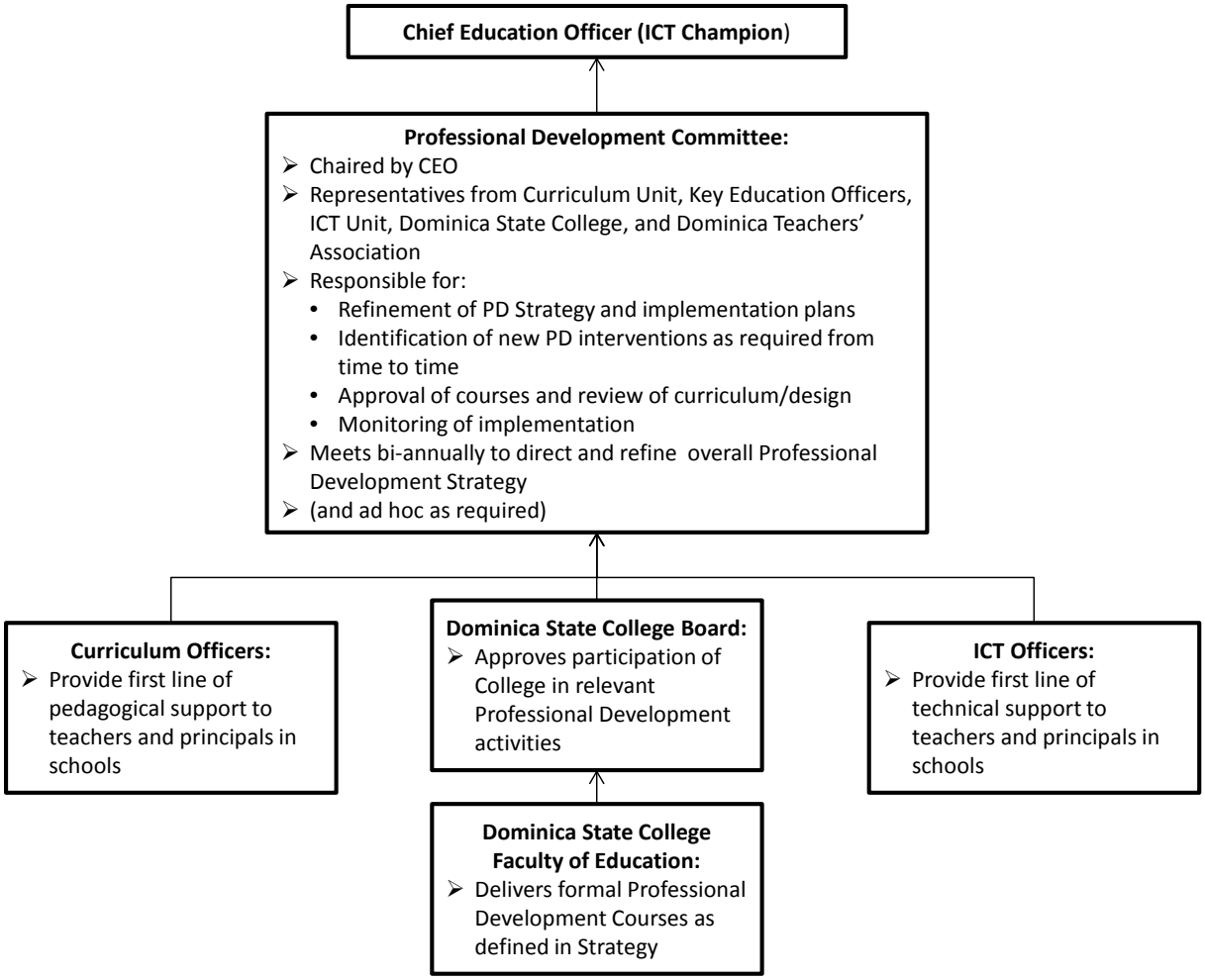
Technology Literacy for Teachers	75	100	100	275
Knowledge Deepening for Teachers	N/A	50	50	100
ICT Integration for Administrators	40	40	N/A	80
SSTC course	180	360	720	1,260

3.4 A Management Structure for the Implementation Plan

A simple management structure is proposed for the Professional Development Strategy, which envisages the MOEHRD assuming overall oversight responsibility for Implementation and is in line with structures already in place in the country.

The management structure can be represented diagrammatically as follows:

Figure 3ICT Professional Development Management Structure



As can be seen, the above structure requires input from various players, whose roles are summarized in the table below:

Table 4 Roles of Key Agencies

Agency	Roles
Dominica State College	• Coordinate development and refinement of PD Strategy/plan, as directed by Professional Development Committee • Facilitate professional development courses as identified in Framework • Manage enrolments onto courses • Design, establish, maintain monitoring system to ensure progress towards targets • Lead course design process • Ensure that Associate Degree programmes incorporate courses to enable trainee teachers to attain at least a 'Knowledge Deepening' level by graduation • Ensure that Certificate Programme in ICT in Education enables graduates to attain at least a 'Knowledge Deepening' level by graduation • Possible development and provision of a menu of in-service courses (aligned with requirements of PD strategy) as agreed with Professional Development Committee

Agency	Roles
Curriculum Unit	• Provide first-level pedagogical support to teachers and principals in schools • Provide overall guidance on infusion of ICT into subject teaching in Dominica • Provide inputs into course design activities • Play key role in monitoring impact of Professional Development Strategy
ICT Unit	• Provide first-level technical support to teachers and principals in schools • Lead the rollout of implementation of SSTCs in schools • Provide inputs into course design activities • Play support role in monitoring impact of Professional Development Strategy
Dominica Teachers' Association	• Mobilize membership to participate in relevant professional development activities • Make available July workshops for delivery of structured courses in Technology Literacy and Knowledge Deepening • Provide inputs into course design activities
COL/COMSEC	• Key inter-governmental organizations, with strong interest in, and history of, supporting education in Dominica • Able to offer technical assistance and support to the Strategy • Have an interest in replicating similar approaches in other countries if they are successful • Able to offer access to educational resources and materials that may be useful in the Plan, particularly – but not only – through the CCTI and CCNC, as well as other similar work in the Caribbean
Microsoft	• Key technology company, with strong interest in, and history of, supporting education in Dominica • Currently a partner of COL and ComSec • Able to offer technical assistance and support to the Strategy • Able to offer access to educational resources and materials that may be useful in the Implementation Plan • Has an interest in replicating similar Strategies in other countries if it is successful

3.5 Logical Framework

The Strategy design is summarized in the logical framework presented below:

	Indicators	*Sources of verification*	*Risks/Assumptions*
General Objective			
Ensure that all education officers, school administrators, teachers, teacher educators, and Ministry officials are competent to harness ICT effectively to support high quality teaching and learning in Dominica schools			
Strategy Objectives			
• Implement a structured, coherent ICT Competency Framework for Educators in Dominica, providing clear learning pathways through to the Knowledge Creation level of the UNESCO ICT CFT • Design and operationalize all necessary courses and modules, with underpinning high quality educational materials, to provide necessary learning pathways to Dominica teachers and other key personnel • Deliver initial and ongoing professional development opportunities to drive ICT integration in Dominica			
Results			
1) Design of Professional Development courses completed	• Capacity audit of Curriculum & ICT Officers and State College lecturing staff completed by March, 2012 • Needs assessment for principals' training completed by April, 2012 • Capacity audit of teachers and all other MoE personnel by December, 2012 • Technology Literacy course and materials completed and ready for holiday implementation by June, 2012 • ICT Integration for Principals course and materials completed and ready for implementation by September, 2012 • Knowledge Deepening course and materials completed and ready for holiday implementation by June, 2013 • SSTC course ready for use by January, 2013 • Associate Degree Programme modules aligned to UNESCO ICT CFT Technology Literacy and Knowledge Deepening Levels by August, 2012	• Capacity audit reports • Course curricula • Course materials • Online OER repository	• Existing courses from around the world can be identified and adapted for local delivery in Dominica • State College ICT infrastructure and connectivity will be upgraded to support growing demand from courses • A stable hosting environment will be established for Moodle to enable development of blended learning courses • Commitment is secured from all relevant parties to share curricula and materials online • Any emerging copyright issues can be resolved to enable release of materials under appropriate Creative Commons licences • Curriculum Officer job descriptions are reviewed and streamlined to create space to discharge ICT Integration support responsibilities effectively • Curriculum Officer travel stipends are

	Indicators	***Sources of verification***	***Risks/Assumptions***
	• Certificate Programme in ICT in Education developed and aligned to Knowledge Creation level of UNESCO ICT CFT by September, 2012		revised to enable sufficient in-school support can be provided
2) Implementation of professional development activities	• Interested Curriculum Officers and College lecturing staff enrolled in CCTI by end March, 2012 • In-service PD targets achieved annually (see table 2 above)	• Curriculum documents • Course materials • Course delivery schedules • Monitoring reports • Certificates of completion	• Lecturing staff and Curriculum Officers required for implementation of ICT Professional Development Strategy successfully complete CCTI and are available to function as mentors • Financial resources are secured to support implementation of new courses • Staff are released to complete courses • Staff participation in courses is sufficiently sustained to ensure successful completion
3) Monitoring system established	• Design of monitoring system and accompanying capacity audits forms completed by July, 2012 • Monitoring system kept up to date in real time and made accessible to key players online as professional development activities are completed • External evaluation of progress with implementation of ICT Professional Development Strategy for Educators in Dominica completed biennially, with first report completed in June, 2013 • Biennial evaluation activities completed	• Capacity audit instruments and report • Monitoring system design • Monitoring system reports • Evaluation reports	• Difficulties in accessing schools do not inhibit completion of baseline survey by identified deadline • Monitoring system can be hosted and accessed online • All participating organizations commit to logging activities within monitoring system to enable real-time monitoring

3.6 Activity Schedule

Drawing from the above Logical Framework, the following high-level schedule of activities for the defined Results has been prepared. Deadlines assume a start date of 1st March, 2012:

Activity	Deadline
1. Design of Professional Development courses completed	
For each course:	
1.1. Appoint consultant to support course development	Variable deadlines for each course
1.2. Complete scan of existing courses and materials that can be harnessed to create course	
1.3. Complete development of initial version of course, through adaptation of existing course materials in consultation with relevant stakeholders	
1.4. Pilot draft course and gather feedback from participants	
1.5. Review and improve course based on feedback from pilot	
1.6. Complete final packaging for course	
1.7. Ensure copyrights are cleared to enable released of course materials as OER	
1.8. Release course materials online via ComSec/COL repository	
2. Implementation of professional development activities	
2.1. Identify 25 new participants to enrol in CCTI to develop local capacity	Every six months, commencing March, 2012
2.2. Implement rolling programme of professional development, based on design of mentor support programme to achieve targets for professional development across all courses	Ongoing
3. Monitoring system established	
3.1. Appoint local research agency/consultant to complete baseline study of ICT competence of teachers and other relevant personnel	1st July, 2012
3.2. Prepare/adjust survey instruments	15th July, 2012
3.3. Pilot and refine survey instruments to ensure they work successfully	31st July, 2012
3.4. Administer survey	30th September, 2012
3.5. Compile results of survey and complete necessary analysis to identify key skills gaps	31st October, 2012
3.6. Use baseline survey to design appropriate monitoring system within MoEHRD, in consultation with all key players	30th November, 2012
3.7. Build monitoring system based on design	31st December, 2012
3.8. Ongoing input of data into monitoring system by key parties to ensure real-time monitoring of progress	Ongoing
3.9. Quarterly reports circulated on status of implementation	Ongoing
3.10. Identify evaluation agency to complete biennial external evaluation	1st January, 2013
3.11. Evaluation agency to prepare detailed implementation plan for evaluation process for approval by MoEHRD	31st January, 2013
3.12. Evaluation agency to implement plan and prepare annual evaluation reports for submission by 30th June every two years	Ongoing

3.7 Monitoring and Evaluation Strategy

As can be seen from the above logical framework and activity schedule, provision has been made for ongoing monitoring and evaluation of the ICT Professional Development Strategy for Educators in Dominica. It is envisaged that this will comprise three key elements:

4) Completion of a detailed baseline survey to determine the level of ICT competence of teachers in Dominica during 2012;
5) Design, development, and maintenance of a Monitoring System designed to track delivery of capacity building in response to the gaps identified in the baseline survey, updated in real time by the agencies delivering professional development, so that progress in delivery can be monitored on an ongoing basis;
6) Commissioning in the second year of implementation of a comprehensive external evaluation study, with biennial formative evaluation reports designed to feed into and improvement implementation of the ICT Professional Development Strategy for Educators in Dominica.