THE COMMONWEALTH OF LEARNING'S

ICT IN EDUCATION ACTIVITY

IN 3 CARIBBEAN COUNTRIES

AN EVALUATION REPORT

Prepared for the Commonwealth of Learning

by

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CONTENT

ACRONYMS

ADSL	Asymmetric Digital Subscriber Line (also DSL)
CAPE	Caribbean Advanced Proficiency Examination
CARADOL	Caribbean Association for Distance and Open Learning
CARICOM	Caribbean Community
CATWOE	Customers-Actors-Transformation Process-World View-Owner-Environmental Constraints
CCTI	Commonwealth Certificate on Teacher ICT Integration
CDB	Caribbean Development Bank
CFT	Competency Framework for Teachers
COL	Commonwealth of Learning
ComSec	Commonwealth Secretariat
CPCE	Cyril Potter College of Education (Guyana)
CXC	Caribbean Examination Council
DE	Distance Education
DOE	Department of Education
EEC	Education Evaluation Center
ETRC	Education Technology Resource Centre
FCC	Federal Communication Commission
GCE	General Certificate of Education
GER	Gross Enrolment Ratio
HDI	Human Development Index (UNDP)
ICT	Information and Communication Technologies
ICT4E	ICT in Education
NCERD	National Centre for Education Resource Development
ODL	Open and Distance Learning
T&T	Trinidad and Tobago
UNESCO	United Nations Education Scientific and Cultural Organisation

EXECUTIVE SUMMARY

This report is a qualitative summative evaluation of the ICT in Education (ICT4E) Activity of the Commonwealth of Learning (COL) in the Caribbean. It specifically examines COL's ICT4E Activity in 3 Caribbean countries: The Bahamas, Guyana and Trinidad and Tobago during 2009 to 2011. The ICT4E Activity is part of COL's Three-Year Plan which contains 2 major programme sectors: the Livelihoods and Health Programme Sector and the Education Programme Sector. Each programme sector contains 4 initiatives. The ICT4E Activity which is the focus of this evaluation, cuts across both programme sectors in that it is linked to the eLearning Initiative in the Livelihoods and Health Programme Sector and the Open Schooling and Teacher Development initiatives in the Education Programme Sector. The COL Three Year Plan and its 2 Programme Sectors are centred on 5 core strategies which are inter-related namely: Policy Support, Capacity Building, Models, Partnerships and Materials Development. This evaluation is focused on how the ICT4E Activity has implemented these 5 inter-related core strategies in the 3 Caribbean countries.

The evaluation framework draws on the conceptual and design approaches already adopted by COL who has embraced Monitoring and Evaluation within a Results Based Management approach. The evaluation drew on the findings of a previous Survey on ICT in Education conducted by infoDev in 2009 as well as a Handbook on COL's approach to Results Based Monitoring and Evaluation. Qualitative data gathering techniques have been used which include face-to-face and skype interviews, focus group discussions, meeting observation, lesson observation site visits and document reviews.

The goal of the evaluation is to explore the effectiveness of COL's ICT4E Activity in 3 Caribbean countries: The Bahamas, Guyana and Trinidad and Tobago during 2009 and 2011. The primary evaluation question is: How effective has COL's ICT4E Activity been in these 3 focus countries during 2009 to 2011?

The evaluation findings show that COL's ICT4E Activity has been successful and has been effective in each of COL's 5 core strategies in all 3 countries. This effectiveness is evident from the way the Activity has catalysed positive and progressive change in the awareness, knowledge, competencies and power among the key stakeholders and participants in COL's ICT4E Activity in varying degrees in each of the 3 countries based on their individual local contexts. The evaluation provides evidence using COL's logframe analysis of the ICT4E Activity and compares intended outcomes with actual achievements during the period under review, in each country and in each of the 5 core strategies.

The evaluation found that COL has given support to the implementation of ICT in Education policy in each of the 3 countries and that here the focus has been on teacher professional development in ICT integration. In Guyana for example, COL has partnered with ComSec, Microsoft and the World Bank to develop a Framework for the Professional Development of Teachers in ICT Integration. This process also includes the implementation of the framework by supporting the development of course modules.

The evaluation found that with reference to the development of replicable models, building capacity and materials development, COL's ICT4E Activity has been instrumental in developing a model of teacher professional development and ICT integration which draws on international good practice in its design and implementation. This course is referred to as the Commonwealth Certificate on Teacher ICT Integration (CCTI) and currently it's Orientation Programme is being implemented in The Bahamas and Trinidad and Tobago with significant commitment and support by both Ministries of Education. Sizeable numbers of teachers, school leadership and Ministry of Education officials are participating in the Orientation Programme which is designed to train participants to become tutors as well. The evaluation found that in this respect, the COL ICT4E Activity has been successful and effective in catalysing a sustainable teacher capacity building programme and that the materials that have been and are being developed for the CCTI are open education resources (OER).

Futhermore, the COL ICT4E Activity has been effective in fulfilling the partnership development strategy of COL by growing and strengthening relationships with strategic partners in government locally, in the international private sector such as Microsoft, in the development sector such as the World Bank and ComSec. Similarly, the partners also perceive their relationship with COL as being positive and mutually reinforcing. At the same time there is clear visibility of COL's contribution as far as local in-country stakeholders are concerned.

The evaluation was found to be reliable, credible and trustworthy. It has also demonstrated the relevance of the key finding that the COL ICT4E Activity is effective and how this relates to different stakeholder groups. In this respect, the evaluation also shows how the effectiveness of the COL ICT4E Activity holds positive implications for different stakeholders.

The evaluation recommends that more attention be paid to building on existing monitoring and evaluation reports by developing a more comprehensive Monitoring and Evaluation framework and suggests performance indicators for consideration in the core strategic areas. It also recommends that COL considers closer collaboration with other development agencies who are reportedly

investing in teacher development and ICT integration in the Caribbean. It also recommends that more consideration be given to the challenge of continued teacher support and teacher attrition in the region.

Given the success of the ICT4E Activity in the 3 Caribbean countries, the evaluation findings further suggest that important lessons can be drawn from this to support further work of COL in the Caribbean and the rest of the Commonwealth.

THE COMMONWEALTH OF LEARNING'S

ICT IN EDUCATION ACTIVITY

IN 3 CARIBBEAN COUNTRIES

AN EVALUATION REPORT

CHAPTER ONE: BACKGROUND AND CONTEXT

This report is a qualitative evaluation of the ICT in Education (ICT4E) Activity of the Commonwealth of Learning (COL) in the Caribbean. It specifically examines COL's ICT4E Activity in 3 Caribbean countries: The Bahamas, Guyana and Trinidad and Tobago during 2009 to 2011.

The rationale for conducting this evaluation stems from COL's commitment to continuous improvement in the work that it does. Whilst COL has partnership agreements with a number of organisations on the work that it does, COL also wants to be able to determine the developmental outcomes that can be fairly attributed to its interventions as distinct from those of its partners. For this reason, COL has committed to embedding Monitoring and Evaluation (M&E) within their plans and strategies. In so doing, COL also commits to the provision of evidence-based reporting to its stakeholders and partners.

1.1 COL's Three-Year Plan (2009-2012)

These commitments are expressed in COL's latest 3-Year Plan (2009-2012) entitled '*Learning for Development*'. The 3-Year Plan reaffirms COL's mission which is " *to help governments and institutions expand the scope, scale and quality of learning by using new approaches and technologies, especially those subsumed under the general term of open and distance learning (ODL)"* (COL, 2009).

Drawing on the experiences of the preceding triennium (2006-2009) when it had 2 major programmes with 15 initiatives, COL has streamlined this triennium's strategy to focus on 2 major programme areas which are *Education* and *Livelihoods & Health,* with each containing 4 inter-related initiatives. Gender, quality and appropriate technologies are integrated as cross-cutting

themes. The focus of the Education Programme Sector is to help countries improve the scope, scale and quality of formal instruction at all levels through the use of learning technologies to extend and improve their educational systems and of the Livelihoods and Health Programme Sector to help communities improve the livelihoods and health of their members by using technologies to enhance skills, share knowledge and develop new economic opportunities (COL, 2009:22). COL's 2 Programme Sectors are pursued through 5 core strategies:

- *Partnerships:* Fostering sustainable partnerships and networks in support of the organisation's programmatic goals;

- *Models:* Refining and sharing models for applying teaching and learning technologies to development challenges;

- *Policies:* Assisting countries and organisations to develop and implement policies that support technology-mediated learning;

- *Capacity:* Facilitating training and organisational development to increase the overall ability of partners to deploy learning systems and technologies effectively; and

- *Materials:* Working with partners to co-create learning materials and make them widely available (COL, 2009)

Figure 1 provides a diagrammatic overview of COL's 3-Year Plan.

Figure 1: Overview of COL's 3-Year Plan
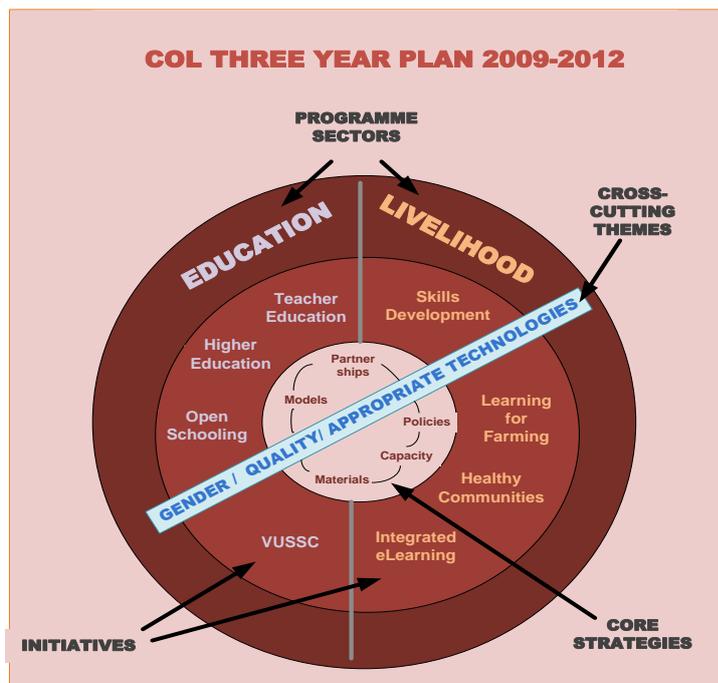
Source: COL Three Year Plan 2009-2012

Evidently, Figure 1 shows that COL has an integrated programme which is centered around its 5 core strategies.

As shown in Figure 1, COL's *Integrated eLearning Initiative* falls under the Livelihoods and Health Progamme Sector. However COL's ICT in Education in the Caribbean Activity (referred to as the *ICT4E Activity* in this report) is a cross-sectoral activity which is mainly embedded within the broader Education Programme Sector and is inter-related across the 3 initiatives within this broader programme sector. This is shown in Figure 2 below:

Figure 2: Where the ICT4E Activity Sits within COL's 3-Year Plan
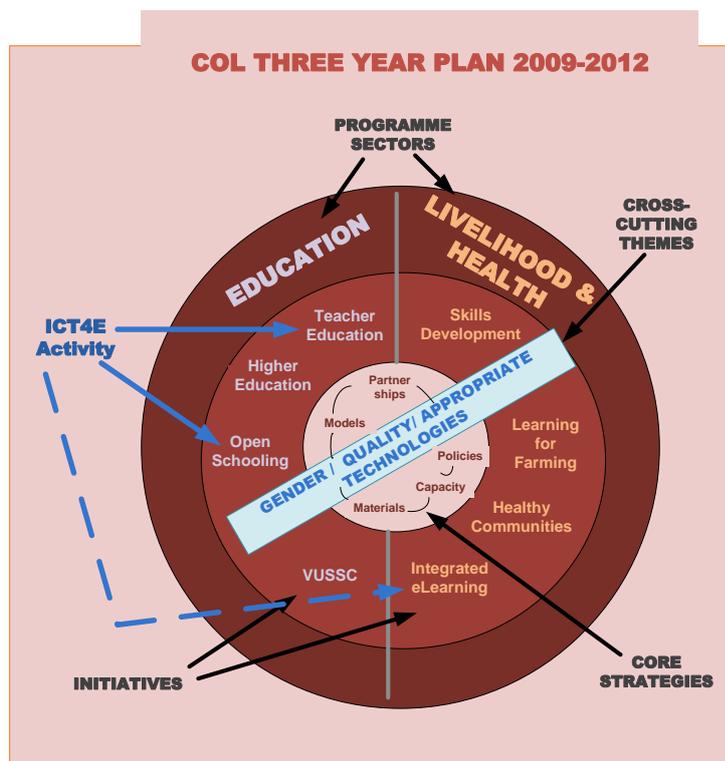
Source: COL Three Year Plan 2009-2012

Figure 2 shows how the ICT4E Activity for the purposes of this report on the 3 Caribbean countries also worked within the 2 initiatives in the Education Programme Sector but which is also organically linked to the Integrated eLearning Initiative in the Livelihood and Health Programme Sector. The consistent reference to the integration of technology/ICT/eLearning within the 5 core strategies, also reflects the embeddedness of the organisation's ICT4E Activity.

To contextualise its Initiatives to fit the unique needs of each country, COL develops individual Country Action Plans after extensive consultations with Ministers, Focal Points and partner institutions. COL's ICT4E Activity in each of the 3 focus countries of this evaluation, would therefore be incorporated into a broader country plans for The Bahamas, Guyana and Trinidad and Tobago.

1.2 Programme Management

COL translates its mission through a results-based management (RBM) logic model which is a life-cycle approach to management. RBM focuses on achieving results, implementing performance measurement and using the feedback mechanisms such as monitoring and evaluation to enable the organisation and its stakeholders to learn and change. Through this approach, COL designs their initiatives/activities in such a way that expected results are realistically defined, risks are identified and managed, lessons are learned and integrated into decisions. RBM is an attempt to shift away from the narrow focus on inputs, activities and outputs and considers results, outcomes and over a longer term, impact based on continuous learning and improvement which is supported by monitoring and evaluation (Farrell, 2009).

COL's use of the RBM logic model of planning, lays out the expected long and intermediate-term results (impacts and outcomes) over the three-year period. Outputs and activities, and the inputs needed to achieve them, are set out annually in log frames that are integrated with the logic model and are specific to each initiative. The log frames are regularly updated and include detailed performance indicators.

COL adopted the RBM model in its 2003-2006 Three Year Plan which led to an increase in the integration of M&E in subsequent 3-year plans.

1.3 COL'S ICT4E Activity in the Caribbean

The RBM model was similarly used as a planning tool for the development of COL's specific ICT4E Activity in the Caribbean. The ICT4E Activity falls under the eLearning initiative. For the purpose of developing activities to achieve the outcomes set in the 3-Year Plan, eLearning has been defined as:

Learning that is achieved, supported and managed through the use of electronic information provision, services and systems'. It includes 3 dimensions:

- 'Technology' expanded to Information and Communication Technologies that includes cost-effective and manageable means of management, delivery and capacity building to use it effectively;
- 'Learning' expanded to management, learning and teaching enhanced by the use of, supported and managed through the use of modern technologies and methodologies; and
- The enabling environment (management, cost-effective systems and effective support mechanisms).

A high level overview of the ICT4E Activity's logframe is summarised in Table 1 on the next page.

Table 1: Overview of COL's eLearning Commitments 2009-2012 (relevant to the ICT4E Activity

1 July 2009 to 30 June 2012
Initiative Outcome:
Governments, institutions, individuals and communities:
• use digital technologies;
• design and develop learning materials that are made available, where possible, as open education resources;
• apply low-cost ICT training models;
• provide effective and appropriate skills training.

Goals (Activity Description)	Inputs	Activities (Actions)	Outputs	Performance Indicators	Means of Verification	Risks (both initiative and activity relevant to ICT4E)	Assumptions
1 July 2009 – 30 June 2010[1] **Activity: Provide Technology Support for eLearning**							
To provide technology support for eLearning in the following ways: • Develop training models for the use of ICT in teaching and learning • Develop technology models for the integration of ICT in teaching and learning	• Dedicated COL Education Specialist • COL budget and resources • Development partners and their resources and budget • COL consultants and service providers	1. Develop, accredit and implement basic ICT skills training (CCNC) 2. Promote and implement Teacher Development in ICT in Education 3. Develop a Teacher Qualification for ICT in Teaching and Learning	1. The Commonwealth Educators' Network[2] – Advanced Certificate Course in ICT Integration for teachers in recognized and adopted by 2 institutions 2. Students are enrolled for the Teacher Qualification for ICT in Teaching and Learning (ACE in ICT Integration) for 2010/11.	At least 2 institutions recognise the Commonwealth Educators' Network and enrolled students for 2010/2011	• Number of institutions recognising the Commonwealth Educators' Network	• Country capacity to adopt ICT in education • Country capacity to provide enabling infrastructure, capital investment and ensure sustainability • Commitment from institutions to participate • Institutional readiness and ability to absorb a new qualification • Level of ICT skills of participants	• Countries, institutions, individual and COL shares a common vision and goal for the activities to take place • Management structures are in place and people are assigned and committed to participate in COL activities. • Countries have the capacity to provide enabling infrastructure, capital

[1] ES:eLearning was appointed on 1 Sept 2009. New logframes were developed after her appointment.
[2] Initially the CCTI was branded as The Commonwealth Educators' Network/Advance Certificate Course in ICT integration for teachers/ACE in ICT integration. All used as synonyms.

Goals (Activity Description)	Inputs	Activities (Actions)	Outputs	Performance Indicators	Means of Verification	Risks (both initiative and activity relevant to ICT4E)	Assumptions
							investment and ensure sustainability. • Governments and institutions are ready and able to absorb changes in programmes and qualifications. • Commitment from institutions to participate - time, financial resources and human resources.
Activity: Development and use of Open Educational Resources							
To develop an understanding for the use of OER Content for eLearning	SAME AS ABOVE	SAME AS ABOVE	Teacher training materials are published as OER for the integration of ICT into teaching and learning	• An increased number of OER published	• Number of OER published	• Country capacity to adopt ICT in education • Country capacity to provide enabling infrastructure, capital investment and ensure sustainability • Commitment from institutions to participate • Availability of a platform/technical solution to publish materials • Availability and agreements by consultants	SAME AS ABOVE
Activity: Capacity Building							
To build capacity for eLearning at the following levels:	SAME AS ABOVE	1. Promote and implement Teacher Development in ICT in	1. Competency Framework for Teacher Development in ICT	• Competency Framework and Guidelines for Teacher	• Publication of Competency Framework and	• Institutional capacity to adopt the courses and to enroll students.	SAME AS ABOVE

Goals (Activity Description)	Inputs	Activities (Actions)	Outputs	Performance Indicators	Means of Verification	Risks (both initiative and activity relevant to ICT4E)	Assumptions
• Government • Institutions • Individuals		Education 2. Develop a Teacher Qualification for ICT in Teaching and Learning	integration into Teaching and Learning published. 2. Guidelines for Teacher Development in ICT Integration into Teaching and Learning published. Mentor training for the Teacher Qualification for ICT in Teaching and Learning (ACE in ICT Integration) initiated.	Development in ICT Integration into Teaching and Learning published and distributed to Commonwealth Countries. • Mentors are in training in 2 institutions for Teacher Qualification for ICT in Teaching and Learning (ACE in ICT Integration).	Guidelines for Teacher Development in ICT integration into Teaching and Learning published • Number of Institutions initialized mentor training for the Teacher Qualification for ICT in Teaching and Learning (ACE in ICT Integration)	• Level of mentors' ICT skills is low	

1 July 2010 to 30 June 2011
Activity: Increase Digital Literacy in Institutions and Communities

Goals (Activity Description)	Inputs	Activities (Actions)	Outputs	Performance Indicators	Means of Verification	Risks (both initiative and activity relevant to ICT4E)	Assumptions
To support individuals in institutions and communities to use ICT confidently and creatively to help develop the skills and knowledge that need to achieve personal goals and to be participants in the global community		No actions relevant to the ICT4E activity					

Activity: OER Content Development and Support

Goals (Activity Description)	Inputs	Activities (Actions)	Outputs	Performance Indicators	Means of Verification	Risks (both initiative and activity relevant to ICT4E)	Assumptions
To support higher education institutions, faculties and programmes to work within a		No actions relevant to the ICT4E activity					

Goals (Activity Description)	Inputs	Activities (Actions)	Outputs	Performance Indicators	Means of Verification	Risks (both initiative and activity relevant to ICT4E)	Assumptions
framework of open licensing models when undertaking development of new courses/materials and when updating or revising them							

Activity: Policy Support for Governments

Goals (Activity Description)	Inputs	Activities (Actions)	Outputs	Performance Indicators	Means of Verification	Risks (both initiative and activity relevant to ICT4E)	Assumptions
To provide governments with ICT in Education policy and implementation support in the integration of ICT in education and training systems to reap the maximum benefits at all levels of the system in improved student performance and enhanced quality of teaching and learning.	SAME AS ABOVE In addition: • Initial work in Guyana and Bahamas- • UNESCO Competency Framework for Teachers in ICT Integration (UNESCO CFT) • Collaboration with Microsoft and ComSec	1. Support Departments of Education[3] to develop an ICT in Education Strategy/Policy and implementation plans. 2. Develop and implement a Roadmap for Teacher Development in the Integration of ICT into Teaching and Learning in the Caribbean 3. Build teacher capacity in the integration of ICT into teaching and learning	1. Governments developed and implemented ICT in Education policies and strategies 2. Governments applied the Roadmap for Teacher Development in the integration of ICT into Teaching and Learning 3. There is an increased number of teachers that demonstrated the knowledge and skills to integrate ICT into teaching and learning	• At least 1 Government in Africa[4] has developed and implemented ICT in Education Strategies/Policies • Governments in 3 targeted countries in the Caribbean have adopted the Roadmap for Teacher Development in the Integration of ICT into Teaching and Learning • 3 Institutions in the Caribbean have adopted an approach to integrate ICT into teaching and learning	• Collect evidence from staff in the relevant Ministries and institutions • Collect documents that provide evidence that ICT in Education policies, strategies and implementation plans have been developed • Collect evidence from institutions on the adoption of an integrated approach to ICT in teaching and learning • Reports from consultants, Ministries and institutions	• Country capacity to adopt ICT in Education • Individual and institutional capacity to understand and absorb ICT in education activities. • Countries and institutions do not provide the necessary time, financial resources and human resources • High cost of consultancy in this field.	• Countries, institutions, individuals and COL share a common vision and goal for the activities to take place • Management structures are in place and people are assigned and committed to participate in COL activities • Countries have the capacity to provide enabling infrastructure, capital investment and ensure sustainability • Governments and institutions are ready and able to absorb changes in programme and qualifications

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[3] Departments of Education = Governments = Ministries of Education

[4] Has been amended because of the non-responsiveness of Seychelles to the Caribbean - Guyana

Goals (Activity Description)	Inputs	Activities (Actions)	Outputs	Performance Indicators	Means of Verification	Risks (both initiative and activity relevant to ICT4E)	Assumptions
							• Commitment from institutions to participate – time, financial resources and human resources
1 July 2011 – 30 June 2012[5]							
Activity: Increase Digital Literacy in Institutions and Communities							
To support individuals in institutions and communities to use ICT confidently and creatively to help develop the skills and knowledge that need to achieve personal goals and to be participants in the global community		No actions relevant to the ICT4E activity					
Activity: Activity: OER Content Development and Support							
To support higher education institutions, faculties and programmes to work within a framework of open licensing models when undertaking development of new courses/materials and when updating or revising them		No actions relevant to the ICT4E activity					

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[5] Although logframes have been developed up to June 2012, this report only covers results up to August 2011.

Goals (Activity Description)	Inputs	Activities (Actions)	Outputs	Performance Indicators	Means of Verification	Risks (both initiative and activity relevant to ICT4E)	Assumptions
Activity: Policy Support for Governments							
To provide governments with ICT in Education policy and implementation support in the integration of ICT in education and training systems to reap the maximum benefits at all levels of the system in improved student performance and enhanced quality of teaching and learning.	SAME AS ABOVE In addition: • Initial work in Guyana and Bahamas- • UNESCO Competency Framework for Teachers in ICT Integration (UNESCO CFT) • Collaboration with Microsoft and ComSec	1. 3 governments and institutions are supported to implement an ICT in Education Teacher Development Strategy/Policy and implementation plans 2. 1000 teachers in 3 Caribbean and I Asia countries' capacity increased in the integration of ICT into teaching and learning through the application of the CCTI model	1. 3 governments and 2 institutions developed and implemented ICT in Education policies and strategies 2. There is an increased number of teachers that demonstrated the knowledge and skills to integrate ICT into teaching and learning 3. 70 mentors trained in the Caribbean to implement the CCTI 4. 1000 teachers in the Caribbean completed a module of the CCTI	• At least 3 Governments have developed and implemented ICT in Teacher Development Strategies/Policies • 2 Institutions have adopted an approach to integrate ICT into teaching and learning • 70 CCTI mentors trained in the Caribbean • 1000 teachers trained in a module of the CCTI	• Collect evidence from staff in the relevant Ministries and institutions • Collect documents that provide evidence that ICT in Education policies, strategies and implementation plans have been developed • Collect evidence from institutions on the adoption of an integrated approach to ICT in teaching and learning • Reports from consultants, Ministries and institutions	• Country capacity to adopt ICT in Education • Individual and institutional capacity to understand and absorb ICT in education activities. • Countries and institutions do not provide the necessary time, financial resources and human resources • High cost of consultancy in this field.	• Countries, institutions, individuals and COL share a common vision and goal for the activities to take place • Management structures are in place and people are assigned and committed to participate in COL activities • Countries have the capacity to provide enabling infrastructure, capital investment and ensure sustainability • Governments and institutions are ready and able to absorb changes in programme and qualifications • Commitment from institutions to participate – time, financial resources and human resources

The logframes outlined in Table 1 provide insight into the COL ICT4E Activity's goals and intended outcomes for the period under review. It demonstrates how the plans contribute to the achievement of the organisation's goals and impact statements, and articulates these in the context of the core strategies around which COL's overall programme revolves: capacity, policy support, materials, partnerships and models.

Whilst the scope of the logframes covers a range of Commonwealth countries, for the purposes of this evaluation, these logframes will be a reference point for evaluating the activities in the 3 focus countries: The Bahamas, Guyana and Trinidad and Tobago. The logframes also articulates what success looks like from COL's perspective, taking into account factors that may constrain success. Evidently there is consistency in the articulation of programme outcomes across the different core strategies. It also provides some indication of timelines. At the time of writing this report, the ICT4E Activity had just passed the second year of the triennium and is now preparing for the final year of the triennium whilst at the same time preparing for the triennium to follow.

An important rationale for evaluation is that stakeholders have expectations of progress and require evidence of such progress. Whilst it is recognised that there are many different stakeholder groups and that within each there are different viewpoints, Table 2 (below) provides an overview of the 5 key groups of stakeholders with whom the COL ICT4E Activity engages. Table 2 captures their assumed world views and perspectives from the viewpoint of the consultant. It uses the CATWOE[6] tool drawn from Soft Systems Methodology to address the perspectives of different stakeholders involved in the ICT4E Activity (Checkland and Scholes, 1990).

Table 2: COL ICT4E Stakeholder Analysis

COL MANAGEMENT	
Who is this stakeholder group's CUSTOMER? In other words, who are this stakeholder group serving?	COL Board of Governors (BoG); Commonwealth Governments; COL Donor Partners
Who are the key ACTORS in this group's system	COL BoG; COL Management; Donor Partners, Commonwealth Governments, Commonwealth Education Institutions, COL Education Specialists; COL Support Staff; International Development Agencies servicing Commonwealth Countries; Private Sector agencies supporting education in Commonwealth Countries
How does this stakeholder group see the TRANSFORMATION of the system	Develop a 3 Year Plan to enable COL to achieve its vision, mission and goals related to improving the scope, scale and quality of education in the Commonwealth
What is their	That COL can make a difference to the education and development goals of

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[6] CATWOE is a simple checklist that can be used to stimulate thinking about problems and solutions

WORLD VIEW	Commonwealth countries as stated in their mission to expand the scope, scale and quality of learning by using new approaches and technologies
Who OWNS the system from their perspective	COL Board of Governors (BoG); Commonwealth Governments; COL Donor Partners
What is the ENVIRONMENT under which they work?	Challenged by growing resource constraints and an increasingly competitive environment amidst pressures for Commonwealth countries to meet their developmental goals

COL IMPLEMENTATION TEAM	
Who is this stakeholder group's CUSTOMER?	COL Management; Ministries of Education in Commonwealth Countries
Who are the key ACTORS in this group's system	COL Management; Ministries of Education; Other Ministries such as ICT and Finance; COL Partners; International Development Agencies working in Commonwealth Countries; Private Sector and NGOs working in Commonwealth Countries; Local Education Delivery Agencies; Consultants and Service Providers; Teacher Training Institutions, Schools
How does this stakeholder group see the TRANSFORMATION of the system	For the programme to be implemented effectively so that COL can help achieve its own as well as countries' goals, mission and vision. ICT can play an enabling role in improving and transforming national education systems.
What is their WORLD VIEW	Deliver on an effective programme on ICT in education which has strong positive impact on the national education systems in the Commonwealth – on management, administration, teaching and learning
Who OWNS the system from their perspective	COL Managers, Ministries of Education and COL BoG
What is the ENVIRONMENT under which they work?	Resource-and-capacity-constrained Ministries of Education; volatile global economic social and political systems; potentially competing interests among donor and development groups

MINISTRIES OF EDUCATION	
Who is this stakeholder group's CUSTOMER?	Teacher Training Institutions; Schools Government and Executive Government Agencies; International Development Institutions; Constituencies
Who are the key ACTORS in this group's system	Teacher Training Institutions; Schools Managers, School Principals, Teachers, Learners, Economic performance; Government; COL and development partners
How does this stakeholder group see the TRANSFORMATION of the system	Ministry can lead the transformation of education supported by ICT in partnership with development partners such as COL
What is their WORLD VIEW	Need to meet Education For All Goals and MDGs and is convinced that ICT can play an enabling role
Who OWNS the system from their perspective	Customers, other partners
What is the ENVIRONMENT under which they work?	Competitive, complex, challenging, resource stricken

EDUCATION INSTITUTIONS	
Who is this stakeholder group's CUSTOMER?	Parents, Learners, Teachers, School Management Student Teachers, Lecturers, TTI Management
Who are the key ACTORS in this group's system	Other teachers/lecturers, parents/guardians, learners/student teachers, school/TTI management, communities
How does this stakeholder group see the TRANSFORMATION of the system	Need to produce learners that can be employable in a changing labour market; need to produce teachers who have the competencies to teach within a transforming education context
What is their WORLD VIEW	That they need to develop sustainable competencies to respond to the demands of a changing labour market, education context and society
Who OWNS the system from their perspective	The Ministries of Education and National Governments
What is the ENVIRONMENT under which they work?	Often working under severe intellectual, human, technological and financial constraints
COL PARTNERS	
Who is this stakeholder group's CUSTOMER?	Their executive managements and governance bodies in respective organisations
Who are the key ACTORS in this group's system	Other COL Partners, COL, Ministries of Education, Education Institutions
How does this stakeholder group see the TRANSFORMATION of the system	Drive initial pilots to scale commercially and/or sustainably
What is their WORLD VIEW	There are valuable synergies that can be created through partnership with COL
Who OWNS the system from their perspective	Their Senior Executives and Governance Bodies
What is the ENVIRONMENT under which they work?	Increasingly competitive and unpredictable environment amidst challenges to reaching development goals

The purpose of the stakeholder analysis in Table 2 is to demonstrate the multiple perceptions and viewpoints of the same reality related to the COL intervention on ICT in education in the 3 Caribbean focus countries. The attempt is made when conducting the evaluation to include these different perspectives to help COL and its partners understand what makes the ICT4E Activity successful or not. Evidently Table 2 shows that the COL implementation team who is responsible for delivering the ICT4E Activity in the 3 Caribbean focus countries, has to consider the interests and aspirations of a range of key stakeholders. It also shows that there are often both shared and potentially divergent views and interests that need to be managed when focusing attention on the intended outcomes of

the ICT4E Activities and making an impact on the education systems in each of the countries in the long run.

1.4 Rationale for an Independent Evaluation

COL has proposed that an independent evaluation be conducted of its ICT4E Activity in this triennium thus far. Such an independent evaluation is intended to provide qualitative data on the ICT4E activities and highlight the key lessons from which COL can learn in order to improve implementation in the remaining period.

The purpose originally was to develop a longitudinal study as part of a long term impact assessment of the performance of the activities. Given both the timeframe provided for this evaluation and the timeframe within which the activities have been implemented thus far, that is, over 2 years of the 3-year triennium, a longitudinal study or an impact assessment may be premature. It was also felt that since the purpose of a longitudinal study would be to track progress over a number of years, it will not make sense to conduct a longitudinal study retrospectively but instead to use this evaluation as a basis for developing a framework for a longitudinal study over the coming period.

Furthermore, whilst COL has demonstrated and implemented its commitment to Monitoring and Evaluation at many levels in the organisation, this can be expanded towards a comprehensive M&E framework for its eLearning Initiative within countries. This means that there are at this stage, the outcomes and impact indicators against which the long term impact of the COL's eLearning Initiative can be evaluated and measured in a continuous, evolving and sustainable way.

This evaluation exercise is intended as an independent evaluation of the performance of COL's ICT4E Activity over more or less 2 years of this triennium in the 3 Caribbean countries. In this sense it could serve as a starting point towards such a proposed comprehensive M&E framework for the eLearning Initiative more broadly in each country and collectively in the Caribbean region (as other countries come on board).

This evaluation also indicates whether the COL ICT4E Activity in the three countries is working effectively, whether it is recognised and visible to stakeholders in the three countries; the extent to which improvements in the education programmes of the three countries can be attributed to the contribution made by the COL ICT4E Activity and if so, how this attribution is realised.   The intended impact of such a comprehensive framework over time is shown in Figure 3 (next page).

Figure 3: Desired Impact of a Comprehensive M&E Framework

POTENTIAL EFFECTS IF
THE CURRENT M&E
FRAMEWORK DOES
NOT TRANSLATE INTO
A COMPREHENSIVE
M&E FRAMEWORK
FOR COL'S SPECIFIC
ICT4E ACTIVITY

DESIRED IMPACT OF A
COMPREHENSIVE M&E
FRAMEWORK FOR
COL'S ICT4E ACTIVITY

Level of
EFFECTIVENESS
of COL's
eLearning Initiative

TIME
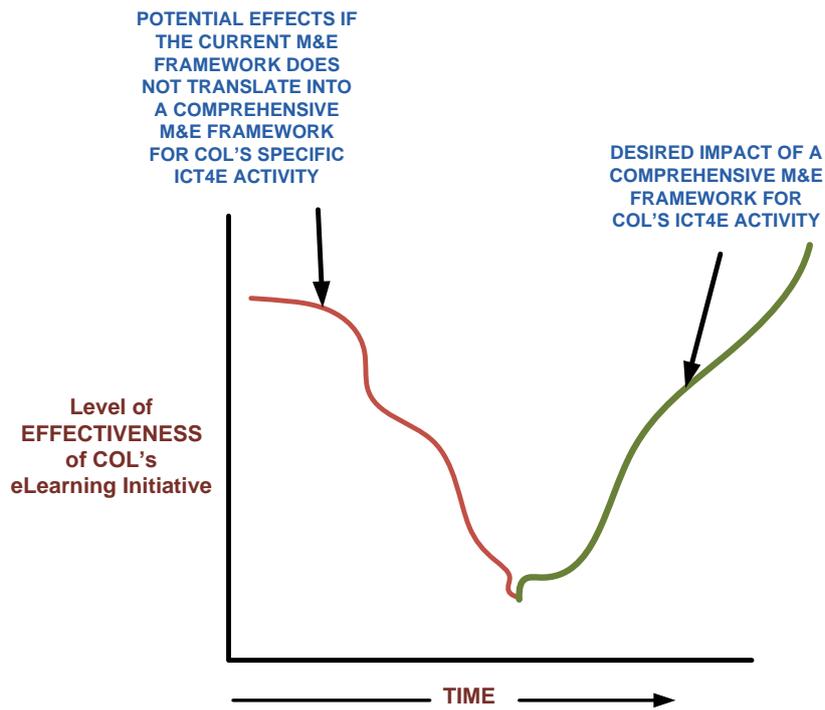
In an attempt to become such a starting point, the framework for this evaluation is explained next.

CHAPTER TWO: EVALUATION FRAMEWORK

The Commonwealth of Learning has done extensive work on framing its approach to Monitoring and Evaluation. In 2009 COL produced a Handbook on its approach to Results-Based Monitoring and Evaluation (Farrell, 2009). Here COL explains the challenges it faces and how it hopes an M&E framework can help address some of these challenges. These include:

1. Defining and verifying the results of COL's work by providing evidence-based reporting that accords with stakeholder expectations.

2. Capturing data relating to the cross cutting themes particularly gender related outcomes.

3. Improve COL's ability to assess and describe the impact of its interventions and the extent to which this impact can be attributed to COL's specified interventions relative to that of its partners.

On this basis COL began a process of developing an M&E Framework that tries to address some of these challenges. This framework has helped to define more clearly how COL envisages M&E and how COL integrates M&E within its Results Based Management approach to programme planning and implementation.

2.1 COL Approach to Monitoring and Evaluation

For COL, **Monitoring** is a process that systematically collects data against specified indicators at each stage of the cycle to enable decisions about:

- whether or not to proceed with a programme initiative;
- the appropriateness of the results described in the initial logframe;
- the need to revise the planned and ongoing activities and/or inputs; and
- whether or not to continue the implementation of a programme initiative.

Monitoring is a continuous process that provides evidence-based reporting about programme progress and input utilisation to stakeholders (Farrell, 2009).

This definition concurs with the view held at a pre-evaluation workshop held in Cochin India with the researcher and representatives from The Bahamas and Guyana on 24 November 2010 (Van Wyk, 2011). Here monitoring was considered to be "*about tracking what is being done, how this is being done, and how this articulates with the set objectives of an observed initiative*" .

If this definition of monitoring is applied, it means that this exercise related to examining the ICT4E Activity of COL in the 3 Caribbean countries, is not a monitoring exercise. However, from this process may emerge a need to revise the planned and ongoing activities and inputs.

For COL, **Evaluation** is not ongoing. An evaluation study is an in-depth analysis, usually undertaken at an advanced point in the programme planning cycle, in order to answer some specific question(s) about the progress of a programme initiative such as:

- the achievement of intermediate or long-term results;
- the reasons why a programme initiative did or did not succeed; and
- to decide if a programme initiative should be continued.

The information gleaned from evaluation studies contributes to an organisation's overall monitoring strategy. This also concurs with the view on evaluation held at the pre-evaluation workshop in Cochin, India where evaluation is understood to reflect on whether the strategies adopted by an initiative are the most effective and considers how they could be improved or changed. It may draw on monitoring and research data to evaluate success and/or failure of particular elements of an initiative and how these can be tackled for the successive period of implementation.

From this perspective, this examination of the COL ICT4E Activity in the 3 Commonwealth countries in the Caribbean, assumes more the role of an evaluation than a monitoring exercise. It is also, moreover, a summative evaluation which takes place one and a half to two years into the 3-year triennium planning cycle.

This study is essentially a summative evaluation that draws on the approach that COL has adopted to monitoring and evaluation.

Furthermore, it is important to clarify the meaning of impact in relation to outcomes. According to Farrell (2009) COL uses the term "impacts" to describe the long-term results it seeks to achieve. For example, in COL's 2009–2012 Three-Year Plan, the expected long-term impact for its work with the education sector states that: *"Target countries improve the accessibility and quality of their formal education systems at all levels through the use of ODL tools and strategies." (Farrell, 2009:14).* COL uses the term "outcomes" to describe the results expected for each of the programme initiatives it plans to focus on in its 3-Year Plan. The outcomes refer to the measurable and tangible changes that result directly from programme activities and the expenditure of related resources. Outputs express changes that are expected to lead to the desired "outcomes." For this reason, whilst due recognition is given to the desired impact of the ICT4E Activity of COL, it will at this stage, pay more attention to the intended and actual outcomes of the programme's activities in the 3 countries during the period under review.

2.2 Evaluation Framework

This evaluation is also framed by a qualitative research methodology. Qualitative research places emphasis on context specific, real world settings and seeks to illuminate understanding based on how phenomenon of interest 'unfold naturally' (Patton, 2001). It also means that the researcher is immersed within the research process and the observed phenomenon as opposed to an 'objective' quantitative methodology. The evaluation therefore draws on qualitative data gathering techniques which are non-numerical in nature and which relies on the thoughts, views, feelings of respondents and provides insights on the beliefs, world views and behaviors of people. The methodology used is outlined in Figure 4 below:

Figure 4: Evaluation Framework
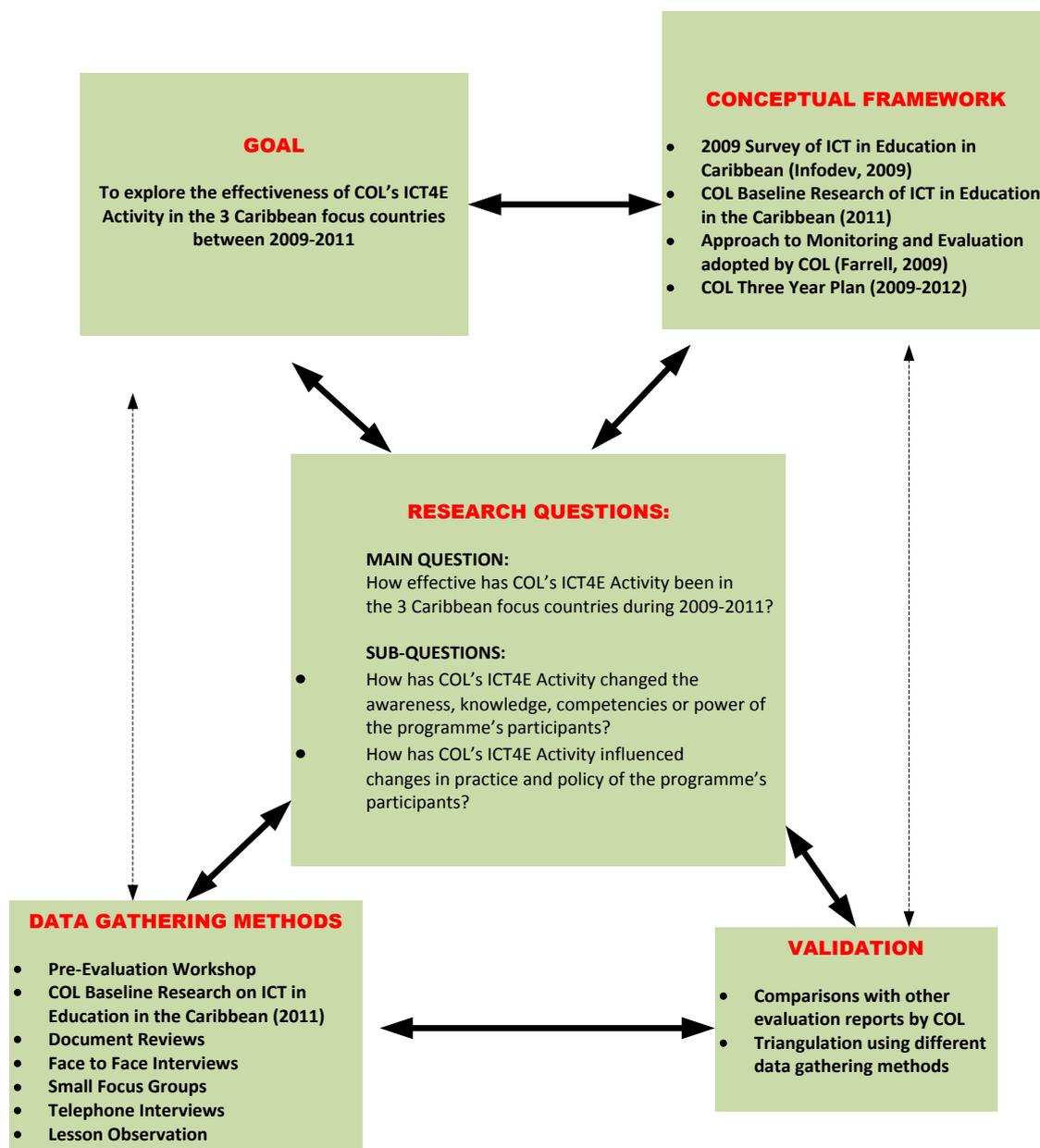
As shown in Figure 4, the goal of the evaluation is to explore the effectiveness of COL's ICT4E Activity in the 3 Caribbean countries. Here effectiveness is considered in the context of changing the awareness, knowledge, competencies and power of the activities' participants, as well as the influence that COL's intervention has had on policy and practice in each of the 3 countries.

The research questions are framed in order to guide the evaluation towards its main goal and its conceptual approach was informed by analyses provided by a range of documents. The evaluation also applied a variety of data gathering techniques.

2.2.1 First Phase Baseline Research

Prior to this evaluation, COL commissioned baseline research on ICT in Education in the Caribbean. This research served as an update on an initial *Survey on ICT in Education in the Caribbean* conducted by InfoDev in 2009 which had become dated by 2010. The COL baseline research involved the provision of country reports by Ministries of Education in the Caribbean. In the end, 8 country reports were submitted which informed the writing of an overview of the status of ICT in Education in the Caribbean region, particularly the Commonwealth countries.

2.2.2 Pre-Evaluation Workshop

A pre-evaluation workshop was held on 24 November 2010 in Cochin, India. This workshop was attended by this evaluation's consultant Shafika Isaacs, the COL eLearning Specialist Trudi Van Wyk, Neil Butcher who facilitated the workshop and representatives from Ministries of Education and Teacher Education Institutions in The Bahamas and Guyana. Trinidad & Tobago was invited, but did not attend the workshop. This workshop provided the consultant with relevant background information on the 2 countries and insights on how previous evaluations have been approached.

2.2.3 Document Reviews

A host of documents have been made available to the consultant and some have been made available upon request. These include:

- COL's 3-Year Plan (2009-2012)
- eLearning Initiative and activity Logframes
- Results Based Management and Monitoring and Evaluation (Farrell, 2009)
- Programme Update Meetings Presentations
- COL Quarterly initiative and Activity Reports
- COL President's Quarterly Reports to the Board of Governors
- Consultants' Reports
- COL Country Action Plans

- ICT in Education Survey Reports from Guyana, Trinidad & Tobago and The Bahamas (2010)
- Pre-Evaluation Workshop Notes
- UNESCO ICT Competency Framework for Teachers
- Commonwealth Certificate for Teachers' ICT Integration (CCTI) Materials including mentor training materials
- Guyana ICT in Education Initiative Consultancy Mission One Report
- Guyana ICT in Education Initiative Consultancy Mission Two Report

Relevant points were drawn from these documents for inclusion in overall evaluation of the ICT4E Activity.

2.2.4 Interviews

Face-to-face or skype interviews were conducted with a few notable respondents. These include:

Table 3: List of Interviewees

Name	Stakeholder Group
Gerald Roos	Educational ICT Consultant
Kim Spencer	NCERD, Ministry of Education, Guyana
Saleema Hyatallie	Ministry of Education, Trinidad and Tobago
Lystra Ovid-Sampson	Ministry of Education, Trinidad and Tobago
Faye Bascom	Ministry of Education, The Bahamas
Trudi Van Wyk	Education Specialist: eLearning, COL
Anthony Ming	Adviser (Informatics), Governance & Institutional Development Division, Commonwealth Secretariat
Neil Butcher	Consultant and Service Provider
Greg Butler	Senior Director – Worldwide Education Leaders Strategy Microsoft Public Sector

These interviews ranged from an hour to an hour and a half in duration and were based on semi-structured interview questions that the consultant had prepared beforehand, based on initial document reviews. Some interviews took place after the consultant had visited 2 of the 3 Caribbean countries, which provided a stronger basis for engaging in conversational interviews with Trudi Van Wyk, Neil Butcher, Greg Butler and Anthony Ming.

2.2.5 Site Visits

The consultant also visited Guyana for 2 days and Trinidad and Tobago for 3 days. During this time she conducted focus group discussions as is the case in Guyana and participated in classroom observation when the CCTI Mentor Orientation Programme was conducted in Trinidad and Tobago

over 1 day. This enabled the consultant to engage directly with beneficiaries of the COL ICT4E Activity and observe the participation of the participants in the orientation programme of the Commonwealth Certificate for Teachers' ICT Integration (CCTI). The orientation programme was delivered to 44 participants.

2.2.6 Focus Groups

The consultant also participated in 2 focus group discussions. The first was in Guyana with the following individuals:

- Ms Viola Rowe, Cyril Potter College of Education, Vice Principal
- Mr Ed Ceasar, Senior Lecturer, Education Faculty, University of Guyana
- Mr. Tota Mangar former Assistant Dean Education Faculty, University of Guyana
- Mr Mohandatt Goolsaram, Director of National Center for Education Research and Development (NCERD), Ministry of Education
- Ms Kim Spencer, NCERD, Ministry of Education

The other focus group was with Ms Lystra Ovid Sampson and Ms Saleema Hyatallie from the Ministry of Education in Trinidad and Tobago. They could not be joined by Ms Sharon Mangroo who was busy at the time of the focus group discussion.

2.2.7 Meeting Observation

The consultant held observer status at a meeting between the National Energy Training Centre (NETC) and the Ministry of Education in Trinidad and Tobago. The NETC expressed keen interest in the CCTI and the discussion served to provide clarity to NETC on the instructional design of the CCTI. In attendance at this meeting was Mr Gerald Roos, ICT Consultant to COL, Ms Lystra Ovid Sampson from the Ministry of Education, the Vice President of Training of NETC and the President of NETC as well as 2 education consultants to NETC.

She also held observer status at a meeting in Trinidad and Tobago with the University of the South Caribbean (USC) hosted by the Ministry of Science and Technology where the Ministry of Education clarified the purpose and design of the CCTI and answered questions related to the prospect of USC accrediting the CCTI as a certified program at their university. In attendance at this meeting was Ms Karen Rosemin from the Ministry of Science and Technology, Ms Lystra Ovid Sampson, MoE, Mr Gerald Roos and a Faculty Representative from USC.

2.2.8 Lesson Observation

The consultant also sat in on the delivery of the Orientation Program of the Commonwealth Certificate on Teacher ICT Integration (CCTI) in Trinidad and Tobago for 1 day. The lesson was attended by a total of 44 participants, mainly teachers and was facilitated by Gerald Roos, an independent COL consultant.

2.3 Data Analysis

The consultant took copious notes on One Note on her laptop, during interviews, site visits, meeting observations and during the classroom observation. She also noted salient points that emerged through document reviews.

These notes were coded, analysed and synthesised using a Grounded Theory methodology which supported the write-up of this report.

2.4 Limitations of the Evaluation

The review took place over a very limited period of time.

Because the researcher's visit to The Bahamas was thwarted by Hurricane Irene, the insights that could have been gained from this visit will not be reflected in this report. Included in the plans for the site visit to The Bahamas was a potential engagement with teachers who are part of the CCTI pilot in The Bahamas. The analysis provided may at times appear to be more biased in favour of Guyana and Trinidad and Tobago as a result.

The researcher has a long history with the Commonwealth of Learning, both as a representative of a partner organisation in the forms of both SchoolNet Africa and Mindset Network and as a COL consultant on a project related to the NEPAD eSchools initiative. She is also associated historically with SchoolNet South Africa (SNSA) and currently serves on its Board of Directors. SNSA is the organisation who has been contracted by COL to assist in the implementation of the CCTI in the Caribbean. She has also worked for Microsoft as a Partner Development Lead in the Middle East and Africa and has conducted consulting assignments with COL partner organisations such as UNESCO and the World Bank. For UNESCO the consultant has been involved in conceptualising a mobile learning initiative and for the World Bank she has conducted a Survey on ICT in Education in Africa and an evaluation of the NEPAD eSchools Demonstration Project.

The consultant is aware of potential biases at a number of levels with this evaluation process that can emanate from the above. Despite these potential biases, the consultant has made serious attempts to make her observations objective, based on her experience and accumulated knowledge

as a practitioner and researcher in the ICT in Education sector over the past 15 years. Typically, triangulation is used as a strategy in qualitative studies to improve the validity and reliability of evaluation findings. Many in the qualitative research community suggest that the use of multiple methods will more likely lead to more valid, reliable and diverse construction of realities because they demonstrate convergence (and divergence) of opinions and views through different data gathering techniques (Golafshani, 2003). That the findings of this evaluation is triangulated through the use of a variety of data gathering tools provides further reliability to the research methodology and its findings.

Whilst attempts were made to ensure that the methodology for this evaluation is rigorous, aspects of the methodology were also limited. The consultant is aware that she only interviewed 1 person per partner organisation when interviewing another respondent from the same organisation may have offered a better sweep of multiple perspectives. In the case of The Bahamas for instance, the consultant only managed to interview 1 respondent after several attempts to connect with these colleagues after the devastation caused by Hurricane Irene. Here too, the range of data sources at the disposal of the consultant potentially militates against these limitations.

CHAPTER THREE: RESEARCH FINDINGS AND ANALYSIS

The main question that this evaluation has sought to answer is:

How effective has COL's ICT4E Activity been in the 3 Caribbean focus countries between 2009 and 2011?

In answering this question, this chapter discusses the results and outcomes in the context of the 5 core programmatic strategies of the COL.

3.1 What has been delivered during 2009-2011?

During the period under review, COL's ICT4E Activity delivered results in accordance with the 5 core strategies around which COL's broader programmatic strategy are centred. With reference to the 3 focus countries, evidently COL's core strategies have been implemented in varying degrees and varying outcomes in accordance with local contexts.

3.2 Policy Support

Policy support provided to the 3 country governments and their partners during the period under review, is an extension of COL's historical investment in the development of ICT in Education policy in the region. In Trinidad and Tobago, for example, COL's ICT in Education Activity was instrumental in supporting the development of their ICT in Education Policy in 2005.

During the past 2 years, COL's current ICT4E Activity focused on teacher professional development and the integration of ICT as an area of strategic policy significance in all 3 countries. Although not the focus of this study, the researcher found it helpful to compare the planned activities, intended outputs and outcomes (as per the logframes) with that which have been achieved over the past 2 years. The following Table 3 provides a summary of achievements, comparing plans with results in Policy Support.

Table 4: Policy Support: Comparing Plans with Results

GOAL:
To provide governments with ICT in Education policy and implementation support in the integration of ICT in education and training systems to reap the maximum benefits at all levels of the system in improved student performance and enhanced quality of teaching and learning.

Inputs	Planned Activities	Implemented Activities	Outputs delivered as at August 2011

• Initial work in Trinidad & Tobago (2005 ICT policy support by COL), in Guyana (World Bank) and The Bahamas (IDB)
• UNESCO ICT Competency Framework for Teachers
• Collaboration with Microsoft and ComSec
• Dedicated COL Education Specialist
• COL Budget and Resources
• Development Partners and their Resources and Budget
• Consultants and Service Providers
	1. Promote and implement Teacher Development in ICT in Education (2009/10)
	2. Support Ministries of Education (MoE) to develop an ICT in Education Strategy/Policy and implementation plans (2010/1)
	3. Develop and implement a Roadmap for Teacher Development in the Integration of ICT into Teaching and Learning in the Caribbean (2010/1)
	4. Build teacher capacity in the integration of ICT into teaching and learning (2010/1)
	5. 3 governments and institutions are supported to implement an ICT in Education Teacher Development Strategy/Policy and implementation plans (2011/2)
		1. Competency Framework for Teacher Development in ICT integration into Teaching and Learning published.
		2. Guidelines for Teacher Development in ICT Integration into Teaching and Learning published.
		3. Roadmap for Teacher Development in the Integration of ICT into Teaching and Learning in the Caribbean developed.
		Implementation:
		4. GUYANA:
		  a. Minister Baksh, Minister of Education agreed in Dec 2009 to the implementation of the ICT Competency Framework for Teachers (CFT) in Guyana and request support to the implementation of ICT in Education in the country.
		  b. Worked with COMSEC, Microsoft, World Bank and MoE to assess the current situation in the MoE and built a comprehensive roadmap to implement CFT-Guyana and to support the Ministry in the implementation of the ICT component of its 2009-2013 Strategic Plan.
		  c. Developed a Framework for Teacher Professional Development and ICT Integration and drafted 'An ICT Professional Development Strategy for Teachers in Guyana'
		  d. A 6-months 'Quick Start Plan' was presented to and accepted by the Minister of Education on 11 April 2010.
		  e. Also supported Guyana to set up Management Structures of the Initiative;
		  f. Developed an Advocacy Plan for ICT in Education;
		  g. Developed a Monitoring & Evaluation Strategy for ICT in Education;
		  h. Worked with Guyana to develop a Capacity Audit;
		  i. Developed a Strategy for support to teachers in ICT integration;
		  j. Worked with MOE to develop concept note on Teacher Laptop Initiative and another one for laptops to schools.
		5. TRINIDAD & TOBAGO
		  a. Assisted in update the 2005 policy and developed roll-out plans for the use of Information and Communication Technologies (ICT) in Education
		  b. Developed a short term plan for the Laptop for Schools Initiative, initiated by the Ministry of Education
		6. THE BAHAMAS
		  a. No policy intervention because the work that COL is doing is in support of the policy work done through the IDB supported 'Inspire' project.
		7. CARIBBEAN REGION
		  a. Commissioned a Survey of ICT in Education in the Caribbean.
		  b. Published a report on 'ICT in Education in the Caribbean - a Review of Achievements & Challenges
		  c. Worked with MoEs in all 3 countries with adoption of an approach to integrating ICT into teaching and learning in line with UNESCO ICT CFT
			6. Competency Framework for Teacher Development in ICT integration into Teaching and Learning published.
			7. Guidelines for Teacher Development in ICT Integration into Teaching and Learning published.
			8. Roadmap/Framework for Teacher Development in the Integration of ICT into Teaching and Learning in the Caribbean developed.
			9. Governments in all 3 countries have developed ICT in Education policies and strategies and implementation plans.
			10. A survey of ICT in Education in the Caribbean provided information on regional trends
			11. All 3 governments have adopted UNESCO ICT CFT

Table 4 shows that COL's ICT4E Activities delivered on planned and additional activities during the period under review.

In Guyana COL provided support through the provision of technical expertise for the development of an *ICT Professional Development Strategy for Teachers.* This process involved an assessment of the current situation in Guyana, compared it with other countries that have implemented similar strategies, compiled a roadmap to implement ICT in Education and developed a high level implementation plan and funding proposal for the Ministry of Education. In partnership with ComSec, Microsoft and the World Bank, COL's ICT4E Activity also assisted Guyana with:

- developing a 6-months 'Quick Start Plan' (accepted by the Minister on 11 April 2010);
- setting up of management structures for the Guyana ICT Initiative; and
- developing an Advocacy Plan and implementation for ICT in Education.

In addition, the COL activities focuses on knowledge-sharing on the generalised experience related to ICT in Education across the Caribbean. COL has published: *ICT in Education in the Caribbean: A Review of Achievements and Challenges (2011).* This *Review* involved the active participation of representatives of Ministries of Education in 8 Commonwealth Countries in the Caribbean. In this respect, MoE representatives submitted country reports as a contribution towards the regional overview. One of the key points raised in this review is the dearth of evidence-based research and integrated monitoring and evaluation strategies in each of the Commonwealth countries in the Caribbean that were included in the review *.* During 2009-2011, the COL ICT4E Activity *c*onducted monitoring and evaluation workshops for The Bahamas, Guyana and Trinidad & Tobago and supported the development of an M&E strategy for Guyana.

The evidence is abundant from Table 3 that COL has provided the planned policy support in each of the 3 countries. In this respect, the evidence shows:

1. The COL activities have influenced the educational policy terrain in all three countries by assisting with the development of complementary/supportive policy on teacher development and ICT integration, alongside COL's partners. Had this intervention not happened, the policy terrain would not have had the added feature of a comprehensive teacher development framework. This was consistently highlighted in the focus group discussion among representatives from Cyril Potter College of Education, NCERD and the University of Guyana. An interview with the Permanent Secretary of Education in Guyana corroborated this view. Similarly, during the focus group discussion with MoE

representatives from Trinidad and Tobago, the recognition of the continuity in policy support provided by COL was acknowledged and the view that policy support is an ongoing process particularly during the implementation phases was emphasised.

2. The process of developing this framework has been a learning/capacity building exercise for representatives of the Ministries of Education and the leadership of Education Institutions in Guyana in particular, which in turn has positively influenced the practice of policy by the leadership. This is evident from the practice of implementing aspects of the *Framework for Teacher Professional Development and ICT Integration* including the development of teacher education modules in Guyana. From the perspective of the stakeholders and partners in each of the countries, the policy support aspects of the COL ICT4E Activity, especially the exposure to international experience that technical expertise have opened up, was considered to be beneficial.

3. The policy-related activities in each of the 3 countries have also developed plans for the sustainability of the frameworks and projects related to teacher professional development and ICT integration. This is evident from interviews with MOE representatives in each of the 3 countries. In Trinidad and Tobago and The Bahamas, the Orientation Programme of the Commonwealth Certificate for Teacher ICT Integration (CCTI) has focused on developing a cadre of tutors who can facilitate the CCTI as it evolves and grows over time. That accreditation of this course by local tertiary institutions is currently under way, lends further credibility to the approach towards sustaining the program through local ownership by embedding it within a recognised tertiary institution. In this way, broader national policy is given concrete expression at local level.

Evidently with reference to policy support provision, the ICT4E Activity has been successful over the past 2 years in each of the Caribbean focus countries. COL's ICT4E Activities essentially served to provide technical expertise and support, provide knowledge and information, build capacity and the skills base among decision-makers which have influenced a positive change in the behaviour of COL partners , the MoE officials and the representatives of the leading education institutions involved.

3.3 Models

During the period under review, COL's ICT4E Activity targeted the design of a model on teacher professional development and ICT integration in each of the 3 Caribbean countries. Table 4 outlines the logframe for this particular strategy of the programme. Such a model to prepare teachers for ICT integration into teaching and learning has been developed by COL in partnership with a range of organisations to develop what is now called the Commonwealth Certificate for Teacher ICT Integration (CCTI). The model was developed based on an assessment of existing models on ICT integration in teacher professional development and draws on the experience of good practice in this respect. This includes the extensive experience of SchoolNet South Africa and its established model on teacher professional development and ICT integration. The key features of the model developed include:

- It is a distance education course that combines affordable technologies (in low-cost, low-bandwidth settings) with social interaction and competency based results;
- It is focused on developing competencies beyond digital literacy with an emphasis on the pedagogical integration of ICT in learning and teaching. The model combines:
  a) Pedagogy - how we teach with ICT, improve and make teaching methods more relevant;
  b) Content - what we teach, how to use ICTs to teach it and how to be information literate;
  c) Technology - knowledge of the digital technologies that support teaching and how to use them;
- It is a certificated programme that can be adapted by local institutions to offer as part of existing qualifications or as a separate qualification;
- It is currently targeted for accreditation by local higher education institutions in both The Bahamas and Trinidad and Tobago; and
- It is also being mapped against the UNESCO ICT Competency Framework for Teachers (CFT). In doing so it recognises that the learning outcomes of the CCTI are aligned with the international standards framed in the UNESCO CFT.

Student-teachers who sign up for the CCTI are assigned to tutors who facilitate the completion of a module, pace activities, give advice and coordinate assignments. Group interaction is a strong feature of the CCTI and a variety of online interaction methods are used. Activities range from self-study to group collaboration efforts. The activities deepen understanding in preparation for the assignments. Assignments are completed for formal assessment. The CCTI is typically a two-year part-time course for educators. The course, consists of 4 core modules and 10 elective modules. After two years the successful student would have completed 8 full modules (COL Website, 2011).

Institutions will make their own decisions about how this course should be conducted, which technologies to use and what learning management and/or collaboration tools to deploy, as is the case in the 3 Caribbean countries at present.

In view of very limited experience in the developing world with giving concrete expression to the UNESCO ICT CFT at local level and that it is geared towards the accreditation of the model with local institutions, makes the CCTI a distinct programme on ICT integration and teacher professional development worldwide.

Table 5 provides a summary of achievements, comparing plans with results in the core strategy: Models.

Table 5: Training and ICT Integration Models: Comparing Plans with Results

GOAL:
To provide technology support for eLearning in the following ways:
1. Develop training models for the use of ICT in teaching and learning
2. Develop technology models for the integration of ICT in teaching and learning
3. Develop models for the re-use of OER

Inputs	Planned Activities	Implemented Activities	Outputs delivered as at August 2011	Intended Overall Programmatic Outcomes
• UNESCO ICT Competency Framework for Teachers • Work done in SA on the EDN (SNSA) • Dedicated COL Education Specialist • COL Budget and Resources • Consultants and Service Providers	1. Promote and implement Teacher Development in ICT in Education 2. Develop a Teacher Qualification for ICT in Teaching and Learning 3. Develop a technology solution to repackage/ develop OER	1. Developed a model as subsequently the Commonwealth Certificate for Teacher ICT Integration (CCTI) to become an accredited qualification and to be mapped against the UNESCO ICT CFT. 2. Developed the CCTI 3. Developed a technical solution including materials are CD-based, use online tools for tracking progress, tools for communication and collaboration (localised) 4. Orientation workshops took place in Guyana, Trinidad & Tobago and The Bahamas on localising and promoting the model and its implementation.	1. A model developed for teacher professional development and ICT integration 2. The model is implemented in T&T and The Bahamas with discussions under way for Guyana 3. CCTI courseware produced as OER (ie low cost training modules)	Governments institutions individuals and communities: 1. Use digital technologies 2. Design and develop learning materials that are made available where possible as OERs 3. Apply low cost ICT training modules 4. Provide effective and appropriate skills training

The model developed is well received and embraced by both partners and in-country stakeholders and all who were interviewed indicated that the model will be applicable in their own countries and applauded the strong role played by COL. In The Bahamas, an interviewee indicated that the CCTI has recognition by the Minister of Education and Permanent Secretary as an initiative of the Commonwealth of Learning and that COL was mentioned in radio talk shows that have been discussing the CCTI.

When questions were raised about the sustainability of the model after the completion of the support by the technical experts, each of the MoE representatives interviewed in The Bahamas and Trinidad and Tobago indicated that they see the development of educators in the Orientation Programme as a stepping stone towards developing local capacity to deliver the CCTI.

Thus in answering the question: how effective has COL's ICT4E Activity been in the 3 Caribbean countries? How has COL's ICT4E Activity influenced policy and practice in these 3 countries? How has the COL ICT4E Activity changed the awareness, knowledge, competencies and power of the programme's participants?

1. The COL ICT4E Activity has catalysed change in the teacher professional development landscape in all 3 countries with the development of the distance education model and the introduction of the CCTI. This change is about introducing a new model that is geared towards its greater diffusion into the teacher professional development system at country level, but also to the localisation of the model to fit into local contexts. Of significance is the adaptation of the CCTI model in Guyana;

2. The process of developing the model and involving local stakeholders has served to sensitise decision-makers in each country to the way the model will be introduced into the system; it has raised awareness among the first cohort of teachers and MoE officials involved in the model and it serves to improve the competencies of both participants and future facilitators of the CCTI at country level;

3. That the CCTI is geared towards bolstering local capacity in a conscious way right at the outset by actively involving local teachers and MoE officials to be involved so that they can be trained to become facilitators, reflects the interest of the MoE officials to ensure that the model is replicated and sustained at local level;

4. With reference to the development of replicable models in each of the 3 countries, the ICT4E Activity has been successful over the past 2 years in each of the Caribbean focus countries. COL's ICT4E Activity essentially served to provide a localised model for the professional development of teachers and the integration of ICT that is scalable and

replicable, drawing on the effective use of international expertise in ways that develops local expertise, raising the awareness, knowledge and competency levels of the teachers and officials involved in the implementation of the model to date;

5. Partners involved in the development of the model have also indicated that valuable synergies have been created between the various parties involved in creating the model. Microsoft could draw on its *Partners in Learning* Programme, COL could draw on its historical relationships and tradition of working in ODL in the Caribbean, ComSes has been able to draw on its established relationships with different Ministries in each of the countries. In this way, each party has been able to draw on the strengths of the other in developing this model; and

6. That it is called the Commonwealth Certificate also 'brands' the model clearly with the role played by COL.

One preoccupation that emerged particularly in Guyana however, is with the high levels of teacher attrition and that training and raising the competency levels of teachers may lead to more teachers leaving the Guyana education system. This seems to be one area that needs to be considered in more detail by COL in general and its ICT4E Activities in particular.

3.4 Capacity

The COL Three-Year Plan refers to capacity as a core strategy that is geared towards facilitating training and organisational development to increase the overall ability of partners to deploy learning systems and technologies effectively. With reference to the COL ICT4E Activity, capacity focuses on the development of competencies within government, institutions and among individuals to integrate ICT in their learning and teaching systems. Table 6 provides an overview of the logframes related to capacity building and compares it with results achieved in the Caribbean countries.

Table 6: Capacity Building: Comparing Plans with Results for the Caribbean

GOALS: To build capacity for eLearning at the following levels: Government, Institutional and Individual				
Inputs	Planned Activities	Implemented Activities	Outputs delivered as at August 2011	Intended Overall Programmatic Outcomes

• Initial work in Trinidad & Tobago (2005 ICT policy support by COL), in Guyana (World Bank) and The Bahamas (IDB)
 • Collaboration with Microsoft and ComSec
 • Dedicated COL Education Specialist
 • COL Budget and Resources
 • Development Partners and their Resources and Budget
 • Consultants and Service Providers
	1. Promote and implement Teacher Development in ICT in Education (2009/10)
	 2. Develop and implement a Roadmap for Teacher Development in the integration of ICT into Teaching and Learning in the Caribbean
	 3. Build teacher capacity in the integration of ICT into teaching and learning
	 4. 1000 teachers in 3 Caribbean and I Asia countries' capacity increased in the integration of ICT into teaching and learning through the application of the CCTI model
	 5. Initialise mentor training for the Teacher Qualification for ICT in Teaching and Learning (ACE in ICT Integration).
		1. Orientation/capacity building workshops were held in Guyana, Trinidad & Tobago and The Bahamas
		    a. Orientation of ICT in Education in Guyana – Dec 2009
		    b. Capacity building of ICT in Education in Guyana –May 2010
		    c. Capacity building of ICT in Education in The Bahamas – Dec 2010, April 2011
		    d. Orientation on ICT in Education in Trinidad & Tobago – August 2010
		 2. Government support/capacity building:
		    a. Intensive capacity building workshops and meeting took place during the 3 visits of the ICT in Education consultant to Guyana – April 2010, June 2011 and September 2011. The consultant worked with MoE officials, HE institutions and other individuals.
		 3. Orientation of the CCTI programme (face-to-face)
		    a. Introduction to the CCTI in Guyana – May 2010
		    b. Introduction to the CCTI in The Bahamas – Dec 2010
		    c. Introduction to the CCTI in Trinidad & Tobago – August 2010
		 4. 35 Teachers participate in distance education training modules of the CCTI in T&T and 50 in The Bahamas.
		 5. Mentor training programme (face-to-face)
		    a. Orientation of mentors in the Bahamas - April 2011
		    b. Orientation of mentors in Trinidad & Tobago – August 2011
		    c. Mentor training in Trinidad & Tobago - August 2011
		 6. Others:
		    a. A workshop on eLearning – 'The Design Principles for eLearning Courses and Integration of Multimedia into eLearning' Dec 2009 - Guyana
		    b. A mission to Guyana took place in December 2009 by COL, the Commonwealth Secretariat and Microsoft.
		    c. Institutional capacity building workshops took place in The Bahamas in April 2011.
		 7. Capacity building workshop took place in Kochi, India in Nov 2010 for Monitoring and Evaluation of ICT in Education. It was attended by The Bahamas and Guyana.
			1. Students are enrolled for the Teacher Qualification for ICT in Teaching and Learning
			 2. There is an increased number of teachers that demonstrated the knowledge and skills to integrate ICT into teaching and learning
				Governments institutions individuals and communities:
				 1. Use digital technologies
				 2. Design and develop learning materials that are made available where possible as OERs
				 3. Apply low cost ICT training modules
				 4. Provide effective and appropriate skills training

"The capacity shortage in the Caribbean is real and complex" was how one of COL's consultants articulated the capacity challenge in all 3 countries in the Caribbean. A short-term, quick-fix approach will not address this challenge sufficiently and may even cause more harm. COL's approach through its ICT4E Activity has been to address the matter systemically and through activities that can be sustained. Here COL's ICT4E Activities emphasised capacity development related to the integration of ICT in teacher professional development. In this respect the emphasis has been on a systemic intervention to introduce a locally accredited qualification that has an international appeal based on the UNESCO CFT but also enabling the association of the qualification with the Commonwealth and COL in particular. The focus of COL's ICT4E Activity since 2009 have therefore been on building the capacity of teachers in the Caribbean to facilitate quality learning, supported by digital technologies but also to build the capacity of the teacher professional development system to produce competent teachers who can facilitate learning in a changing 21st century context. The CCTI also develops the capacity of school managers. It includes mentor guides, mentor training programs, module guidelines, an online community of practice for mentors and an online help facility and tracking system for mentors.

The lesson observation of the Orientation Programme of the CCTI in Trinidad and Tobago was instructive in terms of the nature of participants. An initial survey to ascertain the competency levels of the participants revealed that of the 44 participants:

- 5 were Heads of Departments
- 1 was an Acting Head of Department
- 3 were Curriculum Officers
- 2 were Principals
- 4 were School Supervisors
- 26 were Teachers
- 1 was a Dean of a Secondary School
- 1 was an Assistant Teacher and
- 1 was a School Superintendent

This confirms that there were not only teachers involved in the Orientation Programme but also members of school leadership as well as Ministry of Education officials as curriculum officers.

28 indicated they were very confident with using ICT compared with 16 who indicated they were not confident with using ICT at the start of the programme. This shows a relatively high number who are

familiar and confident with digital technologies. One principal attended the programme with her own iPad and worked from this device throughout the duration of the day-long workshop.

When asked whether they are prepared to commit to the 8 week duration of the CCTI programme with the prospect of becoming a tutor afterwards, 32 indicated that they were prepared to commit whereas 2 participants said they were not prepared to commit for this period. This reflects a high level of commitment to participate in the programme. Inevitably the programme will experience drop-outs along its 8 week duration. The initial number of 32 out of 44 who attended, some of whom arrived very late into the day-long programme, remains a significant number of committed participants.

That the programme is considering the accreditation by a local higher education institution is further manifestation of sustaining and building capacity within Trinidad and Tobago to manage the change towards a 21st century teacher development program.

In The Bahamas on the other hand, 80 participants were involved in the initial orientation of the CCTI, mainly teachers and those with technical skills. The MoE however has set a target of having 50 trainers to qualify from the Orientation Programme. In addition to the CCTI, they also developed the *ICT Potentials and Possibilities (IPP) Course* which is also supported by COL. Its focus is on sensitising leaders to the potential and possibilities of the technologies. It is a 40-hour training model which consists of 4 units. It started in March 2011 with 73 participants signed up including 6 from the College of the Bahamas, 1 math professor and 1 computer professor who participated as technical writers of the course as well.

It is evident here that policy support, capacity building, and birthing new models related to ICT and their use and integration into learning and teaching are all inter-related systemically in the overall programmatic approach of COL's ICT4E Activity in the Caribbean.

In answering the question: how effective has COL's ICT4E Activity been in the 3 Caribbean countries? How has COL's ICT4E Activity facilitated change in awareness, knowledge, competencies and power of the participants in the programme in these 3 countries? There is evidence in all 3 countries that the COL activities are geared towards developing the competencies of teachers in the system as well as the ability of the education institution managers, leaders and MoE officials to support the local development of this capacity building endeavour. The sizeable numbers of initial participants in the orientation programmes in both The Bahamas and Trinidad and Tobago is reflective of a commitment both by the Ministry of Education and the participants to enhance their skills in integrating ICTs in teaching and learning.

Whilst the CCTI may not yet have been introduced in Guyana, that the framework is in place to implement the CCTI, that currently teacher development modules are being developed through the partnership between COL, ComSec, Microsoft and the World Bank, indicates that this process of developing local capacity among teachers is well under way.

With reference to the capacity building strategy of COL, the ICT4E Activity has been successful over the past 2 years in each of the Caribbean focus countries. There may be a concern about the extent to which participants who have gone through the Orientation Programme of the CCTI would be capable of becoming tutors in order to facilitate the training of others. This can be addressed if the eligibility criteria for choosing tutors for subsequent phases of the CCTI is made clear and that the mentorship and peer support continues in these subsequent phases. That the Ministries of Education have expressed strong commitment to manage and support the CCTI, recognising that its success depends on support and commitment from institutions, course co-ordinators, tutors and teachers. In Trinidad and Tobago the understanding of what is required to make the CCTI successful in a sustainable way was clearly articulated by MoE interview respondents. Here, the MoE officials have both expressed ad demonstrated their passion and commitment to the success of the CCTI.

3.5 Materials

COL's Three-Year Plan includes materials as a core strategy. This refers to working with partners to co-create learning materials and make them widely available. An important part of this strategy in the ICT4E Activity is COL's commitment to the development, growth and accessibility of Open Education Resources (OER). Table 6 provides an overview of the Programme's commitments to material development and OER during the period under review.

During the period under review, COL organised 7 policy workshops on OER of which 2 were attended by officials from the Ministries of Education of the 3 focus Caribbean countries. The consultant met Caribbean MoE officials at the OER policy workshop held in Cochin India in November 2010.

Interviewees and CCTI document reviews confirmed that the CCTI course materials are all OER and the teacher development course modules that are currently being developed for Guyana in partnership with Microsoft and ComSec are also produced as OER. The CCTI is a distance learning course requiring little or no face-to-face intervention. A one-day face-to-face orientation is optional. The courseware includes a guide to help adapt the content for local delivery or to convert the course into a face-to-face offering. All course materials are available on CD.

Furthermore, document reviews confirm that the COL-UNESCO partnership on OER have also strengthened the work in the Caribbean in ICT4E.

The following Table 7 provides an overview of the logframes related to materials and compares it with results achieved in the Caribbean countries.

Table 7: MATERIALS: Comparing Plans with Results for the Caribbean

DEVELOPMENT AND USE OF MATERIALS and OER				
Goals:				
1. To develop an understanding for the use of OER Content for eLearning; 2. COMSEC commitment to the development of multi-media materials				
Inputs	**Planned Activities**	**Implemented Activities**	**Outputs delivered as at August 2011**	**Intended Overall Programmatic Outcomes**

• UNESCO ICT Competency Framework for Teachers
• Work done in SA on the EDN (SNSA)
• Dedicated COL Education Specialist
• COL Budget and Resources
• Consultants and Service Providers
	1. Develop, accredit and implement basic ICT skills training (CCNC)[7]
	2. Develop a Teacher Qualification for ICT in Teaching and Learning
		1. Organised OER Workshops – Taking OER beyond the OER community: Policy and Capacity – 2 workshops attended by Caribbean representatives
		2. Conducted a workshop on OER – Use, re-use and re-purpose of OER in The Bahamas – April 2011
		3. Instructional Design workshop conducted in Guyana – April 2011
		4. In Guyana modules for Technology Literacy Strand based on the UNESCO Competency Framework for Teachers were developed as OER.[8]
		5. Gained COMSEC commitment to development of multi-media materials for the Technology Literacy Strand (CCNC for the use of Open Source software in schools).
		6. Gained Microsoft commitment to the development of the CCNC for Microsoft products (need expressed in the Caribbean).
		7. Developed modules for the CCTI:
		  a. Core modules:
		      i. Learning, teaching and thinking with ICT
		      ii. ICT in schools
		      iii. ICT and the roles of the educator
		      iv. Assessing ICT Integration
		  b. Elective modules:
		      i. Designing and creating web sites
		      ii. Choosing and evaluating educational software
		      iii. ICT Maths/Science resources for educators
		      iv. Developing classroom resources for Maths/Science
		      v. ICT leadership in schools
		      vi. ICT planning for schools
		      vii. Learning with projects
		      viii. Working with information
			1. The CCTI recognized and adopted by 2 governments
			2. Teacher training materials are published as OER for the integration for ICT into teaching and learning
				Governments institutions individuals and communities:
				1. Use digital technologies
				2. Design and develop learning materials that are made available where possible as OERs
				3. Apply low cost ICT training modules
				4. Provide effective and appropriate skills training

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[7] Although not directly related to the work under the ICT4E Activities, it has relevance for the work in Guyana.

[8] Both The Bahamas and Trinidad & Tobago have completed training teachers in the Technology Literacy Strand of the UNESCO CFT. They have embarked on the CCTI (the Knowledge Deepening strand). Guyana will follow.

Inputs	Planned Activities	Implemented Activities	Outputs delivered as at August 2011	Intended Overall Programmatic Outcomes

		8. Supporting materials have been developed and include:
		  a. Mentor guides;
		  b. Mentor training programmes;
		  c. Module guidelines;
		9. The Bahamas identified the need and developed an introduction module called 'Information Communications Technology (ICT) Potentials and Possibilities for the CCTI'. This module has been added to the CCTI suite of modules.
		
		10. The CCTI modules have been reviewed by the countries in the Caribbean and included in the review of the CCTI modules that will take place in 2011/2.		

Other OER materials developed and initiatives within the ICT4E Activity produced additional outputs during the period under review which invariably benefits the 3 Caribbean countries. These include:

- Multi-media materials for the Commonwealth Computer Navigators' Certificate (CCNC);
- An Instructional Design Tool (IDT) and workshop materials to support the development of quality courses and learning materials;
- Several resource materials on the development and use of OER were produced and published in print format and on the COL website as part of COL's 'Taking OER beyond the OER Community: Policy and Capacity' Initiative; and
- Materials on the 'Use, Re-use and Re-purpose of OER' that facilitates collaborative content development and sharing.

These resources provide further evidence of the way COL's ICT4E Activity have enabled wider access to educational resources and knowledge to participants of the activities in the 3 Caribbean countries.

3.6 Partnerships

The rationale for multi-stakeholder partnerships in education is that it enables the pooling of resources to support education transformation. According to a recent report, the increasing demand for integrating new ICT in education systems places significant pressure on limited resources at the disposal of governments who have historically been the gatekeeper and chief delivery agent of public education. From a government perspective - sharing of resources between different stakeholders in e-education interventions make possible a shift away from collective, tax-based financing of educational infrastructure and services. This interest also coincides with the interests of commercial enterprises, NGOs and international development agencies to invest in equipment and infrastructure, human capital (i.e. in education and innovation), and to invest in the efficient use of labour (human resources) and capital that increases productivity. Such partnerships tend to draw in new ideas and capacities for problem solving and leverage investments and professional expertise (Pillay and Hearn, 2010).

These sentiments are in line with COL's focus on building strategic partnerships and working through partnerships to support the organisations vision, mission and programmatic goals. Following from this, the COL ICT in Education (ICT4E) Activity included the development of relationships between COL and stakeholders in each of the Caribbean countries, based on the goal towards improving the scope, scale and quality of education systems in each of these countries. Evidently COL's ICT4E Activity has engaged with partners at various levels as shown in Figure 7 below:

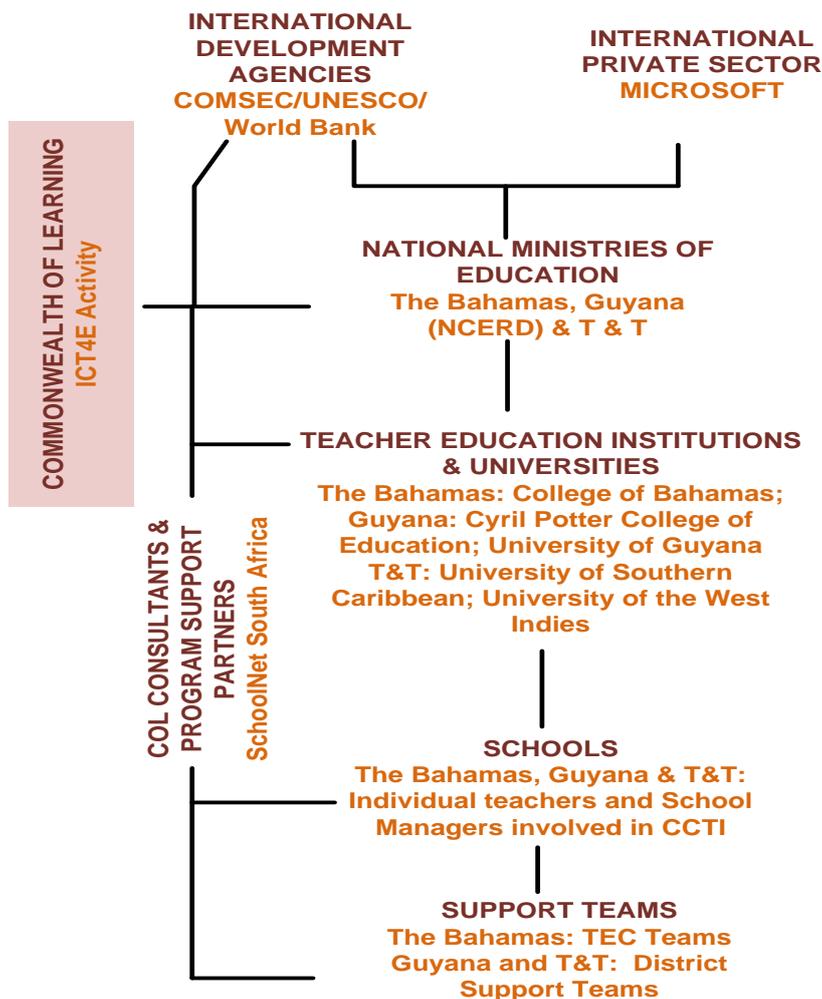**Figure 5: COL ICT4E Activity Partner Network in The Caribbean**

Figure 5 shows that the COL ICT4E Activity has engaged in partnership that range from international development agencies to local education institutions as part of attempts at reaching larger numbers of teachers and learners who are the beneficiaries 'on the ground'. Importantly, these partnerships are serviced by strong and productive relationships with individuals in each of the institutions involved. In this sense, the COL officials have established solid relationships with key individuals who either make decisions directly or who influence decision-making within their respective institutions, in each of the 3 focus countries. This evaluation has found that COL has extended its financial and human resources through partnerships that would not have been possible on COL resources alone.

COL's ICT4E Activity had established strong relationships with Ministers of Education and Permanent Secretaries, as well as other supporting Ministries such as the Ministry of Science and Technology in Trinidad & Tobago, the Office of the President and the Ministries of Finance and of Information Technology in Guyana in each of the countries as well as with leading executives in related education institutions. This was evident from the preparedness of the Ministers' offices to meet with the

consultant to discuss an evaluation of the COL ICT4E Activity and the time set aside by executive decision-makers to meet with the consultant in each of the 3 countries. Upon the consultant's visit to the countries, meetings were secured with leading officials and including in The Bahamas where the consultant's visit was unfortunately thwarted by the coincidence of her visit with Hurricane Irene.

This is a reflection of the established nature of the relationship between COL's ICT4E Activity and the government institutions which appear to be a by-product of regular, consistent, committed and trust-worthy engagement with government officials in each of the focus countries. This too is a reflection of a commitment on the part of the governments in these countries to the partnership with the Commonwealth of Learning more broadly.

3.6.1 Partnership Approach

The concern about multi-stakeholder partnerships is often that some institutions become overshadowed by seemingly more dominant voices and institutions within the partnership. Often the more dominant voices are able to be more vocal because they contribute more and because they are larger, more established organizations.

The approach to programmatic partnership development by the COL ICT4E Activity was to draw on influential partners in the international development sector who also support programmes in education in the 3 target countries. According to interviewees, these include the Commonwealth Secretariat (ComSec), UNESCO and the World Bank which are the 3 key international development agencies that specifically partnered with COL's ICT4E Activity. These partnership arrangements assumed different forms.

 COL's ICT4E Activity have partnered with the World Bank, Microsoft and ComSec in Guyana on the development of a national framework for teacher development and the integration of ICT. This partnership includes the development of teacher education modules to be delivered by local teacher education institutions and the evaluation of education software. The partnership draws on international professional expertise to develop the framework, develop teacher education modules and evaluate the education software. The intention is that once these have been established, the local education institutions like NCERD and the Cyril Potter College of Education will be able to deliver a certified teacher education program which includes the integration of ICT. In this kind of partnership COL's ICT4E Activity makes a notable contribution alongside other partners such as the World Bank and ComSec. According to one interviewee, in monetary terms, even though the ComSec and the World Bank contribute more and are much larger organisations, COL's contribution

is 'known, visible and valued' among the stakeholders. An interview with the ComSec representative revealed that the partnership has created effective synergies between the different organisations with each contributing towards the partnership based on their strengths, expertise and experience. Here it was felt that COL's value was particularly attributable to its rich experience with the integration of ICT in Education systems across the Commonwealth. The interview with the Microsoft representative reiterated the same point: "*what works well is that we have the right complement*". The Microsoft interviewee also indicated that their partnership with COL ranks among the most effective and efficient partnerships they have with an international development agency in the education space.

Similarly, COL partnered with UNESCO on the latter's Open Education Resources project. In this case UNESCO is seen as the lead agency who initiated the project and who brought COL on board. Here too, COL's contribution and participation in the partnership is recognised within the partnership and among the key stakeholders involved.

However, an internal COL report on the ICT4E Activities in 2010-2011 revealed a distinction between partnerships described above and partnerships initiated and led by COL's ICT4E Activity. The most significant of these is the partnership arrangement around the CCTI. This project mobilised the buy-in and support from Microsoft through its *Partners in Learning* programme who contributes its 'Windows Live' platform and its 'Innovative Teachers Forum', the national Ministries of Education in Trinidad and Tobago and in The Bahamas who encourage the participation of teachers to the programme as well as SchoolNet South Africa as a service provider for the partnership. At the time of writing, COL and the Ministry of Education in Trinidad and Tobago were also engaging with the T&T National Energy Training Centre and separately, in collaboration with the Ministry of Science and Technology, with the University of South Caribbean about accrediting the course.

In this case, COL's role as a leading agency is clearly stated and clearly understood by all the partners involved. This is evident from interviews with consultants from SchoolNet South Africa and the Ministry of Education officials in both The Bahamas and Trinidad and Tobago where the activities are being piloted. That the teacher development program is referred to as the *Commonwealth Certificate on Teacher ICT Integration*, also brands it and its related products very clearly with COL.

3.6.2 Partnership Effectiveness

A key sub-question for this evaluation with reference to partnerships would be how has the partnerships enabled change in awareness, competencies, knowledge, and power among the participants in the COL ICT4E Activity in the 3 Caribbean countries. In Guyana, the partnership

between COL, ComSec, Microsoft and the WorldBank has led to the country's first national teacher development framework that considers the integration of ICT. Moreover, this framework provides the parameters within which the key education institutions are engaged in implementing teacher development programmes that integrate the use of ICT. In this sense, the partnership has made a difference to the landscape related to teacher development at least at a policy level and at a level of increasing the educational resources to support teacher professional development programmes.

Similarly, in The Bahamas and in Trinidad and Tobago, the partnership initiated by COL have influenced the ICT4E landscape and has the potential to catalyse a far bigger change in the offerings of the teacher professional development system in both countries.

The effectiveness of these partnership interventions in each of the 3 countries will be based on whether they have strengthened institutional capacity, extended reach to larger numbers of teachers and whether they have improved the quality of the teacher development programme. The impact will be based on whether in the long run, these interventions have supported the delivery of quality learning and teaching within the national education systems.

Because all 3 programmes have started very recently, it will be challenging to make an assessment of their effectiveness and impact. Suffice it to add however that this evaluation will make recommendations about the value of a baseline study and subsequent longitudinal tracking of progress made with teachers in each country in particular.

Two other aspects related to partnerships have emerged over the course of conducting the research. The first relates to the reality that there appears to be additional international development agencies who are investing in education in the Caribbean in general and in teacher professional development in Guyana, Trinidad and Tobago and The Bahamas in particular. An informal discussion between the consultant and a representative from the Organisation for the American States, unrelated to this evaluation, revealed that they too are investing in ICT in teacher education in Guyana. Similarly, the Inter American Development Bank is planning on investing in education in the region. This suggests that there may be value in extending the partnership network that COL's ICT4E currently has to include organisations like these.

The other aspect relates to sustainability. In general, one of the main concerns is the tenuous nature of the partnerships and the question of sustainability. It appears from interviews that COL is already considering the sustainability of the CCTI through partnerships and through extending the network of countries who will adopt the CCTI in ways to encourage support for one another. The same holds

true for the sustainability of the partnerships involved with the teacher development framework in Guyana.

3.7 Conclusion

The evidence is apparent in each of the core strategies that the COL ICT4E Activity has been an effective programme in the 3 Caribbean countries during the period under review. What follows are recommendations on how the programme can be further improved in the context of consolidating a comprehensive M&E framework for the programme.

CHAPTER FOUR: RECOMMENDATIONS AND CONCLUSION

Chapter 3 concludes on the success of COL's ICT4E Activity. What follows are programmatic recommendations and concluding remarks.

4.1 Programmatic Recommendations

It is evident that the COL ICT4E Activity, as it has been designed and implemented in the 3 Caribbean countries, is a holistic and systemic initiative that is integrally woven into the broader COL Three-Year Plan. One of the issues that was highlighted in Guyana, was whether these interventions can also address aspects of the teacher education system in that country that appear to be haemorrhaging the system. Here the preoccupation among the Ministry of Education officials and leading Teacher Education Institutions are with the high levels of teacher attrition. An interview with the COMSEC representative suggested that the development of OER and ODL in teacher education will help make the system more sustainable which in part addresses this challenge.

It is proposed that the ICT4E Activity engages with this challenge in an exploratory way by considering how its current programmes may address this challenge.

Another key matter that arose in the course of the evaluation is that there appears to be more development agencies in the education sector who are involved with various initiatives on ICT in Education and teacher development in the 3 Caribbean countries. Some did not seem to be aware of the work that COL has been doing in this sector. It is proposed that COL considers further collaboration with such partners like the Organisation for the American States (OAS) and the Inter American Development Bank as well as the UNESCO office in Latin America and the Caribbean who are also focusing attention on ICT integration and teacher education. COL is ideally suited to play a convening role with such partners, given its experience, expertise and social capital in the field.

It is further recommended that COL remains focussed on long-term support in the Caribbean. By expanding into other countries in the Caribbean, the continued support to the 3 countries may lessen, and valuable lessons can be learnt that can be applied in other countries.

4.2 Monitoring & Evaluation Recommendations

COL has an established and evolving commitment to the integration of monitoring and evaluation (M&E) in its programme strategy. It is proposed that a more comprehensive M&E framework be considered for the COL ICT4E Activity **in the region** and that this study could potentially serve as a starting point towards such an endeavour.

It is recommended therefore that:

- A comprehensive monitoring, evaluation, and research framework be developed for the ICT4E Activity in the region. This will include the integration of M&E as integral components of design, planning and implementation of the ICT4E Activity. This will require a commitment by both programmatic staff at COL as well as senior management;

- M&E and Research could be made a partnership and multi-stakeholder endeavour which will enable greater participation and knowledge sharing;

- Different baseline studies be conducted as a basis for tracking progress with different aspects of the ICT4E Activities. The surveys used in the Orientation Programme of the CCTI can be further developed as part of a survey methodology for a baseline against which the progress of CCTI participants can be tracked over time;

- Similarly, a baseline study related to OER, their availability, use and re-use and tracking this over time would provide an indication of the performance of this component of COL's ICT4E Activities; and

- A percentage of the Initiative's budget be allocated towards monitoring, evaluation, and research, with dedicated percentages allocated to each of the 3 discrete functions.
  It is further proposed that clear performance indicators be developed for the ICT4E Activities. Table 7 provides some suggestions for performance indicators which could be considered.

It becomes important that COL accumulate the requisite technical competence among teams of staff, partners, service providers and consultants to develop a consistent and workable M&E model for the programme.

Table 8: Proposed Performance Indicators for COL ICT4E Activities

Performance Indicator	Data Source	Data Collection Methods
CAPACITY Teacher Competencies in ICT Integration	Teachers Participating in CCTI Teachers integrating ICT into teaching and learning Facilitators of CCTI UNESCO ICT CFT	Initial and Updated Participant Questionnaires of Teacher ICT Competence Review of Facilitators' Reports Interviews with Teachers and Facilitators Mapping Exercise with UNESCO ICT CFT
MATERIALS 1. Nature of OER/Materials Use 2. Extent of OER/Materials Use	Teachers Participating in CCTI Facilitators of CCTI OER Workshop Participants OER Workshop Facilitators OER Portals Usage Statistics	Initial and Updated Surveys of OER/Materials Use Review of OER Portal Statistical Reports Interviews with MOE representatives, teachers and learners on OER use
PARTNERSHIPS COL Social Capital Index	References to COL in Products and PR of Partners Press Coverage MOUs/Agreements/Contracts with Partners	Interviews with representatives of Partner Organizations
POLICY SUPPORT 1. Level of Awareness of ICT in Education Policy 2. Institutional Capacity to Implement ICT in Education policies	Senior Leadership in Ministries of Education Skills Audits of Public Sector/Ministry of Education/NGOs in Education/Private Sector	Qualitative Survey Questionnaire for MoE Senior Leadership Interviews with Ministers of Education and Permanent Secretaries Document Reviews Interviews with Management of MoE Institutions and Implementing Agencies

4.3 Concluding Remarks

The concluding remarks related to this evaluation will focus on the relevance, trustworthiness and ethical underpinnings of the evaluation findings explained above. In doing so, revisiting the purpose of this evaluation was found useful. The purpose of this evaluation was to explore the effectiveness of COL's ICT4E Activity in 3 Caribbean Countries during 2009-2011 and the main research question was : *how effective has COL's ICT4E Activity been in the 3 focus countries in the Caribbean during 2009-2011?.*

The findings in this study have shown the nature and extent of the effectiveness of COL's ICT4E Activity in each of the 3 countries. They demonstrate that with each of COL's inter-related core strategies, the ICT4E Activity has been effective in each of the 3 focus countries individually as well as collectively which holds implications for the rest of the Caribbean region and the Commonwealth countries where the ICT4E Activity has been/will be involved.

The nature and extent of the Activity's effectiveness is based on the changes in awareness, knowledge, experience, competencies and behaviour of the participants and stakeholders involved in the implementation of the Activity in each of the 3 countries. The research has shown that there has been a positive increase in awareness, knowledge, experience and competencies related to the policy support activities, the model on teacher development and ICT integration, the development of strategic partnerships, the growth of in-country capacity in ICT in education delivery, materials development and OER. The findings in this chapter has attempted to provide evidence of these increasing and positive changes in the behaviour of in-country stakeholders

4.3.1 How Relevant are the Findings?

These findings are relevant to the key COL ICT4E Activity stakeholders including the COL implementation team, COL management and COL partners because they provide evidence of the relevance, visibility and credibility of COL's ICT4E Activity work in the 3 countries. This evidence resides in the establishment of:

- new frameworks, policies and guidelines related to teacher development and ICT integration;
- the development of the CCTI as the product of a particular model of delivering open and distance learning to improve the competencies of teachers in a systemic and systematic way;
- the course materials developed and acquired as OER for mentorship programmes as well as teacher development on ICT integration;

- the numbers of teachers and officials reached through the initial phase of the CCTI, the OER and M&E workshops held; and
- the strategic nature of the partnerships with whom the Activity worked to make the targeted outputs and outcomes materialize in each of the 3 countries.

From the perspective of the in-country stakeholders, there is evidence of progress towards the longer term objective of improving the scope, scale and quality of national education systems in each of the 3 countries.

The findings have also shown that from the perspective of the ICT4E Activity's partners, the contribution made by COL in particular is acknowledged and visible and that the value of COL's participation with its partners lie in the way COL's experience and expertise complements what other partners have to offer by way of improving the scope scale and quality of education in each of the 3 countries. In this sense, the acknowledgement of COL's role by in-country stakeholders such as the Ministries of Education and Education Institutions is relevant for the Activity's partners because they reiterate the value of COL as a partner in the relationship they have with COL and COL's contribution to the social capital of the partnership. Table 9 summarises the relevance of these findings and their implications for different stakeholders.

Table 9: Relevance and Implications of Findings

	Relevance	Evidence	Implications
COL Management	COL's investment in ICT4E Activity in the 3 Caribbean countries has created value for COL	Views of COL Partners; Press coverage of Framework on Teacher Development and ICT Integration Fin Guyana ; MOE and teacher commitment to CCTI in The Bahamas and T&T; Improved Student performance using Success Maker in Guyana	That COL continues to invest in its ICT4E Activity in the 3 Countries; that COL learns how to improve its interventions in ICT4E Activity in the rest of the Commonwealth
COL Implementation Team	COL's investment in ICT4E Activity has made a difference in the 3 countries	Teacher competencies in ICT integration is improving in all 3 countries Learner performance is improving in Guyana MOE awareness, experience and knowledge on ICT in Education is strengthened	That COL continues to invest in its ICT4E Activity in the 3 Countries; that COL learns how to improve its interventions in ICT4E Activity; that COL extends the lessons to other Commonwealth countries
COL Partners	Partnering with COL on its ICT4E activity creates value	Visibility of Partnership in each of the 3 countries Teacher competencies in	Partners continue with the relationship with COL and engages with COL on

	Relevance	Evidence	Implications
		ICT integration is improving in all 3 countries Learner performance is improving in Guyana MOE awareness, experience and knowledge on ICT in Education is strengthened	improving and deepening the partnership with COL
Ministries of Education	COL's ICT4E Activity enables progress towards an improved education system	Improved learner performance linked to use of Success Maker in Guyana; Established Teacher Professional Development Framework in Guyana and improvement in teacher competencies on ICT integration in all 3 countries	MOEs continue their commitment to partnership with COL's ICT4E Activity and invest in the future of the partnership.
Education Institutions	COL's ICT4E Activity is beginning to show favourable results and value to the Education Institutions	Student performance of Success Maker in Guyana	Education Institutions continue to invest in COL ICT4E Activity
Teachers	Teacher competencies in ICT integration being improved	Improvement in teacher competencies and recognition through accreditation and international recognition under way	More teachers are motivated to participate in future CCTI's in all 3 countries

Table 9 shows how the claim of relevance of the evaluation findings is made based on the changes that the projects and interventions of COL's ICT4E Activity have catalysed. These changes assume the form of a notable increase in awareness, knowledge, experience, competencies and power of the key stakeholders outlined in the stakeholder analysis provided in Table 2 in Chapter One.

4.3.2 How Trustworthy are the Findings?

This report argues that the research findings are confirmable because a chain of evidence can be established from the beginning of the research design to data collection, capturing data, data analysis and the final write up of the report. Names of respondents have been supplied for confirmability of the research to be verified.

The evaluation findings are also dependable. Chistie et al (2000) states that dependability is based on the ability of other researchers to carry out the same study and achieve similar results. In this respect there is significant confidence that similar findings will be obtained with different

researchers and using different data gathering techniques. In this sense too, the findings are transferable and generalisable because the findings across the 3 countries are similar.

The evaluation findings can also lay claim to being credible because the consultant has a track record of experience within ICT in Education programmes in developing countries especially in Africa and has experience with the work of the Commonwealth of Learning and its partners. For this reason the consultant was known to a number of the interview respondents as well. This added to the credibility of the research process because there was an established relationship of trust between the consultant and interview respondents. This is evident from the level of candour with which interviewees responded to the questions. Moreover, the shared interest between the consultant and the respondents relating to improving education access, quality and equity in general was apparent during the interview conversations which add further credibility to this report as the outcome of a qualitative research process.

In addition the attempts made to use different data gathering techniques to explore the effectiveness of COL's ICT4E Activity in the 3 countries in the Caribbean has been a further attempt at improving the credibility of the research findings. The consultant has also been very clear about the limitations of the research and how such limitations could be overcome.

4.3.3 Has This Evaluation Been Conducted Ethically?

The ethics of this evaluation is considered based on whether the research process has been conducted ethically. The ethics of the evaluation is based on whether the research process has maximised social benefit and minimised social injuries. The evaluation makes a contribution to the learning of COL's ICT4E Activity and in this sense contributes to the social benefit of the organisation and its broader role in social development in the Commonwealth countries. It can also be claimed that based on this evaluation there will be a just distribution of benefits and burdens to the stakeholders involved in the evaluation process and COL's ICT4E Activity and the process of conducting the evaluation did not wittingly infringe on the moral rights of any of the participants in the research process. The consultant engaged openly with all respondents and has consistently tried to sweep in multiple perspectives within the given timeframe allowed for the evaluation. In this sense the care and well being of the stakeholders were considered and where relevant, due sensitivity was exercised.

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