

# **ICT Essentials For Teachers**

Based on the UNESCO ICT Competency Framework  
for Teachers





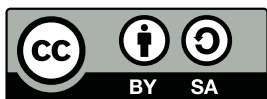
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# **ICT**

## **Essentials For Teachers**

Based on the UNESCO ICT Competency  
Framework for Teachers

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# INTRODUCTION

Rwanda's Vision 2020 aims to transform the country into a knowledge-based, technology-led and middle income society by the year 2020. Information and Communication Technology (ICT) is considered as an ubiquitous tool that will energize the country socio-economic development. Enhancing teacher capabilities in and through ICT is one of the strategies used by the Government of Rwanda to develop a high quality skills and knowledge base, leveraging ICT across various socio-economic sectors of the country. Training teachers in ICTs will increase the resource base and improve education delivery at all levels, hence the need to institutionalize ICT usage and training for all teachers.

The Rwanda ICT Essentials for Teachers provides benefits for both educators and learners in education for improved teaching and learning processes to better learner outcomes, from increased learner engagement to seamless communication with educators which provides robust opportunities that ICT offers for the social development of knowledge based-economies for education.

The Rwanda ICT Essentials for Teachers is based on the UNESCO ICT Competency Framework for Teachers (ICT CFT) a framework that outlines the competencies that teachers need to integrate ICT into their professional practice. The ICT CFT is a result of a partnership between UNESCO, CISCO, INTEL, ISTE and Microsoft. The Rwanda ICT Essentials for Teachers draws from a set of competencies clustered around 6 major education focus areas and focuses on the Technology Literacy growth phase of knowledge acquisition:

Area of educational focus	Modules' - Phases of knowledge acquisition		
	Technology Literacy	Knowledge Deepening	Knowledge Creation
<b>Understanding ICT in Education</b>	Policy Awareness	Policy Understanding	Policy Innovation
<b>Curriculum and Assessment</b>	Basic Knowledge	Knowledge Application	Knowledge Society Skills
<b>Pedagogy</b>	Integrate Technology	Complex Problem Solving	Self Management
<b>ICT</b>	Basic Tools	Complex Tools	Pervasive Tools
<b>Organization and Administration</b>	Standard Classroom	Collaborative Groups	Learning Organizations
<b>Teacher Professional Learning</b>	Digital Literacy	Manage and Guide	Teacher as Model Learner

On completing the Technology Literacy growth phase the teachers will:

- **Outcome 1** ... have good basic ICT skills (Office suite, Learning Management System and Internet environments);
- **Outcome 2** ... be able to integrate ICT into teaching and learning, school administration and use ICT for continuous professional development;
- **Outcome 3** ... use ICT skills in attainment of curriculum learning objectives;
- **Outcome 4** ... uses ICT to access learning resources and promote research;
- **Outcome 5** ... use technology-based learning project and problem solving learning skills;
- **Outcome 6** ... be ICT literate and use ICT pedagogy in teaching and learning for promoting creativity and innovation;

The Rwanda ICT Essentials for Teachers course is an example of blended learning as it includes both face to face sessions and online work. There is 5 days (38 hours) face to face training and the remaining 22 hours are conducted online for a total number of 60 notional hours. During this time participants are exposed to the course's learning management system's content and tools and have an opportunity to work through some of the course content with the physical presence of a mentor.

The course material is composed of existing course material, but also national and international Open Educational Resources (OER). OER are teaching, learning or research materials that are in the public domain or released with an intellectual property license that allows for free use, adaptation, and distribution.



	<b>Key competencies</b>	
<b>Understanding ICT in Education</b>	Explain how existing and planned national policies impact classroom practices and how their classroom practices correspond to and support policies related to ICT.	Unit 1
<b>Curriculum and Assessment</b>	Demonstrate how various ICT can be used in the curriculum.	Unit 12
	Demonstrate how various ICT tools can be used to improve assessment	Unit 13
<b>Pedagogy</b>	Explain the importance of ICT tools to support students' acquisition of school subject matters knowledge and use presentation software and digital resources to support instruction and problem solving in the classroom.	Unit 11
	Manage student project-based learning activities in a technology-enhanced environment to support collaboration	Unit 9
<b>ICT</b>	Explain basic ICT concepts, use and demonstrate the use of common hardware	Unit 2
	Demonstrate ability to perform basic maintenance and repair on hardware and assist in software troubleshooting	Unit 3
	Explain basic ICT concepts, use and demonstrate the use of software applications (particularly Word Processor)	Unit 6
	Explain basic ICT concepts, use and demonstrate the use of graphics software	Unit 7
	Describe the functions and purposes of the internet in the classroom and demonstrate the capacity of using internet. Explain the importance of ICT tools to support students' acquisition of school subject matters knowledge and use presentation software and digital resources to support instruction and problem solving in the classroom	Unit 4
	Demonstrate the capability of using including e-mail, and social media functions in classwork	Unit 5
	Organise ICT to suit learning needs in either a computer lab or classroom setting	Unit 10
	Use in the administration of the classroom and school	Unit 8
<b>Teacher Professional Learning</b>	Locate necessary resources that help to acquire additional subject matter and pedagogical knowledge for professional development	Unit 14

Topic Area: Introduction to Blended Learning

Sub-topic Area: Study Methods

Subject: NA		Introduction to Blended learning		Time: 3 hours	
<p><b>Key unit Competency</b></p> <p>Study effectively using a blended learning methodology that links face-to-face sessions with online access to content and activities using a learning management system (LMS).</p>					
Learning Objectives			Content	Learning Activities	
Knowledge and understanding	Skills	Attitudes and values			
Know and understand how a blended learning study programme is designed to support the acquisition of ICT in education competencies.	<p>Learners should be proficient at;</p> <ul style="list-style-type: none"> <li>• logging into the ICT Essentials for Teachers LMS (Moodle Server);</li> <li>• accessing the appropriate online units and materials;</li> <li>• using the LMS communication tools including 'Chat', 'Forums' and e-mail.</li> <li>• using the LMS assessment tools to complete quizzes and submit assignments.</li> </ul>	Demonstrate a determination to master the skills required to study effectively using a blended learning methodology.	<ol style="list-style-type: none"> <li>1. What is a Blended learning methodology?</li> <li>2. What is an LMS?</li> <li>3. What LMS tools will be used to support the online component of the ICT Essentials for Teachers course?</li> </ol>	<ol style="list-style-type: none"> <li>1. Individuals registered for the course ascertain what is their password and login details and successfully access the course's online materials and activities.</li> <li>2. Individuals use the LMS communication tools while sitting together in a session to simulate a remote situation.</li> <li>3. Individuals use the LMS assessment tools while sitting together in a session to simulate a remote situation.</li> <li>4. Individuals prepare and submit an assignment using the LMS tools.</li> </ol>	
<p><b>Assessment criteria:</b> Demonstrate proficiency at using LMS tools.</p>					

**Materials:**

**Free Resources:**

1. How to Moodle. (2014). What is Moodle. Available online at <https://vimeo.com/117526873>

**Open Education Resources (OER):**

1. Wikipedia. (2015). Moodle. Available on line at <https://en.wikipedia.org/wiki/Moodle> (CC BY SA)
2. Singh, J. (2014). How to Use Moodle. Available online at <https://moodle.org/mod/data/view.php?d=55&rid=6824> (CC BY SA)

**FACILITATION GUIDE:**

This unit is conducted face to face by a facilitator but uses the ICT Essentials for Teachers LMS extensively to model good practice.

**Activity 1 - (30 minutes): Logging In**

All teachers will be expected to bring to the introduction session the digital device they will be using to access the online components of the ICT Essentials for Teachers course. At this session the facilitator will issue the login and password details to each of the participants and they will ensure that they have the correct URL and permissions to access the ICT Essentials for Teachers online materials and activities. It is ideal that for this activity the LMS administrator is on hand to adjust permissions or add new accounts as is necessary. At the end of the session all participants must have access to their LMS accounts.

**Activity 2 - (30 minutes): Profiles**

Each teacher spends half an hour customising their online LMS profiles providing both a head and shoulder photograph and a short biography about themselves

**Activity 3 – (60 minutes): Communication Tools**

The facilitator asks the class to first access the chat room in the LMS and answer the questions. “Where are you from?, How do you normally access the Internet? What are your apprehensions about studying a component of your course online? Once students demonstrate proficiency at communication using a chat room the class moves onto using the forum tool where they are asked to respond to the following question, “What experience have you had using online study tools in the past? What are the advantages and what are the disadvantages of studying online?”

**Activity 4 – (60 minutes): Quizzes and Assignments**

Each participant is asked to access a LMS quiz and complete the multiple choice questions. The questions ask the participants questions about hardware. Immediate feedback is provided by the LMS. Then the participants are asked to use a graphics package such as Paint or equivalent and attempt to draw a plan of their school clearly showing where the computer room is situated. These files are then saved and uploaded into the LMS using assignment tool. The facilitator will need to provide support on these steps as not all participants will be familiar with the process.

Topic Area: Policies related to ICT in Education

Sub-topic Area: Policy Awareness

Subject: Technology Literacy		Unit 1: Effects of ICT related policy on the classroom and vice versa		Time: 4 hours
<b>Key unit Competency</b>				
Explain how existing and planned national policies impact classroom practices and how their classroom practices correspond to and support policies related to ICT.				
Learning Objectives			Content	Learning Activities
Knowledge and understanding	Skills	Attitudes and values		
Know and understand existing and planned national policies related to ICTs in Education.	Identify how classroom practices correspond to and support national policies.	Demonstrate a determination to play a positive role in nation building.	<ol style="list-style-type: none"> <li>1. Overview of National policies related to ICT (Vision 2020, EDPRS2, Smart Rwanda Master Plan (SRMP), ESSP, ICT in Education Policy, Rwanda E-waste policy);</li> <li>2. Introduction to Rwanda ICT in Education Policy;</li> <li>3. Impact of ICT in Education Policy to teaching and learning;</li> <li>4. Key issues and challenges in the education sector as per the SWOC analysis in the Rwanda ICT in Education Policy.</li> </ol>	<ol style="list-style-type: none"> <li>1. In groups read the policy statements, visions, goals and objectives;</li> <li>2. In groups discuss the policies and suggest what to do to implement the ICT in Education policy first at the national level (all schools) and then how to implement the policy in your own classroom;</li> <li>3. In groups discuss in the key issues and challenges in implementing ICT in Education policy;</li> <li>4. Individuals prepare a presentation for class discussion.</li> </ol>
<b>Assessment criteria:</b> Multiple choice questions closed and open ended questions.				

**Materials:**

Government policies and frameworks:

1. Rwanda ICT in Education Policy and Strategic Implementation Plan
2. Economic Development and Poverty Reduction Strategy(EDPRS2)
3. Education Sector Strategic Plan(ESSP 2)
4. National ICT Strategy and Plan(NICI I,NICI II,NICI III)
5. Rwanda Vision 2020
6. Rwanda E-waste policy
7. Smart Education, Education Technology Plan(SRMP)

(These documents are available on the LMS <http://elearning.reb.rw/course/view.php?id=45> )

**Open Education Resources (OER):**

1. COL & Guyana MoE. (2012). Advancing Policy through Classroom Action and Technology  
<http://colccti.colfinder.org/sites/default/files/guyana/pages/TL/Module01/Unit02/01.html>
2. MoEST Kenya. (2015). Policy Understanding <http://kictcft.nba.co.za/course/view.php?id=2>

**Free Resources:**

1. MS Partners in Learning. (2015). Course 1 Unit 1: How technology literacy relates to social and economic goals  
[http://www.pil-network.com/PD/LaunchCourse/msc\\_0001?lang=English](http://www.pil-network.com/PD/LaunchCourse/msc_0001?lang=English)

**FACILITATION GUIDE:**

This unit is an example of blended learning. It will be facilitated face to face during the workshop phase of the course (Day 1) but all documents will be accessed and teacher submissions made online at <http://elearning.reb.rw/course/view.php?id=45>

**Activity 1 - (90 minutes):** As there are six policy documents it is impossible in the time for one individual to read all the documentation. To speed up the processing of these documents divide the class into groups of five. Each individual within a group needs to read only one document and then summarise or read out to the other group members the pertinent points of that policy or strategy. The documents and the suggested page references are available in the LMS. It would help if you asked the group to consider the documents in a particular order.

1. Vision 2020, particularly p13, 16 & 19
2. Economic Development And Poverty Reduction Strategy 2, particularly p14-16, 62, 65, 79
3. National ICT Policy 2015, particularly p13, 15, 19, 22, 30, 31 & 54-55
4. Education Sector Strategic Plan 2014 - 2018, particularly p37-40, 58
5. ICT in Education Policy (2008), particularly p19 & 22-24
6. Rwanda E-waste policy

Or any other relevant government policy frameworks can be used.

**Activity 2 - (30 minutes):** Once the group has an overview of the policy environment it is important for them to start thinking about what this means at two levels: National (all schools) and at the level of classroom practice. Allow the groups to discuss for at least 30 minutes on these two items and forewarn them that they will then need to develop a group presentation of their discussion using an Office Suite program of their choice.

**Activity 3 - (45 minutes):** Each group should identify one person who is familiar with presentation software to capture their discussions. If there is no such person provide support.

**Activity 4 - (75 minutes):** Allow each group to report back to the class using their group presentation that summarises their discussion. Summarise and synthesise their reports into a class report. Once complete the group needs to upload their presentation to the Moodle server using the assignment tool available inside Unit 1.

Topic Area: ICT

Sub-topic Area: Hardware

<b>Subject:</b> Technology Literacy		<b>Unit 2:</b> Hardware		<b>Time:</b> 3 hours 35 minutes	
<b>Key unit Competency</b> Explain basic concepts, use and demonstrate how various ICT can be used in the curriculum.					
<b>Learning Objectives</b>			<b>Content</b>	<b>Learning Activities</b>	
<b>Knowledge and understanding</b>	<b>Skills</b>	<b>Attitudes and values</b>			
<p>Know and understand basic ICT concepts;</p> <p>Identify computer parts and its peripherals;</p> <p>Describe the function of computer parts and peripherals.</p>	<p>Use ICT related concepts applied in learning environment;</p> <p>Operate computers and peripherals and know how to connect them.</p>	<p>Confident to use ICT hardware for teaching and learning processes.</p>	<p>1. Definition of basic hardware;</p> <p>2. Identify different kinds of computer and ICT devices;</p> <p>3. Advantages and disadvantages of ICT devices;</p> <p>4. Types and functions of different ICT device parts.</p>	<p>1. Facilitators explain different kinds of computer and ICT devices' parts and how to connect them;</p> <p>2. Learners complete 2-3 online tutorials;</p> <p>3. Learners share knowledge with peers;</p> <p>4. LMS Quiz on Hardware knowledge.</p>	
<b>Assessment criteria:</b> Demonstrate and illustrate the use of computers through practical exercise and complete a final online quiz.					

**Materials:**

**Free Resources:**

1. GCF LearnFree: Computer Basics  
<http://www.gcflaernfree.org/computers/computerbasics/1>
2. GCF LearnFree: Basic Parts of a Desktop Computer  
<http://www.gcflearnfree.org/computers/basics/5>
3. GCF LearnFree: Buttons, Sockets and Slots of a Desktop Computer  
<http://www.gcflearnfree.org/computers/basics/6>
4. GCF LearnFree: Laptop computers and notebooks  
<http://www.gcflaernfree.org/computers/computerbasics/8>
5. GCF LearnFree: Getting to know Mobile devices  
<http://www.gcflaernfree.org/computers/computerbasics/9>
6. GCF LearnFree: Setting Up a Computer  
<http://www.gcflaernfree.org/computers/computerbasics/10>

**FACILITATION GUIDE:**

This unit is an example of blended learning. It will be facilitated face to face as part of the ICT Essentials for Teachers workshop (Day 2) but all resources are accessed from the LMS at <http://elearning.reb.rw/course/view.php?id=50>

The GCF LearnFree tutorials are particularly good but there is a lot of material here that needs to be covered. So cluster the learners into groups of 5. Within each group identify an individual who must complete both the introductory tutorial and one other. Make sure all the tutorials are covered. If, you feel confident then you could also present to the group. This would allow you to use the computers the learners are using to identify components rather than the generic versions that appear in the tutorials.

**Activity 1 - (60 minutes):** Learners can complete their allocated tutorials or follow the facilitator's presentation.

**Activity 2 - (60 minutes):** Learners develop a short presentation that summarises the tutorials' main points. The facilitator can show them how to use the Snipper Tool to allow the learners to take screen shots for their presentation (See <http://www.gcflearnfree.org/techsavy/taking-screenshots/print>).

**Activity 3 - (60 minutes):** Within each group all learners present their findings.

**Activity 4 - (35 minutes):** Entire class does a 20 minute test during the quiz tool on the LMS.

Topic Area: ICT

Sub-topic Area: ICT Basic Tools

Subject: Technology Literacy		Unit 3: Troubleshooting ICT problems		Time:6 hours
Key unit Competency				
Demonstrate ability to perform basic maintenance and repair on hardware and assist in software troubleshooting.				
Learning Objectives			Content	Learning Activities
Knowledge and understanding	Skills	Attitudes and values		
Identify common failure on hardware and software resources that require maintenance.	<p>Diagnose hardware and software failures;</p> <p>Apply hardware and software troubleshooting principles;</p> <p>Document maintenance and repair problems.</p>	<p>To be confident in computer safety and maintenance;</p> <p>To be comfortable with troubleshooting techniques on hardware and software and connecting devices.</p>	<p>1. Basic troubleshooting:</p> <ul style="list-style-type: none"> <li>a. Power cables;</li> <li>b. Network cables;</li> <li>c. Port connections;</li> <li>d. Rebooting;</li> <li>e. Printer related problems;</li> <li>f. Connectivity related problems;</li> </ul> <p>2. Preventive maintenance:</p> <ul style="list-style-type: none"> <li>a. Disk clean up;</li> <li>b. Defragmentation;</li> <li>c. Virus checkers;</li> </ul> <p>3. Installation of new software.</p>	<p>1. Using a set of two tutorials facilitator will explain and demonstrate the purpose of preventive, corrective, adaptive and perfective maintenance;</p> <p>2. Facilitator will demonstrate different steps of troubleshooting process to the learners who will recreate the process on demonstration computers. Test to see if learners can correctly diagnose ICT problems and select the correct solution;</p> <p>3. Facilitator demonstrates the installation of new software and the updating of virus signatures and provide teachers with time to practice what has been learnt in the demonstration;</p> <p>4. Learners contextualise how this know-how can shape school activities and behaviours in the ICT lab.</p>



**Assessment criteria:** Learners must explain and demonstrate the purpose of preventive, corrective, adaptive and perfective maintenance; installing/upgrading software; demonstrate different steps of troubleshooting.

**Materials:**

**Free Resources:**

1. GCFlearnfree.org Computer Basics, Unit 14: Computer Safety and Maintenance  
<http://www.gcflearnfree.org/computerbasics/14/print>
2. GCFlearnfree.org Computer Basics, Unit 15: Basic Troubleshooting Techniques  
<http://www.gcflearnfree.org/computerbasics/15>

**FACILITATION GUIDE:**

This unit is blended learning and will be facilitated face to face at the ICT Essentials for Teachers workshop. However, access to the resources, tutorials, quiz and blog will be from the LMS at <http://elearning.reb.rw/course/view.php?id=51>

**Activity 1 – (120 minutes):** Use the two GCFlearnfree.org tutorials above and use them to structure your demonstration of the issues and techniques. Project the tutorials on the screen but then do the routines on a demonstration computer in front of the learners. Ideally if the group is small and there are sufficient computers allow them to perform some of the routines.

**Activity 2 – (30 minutes):** Ask the learners to perform a quiz on the LMS that query if they can diagnose ICT problems and select the correct solution.

**Activity 3 – (180 minutes):** Facilitator should demonstrate the installation of new software and updating virus checkers and encourage the learners to perform similar installations and updates on the demonstration computers.

**Activity 4 - (30 minutes):** Learners should reflect in their blog what the most common maintenance issues at their schools are. They should also see if they can identify where safety hazards might exist in the current school set up. In the blog entry they should also suggest potential solutions to these issues and problems.

**Topic Area: ICT**

**Sub-topic Area: Basic ICT tools**

Subject: Technology Literacy			Unit 4: The Educational Internet		Time: 3 hours
<p><b>Key unit Competency</b> Describe the functions and purposes of the internet in the classroom and demonstrate the capacity of using internet. Explain the importance of ICT tools to support students' acquisition of school subject matters knowledge and use presentation software and digital resources to support instruction and problem solving in the classroom.</p>					
Learning Objectives			Content	Learning Activities	
Knowledge and understanding	Skills	Attitudes and values			
<p>Know and different internet applications;</p> <p>Identify different areas where internet functions are applicable in the classroom;</p> <p>Identify the threats to learners of using the internet.</p>	<p>Use internet activities;</p> <p>Make competent use of the internet in different classroom activities.</p>	<p>Recognize the value of internet in facilitating understanding, communication, creativity and the change in the classroom;</p> <p>Teachers should want to protect their students from internet threats.</p>	<p>1. The Internet:</p> <p>a. What is the internet?</p> <p>b. Browsers;</p> <p>c. Understanding URL;</p> <p>d. Navigating Internet;</p> <p>e. Function and characteristics of internet;</p> <p>2. Searching on the web:</p> <p>a. Search Engine Tools;</p> <p>b. Downloading/ Uploading materials;</p> <p>3. Internet Safety.</p> <p>4. Internet Safety in the classroom.</p>	<p>1. Learners complete web tutorial on 'The Internet'.</p> <p>2. Learners complete web tutorial on 'Search Skills'.</p> <p>3. Learners view a video on Internet safety and complete a web tutorial;</p> <p>4. Learners develop draft school Internet safety policy document for their schools to consider.</p>	
<p><b>Assessment criteria:</b> Assessment will be made continuously on the internet risk assessment group work. Searching activities, peer to peer interaction.</p>					

**Materials:**

**Open Education Resources (OER)**

1. COL/Guyana MoE. (2012). TL Module 1, Unit 1: Internet Search  
<http://www.colccti.colfinder.org/sites/default/files/guyana/pages/TI/Module01/Unit01/01.html>
2. COL/Guyana MoE. (2012). TL Module 2, Unit 2: Internet Search Engines-Advanced Searching  
<http://www.colccti.colfinder.org/sites/default/files/guyana/pages/TI/Module02/Unit02/01.html>
3. MoE Kenya. (2015). ICTCFT: Internet Safety  
[http://kictcft.nba.co.za/course/view.php?id=14\(Log-in as a guest\)](http://kictcft.nba.co.za/course/view.php?id=14(Log-in as a guest))

**Free Resources:**

1. GCF LearnFree: Internet 101  
[http://www.gcflearnfree.org/internet 101](http://www.gcflearnfree.org/internet%20101)
2. GCF LearnFree: Internet Explorer  
<http://www.gcflearnfree.org/internetexplorer>
3. GCF LearnFree: Search Better  
<http://www.gcflearnfree.org/searchbetter>
4. GCF LearnFree: Internet Safety  
<http://www.gcflearnfree.org/internetsafety>

**FACILITATION GUIDE:**

This unit is an example of blended learning where the activities will be facilitated face-to face but the materials, resources and activities will be accessed from the LMS at <http://elearning.reb.rw/course/view.php?id=54>

The learners will access unit 4 resources using their own devices and connecting to the LMS

**Activity 1 – (45 minutes):** The learners are introduced to the concept of the Internet, its origin, components by completing the GFC LearnFree Internet 101 tutorial.

**Activity 2 – (45 minutes):** The learners are in introduced to search engines using the GFC LearnFree Search Better tutorial. Move around the room providing support but let the teachers get used to studying using the online tutorials.

**Activity 3 – (45 minutes):** Then using a video tutorial the concept of Internet safety will be raised and learners will discuss this issue using a forum from within the LMS. The learners will complete the GFC LearnFree internet safety tutorial that outlines the issues we need to think about to protect the learners.

**Activity 4 – (45 minutes):** Discuss developing a school Internet Safety policy with the group. What should be in it? What is its purpose? Then task the teachers to create a one page (Word Processor) document that outlines rules and procedures to protect learners when using the Internet. This document needs to be uploaded into the LMS using the assignment tool in unit 4. This is essential practice for when they need to do this remotely after the workshop.

Subject: Technology Literacy		Unit 5: E-Mail & Social Media		Time: 4 hours
<b>Key unit Competency</b> Demonstrate the capability of using including e-mail, and social media functions in classwork.				
Learning Objectives			Content	Learning Activities
Knowledge and understanding	Skills	Attitudes and values		
<p>Know and understand different e-mail services and social media applications;</p> <p>Identify different areas where internet functions are applicable in the classroom particularly e-mail and social media.</p>	<p>Use e-mail and social media activities;</p> <p>Make competent (use of e-mail and social networking) in different classroom settings.</p>	<p>Recognize the value of internet in facilitating, understanding, communication, creativity and change in the classroom.</p>	<p>1. E-mail Communication:</p> <p>a. Reading, composing, sending, forwarding, replying and deleting messages;</p> <p>b. Attaching documents or files to a message;</p> <p>c. Group mails.</p> <p>2. Social Media Applications:</p> <p>a. Social Media Network such as Facebook;</p> <p>b. Twitter;</p> <p>c. WhatsApp;</p> <p>d. Skype;</p> <p>e. LinkedIn.</p>	<p>1. Learners create and use web based e-mail accounts;</p> <p>2. Learners use social media applications (Facebook, Twitter, WhatsApp) for collaboration and support;</p> <p>3. Learners made aware of the ethical implications of the use of social media.</p>
<b>Assessment criteria:</b> Assessment will be made on peer to peer interaction.				

### Materials:

Free Resources:

1. Microsoft PiL PD Course, Unit 5: Email and learning activities  
<https://www.educatornetwork.com/pd/VUWebinars>
2. GCF LearnFree: Facebook 101  
<http://www.gcflearnfree.org/socialmedia/facebook101>
3. GCF LearnFree: Twitter 101  
<http://www.gcflearnfree.org/twitter101>
4. GCF LearnFree: eMail 101  
<http://www.gcflearnfree.org/emailbasics/email101>
5. GCF LearnFree: Beyond eMail  
<http://www.gcflearnfree.org/emailbasics/email101>
6. GCF LearnFree: Gmail  
<http://www.gcflearnfree.org/gmail>

### FACILITATION GUIDE:

This unit is an example of blended learning where the activities will be facilitated face-to face but the materials, resources and activities will be accessed from the LMS at <http://elearning.reb.rw/course/view.php?id=55>

Learners will access the tutorials from the LMS as well as submit their graphics assignment using the assignment tool. If you prefer you can present the first tutorial rather than the whole group diving into the online tutorials. However let them do the second two tutorials without your support. They need to get used to studying without direct support. Move around the room intervening when you see teachers who are genuinely stuck.

**Activity 1 – (90 minutes):** Learners will complete two GFC LearnFree e-mail tutorials, eMail 101 and Beyond Basics, that includes reading, composing, sending, forwarding, replying and deleting messages as well as attaching documents or files to a message.

**Activity 2 – (90 minutes):** Learners will work through the GFC LearnFree web tutorials on Facebook and then be encouraged to set up a Facebook account and class activities that use 'pages' and 'groups' for their classes.

**Activity 3 – (60 minutes):** Learners will work through the GFC LearnFree web tutorials on Twitter, view the ministry of Educations Twitter guidelines and then be encouraged to set up a Twitter and/or WhatsApp account and create a connected group.

There is no assignment submission required for this unit.

**Topic Area: ICT**

**Sub-topic Area: Basic Application Software Skills**

<b>Subject:</b> Technology Literacy		<b>Unit 6:</b> Graphics Software		<b>No of Periods:</b> 4 hours
<b>Key unit Competency</b> Explain Basic ICT Concepts, Use and demonstrate the use of graphic software.				
<b>Learning Objectives</b>			<b>Content</b>	<b>Learning Activities</b>
<b>Knowledge and understanding</b>	<b>Skills</b>	<b>Attitudes and values</b>		
Identify basic graphic functions;  Describe the functions and purpose of graphics software.	Use computer basic software applications such as the MS Paint or Fresh Paint;  Use ICT production tools such as printers.	Confident in using graphics software for teaching and learning processes.	1. Introduction to: a. Paint/Fresh Paint; b. Software interface layout; c. Functions and tools; d. Saving.  2. Graphic development: a. Drawing of different shapes; b. Filling of different shapes with colours; c. Changing the colours, using the palette and making new colours to add to the palette.  3. Adding Text to a drawing.	1. Learners develop and save a fun graphic, an expressive face, as an initial product of their exploration of the software program;  2. Learners develop graphics to support a component of their syllabus and insert it into a word processor document developed previously;  3. Learners create a set of graphics to insert into the class notes/handouts.
<b>Assessment criteria:</b> Practical exercises.				

**Materials:**

**Free Resources:**

1. 7Tutorilas: How to work with paint in Windows 7 and Windows 8  
<http://www.7tutorials.com/how-work-new-paint>
2. RichDragon ON Youtube: What CAN Fresh Paint Do On Windows 8?  
<https://www.youtube.com/watch?v=pEGEbt3Tdp0>
3. OldGuyGeek on Youtube: Fresh Paint for Windows 8  
<https://www.youtube.com/watch?v=3ctfzImB82c>

**FACILITATION GUIDE:**

This unit is an example of blended learning where the activities will be facilitated face-to face but the materials, resources and activities will be accessed from the LMS at <http://elearning.reb.rw/course/view.php?id=53>. Learners will access the tutorials and forum from the LMS as well as submit their graphics assignment using the assignment tool.

**Activity 1 – (20 minutes):** Through the LMS learners can access both the Paint/Fresh & Paint tutorials. They must choose appropriately according to their Operating System. Limited them at this stage to a cursory investigation of these tutorials. Move around the room providing support to those struggling to activate the program and access the tutorials.

**Activity 2 – (40 minutes):** While the learners will have access to the tutorials the course encourages the learners to learn through investigation, trial and error rather than working step by step through the program tutorials. In this activity set them an easy task such as, “Draw how you are feeling at this point.” Encourage them to experiment and then share their funny faces using the forum tool in the LMS.

**Activity 3 – (90 minutes):** Encourage the teachers to create a set of graphics that can be inserted into class notes or hand-outs. They will be tasked with making class notes in MS Word in the next unit so encourage them to create some graphics to inset later. Identify persons who are familiar with MS Word software to prepare the class notes or hand-outs. If there is no such person provide support.

**Activity 4 – (30 minutes):** Time permitting, provide guidance on how to load their images into a blank MS Word document. Word Processing will be the focus of the next unit, so don't labour this part of the activity.

Topic Area: ICT

Sub-topic Area: Basic Application Software Skills

Subject: Technology Literacy		Unit 7: Word Processing		Time: 8 hours
<b>Key unit Competency</b> Explain basic ICT concepts, use and demonstrate the use of software applications (particularly Word Processor).				
Learning Objectives			Content	Learning Activities
Knowledge and understanding	Skills	Attitudes and values		
<p>Know and understand the difference between system and application software;</p> <p>Know and understand word processing concepts;</p> <p>Describe the function and purpose of a Word Processor;</p> <p>Identify basic word processing tools.</p>	<p>Use computer basic software applications such as the Word Processor;</p> <p>Use ICT related concepts applied in learning environment;</p> <p>Use output devices such as a printer.</p>	<p>Confident in using ICT hardware and software for teaching and learning processes.</p>	<p>1. Introduction to system vs application i.e. an application like a word processor;</p> <p>2. Basic understanding of the operating system environment;</p> <p>3. Introduction to Word Processing;</p> <p>a. Starting, creating and closing a Word Processor document;</p> <p>b. Toolbars and menu system;</p> <p>c. Rule, document view, text area;</p> <p>d. Saving and retrieving a document;</p> <p>e. Typing, inserting, editing and formatting text;</p> <p>f. Page margins, page size and orientation;</p> <p>g. Error proofing tools (check spelling and grammatical errors);</p> <p>h. Printing a word processor document.</p>	<p>1. Introduction and orientation to the operating system and how to access the Word Processor;</p> <p>2. Web tutorials cover opening, saving and exiting Word Processor files, formatting, fonts and paragraphs, editing documents and manipulating graphics and objects;</p> <p>3. Teachers use skills to create teaching aid and submit a document as evidence of proficiency.</p>



**Assessment criteria:** Practical exercises.

**Materials:**

**Open Educational Resources(OER):**

1. COL/Guyana MoE. (2012). TL Module 1,Unit 3: What is the Purpose of Word Processing Software?  
<http://colccti.colfinder.org/sites/default/files/guyana/pages/TL/Module01/Unit03/01.html>

**Free Resources:**

1. Microsoft PiL PD Course 4,Unit 6:Software applications for better learning  
[http://www.educationnetwork.com/PD/LaunchCourse/msc\\_0004?lang=English](http://www.educationnetwork.com/PD/LaunchCourse/msc_0004?lang=English)
2. GCF LearnFree: Getting started with Windows 8  
<http://www.gcflearnfree.org/windows/WINDOWS8/4>
3. GCF LearnFree: Getting to know Word  
<http://www.gcflearnfree.org/office2013/word2013/4>
4. GCF LearnFree: Word 2013 Creating and Opening Documents  
<http://www.gcflearnfree.org/office2013/word2013/5>
5. GCF LearnFree: Word 2013 Text Basics  
<http://www.gcflearnfree.org/office2013/word2013/7>
6. GCF LearnFree: Word 2013 Formatting Text  
<http://www.gcflearnfree.org/office2013/word2013/8>
7. GCF LearnFree: Word 2013 Printing Documents  
<http://www.gcflearnfree.org/office2013/word2013/10>
8. GCF LearnFree: Indents and Tabs  
<http://www.gcflearnfree.org/office2013/word2013/11>
9. GCF LearnFree:Lists  
<http://www.gcflearnfree.org/office2013/word2013/13>
- 10.GCF LearnFree:Headers, Footers and Page Numbers  
<http://www.gcflearnfree.org/office2013/word2013/17>
- 11.GCF LearnFree: Tables  
<http://www.gcflearnfree.org/office2013/word2013/23>

**Free Textbook:**

1. BOOKbOON:Word 2013 Textbook  
<http://bookboon.com/en/word-2013-ebook#download>

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## FACILITATION GUIDE:

This unit is an example of blended learning where the activities will be facilitated face-to face but the materials, resources and activities will be accessed from the LMS at <http://elearning.reb.rw/course/view.php?id=52> . Learners will access the tutorials and forum from the LMS as well as submit their word processing assignment using the assignment tool. It is important that as a first step you distinguish between system software, particularly the operating system (OS), and application software, such as MS Word. However, don't spend too much time on the OS. Explain that the OS supports all application software function correctly.

**Activity 1 – (30 minutes):** Learners will complete the GCF Learn Free tutorial 'Getting Started with Windows 8' (or the appropriate tutorial for their computer system) that illustrates the role of the Operating System and distinguishes between system and application software.

**Activity 2 – (30 minutes):** Learners are tasked with preparing a set of either class notes or hand-outs that they can use in their teaching. Let them brainstorm some ideas using the LMS forum but the document must have text, headings, lists, tables and graphics.

**Activity 3 – (6 hours):** Learners work at their own pace using the 9 GCF LearnFree tutorials or with the BookBoon Word 2013 free textbook accessed from within the LMS. A forum has been set up after each tutorial where they can discuss issues raised by the tutorial. This is a very long session, the longest on the workshop so move around and handle individual queries. Make sure you provide support to those feeling 'lost' or wanting to query aspects of the skill. If you want you can interrupt every now and then and demonstrate some 'extra' feature to the group as a whole. This will break the monotony of tutorial work.

**Activity – (40 minutes):** Ask the class to 'print' their class notes both using the centre printer but also as a 'PDF'. The PDF method means they need to go through the process of printing but actually end up with a digital document. This is the document they need to submit using the LMS assignment tool. By now they should have had plenty of practice uploading documents but be on hand online to support the process.

**Activity 5 – (20 minutes):** Identify an exemplary set of notes from those submitted and provide positive criticism as to what is good and could be improved and encourage debate about what constitutes a good set of notes or handouts.

**Topic Area:** Organization and Administration

**Sub-topic Area:** Administration

Subject: Technology Literacy		Unit 8: Record Keeping (Spreadsheets)		Time: 4 hours
<p><b>Key unit Competency</b></p> <p>Use in the administration of the classroom and school spreadsheet in school management.</p>				
Learning Objectives			Content	Learning Activities
Knowledge and understanding	Skills	Attitudes and values		
Identify and understand different ICT tools used in schools.	Apply different application software to increase efficiency and cost effectiveness in school and class management.	Increase efficiency, access, equity, quality and relevance in school and class management.	<p>1. The Importance of ICT in school and class administration:</p> <p>a. Information management;</p> <p>b. Recording and processing data;</p> <p>c. Storing and sharing information;</p> <p>d. Capture and store data for informing data-driven decision making;</p> <p>e. Improve methods of accountability and reporting.</p> <p>2. Spreadsheet skills:</p> <p>a. Introduction to Excel;</p> <p>b. Interface;</p> <p>c. Functions and Formulas.</p>	<p>1. Demonstration on various ICT tools used for school and class administration;</p> <p>2. Practical sessions on using spreadsheets applications;</p> <p>3. Tutorials on setting up a class mark book using a spreadsheet.</p>
<p><b>Assessment criteria:</b> Assessment will focus on ability to identify different school management software applications and use a spreadsheet package to support class record keeping.</p>				

**OER Materials:**

COL/Guyana MoE. (2012). TL Module 2 Unit 4: Classroom Records  
<http://colccti.colfinder.org/sites/default/files/guyana/pages/TL/Module02/Unit04/01.html>

COL/Guyana MoE. (2012). TL Module 2 Unit 5: School Records  
<http://colccti.colfinder.org/sites/default/files/guyana/pages/TL/Module02/Unit05/01.html>

MoE Kenya MoEST. (2015). KICTCFT: ICT to Keep School Records  
<http://kictcft.nba.co.za/course/view.php?id=11>

**Free Materials**

GFC LearnFree: Excel Tutorials  
<http://www.gcflernfree.org/office2013/excel2013>

GFC LearnFree: Excel Formulas  
<http://www.gcflernfree.org/office2013/excelformulas>

**FACILITATION GUIDE:**

This unit is an example of blended learning where the activities will be facilitated face-to face but the materials, resources and activities will be accessed from the LMS at <http://elearning.reb.rw/course/view.php?id=57>. Learners will access the tutorials and forum from the LMS as well as submit their assignment using the assignment tool.

**Activity 1 – (60 minutes):** Learners will be access readings from the LMS on different school administration packages that outline the merits of such systems. They will be encouraged to investigate a few open source platforms that can be used free of charge. Towards the end of the session discuss the merits of such software with the group.

**Activity 2 – (90 minutes):** Learners will be encouraged to do the GFC LearnFree tutorials on Spreadsheets accessed from the LMS. Work around the room providing individualised support.

**Activity 3 – (90 minutes):** Learners will be asked to follow a step by step process to set up a class mark book using a spreadsheet package. The completed mark book will need to upload to the LMS using the assignment tool in unit 8.

**Topic Area:** Pedagogy

**Sub-topic Area:** Project Based Learning

<b>Subject:</b> Knowledge Deepening		<b>Unit 9:</b> Manage ICT for Project Based Learning		<b>Time:</b> 4 hours
<b>Key unit Competency</b> Manage student project-based learning activities in a technology-enhanced environment to support collaboration				
<b>Learning Objectives</b>			<b>Content</b>	<b>Learning Activities</b>
<b>Knowledge and understanding</b>	<b>Skills</b>	<b>Attitudes and values</b>		
Know and understand how to facilitate project based learning using ICTs.	Manage project based learning activities in a technology environment.	Appreciate a flexible classroom learning environment that promotes student-centred activities and flexible technologies to support collaboration.	1. Introduction to the project based learning;  2. Designing a project based learning 'lesson';  3. Facilitating project based learning in a safe technological environment.	1. Facilitator presentation on the Project Based Learning project management cycle and project based learning management and physical environment factors for creating a safe environment;  2. Group work: Practical exercise to develop a project based learning activity;  3. Presentation of individual teacher PBL lesson plans;  4. Discussion on PBL facilitation techniques ;  5. Teachers submit finalized lesson plans to LMS.
<b>Assessment criteria:</b> Teachers develops a PBL lesson plan.				

## MATERIALS

### Open Education Resources (OERs):

1. OER4schools.org. (2014). Unit 3: Group Work  
[http://oer.educ.cam.ac.uk/wiki/OER4Schools/Group\\_work](http://oer.educ.cam.ac.uk/wiki/OER4Schools/Group_work)
2. COL/CCTI. (nd). Module 6: Project Approaches to Learning with ICT  
<http://schoolnet.org.za/CoL/ACE/course/pbl/activities/pbl.index.htm>
3. OER4schools.org. (2014). Unit 5: Enquiry-based learning and project work  
[http://oer.educ.cam.ac.uk/wiki/OER4Schools/Enquiry-based\\_learning\\_and\\_project\\_work](http://oer.educ.cam.ac.uk/wiki/OER4Schools/Enquiry-based_learning_and_project_work)
4. Study Guides & Strategies: Project Planning  
<http://www.studygs.net/shared/mgmnt.htm>
5. COL/Guyana KD Module 3, Unit 3: PBL Cooperative and Collaborative Strategies  
<http://colccti.colfinder.org/sites/default/files/guyana/pages/KD/Module03/Unit01/01.html>
6. MoE Kenya: ICT Tools to Support PBL  
<http://kictcft.nba.co.za/course/view.php?id=6>
7. Buck Institute: PBL  
<http://174.123.25.183/pathway2.html>

## FACILITATION GUIDE:

This unit is an example of blended learning. It will be facilitated face to face at the ICT Essentials for Teachers workshop as part of the final day's programme, however, the resources and tools required to complete the activities will be accessed from the LMS at this URL <http://elearning.reb.rw/course/view.php?id=49>. You need to provide them with an awareness of what PBL is, how to manage and facilitate a PBL lesson. A good resource to get up to speed is at <http://cctionline.org/courses/planning-learning-through-projects/>

**Activity 1 – (45 minutes):** Provide the learners with an overview of the PBL methodology, particularly the different phases of PBL activity. Also see if you can show them an example of the products from a completed project. Let them ask lots of questions.

**Activity 2 – (90 minutes):** Ask the learners to work in groups of two, but each produce a PBL lesson plan using the template lesson planner available here <http://kictcft.nba.co.za/mod/resource/view.php?id=1058>

**Activity 3 – (60 minutes):** Ask a few learners to present their plans to the class and encourage debate as to whether it follows the guide in the PBL Buck Institute website and encourage the learners to provide constructive feedback.

**Activity 4 – (15 minutes):** Ask the learners to consider the learner's role in facilitating a PBL project. Ask them to read this article: <http://kictcft.nba.co.za/mod/page/view.php?id=809>  
What will they need to do that is different from the way they normally teach? Encourage debate.

**Activity 5 – (30 minutes):** Encourage the learners to revise and upload their PBL Lesson plans using the LMS assignment tool.

**Topic Area:** Organization and Administration

**Sub-topic Area:** Organisation

Subject: Technology Literacy		Unit 10: ICT & the Physical Environment		Time: 5 hours	
<p><b>Key unit Competency</b></p> <p>Organise ICT to suit learning needs in either a computer lab or classroom setting.</p>					
Learning Objectives			Content	Learning Activities	
Knowledge and understanding	Skills	Attitudes and values			
Identify and understand different ways to organise ICT in the school, lab/ classroom.	Reorganize ICT environment to suit curriculum objectives and learning needs i.e. labs, classrooms or in the community.	Maximize the potential of ICT to suit learning needs.	<ol style="list-style-type: none"> <li>Definition of computer laboratory:                             <ol style="list-style-type: none"> <li>Human computer interaction;</li> <li>Design;</li> <li>Electricity/ceiling, etc.</li> </ol> </li> <li>How to manage a computer lab:                             <ol style="list-style-type: none"> <li>Seating habits;</li> <li>Code of ethics;</li> <li>Cleaning of equipment.</li> </ol> </li> <li>How to use the Classroom as an environment for ICT use.</li> <li>Mobile usage to support curriculum.</li> </ol>	<ol style="list-style-type: none"> <li>Group discussion on the use of computer labs to enhance learning. Teachers develop a school plan for an IT lab.</li> <li>Group discussion on the use of computers to enhance learning in a classroom setting. Teachers develop a lesson plan demonstrating how to use computers effectively.</li> <li>Group discussion on the use of mobiles to enhance learning.</li> <li>Teachers develop a lesson plan demonstrating how to use mobiles effectively.</li> </ol>	
<p><b>Assessment criteria:</b> Assessment will focus on the use of ICT deployed in a computer lab or in a classroom setting.</p>					

**Materials:**

**Open Education Resources (OERs):**

1. COL/Guyana MoE. (2012). TL Module 4, Unit 2: ICT in the laboratory  
<http://colccti.colfinder.org/sites/default/files/guyana/pages/TL/Module04/Unit01/01.html>
2. COL/Guyana MoE. (2012). TL Module 4, Unit 2: ICT in the Classroom  
<http://colccti.colfinder.org/sites/default/files/guyana/pages/TL/Module04/Unit02/01.html>

**Free Resources:**

1. Microsoft Pil PD Course 5, Unit 2: Managing ICT resources in a classroom environment
2. Microsoft Pil PD Course 5, Unit 3: Managing Logistics and social interactions around ICT resources

**FACILITATION GUIDE:**

This unit is to be completed online. It will occur after the ICT Essentials for Teachers workshop is completed. Your role as facilitator has changed to that of an 'online facilitator'. The teachers will access unit 12 using their own devices and connecting to the LMS at <http://elearning.reb.rw/course/view.php?id=56>. Teachers will access the tutorials and forum from the LMS as well as submit their graphics assignment using the assignment tool. You will need to provide online support in the various forums.

**Activity 1 – (100 minutes):** Pros and cons of ICT in a laboratory. Teachers will read 2 articles from the Internet, one in praise and suggesting optimal layout options the other rather negative about labs. Teachers will then discuss in a forum whether they have a lab at school, are planning to create one or have decided not go this route. Teachers will discuss the issues in the forum and the facilitator must support the conversation. The first assignment is to draw a scale diagram of a room in the school that could serve as a lab and how it could be set up best to serve the school needs. This will be uploaded to the LMS using the assignment tool in unit 10.

**Activity 2 – (100 minutes):** Pros and cons of using ICT in a classroom. Teachers will read a few articles about how best to use ICT in a classroom. Teachers will discuss the issues in the forum and the facilitator must support the conversation. Teachers will then be tasked to create a lesson plan that uses ICT appropriately in this setting. The lesson plan will be uploaded to the LMS using the assignment tool.

**Activity 3 – (100 minutes):** Using mobiles for learning. Teachers will read online articles that identify the pros and cons of using mobile phones for learning. Teachers will discuss the issues in the forum and the facilitator must support the conversation. Teachers will then be tasked to create a lesson plan that uses ICT appropriately in this setting. The lesson plan will be uploaded to the LMS using the assignment tool.



**Topic Area: Pedagogy**

**Sub-topic Area: Integrate Technology**

Subject: Technology Literacy		Unit 11: ICT to support Traditional Pedagogy		Time: 4 hours	
<p><b>Key unit Competency</b></p> <p>Explain the importance of ICT tools to support students' acquisition of school subject matters knowledge and use presentation software and digital resources to support instruction and problem solving in the classroom.</p>					
Learning Objectives			Content	Learning Activities	
Knowledge and understanding	Skills	Attitudes and values			
<p>Know and understand ICT tools.</p> <p>Identify where ICT-based activities would be appropriate.</p> <p>Identify relevant ICT problem solving tools.</p>	<p>Use ICT tools to support students' acquisition of school subject matters;</p> <p>Apply facilitation methods including presentation software;</p> <p>Design lesson aids that make use of ICT tools and digital resources to support instruction and problem solving in the classroom.</p>	<p>Recognize the value of ICT in promoting creativity, change, problem solving and collaborative learning.</p>	<p>1. The importance of using ICT in teaching and learning;</p> <p>2. ICT Tools and systems in learning:</p> <p>a. Mobile devices;</p> <p>b. Computer with accessories;</p> <p>c. Projector;</p> <p>d. Internet.</p> <p>3. Relevant digital tools &amp; resources:</p> <p>a. Digital instructional materials;</p> <p>b. Presentation software application.</p>	<p>1. Individual research and brainstorming about the importance of ICT in Teaching and Learning and present it;</p> <p>2. Facilitator led demonstration on ICT tools and its usage in subject matters;</p> <p>3. Individual exercises with presentation package;</p> <p>4. Group discussion on good presentation design to encourage learning;</p> <p>5. Upload presentation on LMS.</p>	

**Assessment criteria:** Learners should be able to integrate ICT into didactic materials, create learning activities that use ICT resources to meet outcomes and design presentations that appropriately incorporate ICT resources.

## MATERIALS

### Open Education Resources (OERs):

1. OER4schools.org. (2014). Unit 1: Introduction to interactive teaching and the use of ICT  
[http://oer.educ.cam.ac.uk/wiki/OER4Schools/Introduction\\_to\\_interactive\\_teaching\\_and\\_the\\_use\\_of\\_ICT](http://oer.educ.cam.ac.uk/wiki/OER4Schools/Introduction_to_interactive_teaching_and_the_use_of_ICT)
2. COL/Guyana MoE. (2012). Module 3, Unit 1: Integrating ICT into Didactic Teaching Methodologies  
<http://colccti.colfinder.org/sites/default/files/guyana/pages/TL/Module03/Unit01/01.html>
3. OER4schools.org. (2014). Unit 4: Assessment for learning and lesson pacing  
[http://oer.educ.cam.ac.uk/wiki/OER4Schools/Assessment\\_for\\_learning\\_and\\_lesson\\_pacing](http://oer.educ.cam.ac.uk/wiki/OER4Schools/Assessment_for_learning_and_lesson_pacing)
4. COL/Guyana MoE. (2012). TL Module 3, Unit 3: Strategies for Integrating ICT into Learning  
<http://colccti.colfinder.org/sites/default/files/guyana/pages/TL/Module03/Unit03/01.html>

## FACILITATION GUIDE:

This unit is the first pure online lesson. Resources and tools will be available from the LMS at <http://elearning.reb.rw/course/view.php?id=48>

It is now your task to facilitate from a distance.

### Activity 1 – (50 minutes over a week)

Using the LMS forum ask the teachers to consider how they would use technology to improve or enhance their teaching. Ask them to brainstorm and compile lists on the following:

- How ICT might be used to improve their teaching?
- How they might use a presentation package specifically in what they are already doing?
- How might ICT be used to help student learning?
- How could ICT be used to help student's solve problems?

Then ask them to post their lists using the forum. Once they have posted encourage them to discuss each other's contributions. At the end of the week as facilitator create a summary of the group findings and post to the forum.

### Activity 2 - (130 minutes):

The activity in the LMS will ask each teacher to select a component of the syllabus that they think would lend itself to presentation software. The teachers then are required to follow a tutorial where they are taught to create simple Power Point presentations. For those teachers who are familiar with the package they can go ahead and create the teaching aid without waiting for the tutorial. Provide support by tracking what the teachers have accessed and contact using e-mail or telephone any teachers that have not accessed the system at the end of the week.

### Activity 3 - (60 minutes):

The class will access the "Death by PowerPoint" reading on the LMS that explains how best to engage an audience and not fall into the trap of creating 'boring' class materials. They will be required to revise their designs based on the lessons about good design practices. Teachers will use the assignment upload tool to submit their presentations. Access these submissions and identify some good examples of PowerPoint being used well to support teaching. Using the forum highlight the exemplars and provide the designers an opportunity to explain their thinking and approach to the class.

Topic Area: Curriculum and Assessment

Sub-topic Area: ICT Basic Knowledge

Subject: Technology Literacy		Unit 12: ICT to support teaching the curriculum		Time: 3 hours
<b>Key unit Competency</b> Demonstrate how various ICT can be used in the curriculum.				
Learning Objectives			Content	Learning Activities
Knowledge and understanding	Skills	Attitudes and values		
Identify and understand the use of ICT to support the curriculum and improve assessment.	Select digital resources to support curriculum and assessment Evaluate digital resources to support curriculum and assessment Develop ICT based learning activities/ exercises.	Appreciate the support of digital resources and ICT based learning activities/ exercises in curriculum and assessment.	<ol style="list-style-type: none"> <li>Understanding how ICT digital content supports teaching and learning;</li> <li>Finding the right digital resources for the subject matter;</li> <li>Selecting the best ICTs for the learning outcomes;</li> <li>Using productivity suite software that provides students with tools to solve real world problems;</li> <li>Barriers to ICT classroom integration;</li> <li>Development of ICT based learning activities in a specific subject.</li> </ol>	<ol style="list-style-type: none"> <li>Lecture and demonstration to show examples of how ICT tools can support various syllabi (Visualization in Science, Data analysis tools in Mathematics and role play simulations in social studies ...);</li> <li>Individual assignment for teachers' to develop a learning activity to improve learning in a specific curriculum area using digital content;</li> <li>Individual assignment for teachers to develop a lesson plan that illustrates how technology has been used to support the curriculum and then present to peers;</li> <li>Individual teachers write a blog to reflect on the relationship between resources and curriculum goals.</li> </ol>
<b>Assessment criteria:</b> Demonstrate how various ICT can be used in the curriculum.				

**Materials:**

**Open Education Resources (OER):**

1. COL/Guyana MoE. (2012). TL Module 2, Unit 1: Selecting ICT Resources to Support Curriculum Outcomes  
<http://colccti.colfinder.org/sites/default/files/guyana/pages/TL/Module02/Unit01/01.html>
2. UNESCO/Kenya MoE (2015). ICT Supporting Curriculum Goals  
<http://kictcft.nba.co.za/course/view.php?id=3>
3. University Cambridge/OER4Schools. (2014). Unit 1 - Introduction to interactive teaching and the use of ICT  
[http://oer.educ.cam.ac.uk/wiki/OER4Schools/1\\_Introduction\\_to\\_interactive\\_teaching\\_and\\_the\\_use\\_of\\_ICT](http://oer.educ.cam.ac.uk/wiki/OER4Schools/1_Introduction_to_interactive_teaching_and_the_use_of_ICT)
4. COL/SchoolNetSA. (nd). WebEvaluationTemplate  
<http://kictcft.nba.co.za/mod/resource/view.php?id=423>

**Free Resources:**

1. Microsoft PiL Teaching with Technology Course 2: Selecting ICT resources to support curriculum outcomes  
[http://www.pil-network.com/PD/LaunchCourse/msc\\_0002?lang=English](http://www.pil-network.com/PD/LaunchCourse/msc_0002?lang=English)

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**FACILITATION GUIDE:**

This unit is the second pure online learning unit. Resources can be accessed from the LMS at <http://elearning.reb.rw/course/view.php?id=46>. *You will need to facilitate from a distance.*

**Activity 1 - (45 minutes):** Using an online video (<https://channel9.msdn.com/Series/Teaching-with-Technology/Selecting-ICT-Resources-to-Support-Curriculum-Outcome>) teachers will get an overview of how and where ICT can contribute to the teaching of the curriculum. If you need to prepare look at the OER4Schools and/or Microsoft PiL links above which summarise the main points. Once the video has been seen encourage debate in the LMS forum and ask the class to volunteer how ICT is adding value to their subjects.

**Activity 2 - (105 minutes):** Teachers are encouraged to select a component or topic within the curriculum they teach and identify a particular syllabus specific objective they would like to address. They will access the web resources evaluation template referenced in the materials section above to help them assess the quality of the resource.

**Activity 3 - (60 minutes):** Once the teachers have identified a set of digital resources they will need to write up a lesson plan that explains how these resources and tools help their learners achieve the specific objectives as identified in the official syllabus. Encourage debate on the topic, “Does the application of these tools & resources really add value to the lesson or could we have done the same without them? Are we teaching in the old way but with new technology?” in the LMS forum. Make sure you summarise the discussion and post it in the forum at the end of the week. The learners will submit their completed lesson plans using the LMS assignment tool located in Unit 12.

**Activity 4 - (15 minutes):** Teachers will be tasked with adding an entry into their ‘journals’ about what they learnt. If the teachers ask for clarity ask them to get used to using the blog facility in the Moodle LMS. There is a link to their blogs in a block on the left hand side of the screen in Unit 12. Ensure that they can return to it and fill out new journal entries later as we will use this facility again.

**Activity 5 - (15 minutes):** Ask the teachers to add an entry into their ‘journals’ (Blogs) about barriers to ICT classroom integration with a specific reference to learners with disabilities.

Subject: Technology Literacy		Unit 13: ICT to Support Assessment		Time: 4 hours
<p><b>Key unit Competency</b></p> <p>Demonstrate how various ICT tools can be used to improve assessment.</p>				
Learning Objectives			Content	Learning Activities
Knowledge and understanding	Skills	Attitudes and values		
Identify and understand the use of ICT to improve assessment.	Select digital resources and tools to support assessment.	Appreciate the support of digital tools to support assessment.	<ol style="list-style-type: none"> <li>1. Introduction to Online ICT assessment tools;</li> <li>2. Evaluating ICT assessment resources;</li> <li>3. Optimizing assessment tools.</li> </ol>	<ol style="list-style-type: none"> <li>1. Reading of internet resources on assessment tools;</li> <li>2. Class discussion using a forum on different online assessment tools available and potential benefits;</li> <li>3. Demonstration of an assessment tools;</li> <li>4. Participants write short paragraphs in their blog as to what potential benefits can be derived from using digital assessment tools.</li> </ol>
<p><b>Assessment criteria:</b> Demonstrate how various ICT tools can be used for assessment.</p>				

**Materials:**

Department Education & Training, Victoria. (2006). Assessment Tools). Available online at <http://www.education.vic.gov.au/school/teachers/support/pages/tools.aspx>

**Open Education Resources (OER)**

California State University. (2007). Choosing Appropriate Assessments. Available online at <http://teachingcommons.cdl.edu/cdip/facultyteaching/Choosingappropriateassessment.html> (CC BY NC SA)

**FACILITATION GUIDE:**

This unit is an example of online learning learning. Access to the content and assessment tools will be from the LMS at <http://elearning.reb.rw/course/view.php?id=47>. The facilitator will need to provide online support.

**Activity 1 – (120 minutes):** Teachers will be asked to investigate the following assessment tools as identified by the Australian Victoria Department of Education <http://www.education.vic.gov.au/school/teachers/support/pages/tools.aspx>

- Graphic Organizers,
- Rubrics,
- Review and reflection tools
- Familiarization & discussion tools.
- LMS testing

**Activity 2 – (60 minutes):** In the appropriate LMS forum they will discuss the pros and cons of each of the assessment tools and suggest when their use would be appropriate for their subject or grade. Once they have posted their review encourage them to have a look at and comment on their colleagues posts.

**Activity 3 – (15 minutes):** The teachers will complete a short LMS Quiz that uses multiple choice, True & False and matching pair's questions.

**Activity 4 – (45 minutes):** Teachers will be asked to reflect in their LMS blog on the ICT based assessment tools. Encourage them to consider what would be an appropriate use of the assessment tools they investigated for their particular subject.

**Topic Area: Learner Professional Learning**

**Sub-topic Area: Digital Literacy**

<b>Subject:</b> Knowledge Deepening		<b>Unit 14:</b> ICT Resources for Professional Development		<b>Time:</b> 4 hours	
<p><b>Key unit Competency</b></p> <p>Locate necessary resources that help to acquire additional subject matter and pedagogical knowledge for professional development.</p>					
<b>Learning Objectives</b>			<b>Content</b>	<b>Learning Activities</b>	
<b>Knowledge and understanding</b>	<b>Skills</b>	<b>Attitudes and values</b>			
Identify relevant resources for professional development.	Access online learning materials and communities in supporting professional learning.	Appreciate available and appropriate resources for professional development.	1. Professional development goals;  2. ICT supporting teacher professional development through E-learning;  3. Access to outside experts and learning communities to support professional learning.	1. Discuss best practices about ICT resources for professional development;  2. Teachers investigate collaborative networks for growth e.g. PIL and Rwanda Teachers' Portal;  3. Conduct internet web search to identify learning opportunities that can help in reaching Professional Development goals (formal or informal learning, including MOOCs);  4. Teachers develop individual Professional Development plans for post ICT Essentials for Teacher's course.	
<p><b>Assessment criteria:</b> Locate necessary resources that help to acquire additional subject matter and pedagogical knowledge for professional development.</p>					

## MATERIALS

### Open Education Resources (OER):

1. COL/Guyana MoE. (2012). TL Module 5, Unit 2: Use of ICT to Support Lifelong Learning.  
<http://colccti.colfinder.org/sites/default/files/guyana/pages/TL/Module05/Unit02/01.html>
2. COL/Guyana MoE. (2012). KD Module 5, Unit 1: Life Long Learning I  
<http://colccti.colfinder.org/sites/default/files/guyana/pages/KD/Module05/Unit01/01.html>
3. OER4schools.org. (2014). Unit 6: Into the Future  
[http://oer.educ.cam.ac.uk/wiki/OER4Schools/Into\\_the\\_future](http://oer.educ.cam.ac.uk/wiki/OER4Schools/Into_the_future)
- MoEST Kenya. (2015). KICTCFT: Unit 13 Collaborative Teacher networks  
<http://kictcft.nba.co.za/course/view.php?id=16>
4. MoEST Kenya. (2015). KICTCFT: Unit 14 Personal Learning Networks  
<http://kictcft.nba.co.za/course/view.php?id=15>

### Free Resources:

1. Microsoft PiL PD Course 6, Unit 2: Supporting teacher professional development

## FACILITATION GUIDE:

This final unit is to be completed online. The teachers will access unit 14 using their own devices and connecting to the LMS at <http://elearning.reb.rw/course/view.php?id=58> Teachers will access the tutorials and forum from the LMS as well as submit their graphics assignment using the assignment tool. You will need to provide online support in the various forums.

**Activity 1 – (90 minutes):** Teachers will be asked to investigate collaborative teacher networks, e.g. Partners in Learning Network at <http://www.pil-network.com> and the Rwanda Teachers Portal at [www.education.rw](http://www.education.rw) , to ascertain what value they offer each individual. Teachers will discuss merits of these networks in a forum.

**Activity 2 – (90 minutes):** Teachers will be then be introduced to various options for professional development including MOOCs and other online courses. Again after investigating a number of course offerings e.g. Coursera's Teacher Professional Development courses <https://www.coursera.org/courses?categories=teacherpd> they will discuss the merits of such study options in a forum.

**Activity 3 – (60 minutes):** Teachers will then be encouraged to be encouraged to do develop a personal Professional Development plan that outlines a timeline and PD options that they would like to study to continue their professional growth. This Professional Development plan will be uploaded to the LMS using the assignment tool in unit 14.

*This completes the ICT Essentials for Teachers course.*



# GLOSSARY

**Application** – a computer program (see program below).

**Assessment for learning** – a new name for formative assessment (see formative assessment below).

**Competency** – the skills, knowledge and understanding needed to do something successfully.

**Course** – a programme of study.

**Curriculum** – a list of the topics to be learnt in a course of study. (The terms 'curriculum' and syllabus' are used slightly differently in different countries, but essentially they both mean a list of what is to be learnt.)

**Didactic Teaching / Didactic Instruction** – teaching by telling students about the subject; teaching by talking, explaining, demonstrating, lecturing, posing questions to students, answering students' questions and conducting discussions with students. This is in contrast to teaching by helping students to learn through experimenting and reflecting, by getting students to do things rather than primarily listening to the teacher.

**Digital** – (as in digital content, digital devices, digital resources, digital technology) – essentially, another word for computers and computer technology. (Computers store and process information by converting it all to single-figure numbers – digits.)

**Digital Literacy** – basic computer skills such as being able to do word-processing or go online

**Digital Tools** (as in 'Matching digital tools and resources with learning objectives ...') – another name for ICT

**Formative Assessment** – assessment which helps students to learn (which shapes, or forms their learning) by showing what the students have not understood, what they might need to repeat and whether they are ready to move to the next stage.

**Graphics Software** – computer programs, like Photoshop, which create and manipulate images, pictures, photographs, diagrams and drawings.

**ICT** – Information and Communication Technology, which means computers, mobile phones, digital cameras, satellite navigations systems, electronic instruments and data recorders, radio, television, computer networks, satellite systems ... almost anything which handles and communicates information electronically. ICT includes both the hardware (the equipment) and the software (the computer programs in the equipment).

**ICT-CFT** – UNESCO's ICT Competency Framework for Teachers, also referred to as the Framework.

**Internet** – the Internet and the World Wide Web (or web, or websites) are often used interchangeably, but strictly speaking the Internet is the network which connects computers around the world, and the websites are the documents, images and other material on the network.

**Knowledge Society** – a country, or economy or community, in which knowledge is very important because much of its economic and social activity involves handling information. See also <http://unesdoc.unesco.org/images/0014/001418/141843e.pdf> and <http://unesdoc.unesco.org/images/0012/001295/129531e.pdf>

**Knowledge Society Skills** – the skills needed to handle and create information and knowledge, which means skills such as problem-solving, critical-thinking, analysis, collaboration, communication, understanding others' points of view, and being able to use ICT which is a key tool for handling information.

**Learning Organisations** – organisations, such as a school or a company, which embrace the idea that everyone needs to keep learning throughout life. So teachers would continue to learn more about the subjects they teach and learn more about how to teach those subjects.

**Learning Society** – a society which embraces the idea that everyone should keep learning throughout life.

**Module** – a part of something. In this publication, the modules are parts of the ICT-CFT. A course of study in teacher-education or a professional learning programme based on the ICT-CFT might be divided into these Framework modules or it might have a different modular structure.

**Networks** – linked computers. Computers may be linked together either by wires or wirelessly. The linked computers could be just the computers in a classroom or an office building or a set of computers in different parts of the world.

**Online** – connected to the Internet or a computer network, for example accessing websites and email.

**Package** – computer program (see program below)

**Pedagogy** – this usually means teaching methods, styles and techniques, the way in which the teacher teaches. It can also mean simply teaching, or the study of teaching.

**Presentation Software** – computer programs, like PowerPoint, which are used to create and display a series of slides (text and images) typically to an audience watching a large screen.

**Productivity Software (or tools)** – word-processing, spreadsheet and presentation software.

**Professional Learning** – the additional skills and knowledge which teachers acquire in their work, beyond what they learnt to become qualified teachers. Teachers can gain this additional knowledge and skill in various ways, through courses, programmes, conferences, seminars, events and workshops, from colleagues, through experience and experimentation, personal research and reflection, and through membership of professional networks and associations. Sometimes referred to as ‘professional development’ or ‘CPD’ (continuous professional development).

**Program** – another word for software, application, package, for example Microsoft Word, or Photoshop, the set of instructions loaded into a computer which enable it to provide specific functions such as word-processing, spreadsheets, presentations, databases, and image editing.

**Resource** (as in digital, ICT, web, online resource) – digital information, and digital hardware and software.

**Rubrics** (as in assessment rubrics, knowledgebased rubrics, performance-based rubrics) – criteria for assessment, the features to be looked for in evaluating students’ work. For example, the assessment criteria in a piece of writing might include correct spelling and punctuation, good use of paragraph divisions, and a clear logical structure. Rubrics often include the weightings or the number of marks to be awarded to different aspects of a piece of work.

**Software** (software package etc) – computer program (see program above).

**Syllabus** – another word for curriculum (see curriculum above).

**Technology** – often used as another word for ICT, although strictly speaking ‘technology’ can mean almost any type of tool or applied knowledge. For example, pencil and paper, slates, blackboards and whiteboards are all types of writing technology.

**Tool** (as in digital tools) - digital hardware and software. tutorials (as a type of software) – usually a video explanation or demonstration.

**Unit** (as in unit plans) – part of a course of study, a module.

**Web Content** – information on websites.

**Wiki** – a website which can be edited by users (directly, via their web browsers).

