Microsoft in Education
Teaching with Technology:
Facilitator Guide
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Introduction
How to Use This Guide

The facilitator guide provides an overview of the *Teaching with Technology* Curriculum and highlights the key learning objectives and how they can be supported in different modes of delivery. This might be a school which adopts the curriculum as part of its formal professional development initiatives; educators working together to develop their pedagogic skills, or educators from around the world working together online; or a group of more experienced educators supporting each other in developing their ICT capabilities as educator-leaders, organising their own learning so as to help others increase their capacity in this area.

Educators who undertake this learning need to have confidence and a basic level of ICT skills. It is not designed to support novice computer users, who might be better directed to more appropriate training, such as basic digital literacy (see the [Microsoft Digital Literacy Curriculum](#)). However, it’s likely that some educators will need some support in this area, and there are tips included in this guide to help.

As the facilitator, you are expected to be an experienced educator and already enthusiastic and knowledgeable about using ICT and digital technologies in teaching and learning. It is highly recommended that you complete the self-assessment and curriculum so that you have an insight into the experience awaiting those educators you are training. At a minimum, familiarise yourself with the content in each course so that you can identify the learning challenges your group of educators may encounter, and so that you can create examples to address and support your facilitation.

**Overview**

[Microsoft in Education](#) empowers educators to use technology effectively in the classroom, gain critical skills through professional development, and connect and collaborate with educators and education experts worldwide. It provides opportunities for educators to join a global community of education innovators, share insights and best practices, learn how to utilise technology to improve teaching practices, and create an environment that enables students to develop 21st century skills.

In 2010, at the request of governments, school leaders, and colleges of education, Microsoft collaborated with subject matter experts worldwide to
provide a new e-learning professional development offer for educators, Microsoft Teaching with Technology.

This Facilitator’s Guide will assist trainers working with educators or educators in training who are helping students acquire 21st century skills through the integration of ICT in teaching and learning – skills that are needed for success in today’s knowledge-based global economy.

Teaching with Technology’s competency-based professional development is aligned with the Technology Literacy learning objectives of the 2011 release of the UNESCO ICT-Competency Framework for Teachers (UNESCO ICT-CFT). It offers:

1. An online self-assessment that identifies gaps in competency attainment and recommends an individualised learning path;
2. An e-Learning curriculum (6 courses);
3. Summative assessments to assess understanding of the concepts covered.

The aim of the curriculum is to develop educators’ knowledge, skills and confidence in using ICT and digital technologies to create more impactful learning activities which impart 21st century skills; in addition, the curriculum improves our understanding of how ICT can be used to make teaching practice more productive. Ideally, professional development should model the approaches to teaching and learning using the ICT that it aims to develop. As facilitator, you can support educators in developing an awareness and understanding of their own learning as they progress through the curriculum, so that they can apply this knowledge in their work more confidently.

There are a number of ways in which educators may approach this learning process:

- Through formal, organised engagement with the six e-Learning courses, with groups of educators seeking accreditation by a recognised awarding body or passing the six course summative assessments as evidence of having completed the course.
- Through less formal approaches involving more flexible support, for example groups of educators working to support each other in developing their knowledge and skills.
• Through blended models where online learning is mixed with face-to-face learning, often the most impactful model.

We hope that this guide will help you consider how best to support educators and plan a successful learning journey.

**Chapter Summary**

Chapter 1 contains an overview of the *Teaching with Technology* curriculum and the role of facilitator in supporting educators who are using the materials. It provides background information on the UNESCO ICT Competency Standards for Teachers (UNESCO ICT-CFT), on which the curriculum’s learning objectives are based, as well as a course overview, and suggestions for effective facilitation.

Chapter 2 supports planning for facilitation with a discussion of how the role varies in different contexts, particularly between online and blended learning. Attention is drawn to the importance of identifying group and individual needs and modelling effective pedagogy during facilitation.

Chapter 3 reviews the *Teaching with Technology* curriculum and provides more detailed information about the six courses offered, such as key objectives and tasks, and the best means of offering support to achieve the learning outcomes. The curriculum may have also been localised for use in different contexts and so the specific content of courses may vary slightly in different settings.

There are other differences which might affect how you interact with educators. For example; if learners are users of IT Academy, a Facilitator can track an individual user’s progress and review which courses, units and topics each person has undertaken.

By contrast on the Microsoft Educator Network only the individual learner has access to this information. It would therefore be more important to encourage educators to share this information and agree a timetable for completion so that you can support the tasks they undertake and confirm they are progressing.

Chapter 4 contains a range of scenarios for supporting different approaches to facilitation. The scenarios cover formal as well as self-organising approaches, including face-to-face sessions, online and blended learning. It
looks at maintaining motivation and engagement and the importance of developing group interaction.

Chapter 5 is the summary. Additional sections provide supplementary resources, including a glossary, references, and further reading.
Chapter 1: Curriculum Overview and the Role of the Facilitator
Chapter Overview and Objectives

This chapter describes the rationale for the Microsoft in Education, Teaching with Technology Curriculum and introduces the UNESCO ICT Competency Framework for Teachers (UNESCO ICT-CFT). These competency standards provide a structure that underpins the six courses and the accompanying self-assessment. These are described in more depth in Chapter 4 and additional details about the UNESCO Framework can be found in Appendix 1. In developing these standards, UNESCO worked in partnership with global education experts and representatives from the private sector, including Microsoft, Intel, Cisco, and the International Society for Technology in Education (ISTE).

Rationale

Research shows that innovative teaching practices, supported by the use of Information Communication Technology (ICT) in the classroom strongly predict students’ acquisition of 21st century skills. Teaching with Technology is online learning that supports an educator’s professional development in this area. The learning focuses on helping educators integrate ICT into their teaching and learning practice.

The **Teaching with Technology** Curriculum addresses the first approach - Technology Literacy - while setting the foundation and visioning for Knowledge Deepening and Knowledge Creation. Each element in the grid above forms the basis for a course in the curriculum.  

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1 Innovative Teaching and Learning Research, 2011  
Created to help set a foundation beyond learning to use technology tools, educators will develop a deeper understanding of how ICT integration can enhance the teaching and learning experience and enable 21st century skill acquisition via six e-learning Courses:

1. Why Promote Technology Literacy?
2. Selecting ICT Resources to Support Curriculum Outcomes
3. How Technology and Pedagogy Mix
4. Using Basic ICT Tools to Support Teaching and Learning
5. Organise and Manage the Use of ICT in the Classroom
6. Technology Literacy and Your Professional Development

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Standards and the Teaching with Technology curriculum

The Microsoft Teaching with Technology curriculum covers:

- [ISTE NETS for Teachers](https://www.iste.org)

It can also help support educators’ success as the U.S. Common Core student standards that require a high level of technology integration such as the use of technology tools and assistive devices for learning.

Competency-based professional development

Competency-based means the curriculum helps build skills and the ability to apply these skills to perform a particular job or task. Combined with the global network of educators found on the [Microsoft Educator Network](https://www.microsoft.com/education/), it provides
the six key components for effective competency-based professional development:

1. A common set of competency standards defined by role or educational goals.
3. Help filling competency gaps with a rich and varied set of aligned resources, such as job shadowing, classes, workshops, and e-Learning.
4. Assessments, observation, or portfolio work that help verify improved teacher competencies.
5. Peer support or mentoring to help teachers carry forward ICT use to the classroom.

What makes this professional development relevant?
The Teaching with Technology Self-assessment and Curriculum are competency-based and can be customized to meet each educator’s needs:

- The Self-assessment helps educators identify specific learning needed creating a customized learning report.
- The time required to develop competency using the Self-assessment and the Curriculum depends on an educator’s learning needs.
- Each unit of study stands on its own so educators can focus on a specific area of interest or need.
- Created by education experts from around the world, it includes a range of learning scenarios and best practices.
- Whether a classroom has one computer or a laptop for every student, the educator will be able to apply what they have learned to their individual context.

**Your Role as a Facilitator**

The facilitator’s role is to help educators get the most from the activities provided and motivate them. While the e-Learning can support educators’ professional development, their learning will only be embedded once the ideas and activities are put into practice. Facilitation should model the same approaches to teaching and learning that it aims to develop. Educators who develop awareness and understanding of their own learning as they progress.
can apply this knowledge more confidently. Such a reflective dimension might also help support their students in developing an understanding and awareness of *their* own learning, thus modelling effective aspects of teaching and learning as an integral part of the course design and pedagogy.

There are three main areas to consider in developing your facilitation support strategies:

1. ICT skills and knowledge
2. Pedagogical skills and knowledge
3. Motivation and perseverance

**ICT Skills and Knowledge**

Although you do not need to be a technical expert, you are likely to be more knowledgeable and experienced than many of the educators you’re working with. You can use this knowledge and experience to identify some activities and scenarios in which technology is/was used effectively. There are examples of such scenarios in the units, but you may wish to supplement these when providing practical, convincing examples of how digital technologies can support teaching and learning to meet a variety of learning objectives. Most importantly, encourage educators to tackle their own technology challenges so that they become confident enough to try new things.

**Pedagogical Skills and Knowledge**

Educators following the courses will have a range of subject expertise and may be teaching students of different ages. You will need strategies to utilise their expertise and see the potential for ICT to be integrated with their existing subject and pedagogical knowledge. You can encourage the sharing of best practices or challenges by asking educators to post their top three ideas or challenges specific to their curriculum area or age group and get started with an educator discussion around those.

**Motivation and Perseverance**

Online learning has several challenges, such as maintaining participants’ motivation and engagement. Here you’re likely to make a real difference as facilitated courses have a higher rate of completion than non-facilitated ones. The key is to maintain contact with learners, offer support and guidance, and give feedback and encouragement. Another successful strategy is to prompt

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1 Salmon (2004) suggests this may be by as much as 20%.
learners to support, encourage, and collaborate with one another. In this way you’ll support not just individual learners but create a community of practice that will provide broader support as participants learn together.

Getting started
There are two ways to access the self-assessment and Teaching with Technology E-learning:

- Microsoft Educator Network
  - There is no charge for accessing Teaching with Technology via the Microsoft Educator Network, and there is added value in enabling teachers to connect to a global community of educators and create communities of practice to support them through their learning.
  - www.pil-network.com
- IT Academy
  - Educators can access the six e-learning courses and Self-assessment via the IT Academy member E-learning site. IT Academy provides students with the future ready technology skills they need to be successful in college and a career, and educators with the resources they need to help their students get there. Detailed tracking lets administrators or facilitators see how their teachers and students are progressing in their learning.

Summary
This chapter provided an overview of the background and rationale the Teaching with Technology Curriculum. The Technology Literacy approach seeks to integrate digital technologies effectively for learning and teaching in today’s world. These changes are essential to ensure that educational practices enable educators to support students, so that they can flourish in the global, knowledge-based workplace.

The UNESCO ICT-CFT offers a common set of guidelines which professional development providers can use to identify, develop and evaluate learning materials and educator development programs for the use of ICT in teaching and learning. This approach to extending educators’ professional
development aims to advance skills in pedagogy, collaboration, leadership and innovative school development using ICT.
Chapter 2: Planning for Effective Facilitation
Chapter Overview and Objectives

This chapter will support you in planning for the facilitation of the Teaching with Technology curriculum. As with all forms of teaching, thorough preparation is essential. However, there are many different kinds of online support which can be provided to help educators get the best from their learning. Some facilitators may even be able to meet with learners face-to-face in a blended-model approach. This chapter offers an overview of some of the tools, approaches and techniques you can use to support participating educators.

Key Features of Effective Facilitation

You will need to be familiar with the aims and content of the courses, and also get to know more about the participating educators. In this way you can help them to connect their learning with what they already know and can do. You might use your own experience of teaching and of using ICT in your professional life to provide real and practical examples to help make the content more immediate and relevant to the course participants.

Know the Objectives

It is important to understand the learning objectives that underpin the activities in the learning. This will help you to understand why the educators are completing them and not just what they have to do. Understanding the why is important in helping educators achieve the learning outcomes, rather than simply finishing their tasks.

Know the Materials

The materials are designed to enable the educators who complete them to meet the learning outcomes. For most of these tasks and activities, what is important is the knowledge and understanding the educators will achieve through the processes of undertaking the tasks. You could therefore think about how the educators do these tasks (or perhaps how well they do them) rather than just getting through the material. Adding activities to supplement or extend the learning will be important for the learning to be successful.

Know your Students

Understanding the experience and knowledge of the participating educators is an important part of effective facilitation. The self-assessment can be a great tool in helping you understand the educators' strengths and gaps. Consider having them take it before the first meeting and sending you the
result. You might aim to elicit this professional knowledge and help them to see the possibilities with ICT. They are likely to have a wealth of professional knowledge, but may not easily recognise where and how technology can be beneficial. How could they collaborate and support each other? Do any of them have similar interests or experience? Could you arrange them in teams or small collaborative groups so that they can support and encourage one another?

**Be Flexible**

Your goal is to help your students achieve the learning objectives and not just complete the tasks and activities. Sometimes the educators will need little support to achieve the objectives: they may already be broadly familiar with the ideas, skills and knowledge required. On other occasions you may need to adapt the tasks and activities to suit their particular context or skills.

**Support Application and Use**

The learning materials are most effective when educators try out the ideas in the classroom with their students. This provides the best evidence of achieving the learning objectives. Encourage them to share their experiences with one another, as this will encourage others to do the same. Sharing resources such as files, templates and presentations is an effective way of stimulating educators to try things out.

**Overall Approach: Online and Blended Learning**

Most educators are likely to work through the course materials online and independently. The facilitator’s role is to support them in doing so, and to help them make contact and collaborate with other educators in a way that provides mutual support and encouragement.

Key tasks to help ensure success:

- Find out more about the educators and their professional work so that you can understand where and how ICT is likely to be of most help in their teaching practice.
- Discuss the results of their self-assessment and identify which specific courses or units of study they are going to focus on.
- Monitor how they are progressing through each unit of recommended study; solicit feedback on what they find valuable and where they may need some additional support.
• Motivate and encourage them to keep going! It’s easy to lose momentum when studying through e-Learning.
• Provide advice and ideas, suggesting ICT tips and activities that will lead to appropriate pedagogical development.
• Offer ideas, examples and practical suggestions to encourage collaboration and mutual support.
• Ask them how they plan to apply the learning in their classroom while it is fresh, and how they will share experiences with other teachers.

These tasks all require direct interaction with the participants. There are different kinds of interaction available to you as a facilitator. Broadly speaking, these fall into three categories:

• **Asynchronous** tools such as e-mail and discussion boards, where you can be online at a different time from your learners.
• **Synchronous** tools such as chat, video-conferencing and online meeting tools where you will be online at the same time.
• **Face-to-face activities** and meetings if you’re supporting a blended learning model.

These options are not exclusive. If you’re distant in place and time from your learners (or they are from one another), you will have to rely mainly on asynchronous opportunities. If you can be online together, you can use both asynchronous and synchronous opportunities. If you’re running a blended learning course, you can use both kinds of online tools, as well as face-to-face facilitation techniques. Advice and guidance about effective facilitation is presented throughout the introductory chapters.

**Asynchronous Tools**
At a basic level you will have opportunities to engage with your group of learners using tools such as e-mail, discussion lists and social networking tools, and shared websites such as blogs and wikis. The advantage of this approach is that the interaction is recorded, and, if kept public (for example on a discussion board or a blog), provides a record that other course participants can benefit from. The interaction needn’t be restricted to short text exchanges. You can create shared documents that participants can edit or
annotate, and post and share podcasts or videos. Instead of asking people to post a short biography as an introduction to the course, ask them to make a one-minute podcast or video to introduce themselves to the other participants.

**Synchronous Tools**
With some tools you need to be online at the same time as the educators. For basic communication, programs like Microsoft Windows Live Messenger and Skype allow text-based chat, and some let you use audio or video-chat. As these tools have become more common, people are more confident in using them. Online meeting tools such as Microsoft Lync and Skype have these basic communication functions, and let you share your screen or in some cases create a virtual online whiteboard. The advantage of these tools is that you can support learners more directly and immediately. This lets you address questions or problems and respond to educators’ ideas and suggestions. The immediacy of response helps to build a sense of social presence, which in turn supports the teaching and learning interactions. There isn’t always a clear distinction between synchronous and asynchronous tools. A rapid exchange of e-mails can feel like an online conversation, and current social networking sites often have the facility for both asynchronous messaging and synchronous chat on the same page.

**Face-to-Face Tools and Techniques**
If you’re planning for facilitation based on a blended learning approach, you could plan sessions where you meet the course participants in person. This is likely to happen where a school or group of local schools is using the materials to support the professional development of its staff in a coordinated approach. This might also happen if you’re supporting trainee educators who are learning about ICT as part of their initial teacher-training programme. You may have the opportunity for some face-to-face meetings, in which case you’ll likely have an introductory session to outline the curriculum, its overall aims, the timescale involved, and the forms of support you will be providing, perhaps indicating when you will be meeting and what the educators should have achieved when you do meet. There is certainly no point in meeting simply to work through the on-screen activities individually! A maximum of three or four meetings should be sufficient, featuring activities that support the educators in sharing their experiences and knowledge and that build on their online work. A final meeting could celebrate and share the successes. This blended approach can be particularly effective with groups of learners who have lower skills or confidence in using ICT. Face-to-face support can provide reassurance and practical guidance, particularly in the early stages.
In each of these forms of communication, the most important thing is to be supportive and responsive to the educators, and to make the most of the medium of communication you’re using to ensure that they feel supported.

Key facilitation strategies when communicating online:

- Get participants engaged with the activities as early as possible, and provide clear instructions on what they should be communicating about.
- Be prepared for some resistance. There may be learners who expect to take a more passive role: ‘Just tell us what we need to know.’
- Provide quick feedback especially to early contributions, and encourage the learners to respond to the suggestions and ideas of others.
- Once they are comfortable, encourage them to take the lead sometimes and facilitate the discussion. Suggest specific tasks or roles, for example summarising parts of the learning or generating ideas to apply the skills/knowledge more widely.
- Encourage collaboration as this helps to make the content more meaningful and supports the learners in transferring knowledge to practice.
- Always re-read written messages before sending or posting them online, and try to interpret them from the perspective of a learner. Consider how else the message might be interpreted, and if you have made your intention clear. Check messages for typos (most educators notice even trivial errors!) and be aware that not everyone likes or understands Internet shorthand and emoticons. Be cautious when using humour – it is easily misinterpreted online.

**Identifying Group and Individual Needs**

There is an underlying assumption that those following the *Teaching with Technology* curriculum have a basic level of ICT skills and knowledge. Though it’s not designed to support novice computer users, some educators are likely to need a degree of guidance or support in this area, and you may need strategies to help them.
Ask all learners to complete the online self-assessment prior to engaging with the learning content. There is no need to work through all of the courses, as the self-assessment indicates the areas where there may be learning gaps. In practice, many may choose to complete all of the courses. You could therefore encourage them to spend more time on the areas indicated by the needs assessment, or ask them to mentor others in the areas where they have more confidence. (See the section in chapter 4 on the self-assessment tool).

Planning for and Responding to Need

Meeting individual needs is challenging in any teaching and learning situation. Through experience in facilitating the courses you will quickly learn where the challenges lie. Encourage your learners to support one another, perhaps working in small groups or teams of three to five, cohering around a shared interest such as the age group or subject that they teach. Identifying pairs or a single ‘buddy’ is sometimes too unreliable, since if one person drops out or is less committed then the other person feels isolated; in a blended or more formal setting, however, this can work well. Suggest that groups contact one another before they start a course and again once they have completed it, or ask them to plan to be online simultaneously so that they can chat if they have any questions. You might indicate when you’re available to chat online too. One of the most effective means of support is to encourage learners to exchange lesson ideas and resources that they have created or found particularly helpful, as this tends to encourage uptake and application of the ideas.

It’s a good idea to set start and end dates for the courses, as this provides a structure for participants and encourages completion, as well as providing regular intervals in which you can review what has been learned and encourage reflection on progress and achievements.

These are the key facilitation issues to consider in your course preparation and planning:

- Help develop a sense of connection between learners in the same way that you would in a face-to-face setting.
- Even though introductions and early socialisation are important, move quickly and purposively and on to the focus of the course.
- Establish online ground rules or guidelines, especially at the early stages of working with a group, so that people know they are posting or sending messages to the right place, and understand online behaviour or ‘netiquette’.
• Plan some orientation information to clarify what the course is all about, the practical issues, where to get help, and such matters as timings and target dates for course completion.
• People may require help in adapting to online communication, particularly if this is an asynchronous version of the course.
• Allocate initial teams or ‘buddies’ so that everyone feels part of a group.

Modelling Effective Pedagogy

It is important to model the approach to teaching and learning that you’re advocating. Encourage educators to work out ways of doing things independently, while providing support and advice. Encourage them to support one another and share ideas. You will not know the answer to all of their questions or issues. Encourage the group to offer suggestions and advice so that their collective knowledge and experience can be shared.

These are the key facilitation issues to consider when planning a specific session:

• Before you begin, make sure that you have experienced the courses and associated activities from a learner’s perspective.
• Consider how you will contact learners. Is there an online space already set up, or will you establish contact by e-mail? You may need to use multiple strategies.
• Consider creating an optional ‘social space’ for participants who like to socialise while they undertake the learning.
• Ensure that discussion areas or topics are meaningful by linking them to practical outcomes that will help them with their teaching.
• Structure online or e-mail discussions to limit the number of conversation topics happening at the same time.
• A small group or ‘buddy’ system can be motivating and engaging, especially when combined with voice or video chat.
• An online location where you respond to problems or issues can also be useful.
• Remember that the larger the group, the more challenging it is for learners to work collaboratively, so break up groups into learning teams of three to five.
• Use scenarios and practical examples that are relevant to educators’ experiences and knowledge – these help learners apply new ideas creatively.

• Build on what learners already know and can do with ICT. This makes the new learning seem more achievable.

Some Dimensions of the Facilitator’s Role in Supporting Online Discussion

The facilitator’s role in supporting online discussion is challenging. The guidance below aims to support you as a facilitator in thinking about the different stages involved in facilitating a group.

Establishing the Context

Opening Discussions
A facilitator could provide an opening statement which sets the theme of a discussion and establishes a model for communication. The facilitator might then initiate or refocus with some prompts or starting points that open up further exchanges, but within the overall theme of the discussion.

Establishing Norms
This involves suggesting guidelines or rules for the procedure of the discussion. Some are set by the style and form of the facilitator’s opening post. Other rules can be more explicitly set out in comments which establish the context for the discussion.

Managing the Agenda
This involves managing the discussion over time, selecting an order and flow of themes and topics of discussion. The moderator generally shares part or all of the agenda with participants at the outset.

Referring and Recommending
Participants will appreciate suggestions of links to materials on the Internet or suggestions for books and other resources; the intention is to encourage participants to contribute their own suggestions and recommendations.

Monitoring the Discussion

Providing Recognition and Feedback
• Recognising the contributions of participants by referring explicitly to their comments or postings helps to reassure them that their contribution is valued. Providing feedback is an essential ingredient of successful facilitation.

Prompting and Persuading
Prompting participants by requesting comments from individuals or from the group can be a useful way to engage people in the discussion. This can be done both publicly (in a shared discussion space) or privately (such as by e-mail or chat), depending on the confidence of participants and their level of engagement. It can also help the facilitator to share responsibilities.

Managing and Maintaining

Meta-Commenting
These are remarks or contributions aimed at drawing participants’ attention to the norms, themes, principles or underlying ideas in a discussion. They could also be used to solve particular issues or problems, such as lack of focus, irrelevant information, or confusion. Meta-comments play an important part in maintaining successful discussion and communication.

Weaving
Weaving involves a facilitator summarising a discussion and finding common threads or ideas in the comments of participants. It acknowledges and values their comments by ‘weaving’ them together, and often prompts participants to continue contributing in a similarly constructive way.

Delegating
As a facilitator you can ask that individual participants undertake some of the facilitating functions, such as weaving or meta-commenting or uploading example resources, with the aim of developing their skills and acknowledging their expertise. You can invite contributions from the group, or approach individuals outside of the discussion, for example; by e-mail.

Summary
The aim of this chapter is to support you in planning for the facilitation of the courses in the Teaching with Technology curriculum. Thorough preparation is essential. Understanding the objectives, knowing the materials, and getting to know the educators will help ensure success.
Tools for facilitation can be divided broadly into three groups: asynchronous, for example e-mail; synchronous, for example, video-conferencing; and face-to-face techniques in a blended learning approach.

Effective facilitation requires effective communication between you and the learners and between the learners themselves. A key strategy for success is to model the pedagogy underpinning the learning and to use appropriate online and digital tools to do this.

Identify the online and ICT tools available to you, and choose those that will best support the learning objectives. Decide how you will use these tools to:

- Get to know the educators you will be working with
- Offer support as they work through the materials
- Encourage participants to support each other and develop an effective community of practice.
Chapter 3: The Teaching with Technology Curriculum
Overview and Objectives

This chapter provides an introduction to the teaching and learning materials in the Teaching with Technology professional development curriculum. The objectives of this chapter are to provide facilitators with an overview of the available courses, the role of the self-assessment and its relationship with the learning materials. It identifies opportunities for you as a facilitator to:

- Support educators using the materials
- Indicate opportunities to encourage educators to work together and
- Help educators apply the skills and knowledge they are developing.

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Course Assessment
### Course 3: How do Technology and Pedagogy Mix

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#### Unit 2: Planning Better Learning Activities Based on Didactic Teaching
- Topic 1: Creating Learning Activities that Support Students’ Learning
- Topic 2: Planning Engaging ICT-Supported Activities

#### Unit 3: Incorporating ICT Resources for Just-in-Time Learning
- Topic 1: Using ICT to Manage Spontaneous Learning Interactions
- Topic 2: Encouraging Students to use ICT In and Outside the Classroom

#### Unit 4: How Technology Can Help You Deliver Your Message
- Topic 1: Using ICT for Presentations
- Topic 2: Using Technology to Help You Deliver Your Message
- Topic 3: Evaluating Presentations

### Course Assessment

### Course 4: Use Basic ICT Tools to Support Teaching and Learning

#### Unit 1: Hardware to Support Teaching and Learning
- Topic 1: Add Value with Hardware Technologies
- Topic 2: Optimising Devices for Learning and Teaching

#### Unit 2: The Internet to Support Learning Activities
- Topic 1: Create Better Learning Activities with the Internet
- Topic 2: Assess Website Credibility

#### Unit 3: Internet Safety
- Topic 1: Risks and Benefits of Internet Use
- Topic 2: Making the Internet Safe for Students
- Topic 3: Identifying Internet Risks
- Topic 4: Recognize Potential Dangers

#### Unit 4: Search Engines and Learning Activities
- Topic 1: Find Resources Fast by Using Search Engines
- Topic 2: Efficient Search Strategies

#### Unit 5: E-mail and Learning Activities
- Topic 1: E-mail to Support Learning Activities
- Topic 2: Managing E-mail Accounts

#### Unit 6: Software Applications for Better Learning
- Topic 1: Choosing Software to Meet Learning Needs
- Topic 2: Making the Most of Application Features

#### Unit 7: Using Software for Managing and Sharing Student Data
- Topic 1: Gathering Student Data
- Topic 2: Analysing Student Data

#### Unit 8: Add Value to Teaching and Learning with Collaboration Technology
- Topic 1: Supporting Teaching and Learning with Collaboration Technologies
- Topic 2: Maximising Collaboration Opportunities

### Course Assessment
If you access the curriculum via IT Academy or the Microsoft Educator Network, you will have different opportunities and challenges as facilitator.

With IT Academy, a Facilitator can track an individual user’s progress and review which courses, units and topics each person has reviewed. This can provide useful information which can help you initiate a discussion with educators, such as by asking them specific questions about what they have just done or by suggesting resources or activities that they might try out to follow up what they have learned and apply their new knowledge.

On the Microsoft Educator Network [www.pil-network.com] only the individual learner has access to this tracking information. It would therefore be more important to encourage educators to share this information with you (and perhaps each other) and to agree a timetable for completion so that you can support the tasks they undertake and confirm they are progressing. In this scenario you are more likely to initiate a conversation by finding out where they are up to and what they have used in their professional work or what challenges they are currently facing in applying their learning. On the Microsoft Educator Network there is added value in supporting teachers to connect to a global community of educators and create communities of practice to support them through their learning. As a facilitator you can set up
discussions and encourage teachers to post and share resources they develop through applying their skills with other educators using the network.

**The Self-Assessment for the UNESCO ICT Competency Framework for Teachers (ICT-CFT), Technology Literacy Strand**

The online self-assessment is designed to help educators determine their proficiency levels in for each of the learning objectives.

There are 40 multiple choice questions in the self-assessment, which takes about 45 minutes. It’s important to emphasise to educators that individual results are not intended to be shared, unless they wish to make these available to you as facilitator or with others undertaking professional development to identify joint goals or learning activities.

**Important!** Educators need to answer the questions as honestly and directly as possible, and not try to figure out the 'correct' answer, since the results are used to recommend specific further learning. If a learner takes more than an hour to complete the self-assessment, they are likely to be trying to be ‘correct’ rather than using it as a learning tool. It is accessed differently on Microsoft in Education and the IT Academy, but the content of the assessment is the same.
As a facilitator you could complete the self-assessment yourself and work through the courses to familiarise yourself with how they are presented and with the content. Even as an experienced user of ICT, it’s likely that there may be some areas of the curriculum where you will be less skilled or knowledgeable, such as the detail of the UNESCO ICT-CFT or the relation between government education policy and classroom instruction.

Encourage educators to discuss the outcomes of their self-assessment with you. You may find that many educators prefer to work through all the courses. This may be because they are curious about the content and feel they are missing out if they don’t complete each one. Encourage them to spend more time where the self-assessment has indicated they may benefit more. If you’re working with a group of educators, you might, on the basis of their self-assessment, identify some as possible mentors in support of others undertaking the units.

The Self-Assessment Outcomes
The self-assessment identifies the gaps where educators are likely to benefit most from the development opportunities and where further study is needed, if that is part of their professional development goal.
Educators can take the self-assessment several times without getting the same questions. They may choose to use it again after completing a couple of courses or several units of study.

Each course is broken down into a series of units that are subdivided into even shorter topics. Each unit and topic is a complete learning experience. Learners who want to explore the materials in a non-linear fashion can work well within this structure. For those that do undertake an entire course there is a final summative assessment, and learners can print a certificate of completion for each summative assessment passed. On the Microsoft Educator Network educators can also collect ‘badges’ as they progress through the materials.
Your recommended learning path

Based on your self-assessment, here is your recommended personal learning path. Each course concludes with a summative self-assessment so that you can test your understanding. Also explore additional courses to find interesting tips and best practices that you can start using right away.

**COURSE**
Selecting ICT resources to support curriculum outcomes
This course is about helping educators to meet that challenge by demonstrating how to find appropriate ICT instructional and assessment resources, evaluate them, and incorporate them into different learning activities in order to meet curriculum goals.
4 Units  Duration: 5 hours 40 minutes

**COURSE**
How do technology and pedagogy mix?
This course aims to help educators consider an appropriate set of technology tools, and to match effective tools with specific lesson objectives and with students’ needs.
4 Units  Duration: 7 hours

**COURSE**
Use basic ICT tools to support teaching and learning
This course discusses hardware and software, the skills required to use them effectively, and the added value they can bring to teaching and learning. It covers the use of Internet browsers, navigation of websites, location of resources, use of plug-ins, bookmarking, and assessment of the credibility of websites, e-mail and collaboration tools are also presented.
8 Units  Duration: 10 hours 40 minutes

**COURSE**
Organize and manage the use of ICT in your classroom
This course focuses on using ICT within different environments. It explains how to adapt computer lab activities for different computer ratios and levels of skills and confidence.
6 Units  Duration: 6 hours 30 minutes

**COURSE**
Technology literacy and your professional development
This course aims to help them identify realistic goals and practical first steps for building ICT into their daily routine to improve their efficiency and productivity.
2 Units  Duration: 3 hours

**COURSE**
Why does UNESCO ICT-CFT promote technology literacy?
This topic explores the components and goals of the ICT CFT and the importance of educators and students becoming digitally literate.
3 Units  Duration: 3 hours

Summary
Encourage all educators to complete the self-assessment, which will help them by identifying their learning gaps and recommending the courses or units of study most useful to them.

Emphasise that this is a professional development tool, not a ‘test’. Seeking the ‘right answer’ instead of choosing the answer that is most in-line with their
current knowledge and practice will result in inaccurate learning recommendations.

Help educators plan how to move through the content and get the most from the learning. Which areas will help most with their professional work? Starting with units of study that can be put into practice right away – this encourages learners and motivates them to continue!

It is crucial to consider how to organise the learning so that educators can collaborate and support one another in putting the learning into practice. The self-assessment results, if shared, can be used to group together learners who have common needs and also to identify mentors.
Course 1: Why Does the UNESCO ICT-CFT Promote Technology Literacy? (5 hours)

Unit 1: How Technology Literacy Relates to Social and Economic Goals

This unit develops knowledge and awareness of the UNESCO ICT Competency Framework for Teachers (ICT-CFT), government educational policy, national economic goals, and the relationship of these to teaching and learning. It is challenging to facilitate, so it may help to focus on the potential benefits of technology in support of teaching and learning, and to emphasise how technology skills help educators and students to be more competitive in a global society.

Core issue for deeper understanding: Do you know your country’s education policies?

Practical ideas for facilitation:
- Encourage the exchange or posting of ideas on the possible benefits of integrating ICT into education, and how these might relate to educators’ work.
- Supplement ideas with examples from your own experience to help educators develop the confidence to engage with others online.

Topic 1: Technology Literacy and Better Teaching and Learning (25 minutes)

This topic explores the components and goals of the ICT-CFT and the importance of educators and students becoming digitally literate.

The objectives for this topic are that educators should be able to:
- Understand that technology literacy is about teaching, learning, and improving teacher practice
- List the benefits (for teachers and students) of incorporating ICT into education
• Provide examples that highlight the impact of incorporating ICT into education
• Consider the impact it could have in their own classroom.

**Topic 2: How Educators Can Support Government Education Policies**

*(40 minutes)*

This topic is about the changing global context. It highlights the difference between the industrial and digital ages, and explores the importance of technology literacy in contemporary society, showing the implications for the education system. Technology and education are two interrelated factors in sustaining economic growth and development. The knowledge economy is developing rapidly, and ICT is increasingly important in bridging the gap between traditional education and the emerging pedagogy that can equip students with the 21st century skills needed for the modern working world.

The objectives for this topic are that educators should be able to identify and explain:

• The general ideas, concepts and theories of ICT-CFT
• The policy goals supported by the ICT-CFT framework
• How the ICT-CFT addresses economic and social goals
• How teachers can support these goals by incorporating ICT-CFT methods in the classroom

Practical ideas for facilitation:

• Emphasise the importance of pedagogy and the process of change led by the demands of the changing workplace, but driven by students’ learning needs.

**Unit 2: 21st Century Teaching and Learning**

This unit focuses on how the ICT-CFT impacts educators, teaching and learning more widely. Facilitators need to engage and motivate educators to see the relevance of the ICT-CFT in their work.

Core issue for deeper understanding:

How is technology changing our world and how should education respond?
Practical ideas for facilitation:
- Ask educators the following questions:
  o What technology changes have happened in your lives? (for example; ‘Technology I can’t live without’.)
  o How has technology become embedded in young people’s lives? (for example ‘Technology kids can’t live without’.)
  o How are these changes reflected in schools, in the curriculum, and in the students’ experiences?
  o What external influences help to ensure that education meets learners’ needs as the world changes?

**Topic 1: What Does the ICT-CFT Require from Me? (35 minutes)**

This topic explores the dynamics of the ICT-CFT approach, the learning objectives for educators, and the benefits of using ICT in the classroom. The changing technological landscape of the 21st century offers many challenges to modern-day learners. The range of necessary skills is becoming increasingly demanding. This means that educators need to equip themselves to support their students in developing capabilities that will ensure their success in a digital age.

The objectives for this topic are that educators should be able to:
- Understand the level of commitment and initiative that the ICT-CFT requires from educators
- Recognise unfamiliar ideas and approaches
- Recognise the need to be open-minded and willing to accept change
- Recognise how this effort will be rewarded by the benefits to educators in their work

Practical ideas for facilitation:
- Encourage educators to reflect on their own experience and current practice and identify how the ICT-CFT might help them in their professional life.
- Ask them to exchange ideas about their understanding of the ICT-CFT and how it relates to their current skills and knowledge. This could be by posting their ideas to a discussion board, contributing to a course
blog, or through e-mail exchanges between ‘buddies’, depending on the group you’re working with.

- Ask them to find out what their own country’s education policy is, and identify similarities and differences to the ICT-CFT

**Topic 2: Changing Teaching and Learning Processes (30 minutes)**

Information Communication Technology (ICT) can be an empowering tool for educators. It can transform traditional classroom dynamics by making generic instruction more interactive and effective. This topic presents the benefits of incorporating ICT into the teaching and learning process and its applications across various access scenarios.

The objectives for this topic are that educators should be able to:

- List the uses and benefits of incorporating ICT into the teaching and learning process
- Visualise application to particular situations including classroom practices, homework, and project work
- Match appropriate applications of ICT-CFT to different situations
- Consider how their own teaching practices might change in given situations
- Suggest how to start making changes to their teaching practices
- Find out how other teachers started incorporating ICT into classroom activities and to extend learning beyond the classroom

**Unit 3: How Will My Students Benefit from Technology Literacy?**

This unit focuses on the learning outcomes that are achievable as a result of using technology, along with innovative teaching practices, to enhance the learning experience. One of the objectives is for educators to discuss with one another how students might benefit from ICT as a tool to enhance learning.

Core issue for deeper understanding: How does ICT enable 21st century skill development in students? How do we ensure that students maximise developments in technology not only in their education, but as preparation for life after school?
• Encourage thinking about solutions for educators’ context and the exchange of suggestions and ideas with colleagues.
• Consider setting up a shared resource area on a site like Microsoft Educator Network where educators can upload resources to share and download learning activities.

**Topic 1: Student Outcomes from Implementing a ICT-CFT-Based Approach (30 minutes)**

This topic focuses on the changes in education and learning in the 21st century. Today’s students are experienced technology users, ‘natives’ in a digital world, so teaching methods should adapt to their requirements. The UNESCO ICT-CFT aims to help educators build the skills that students will need in this digital world.

The objectives for this topic are that educators should be able to:

- Recognise the student outcomes that can result from using the Technology Literacy approach
- Match different learning activities with different student outcomes
- Consider the benefits for student outcomes that would result from implementing the teacher competencies outlined in the UNESCO framework in their own teaching environment
- Through discussion/collaboration with others, consider how students will benefit from improved learning outcomes

Use the downloadable action points in this topic to ‘Increase Student Engagement in Your Classroom’. These will help educators identify simple, practical steps to try out in their own classroom. Share what happened with others. Identify common challenges and best practices.
Topic 2: Supporting Students in Their Journey to Technology Literacy (40 minutes)

Information Communication Technology (ICT) can enable educators to support their students’ learning through activity-based and customised learning techniques. This topic explores how to develop student ownership and interest in using ICT, the role of technology in individualising instruction and student experiences, and the importance of students’ perspectives in the ongoing process.

The objectives for this topic are that educators should be able to:
- Understand students’ perspectives and experiences
- Understand how technology can help individualise instruction
- Develop student ownership of their ICT use
- Promote student reflection and interest in expanding student’s own ICT use
- Show students how technology can give access to learning anytime and anywhere

Suggest educators consider their own students and draw on practical examples where they could develop their use of technology to support students’ learning.

Topic 3: Now You Try It – Using Digital Tools in the Classroom (35 minutes)

Technology can widen the scope of a classroom project and add new dimensions to the students’ roles in the project. This topic analyses a classroom scenario, identifies desired student outcomes, considers various access scenarios, and explores their limitations. It examines how technology can be used to overcome these limitations and make the project more effective.

The objectives for this topic are that educators should be able to:
- Analyse a given scenario
- Propose a solution. (match digital tools and resources with learning objectives)
- Identify student outcomes
- Identify limitations. (for example slow Internet connection)
• Propose how problems/limitations might be overcome (for example downloading a video overnight onto the teacher’s computer for use the next day in class)

The focus here is to encourage educators to overcome problems and challenges and to seek solutions to their challenges. At this point it is very important to get them to identify solutions for one another, rather than relying on you as facilitator to come up with an answer.

**Topic 4: Learning from Peers (20 minutes)**

Technology tools can add value to traditional classroom projects, and provide educators with different methods to achieve learning outcomes. This topic identifies the strengths and weaknesses of different teaching methodologies, examines solutions for each scenario, and suggests alternative teaching and learning approaches.

The objectives for this topic are that educators should be able to:
- Consider different solutions to a given scenario.
- Share ideas and proposed methods with colleagues.
- Collaborate to identify strengths and weaknesses of different approach to the scenario.
- Suggest alternative approaches.

**Course Assessment (35 minutes)**

The assessment aims to see how well the educators have mastered the course objectives. Educators are presented with questions covering the content from each unit. The question pool is randomised each time the assessment is attempted. A score of 80% or above in the 20 questions is needed to pass and receive a certificate of completion. Educators can take the assessment more than once. You might encourage them to attempt the assessment on completion of the course to help provide feedback on their developing understanding. If they have saved the downloadable summaries from each unit, they may find it helpful to review these before completing the assessment. This might also act as a reminder of the progress they have made through the course.
Course 2: Selecting ICT Resources to Support Curriculum Outcomes (5 hours 40 minutes)

The education paradigm in the 21st century has moved away from educator-centred instruction to student-centred learning. The challenge for educators is to make the best use of ICT to enhance teaching and learning. This course is about helping educators to meet that challenge by demonstrating how to find appropriate ICT instructional and assessment resources, evaluate them, and incorporate them into different learning activities in order to meet curriculum goals. The emphasis is on practical solutions to support students’ learning. If you haven’t yet done so, you might set up a shared resource area on a site like Microsoft Educator Network where educators can upload materials to exchange resources.

Unit 1: Bringing Teaching and Learning to Life

This unit is about the way that 21st-century educators and students need to develop ‘21st-century skills’, such as critical thinking, creativity, and collaboration. If used correctly, ICT tools can foster the development of those skills and enhance traditional ways of teaching and learning.

Core issue for deeper understanding:
What can educators do with technology to enhance teaching and learning?

Practical ideas for facilitation:
- Ask participants about their favourite technology activities in school.
- Discuss the most innovative uses of technology to support learning objectives that they’ve seen. Suggest they post pictures with a short description to a website.
- Ensure that educators assess the quality of the learning objectives in terms of students’ learning.
Topic 1: Supporting Teaching and Learning with ICT (25 minutes)

This topic demonstrates how the ‘best’ ICT resource or tool for any given situation depends on your specific learning objective(s), the available resources, and the level of skill that you and your students have in using the tool. The facilitator’s emphasis is on supporting educators to match the learning objectives or outcomes with the opportunities ICT may offer to enhance that outcome.

The objectives for this topic are that educators should be able to:
- Understand how technology affects the learning paradigm.
- Recognise the potential of digital resources to support curriculum outcomes.
- Understand the importance of devising appropriate topic objectives/learning activities.
- Understand the importance of matching topic objectives with the right software/resources.
- Identify the consequences of a mismatch between lesson objectives and software/resources.

The key point is being clear about learning objectives and how technology can support these. A common mistake is to make an inappropriate match between a learning objective and the technology tool an educator uses.

Topic 2: Addressing Challenges in ICT (20 minutes)

Information Communication Technology (ICT) offers great opportunities to enhance teaching and learning. However, some educators hesitate to integrate ICT into their teaching practices because of the challenges it can pose. This topic focuses on enabling educators to manage challenges by systematically listing and categorising them, and finding creative solutions.

The objectives for this topic are that educators should be able to:
- Identify risks related to using digital resources.
- Propose appropriate solutions to the risks related to using digital resources.

This is an appropriate activity for encouraging educators to share ideas and successes from their current practice.
Topic 3: Finding the Right Resources (30 minutes)

With so many ICT resources available, it’s important that educators are able to identify those that are reliable and appropriate. They will need to be able to plan and organise them effectively. It’s essential that they adapt ready-made resources to their specific curriculum goals to ensure that they meet the learning objectives. This topic focuses on finding and organising resources and adapting ready-made resources to meet teaching and learning requirements.

The objectives for this topic are that educators should be able to:
- Research ways to teach particular curriculum goals or standards.
- Evaluate resources.
- Match resources (particular software packages/computer applications) to different curriculum standards/goals.

This is an opportunity to prod educators into thinking more deeply about the course. They should be able to explain how and why they adapt activities to learning objectives in their planning. Explaining and presenting these ideas is an important part of the learning.

Unit 2: Evaluating ICT Instructional Resources

While there are millions of resources online, educators must choose those that are suitable for their students’ learning needs and the specific environment and culture in which they are working. This is likely to vary according to the specific curriculum, subject matter, and ages of the students, as well as their technical skills and competence. It might involve, for example, exploring patterns in calculations using Excel, so that students focus on the general rules and not the specific sums; or using Word to explore the impact of changing adjectives systematically in a drafted descriptive text, highlighting the role of adjectives as a syntactic qualifier affecting the sense of a sentence.

Core issue for deeper understanding:
How do we ensure that technology benefits students’ learning?

Practical ideas for facilitation:
• Ask educators to post ideas about where technology helps students achieve the learning objectives.
• Ask them to describe, in a short vignette or mini-case-study, a student for whom technology was particularly effective.
• Suggest they post links to good sources of information or networks concerned with meeting the needs of diverse students.

**Topic 1: Selecting the Best ICT for Your Learning Outcomes (35 minutes)**

This topic presents an analysis of a specific scenario and identifies suitable ICT tools that can be used by the educator and the students before, during, and after the lesson.

The objectives for this topic are that educators should be able to:
• Analyse a given scenario to determine the lesson objective(s) and how ICT can best play a role.
• Evaluate credibility, age-level, appropriateness, accessibility of different digital resources/tools.
• Assess the feasibility of resources/tools for classroom use in this scenario.
• Select the best resources/tools for this scenario. (ensure there is a good fit between topic objectives and software/resource)
• Predict learning outcomes.

Educators should apply these ideas to their own work, making it more than an academic exercise. Consider grouping educators by subject area or age range so that they can exchange ideas with others who have a similar interest or professional

**Topic 2: ICT to Support Students’ Individual Needs (25 minutes)**

How do you cater to the learning needs of all your students? This topic considers how educators can use ICT tools to reach out to students with varied needs, including physical, social and emotional ones. It reviews how ICT
tools can be used to differentiate tasks and make them more suitable for students with learning difficulties or particular needs.

The objectives for this topic are that educators should be able to:
- Explore different ways of using resources/tools for a given scenario.
- Determine how to use digital resources/tools to meet different students' needs.
- Decide how best to differentiate student tasks using digital resources/tools.

**Unit 3: Evaluating ICT Assessment Resources**

Assessment or evaluation is an integral part of teaching and learning. ICT offers educators and students many different tools to support various forms of assessment.

[Image with gears]

Core issue for deeper understanding:
How can technology make the assessment of student learning more effective?

Practical ideas for facilitation:
- Find out how educators currently use ICT for assessment.
- Consider which ideas could be shared or exchanged.
- Inspire creative thinking by asking educators to complete the proposition 'In an ideal world technology would...

**Topic 1: Unlock the Potential of ICT-Based Assessment (35 minutes)**

This topic focuses on how educators can use some ICT tools to create effective assessment and evaluation opportunities.

The objectives for this topic are that educators should be able to:
- Recognise what ICT-based assessment covers.
- Identify the advantages of ICT-based assessment.
- Recognise when ICT forms of assessment are are not appropriate.
Assessment should be matched to learning objectives, and the role of technology is to enhance the assessment opportunity in some way. Encourage educators to identify the added value technology can offer.

**Topic 2: Evaluating ICT Assessment Resources (30 minutes)**

ICT significantly improves assessment approaches. This topic focuses on how ICT resources help address some of the challenges educators face when using traditional assessment methods. It considers some useful criteria for evaluating these resources.

The objectives for this topic are that educators should be able to:
- Recognise the challenges faced in traditional assessment.
- Identify how ICT assessment tools can address these challenges.
- Evaluate ICT assessments resources.

**Topic 3: Optimising Assessment Tools (40 minutes)**

ICT offers many tools that can enhance the assessment approach and experience for both educators and learners. This topic identifies ICT tools that match the aims at various stages of assessment. It shows how to analyse assessment data in order to provide meaningful information.

The objectives for this topic are that educators should be able to:
- Analyse a scenario to determine what information is needed from the assessment and the available resources/tools.
- Recognise the importance of assessment aims (don’t allow ICT to distort assessment methods/aims).
- Determine what type of assessment is needed.
- Match ICT resources to needs.

**Unit 4: Making it Easy to Manage Student Data**

Student performance data informs educators, students, and parents, as well as schools and education authorities. Managing extensive performance data is a challenging task.
Core issue for deeper understanding:
How can technology make assessment in schools more efficient?

Practical ideas for facilitation:
- Make a collection of screenshots from different examples of student data or assessment tools.
- Explore how to turn educators’ Excel or Word documents into templates for wider circulation.
- Explore how to create a bank of educators’ assessment guidance or rubrics so as to exchange ideas.
- Do the same with teachers’ assessment guidance or rubrics, if used by them.

**Topic 1: How Will ICT Make Managing Data Easier? (30 minutes)**

This topic demonstrates how Information and Communication Technology (ICT) can help educators to manage data effectively. It identifies measures that mitigate the risks associated with ICT-based data management to ensure reliability, confidentiality, and security.

The objectives for this topic are that educators should be able to:
- Define the benefits of using ICT to manage student performance data (more efficient and so on)
- Summarise best practice for keeping data confidential and secure.
- Be aware of the importance of accurate data.
- List/locate available tools for tracking student data.
- Match different tools to different situations or needs (for example, a spreadsheet to keep record of grades).

Encourage the educators to try something out that is appropriate to their level of skill and their work context. They may be able to share or exchange assessment materials they have used. Encourage them to adapt these to their specific context and the learning objectives they are addressing.
**Topic 2: Sharing Data Securely (20 minutes)**

Sharing performance data enables appropriate interventions by educators, school administrators, or education authorities wherever necessary. This topic identifies the purpose served by sharing performance information at various levels of the education system, and how this benefits the students. It also highlights the importance of ensuring data privacy.

The objectives for this topic are that educators should be able to:
- Identify appropriate reasons for sharing data (to make comparisons with other teachers, students, schools or to improve parent involvement through better information flow).
- Understand the importance of being aware of and complying with legislation around privacy relating to data.

You could encourage educators to describe the kind of data shared in their school (with whom and how is it shared?). Educators usually enjoy finding out how other schools operate so there may be opportunities to exchange ideas about effective practice here.

**Course Assessment (35 minutes)**

The assessment aims to see how well the educators have mastered the objectives. Educators are presented with questions covering the content from each course unit. The question pool is randomised each time the assessment is attempted. A score of 80% or above is needed to pass the assessment and receive a certificate of completion. Educators can take the assessment more than once. You could encourage them to attempt the assessment on completion of the course, as this will help to provide feedback on their developing understanding. If they have saved the downloadable summaries from each of the units, they may find it helpful to review these before completing the assessment. This should also act as a reminder of the progress they have made through the course.
Course 3: How Do Technology and Pedagogy Mix? (7 hours)

This course aims to help educators consider an appropriate set of technology tools, and to match effective tools with specific lesson objectives and with students’ needs. By choosing the right digital tools and information, educators can cater for students’ different learning approaches, make effective presentations, and manage just-in-time or unplanned teaching and learning moments while extending the value of digital resources both within and beyond the classroom. The focus is on being able to identify appropriate technologies to match teaching activities and aims.

One of the key goals of facilitation is to get educators identifying ideas which apply to their work, and then trying them out in their teaching. There are several practical links and guides. You will need to check to ensure links are still active, and be able to suggest or help them find alternatives where needed.

Unit 1: Exploiting Digital Possibilities to Improve Didactic Teaching

Technology can support educators in many ways. There are several opportunities for it to be used in a way that supports more educator-led approaches to supporting learning.

Core issue for deeper understanding:
How can technology support educators’ instruction, demonstration and explanation?

Practical ideas for facilitation:
- Find out what hardware and software educators are currently using.
- Discuss how they may be currently using those tools to provide greater clarity to students by presenting learning objectives and content, assessing understanding, and reiterating what students have learned.
• Try to connect educators using the same hardware or software to exchange ideas and resources (for example using the same kind of interactive whiteboard).
• Create smaller groups for discussions.

**Topic 1: Integrating ICT with Didactic Teaching Approaches (35 minutes)**

This topic focuses on the features of today's classrooms, and considers the digital tools that can enhance more didactic teaching methods. It looks at the nature of didactic teaching and the activities and challenges for an educator adopting a didactic teaching model. It also considers how ICT tools can enhance such approaches.

The objectives for this topic are that educators should be able to:
• Define particular challenges/issues related to didactic teaching.
• Identify tools that could be effectively used in didactic teaching.
• Identify different ways digital tools and resources could be used (i.e. for communication, presentation and investigation).
• Understand that ICT should be integrated with teaching (i.e. it should not replace teaching).
• For a given classroom scenario, recommend appropriate ICT resources to enhance didactic teaching.

**Topic 2: Selecting the Right ICT Resources to Support Didactic Teaching Practices (35 minutes)**

This topic identifies different kinds of learning objectives, including knowledge-based, understanding-based, and application-based learning. It considers the most appropriate ICT tools to meet these objectives and identifies different learning styles or approaches adopted by students, and the role of ICT in supporting and extending these.

The objectives for this topic are that educators should be able to:
• Analyse the effectiveness and suitability of different tools/resources to meet a given learning objective in a didactic teaching context.
• Match different resources/tools to different didactic teaching objectives.
• Propose ways of using ICT in didactic teaching to cater to different learning styles or respond to specific learning needs.
• Anticipate possible problems that may arise relating to the use of selected resources/tools.
• Propose contingency plans to deal with the problem.

**Topic 3: Keys to Successful Integration of ICT with Teaching and Learning (40 minutes)**

This topic explores how ICT can be successfully integrated with teaching and learning by both educators and students. The development of educators’ and students’ ICT skills depends on two key factors:

1. The maintenance of functioning ICT systems (hardware and network).
2. A well-considered ICT development plan that ensures good training opportunities for staff, as well as regular learning opportunities for students.

In order to make the most of existing ICT resources, there is a need for enthusiasm, commitment, and the active participation of educators, students, and those who work more widely in schools. This depends on the quality of relationships developed in schools and other educational settings.

The objectives for this topic are that educators should be able to:

- Demonstrate competence in operating relevant hardware/software/tools before the lesson starts.
- When appropriate, ensure that students are competent using necessary hardware/software/tools.

In order to apply the ideas in this topic, the suggested resources may need to be extended or matched to the particular software that educators are using. Encourage them to share resources they've found useful in developing their teaching, or to post useful sites and further information so that other course participants can benefit.
Teaching

The key focus in this unit is on the effective integration of ICT to support learning objectives.

Core issue for deeper understanding:
How do educators ensure an effective match between technology tools and learning objectives?

Practical ideas for facilitation:
- Keep the focus on using ideas and adapting them for their own work, such as:
  - Swapping files to use in their own work.
  - Create a list of ‘top ten tips’ for presentations.
  - If you need a change of mood, get them to identify the **worst** things they have seen people do with presentation software (for example tiny text, poor colour contrast, distracting builds and so on), to then identify more positive best practice.

**Topic 1: Creating Learning Activities that Support Students’ Learning (40 minutes)**

This topic explores the different phases of a didactic lesson and some of the possible learning activities. It identifies ICT tools to help educators enhance these activities. It identifies some of the potential problems of using ICT as an add-on rather than as an integral part of the learning process, and highlights some approaches to ensure effective integration.

The objectives for this topic are that educators should be able to:
- Consider learning activities based on didactic teaching that they and/or other teachers have created.
- Evaluate these activities in terms of their success in engaging students and improving their learning.
- Consider how they could use ICT resources to create more engaging and motivating activities.
**Topic 2: Planning Engaging ICT-Supported Activities (30 minutes)**

This topic uses two case studies to explore the use of ICT resources to create effective and engaging learning activities. By looking at a maths lesson and a science lesson in depth, we discover how ICT can make teaching and learning more effective, engaging, interesting, and accessible.

The objectives for this topic are that educators should be able to:
- Identify teaching objective(s) to meet specific educational outcomes.
- Plan/design learning activities (based on didactic teaching) to meet this objective(s).
- Consider the full range of potential digital resources and tools available to support the learning activity.
- Incorporate appropriate ICT-based activities into a lesson plan for this activity to engage students and help them understand the concepts involved.

Help educators identify how they could apply or adapt the ideas in the case studies to their own teaching.

**Unit 3: Incorporating ICT Resources for Just-in-Time Learning**

ICT is an effective tool for educators to use more spontaneously and creatively. While it is important to ensure that they don’t get distracted from the learning objectives, technology can provide ways of responding to students’ questions, provide challenges, and develop students’ creativity.

Core issue for deeper understanding:
How can technology support more responsive, spontaneous, and creative teaching?

Practical ideas for facilitation:
- Ensure educators have the opportunity to express their concerns about being distracted, but keep the focus on supporting learning effectively.
- Try a series of blog or discussion board posts which educators can update after trying out ICT activities.
**Topic 1: Using ICT to Manage Spontaneous Learning Interactions (40 minutes)**

This topic looks at the way that ICT can enhance learning through more spontaneous learning interactions. Educators will need to develop effective management strategies to maximise these opportunities; strategies to keep the learning on track are covered here.

The objectives for this topic are that educators should be able to:

- Manage an unplanned learning interaction/enquiry so that it is productive and related to the purpose of the lesson.
- Exploit the opportunity to see how digital resources and tools can assist learning.
- Demonstrate effective search/research strategies to students.

**Topic 2: Encouraging Students to use ICT In and Outside the Classroom (35 minutes)**

This topic focuses on the extensive range of possibilities for learning, creating, and sharing knowledge through school ICT resources. Students should be encouraged to use ICT tools and resources to support lifelong learning. Self-directed projects with minimal educator intervention can help develop students’ independent learning skills.

The objectives for this topic are that educators should be able to:

- Help students to extend their knowledge and understanding of a given learning objective by enabling them to use digital resources.
- Create awareness among students about how ICT tools can be used on an everyday basis for everyday tasks.
- Demonstrate to students the value of digital resources in all aspects of life, not just in education, for obtaining information and extending knowledge.

Some of the ideas and suggestions in this topic are challenging. Get educators to express their concerns and to help each other suggest solutions to the challenges.

**Unit 4: How Technology Can Help You Deliver Your Message**
Some technology tools can help you get your message across as an educator. By designing and using effective presentation techniques, educators can support students’ learning, engage their interest, and support their interaction.

**Core issue for deeper understanding:**
What are the key features of effective presentation, explanation, and demonstration, and how are they best supported with technology?

**Practical ideas for facilitation:**
- Ask educators to swap presentations they have made and provide feedback.
- Encourage them to search for ideas on a site like Microsoft Educator Network, YouTube or SlideShare.
- Create a shared folder to post those that they feel are most effective in meeting the learning objective, and encouraging student collaboration, creativity, and critical thinking.

**Topic 1: Using ICT for Presentations (30 minutes)**

This topic discusses different ICT hardware and software tools and how these can be used by educators in their classrooms. It compares multimedia presentations with lectures. The key issues are how learners absorb and retain information, and which hardware and software tools can support more effective presentations.

The objectives for this topic are that educators should be able to:
- Distinguish between an effective presentation and a lecture.
- Identify a range of digital tools and resources that can support effective presentations.
- Define benefits of different tools/resources/software.
**Topic 2: Using Technology to Help You Deliver Your Message (35 minutes)**

The focus of this topic is on the effective use of ICT presentation tools to deliver information interactively and engagingly, and to help embed students’ knowledge and learning.

The objectives for this topic are that educators should be able to:
- Identify teaching objective(s) for a given presentation.
- Choose appropriate digital resources and tools to best match the teaching objective(s) and students’ learning styles.
- Identify tools/resources that will stimulate students’ interest and add interactivity.
- Organise the structure of the presentation and its relationship to the rest of the lesson.

**Topic 3: Evaluating Presentations (45 minutes)**

Good design and delivery are essential aspects of a successful presentation. This topic looks at how using presentation software such as PowerPoint lets educators create effective and engaging presentations quickly and easily. The focus is on presentation design, the importance of visual design, and on considering presentation delivery and overall effectiveness.

The objectives for this topic are that educators should be able to:
- Identify common mistakes teachers make when preparing presentations.
- Identify the principles of good visual design.
- Identify good presentation techniques.
- Assess the effectiveness of a given presentation.

To facilitate this topic you could encourage the educators to share or exchange presentations they have developed using ICT tools. You may be able to set up some shared file space, or use an online environment such as the Microsoft Educator Network. This may help educators use the ideas practically in their work.
Course Assessment (35 minutes)

The assessment aims to see how well the educators have mastered the objectives. Educators are presented with questions covering the content from each unit. The question pool is randomised each time the assessment is attempted. A score of 80% or above in the 20 questions is needed to pass the assessment and receive a certificate of completion. Educators can take the assessment more than once. You could encourage them to attempt the assessment on completion of the course as this will help to provide feedback on their developing understanding. If they have saved the downloadable summaries from each of the units, they may find it helpful to review these before completing the assessment. This might then also act as a reminder of the progress they have made through the course.

Course 4: Use Basic ICT Tools to Support Teaching and Learning (10 hours 40 mins)

This course discusses hardware and software, the skills required to use them effectively, and the added value they can bring to teaching and learning. It covers the use of Internet browsers, navigation of websites, location of resources, use of plug-ins, bookmarking, and assessment of the credibility of websites; e-mail and collaboration tools are also presented. The potential benefits of the Internet are highlighted, and the identification and management of its risks discussed. There are several technical and practical issues to do with Internet access which you may need to help educators with. This is a long course with detailed information, so you may wish to think of strategies to maintain educators’ motivation as they progress through the Units and Topics.

Unit 1: Hardware to Support Teaching and Learning

This unit is about the range of hardware devices for teaching and learning, and the importance of matching equipment with learning opportunities. Supporting educators in thinking about planning and preparation is a key facilitation issue.
Core issue for deeper understanding:
What are the options for effective use of technology in schools?

Practical ideas for facilitation:
- Ask the educators to look for and share online ‘how to’ guides and websites.
- Post some case studies of educators’ use of technology to provoke discussion.
- Create ‘top tips’ or ‘best for...’ lists for popular technologies.

**Topic 1: Add Value with Hardware Technologies (40 minutes)**

This topic considers the practical aspect of using different digital technologies and devices for teaching and learning. Students are likely to have some technology skills already; educators can build on these effectively for teaching and learning in schools. The key issues are choosing digital devices, matching these devices with the specific learning objectives, and managing the practical logistics and organisation for the classroom.

The objectives for this topic are that educators should be able to:
- Describe the basic use(s) of a range of different hardware devices.
- Provide examples of when these devices could support teaching and learning.
- Evaluate the time and cost involved in using these devices.
- Identify memory and storage requirements for these devices.
- Match the most appropriate device(s) to given learning activities.

**Topic 2: Optimising Devices for Learning and Teaching (20 minutes)**

This topic demonstrates how the use of technology can add value to teaching and learning, while acknowledging that technology can also undermine learning if used ineffectively. It also covers the importance of planning and preparation, and identifies different approaches to finding sources of support.

The objectives for this topic are that educators should be able to:
● Recognise the importance of preparation and planning when using hardware to support learning activities (for example testing the activity using the device, verifying that the device(s) will be available at the required location/time).
● Understand the skills required to use given devices.
● Find out what devices other teachers use to support teaching and learning and how they use them.
● Get tips from other teachers about using different devices.
● Evaluate and share your experience with other teachers.

Unit 2: The Internet to Support Learning Activities

The Internet offers an amazing resource for educators and can help them create improved learning activities. However, information on the Internet needs to be checked for credibility, reliability and appropriateness.

Core issue for deeper understanding:
How can resources like the Internet be used more effectively to support learning objectives?

Practical ideas for facilitation:
● Identify some videos from sites like YouTube and Teacher Tube that will help develop educators’ technical skills in using Internet search tools.
● Ask some educators to try out a site like ‘Delicious’ (http://delicious.com) to organise bookmark ‘playlists’.

Topic 1: Create Better Learning Activities with the Internet (35 minutes)

This topic focuses on developing awareness and understanding of how the Internet can enhance different learning activities. It suggests activities to support educators in their planning for teaching and preparation of resources, while emphasising the importance of evaluating materials and resources in order to assess their practicality.
The objectives for this topic are that educators should be able to:

- Recognise the potential of the Internet to help create better learning activities.
- Recognise the influence of connection speed on possible educational activities.
- Navigate websites in IE and Bing to locate a broad range of resources (text, images, videos, and so on) to support a given learning activity.
- Assess the relevance of the content to the learning activity.
- Determine if any additional software is required (e.g., plug-ins).
- Bookmark/reference relevant websites.
- Incorporate the content into the learning activity/outcome.

**Topic 2: Assess Website Credibility (25 minutes)**

This topic explains why educators should verify the credibility and accuracy of websites. It lists several criteria for evaluating usefulness and highlights the importance of evaluating websites against school policies to ensure that the content is appropriate for students.

The objectives for this topic are that educators should be able to:

- Understand the importance of verifying the credibility and accuracy of websites.
- Use different criteria to evaluate the credibility of websites.
- Evaluate the Web site against school policies.

**Unit 3: Internet Safety**

This unit needs sensitive facilitation. Educators will have concerns about Internet use and students’ safety, and you could encourage them to discuss these worries. However, the emphasis is on educators developing their understanding of the risks in relation to Internet safety as a whole school issue rather than a challenge to be tackled alone. There are plenty of excellent Internet resources to support this Unit, with a series of links presented through the topics. You may need to check that these links are still active, and encourage educators to share resources and websites that they find useful.
Core issue for deeper understanding:
How can the Internet be used safely for learning?

Practical ideas for facilitation:
- Check out the links in this unit in advance.
- Ask educators to look at the materials on cyber bullying and to share their concerns.
- Emphasise the support of school policies and procedures, possibly by sharing them.
- Ask them to identify and share effective and practical resources to support their work.

**Topic 1: Risks and Benefits of Internet Use (40 minutes) 🕒**
This topic focuses on making educators aware of the risks and benefits of Internet use and how educators should make students aware of these. It emphasises that there should be a school policy to cover Internet use, and that good digital citizenship among students and the wider school community should be promoted.

The objectives for this topic are that educators should be able to:
- Identify risks and dangers involved in Internet use.
- Teach students about the risks (cyber bullying, posting inappropriate information, predators; communication forums).
- In teaching students, balance dangers with benefits of Internet use.
- Promote safe use of Internet and appropriate e-mail procedures and netiquette.
- Be aware of school policy on use of digital devices and implement policy’s requirements.
- Model good digital citizenship.

**Topic 2: Making the Internet Safe for Students (35 minutes) 🕒**
This topic focuses on practical actions to protect students from some of the threats posed by the Internet. It looks at making the Internet safer for
students and maintaining technical safeguards in school, as well as ensuring that students understand how to make their passwords safe and secure.

The objectives for this topic are that educators should be able to:

- Make the Internet environment as safe as possible for all students.
- Take all possible precautions to avoid dangers of scams, predators etc.
- Take preventive action against viruses, spam, malware, cookies etc.
- Ensure security of data (for example, through passwords).

**Topic 3: Identifying Internet Risks (20 minutes)**

The focus in this topic is on identifying Internet risks and protecting students by providing them with the right information and guidance. It emphasises that educators should encourage a student who is at risk to talk about what has happened in detail and inform the people who need to know, according to the school's Acceptable Use Policy. It covers the importance of being aware of cyber bullying and taking preventive measures to address such issues.

The objectives for this topic are that educators should be able to:

- Identify potential risks, given a scenario.
- Identify appropriate actions to take in order to minimise these risks.

**Topic 4: Recognize Potential Dangers (30 minutes)**

This topic looks at the potential dangers posed by the Internet from different perspectives, and supports educators in identifying which actions to take in addressing these dangers.

The objectives for this topic are that educators should be able to:

- Given a scenario, identify the issues (such as spam/scams, malware and the like) behind unusual or suspicious Internet and/or e-mail experiences.
- Identify appropriate actions to take to address these issues.

**Unit 4: Search Engines and Learning Activities**
To get the best from the Internet, educators need to develop effective search strategies to help them identify appropriate resources to support the learning objectives they need to cover in their teaching.

Core issue for deeper understanding:
How can educators find what they need quickly online?

Practical ideas for facilitation:
- Set some challenges to find resources for one another.
- Organise educators in teams to undertake searches for each team member and post their top five sites for a lesson or topic.
- Focus on the efficient use of search strings (the shortest combination of keywords to get what you want) and search pages (such as Bing Images, Maps, and News).

**Topic 1: Find Resources Fast by Using Search Engines (30 minutes)**

This topic is about using the Internet to search for materials efficiently. It reviews ways of searching, tracking and saving websites and materials without becoming overwhelmed by the quantity of information available. The importance of evaluating websites and judging the quality and usefulness of the results is emphasised.

The objectives for this topic are that educators should be able to:
- Identify the advantages of using search engines to find useful resources for teaching and learning.
- Given a specific educational need, identify what to search for, and in what format (for example image, text, video).
- Select the appropriate keywords to use in the search (indicate format of required resource in keywords).
- Evaluate/compare results from different keyword combinations.
- Compare results from keywords searched on different search engines.
- Choose the most suitable search result for a given teaching/learning objective.
Topic 2: Efficient Search Strategies (35 minutes)

This topic focuses on strategies to help educators use search engines to refine their searches for Internet teaching and learning resources. It looks at ways to navigate between search results efficiently and to organise, store and retrieve them.

The objectives for this topic are that educators should be able to:

- Refine searches.
- Use a natural language search.
- Navigate between the search results.

Unit 5: E-mail and Learning Activities

E-mail is an important modern communication tool. Most people use email in their personal and professional lives. It's also a tool for educators to support students with learning activities.

Core issue for deeper understanding:

What does e-mail offer to support learning?

Practical ideas for facilitation:

- Use e-mail to facilitate this Unit.
- Set up a group to exchange information.
- Work towards identifying e-mail’s strengths (such as the personalising or targeting of communication).
**Topic 1: E-mail to Support Learning Activities (40 minutes)**

The focus of this topic is on helping educators to identify ways in which e-mail can support teaching and learning activities. It includes identifying ‘good’ passwords, reviewing other skills related to sending, receiving and replying to messages, sending and receiving attachments, and understanding common error messages when using e-mail.

The objectives for this topic are that educators should be able to:

- Identify situations in which e-mail could support learning activities.
- Create a web-based e-mail account to support a given learning activity (for example assign a task to students).
- Identify ‘good’ passwords.
- Send, receive, and reply to messages.
- Recognise the importance of using accurate subject lines.
- Recognise the importance of reviewing e-mails before sending.
- Send and receive attachments.
- Understand common error messages.

**Topic 2: Managing E-mail Accounts (25 minutes)**

The focus of this topic is on managing e-mail for wider professional tasks. Educators use e-mail to communicate with students after class, connect with parents, exchange notes and information with colleagues, as well as for professional development. The topic covers issues such as folders, the use and management of contacts/address books, and storage issues and limits.

The objectives for this topic are that educators should be able to:

- Organise folders.
- Delete messages to stay within storage limits (including sent folder and trash folder).
- Move messages to folders.
- Check spam folder periodically.
- Manage address book and address book functions (including groups).

**Unit 6: Software Applications for Better Learning**
Choosing appropriate software is a vital skill for educators. The range of applications and software tools can make this challenging.

Core issue for deeper understanding:
New software is constantly being developed. How can educators be self-supporting in learning about software capabilities and how to use them?

Practical ideas for facilitation:
- Find some relevant examples of 'how to' videos on the Microsoft Educator Network or YouTube as a starter activity.
- Ask the educators to find a clip to teach them something new that's interesting.
- Encourage them to summarise why it is useful to the group.
- Challenge more advanced learners to make their own short 'how to' videos and post them on the Microsoft Educator Network.

**Topic 1: Choosing Software to Meet Learning Needs (30 minutes)**

This topic aims to help educators understand the range of available software to support students’ learning, and emphasises the importance of matching software to the desired learning outcomes. This includes considering the student’s learning needs and evaluating the impact of technology on learning. Practical issues covered include why it is important to test software before using it with students.

The objectives for this topic are that educators should be able to:
- Recognise the importance of identifying the learning need/desired learning outcome before selecting a software application.
- Identify available possibilities to meet given learning outcomes (word processing, presentation, graphic and spreadsheet, tutorial and drill and practice software).
- Compare/evaluate the options (focus on general features) in terms of matching the most appropriate application with different teaching/learning objectives.
- Describe how these applications support students' acquisition of knowledge of different subjects.
• Recognise the importance of piloting/testing software before using it with students.

**Topic 2: Making the Most of Application Features (35 minutes)**

This topic aims to support educators in identifying the advanced features of software applications they can use to create learning activities. The focus is on understanding how to use them effectively to support learning. It looks in particular at the use of keyboard shortcuts and templates to create activities with interactive features in a program like Microsoft Word.

The objectives for this topic are that educators should be able to:

• Given specific learning needs, identify the most effective/efficient features of a software application to use (for example templates).
• Demonstrate/practice the skills required to carry out the chosen activity.
• Evaluate the implications of using the activity in the future.

There is an evaluation task included in this topic. You might get the educators to share this information with you or with others undertaking the topic. Encouraging educators to share their reflections on their learning is a key aspect of their professional development.

**Unit 7: Using Software for Managing and Sharing Student Data**

Most schools will already have systems in place for gathering, managing and sharing student data. You could encourage them to reflect on the systems and to consider the role of ICT in making these more effective. You might ask them to exchange examples of what they already do and use these to suggest ways of improving existing systems.

**Core issue for deeper understanding:**
What are the issues in the secure and effective use of individual student’s data in schools?

**Practical ideas for facilitation:**

• Swap examples of what the educators do in their own work.
• Encourage creativity by asking them to post ideas on the theme ‘Wouldn’t it be good if we could...’, using the information.
• Try to help them identify ways in which they can all use existing information more effectively with technology.

**Topic 1: Gathering Student Data (35 minutes)**

This topic focuses on systems for tracking and recording attendance data and other information about students in a class or across a school. It aims to help educators consider which data they could collect for a specific purpose, and the best methods to gather, enter, and record it.

The objectives for this topic are that educators should be able to:
- Determine what data to gather for a given need (for example need to track attendance records in efficient manner).
- Identify the best way to gather the data (select appropriate data management systems).
- Identify best practice for data entry.

**Topic 2: Analysing Student Data (30 minutes)**

The next step is to consider how technology can be used to organise, analyse, and use data to arrive at decisions as a basis for action. The topic looks at classroom data about students and how this can be analysed and shared so that appropriate action can be taken.

The objectives for this topic are that educators should be able to:
- Identify how to analyse student/classroom data meaningfully.
- Identify how to create and share reports.
- Identify who should have access to the data.
- Act upon the information, as appropriate.

**Unit 8: Add Value to Teaching and Learning with Collaboration Technology**

This unit looks at collaboration tools and how they can support teaching and learning in schools. Some of this will be challenging for educators, so you should assist them in identifying realistic and practical activities to try out with their students. You may want to model some of these approaches with your
group, e.g. producing a joint guide for educators (as a document, a presentation, or even a wiki) to help them master the practical skills.

Core issue for deeper understanding:
How does technology change the way we think about collaboration?

Practical ideas for facilitation:
• Model the available collaboration tools:
  o Set up a shared folder with shared documents to work on.
  o Create a wiki or a blog with the group.
  o Use photo sharing (for example, Microsoft Windows Live Photo Gallery) to exchange pictures of each other’s schools or classrooms (you’ll have to set up a shared folder for your group to upload pictures to, and then transfer the pictures to the online Gallery).
  o Send a document around group members in order to compile information (for example. ‘My favourite recipe’, ‘My favourite lesson’), then e-mail the final version to everyone.

**Topic 1: Supporting Teaching and Learning with Collaboration**

**Technologies (40 minutes)**

A range of new and developing technology-based collaboration tools are available, and these tools provide opportunities to add value to students’ learning. This topic identifies two basic types of collaboration for learning and teaching:

• When students communicate with people outside the classroom to gather information and increase their understanding.

• When students collaborate to produce a shared output such as a document, presentation, or website (either within their classroom or with other classes).

Each tool offers varied benefits, and is therefore appropriate to meet different learning objectives.

The objectives for this topic are that educators should be able to:
• Identify collaboration opportunities that add value to learning.
• Identify available tools for collaboration.
• Select appropriate tool(s) for collaboration, given specific learning needs.
• Ensure the collaboration enhances/helps to meet curriculum goals/educational needs.

**Topic 2: Maximising Collaboration Opportunities (40 minutes)**

Learning is more effective when learners share ideas and approaches and build knowledge so that they can teach and learn from one another.

Collaboration can provide opportunities to extend the classroom beyond its traditional walls, and add further value to the learning process. This topic is focused on the practical implications and challenges associated with collaborating with educators or classes in other locations or countries. It underlines the importance of detailed planning and thorough piloting, particularly with more advanced tools or complex collaborations, to ensure success in meeting teaching and learning objectives.

The objectives for this topic are that educators should be able to:
• Recognise the logistical challenges of collaboration (different time zones, language, cultural differences and so on and how to deal with them.
• Recognize the importance of planning the collaboration (for example. identify time required, additional ICT resources required - for example webcam - logistics and so on
• Test advanced resources: blogs, wikis, digital whiteboards.

**Course Assessment (35 minutes)**

The assessment aims to see how well the educators have mastered the objectives. Educators are presented with questions covering the content from each unit. The question pool is randomised each time the assessment is attempted. A score of 80% or above in the 20 questions is needed to pass the assessment and receive a certificate of completion. Educators can take the
assessment more than once. You could encourage them to attempt the assessment on completion of the course as this will help to provide feedback on their developing understanding. If they have saved the downloadable summaries from each of the units, they may find it helpful to review these before completing the assessment. This might then also act as a reminder of the progress they have made through the course.

Course 5: Organize and Manage the Use of ICT in Your Classroom (6 hours 30 mins)

This course focuses on using ICT within different environments. It explains how to adapt computer lab activities for different computer ratios and levels of skills and confidence. It covers different social and organisational arrangements within the classroom and strategies for teaching and learning using ICT in group settings.

Unit 1: Learning Activities for a Computer Laboratory Environment

This unit looks at the practical issues in the organisation of equipment and students in a computer lab or other place where there is access for every student to ensure technology is used effectively.

Core issue for deeper understanding:
How does increased access to technology change our choices about the way we organise and manage students’ learning?

Practical ideas for facilitation:

- Encourage educators to exchange information and ideas about their school or work setting. What are the challenges they face? Can other educators provide advice about how to overcome them? What tips can they swap and try out?
- Emphasise trying out ideas and reporting back on results, such as how they plan groupings for ICT tasks.
• Ask them to post to your shared online area examples of the task sheets or help sheets they use with students.

**Topic 1: Teaching and Learning in a Computer Lab (35 minutes)**

This topic identifies the advantages and disadvantages of using computer labs in schools, and considers some associated pedagogical issues, particularly integration into learning and the development of higher order skills such as collaboration, communication, critical thinking, creativity, and innovation.

The objectives for this topic are that educators should be able to:
- Identify the advantages and disadvantages of working in a networked computer lab environment.
- Given specified computer lab environments, identify learning opportunities into which you can integrate lab use.
- Estimate the time required for the activities.
- Verify the skills required for students to perform the activity.
- Create a lesson plan that includes the appropriate and effective use of the lab resources.
- Develop a task sheet that outlines/scaffolds the activity.

**Topic 2: Adapting Activities for a Computer Lab Environment (35 minutes)**

Educators should think about adapting their teaching practices when working in a computer lab environment, and work out how to adapt activities to suit the different levels of students’ skills. This topic identifies important themes relating to integrating technology, catering for different levels of skill, providing educator support, and identifying some ‘if time allows’ extensions and additional support activities.

The objectives for this topic are that educators should be able to:
- Given a specific lab-based learning activity, adapt the activity for different student computer ratios.
- Adapt the activity to suit different student skill levels.
- Plan for ‘if time allows’ activities.
- Talk or collaborate with other teachers to identify new opportunities for using the lab.
**Topic 3: Preparing for Lab-based Teaching and Learning (40 minutes)**

This topic focuses on establishing good practices when using computer labs. It identifies key strategies such as establishing standardised procedures and rules for appropriate conduct. It encourages educators to plan logistics in a computer lab and organise seating and interaction in ways that support learning.

The objectives for this topic are that educators should be able to:
- Identify best practice for testing lab-based activities before the lesson.
- Plan the logistics (for example booking lab time, ensuring files available for students, access - passwords)
- Verify if the lab environment supports the selected need (e.g., number of students vs. number of computers).

**Unit 2: Managing ICT Resources in a Classroom Environment**

This unit is about the management of ICT resources in a more typical classroom environment.

Core issue for deeper understanding:
How does availability of technology change the way we think about organising the students and planning the activities they undertake?

Practical ideas for facilitation:
- What systems do different educators use to manage ICT? What ideas can they suggest others on the course try out?
- What are the challenges they face in meeting individual student needs? Can others suggest ideas or online resources that might help? Ask them to recommend helpful materials they use online.
- Ask them to undertake and then post a review of an ICT activity they have undertaken in the classroom. What went well? What would they
change next time? If you feel it appropriate, you could ask them to make a short video clip to share online.

**Topic 1: Manage ICT-Based Activities in the Classroom (40 minutes)**

This topic looks at how ICT resources can support learners with differing learning abilities. It identifies the differences between using ICT in a computer lab and using embedded ICT in daily learning activities in other classroom settings. It also supports educators in identifying the challenges involved in managing ICT-based activities in the classroom. It emphasises the need to establish systems that will enable the integration of ICT in the classroom, as well as the importance of having sufficient time to practise and develop skills.

The objectives for this topic are that educators should be able to:
- Identify how ICT resources can provide a quality supplement to classroom teaching (in other words some students using ICT resources while other instructional activities continue in the classroom).
- Identify the advantages of this approach (differentiated learning experiences/individualised training);
- Recognise the differences between this approach as opposed to using ICT resources with whole class groups.
- Consider the implications for classroom management of adding activities that use ICT resources (while other activities go on).

**Topic 2: Using ICT Resources with Individuals (40 minutes)**

This topic supports educators in identifying the kinds of learning activities that ICT can support in developing differentiated learning. It highlights the factors that help educators to manage a classroom in which a few students work on the computer while the rest are involved in other learning activities.

The objectives for this topic are that educators should be able to:
- Identify appropriate learning activities into which ICT resources can be integrated for individuals, while continuing with other activities with the rest of the class.
- Consider the suitability (capabilities/limitations) of various ICT resources in this environment/situation.
• Identify appropriate classroom strategies for managing such an activity.
• Plan the logistics (availability of resources and support if required) for the activity.
• Verify if the students have the skills to perform the activity.
• Provide necessary scaffolding to students for the activity.
• Implement the activity without disrupting other instructional activities in the class.

**Topic 3: Using ICT Resources with Small Groups (30 minutes)**

Educators should be able to identify the need for, and the benefits of, enabling group-based learning activities. This topic highlights the related benefits and challenges of managing group work with and without the support of ICT. It helps educators to overcome the challenges, increasing the chance of successful group work.

The objectives for this topic are that educators should be able to:
• Identify learning opportunities into which you can integrate ICT resources with pairs and small groups, while continuing with other activities with the rest of the class.
• Consider the suitability (capabilities/limitations) of various ICT resources/hardware configurations in this environment/situation.
• Identify appropriate classroom strategies for managing the activity.
• Plan the logistics (availability of resources and support if required) for the activity.
• Verify if the students have the skills to perform the activity.
• Provide necessary scaffolding to students for the activity.
• Implement the activity without disrupting other instructional activities in the class.

**Topic 4: Evaluating the ICT Experience (25 minutes)**

This topic focuses on how to assess the experience of using ICT resources in the classroom. It identifies effective practice by considering both ‘hard’ and ‘soft’ measures, such as test scores and the development of students’ enthusiasm and engagement.
The objectives for this topic are that educators should be able to:
- Assess their experience of using ICT resources with individuals and small groups in a classroom environment.
- Consider ways to improve the experience.
- Find out how other teachers manage the use of supplemental ICT resources with individuals and small groups without disrupting other activities.

**Unit 3: Managing Logistics and Social Interactions Around ICT Resources**

In this unit, educators will think in more detail about the role of technology in supporting more effective learning interactions.

Core issue for deeper understanding:
How does technology change the way we think about interaction between students so as to increase the opportunities for learning?

Practical ideas for facilitation:
- Discuss how educators get their students to use the computers or ICT equipment. Ask them to summarise the options they have and share these with the group.
- Suggest that they post pictures of the facilities they have (without students present, if they have any concerns). Ask them to identify the benefits and challenges of the spaces they use. You could use an online photo album (for example, Microsoft Windows Live Photo Gallery).
- Suggest that the educators try out something new, such as asking students to work in pairs or threes and take turns in focusing on different aspects of a task (such as planning, monitoring and reviewing). Can they try out a suggestion made by someone else on the course?
**Topic 1: ICT and Social Interactions in a Class (40 minutes)**

The focus of this topic is on identifying the educational and social value of using different grouping classroom arrangements. It looks at how different ICT tools can be mapped onto these organisational strategies, particularly relating to group size and composition. It covers the practical teaching strategies to support the management of social interactions around ICT to ensure a learning focus, rather than a social focus.

The objectives for this topic are that educators should be able to:
- Consider different social arrangements that can be used in classroom.
- Identify the educational and social value of using different social arrangements/groups in a class for learning.
- Recognise why/when the implementation of different ICT resources is appropriate/inappropriate for different social arrangements in a class.
- Consider appropriate teaching strategies for managing social interactions around ICT resources.

**Topic 2: Managing Groups When Using ICT Resources (30 minutes)**

This topic presents practical examples of educators using ICT tools to help learners develop core learning outcomes for the 21st century, focusing on contributing, collaborating, and being creative as core learning outcomes of the digital age. It supports educators in considering how they can best manage groups of learners while using ICT support.

The objectives for this topic are that educators should be able to:
- Identify appropriate ICT resources, with a particular learning outcome, in a given scenario.
- Consider potential social arrangements for using these resources.
- Choose optimal group size to ensure the success of the activity.
- Adapt the activity (while in progress) if the group size is found to be inappropriate.
- Identify best practice for dealing with disruptions/challenges.
Topic 3: Key Considerations for Different Social Arrangements (25 minutes)

For this topic, educators reflect on the key considerations of using different social arrangements in the classroom. Group work is an extremely powerful arrangement for learning but there needs to be effective management of the space available, access to ICT resources, and a mix of ability, gender, and ethnicity. There is a clear emphasis on taking small manageable steps, such as planning seating arrangements, to ensure success.

The objectives for this topic are that educators should be able to:
- Be aware of key considerations when using different social arrangements in the classroom (including questions such as: What is the class size? How flexible is the physical classroom? Can the classroom accommodate different groups using the resource? What is the learning intention? Do you need support? Are students resistant to different arrangements?).
- Find out how other teachers manage social interactions around ICT resources.

Course Assessment (35 minutes)

The assessment aims to see how well the educators have mastered the objectives. Educators are presented with questions covering the content from each unit. The question pool is randomised each time the assessment is attempted. A score of 80% or above in the 20 questions is needed to pass the assessment and receive a certificate of completion. Educators can take the assessment more than once. You could encourage them to attempt the assessment on completion of the course as this will help to provide feedback on their developing understanding. If they have saved the downloadable summaries from each of the units, they may find it helpful to review these before completing the assessment. This might then also act as a reminder of the progress they have made through the course.
Course 6: Technology Literacy and Your Professional Development (3 hours)

Information Communication Technology (ICT) can help educators work more effectively in areas like preparation, planning, assessment, and evaluation. This course aims to help them identify realistic goals and practical first steps for building ICT into their daily routine to improve their efficiency and productivity. This course is also about using technology to support educators’ professional development and inspiring them to create a professional development plan.

As facilitator you can support educators in identifying and then taking small practical steps towards their goals in using technology in their teaching and wider professional work. You could encourage them to identify how they can integrate professional development with ICT into the existing frameworks for development, rather than seeing it as additional work.

Unit 1: Use ICT to Work Smart

In this unit educators will think about how technology can help them as professionals in their wider roles. It aims to get them to transfer the skills they have developed in other areas to support their work.

Core issue for deeper understanding:
What does technology offer me as a professional educator in my wider work?

Practical ideas for facilitation:
- Encourage educators to share their current professional development goals (particularly their school or departmental plans); this could be done collectively, for example posting to a discussion board, or in smaller groups by e-mail or blog.
- Ask them to find a match between what is expected of them in their school and how they could use ICT to support their work – this is about working smarter not harder.
- Share examples and templates (for example of planning sheets, Excel Mark Sheets) across the group.
• Identify how educators communicate with parents – through the school or directly? Have they considered using ICT to update parents, for example with a class blog or e-mail newsletter?

• Make sure the plans are realistic and the first steps small and manageable. You could ask educators to pair up here to offer support.

**Topic 1: Getting More Done with ICT (25 minutes)**

The focus of this topic is the wider work of educators in non-teaching tasks in schools. Educators are supported in identifying the potential of ICT tools to perform some of these tasks more efficiently, particularly in such areas as planning, record keeping, assessment and evaluation, communication and collaboration.

The objectives for this topic are that educators should be able to:

- Identify key tasks (other than teaching) that teachers need to perform as part of their job.
- Consider ‘traditional’ methods for performing these tasks.
- Consider how efficient these methods are.
- Recognise potential for ICT to enhance teacher productivity.
- Identify strengths and weaknesses of ICT resources for productivity purposes.
- Match key activities that teachers need to perform as part of their job to ICT resources.

**Topic 2: Harnessing ICT for Routine Tasks (20 minutes)**

In this topic educators are encouraged to identify and use appropriate tools to enhance productivity in performing specific tasks in their professional work. They are supported in identifying the skills and knowledge that they will need to use technology in school effectively, such as contacting parents, creating lesson plans, quizzes, and mark sheets. Educators could set a SMART (Specific, Measurable, Achievable, Realistic, and Timebound) action plan.

The objectives for this topic are that educators should be able to:
For a given scenario, identify a task that could be performed more efficiently using ICT.

- Match the most appropriate ICT tool to the task.
- Perform the task using the ICT tool identified.
- Evaluate how best they can use ICT to enhance productivity in their school environment.

**Topic 3: Step by Step with ICT (20 minutes)**

The aim of this topic is to support educators in getting started in simple and practical ways to use ICT tools for routine tasks. It also looks at groups of people and resources that can help educators in taking steps towards gradually incorporating ICT tools into their daily tasks.

The objectives for this topic are that educators should be able to:
- Recognise importance of starting simple and practicing skills when unfamiliar with using ICT for routine tasks.
- Recognise importance of being flexible and not giving up if first attempts are unsuccessful (or time-consuming).
- Identify peers, support staff or other individuals (including students) who can serve as resources, mentors and/or collaborators in the use of ICT to enhance productivity.
- Identify steps to take in order to build ICT into their daily routine and increase overall productivity.

**Unit 2: Supporting Teacher Professional Development**

In this unit, educators will focus on how technology can be useful in supporting professional learning and development. There is a vast range of professional development materials and opportunities available through the Internet. The challenge is in deciding which will be appropriate and effective.

Core issue for deeper understanding:
If technology can help my students as learners, how can it help me as a learner in my role as an educator?
Practical ideas for facilitation:

- Encourage educators to identify their key development needs and goals, perhaps on a shared website or course blog. Ensure that these are realistic and fit with other development demands and opportunities.
- Ask them to identify who in their workplace could support them with these needs and goals, stressing that this needn’t be an ICT expert, but could be a peer who will help them stay focused.
- Ask them to research some potentially useful websites and to share these with other course participants.
- Suggest they e-mail one another a few weeks after the course is over to say how they are doing.

**Topic 1: Accelerating Success with ICT (30 minutes)**

This topic looks at various ICT resources that can be used to enhance educators’ professional development. It stresses the importance of verifying the credibility of these online resources.

The objectives for this topic are that educators should be able to:

- Recognise the potential uses of ICT resources for professional development.
- Identify various ICT resources that can be used to increase subject matter knowledge/pedagogical knowledge.
- Verify the credibility/quality of the resources.
- Identify the potential of distance and virtual learning for meeting professional development goals.

**Topic 2: Success Stories with ICT (30 minutes)**

This topic offers a series of case studies to demonstrate how technology can contribute to educators’ professional development. The aim is to help educators create their own action plan to achieve their professional development goals using ICT tools. As facilitator, you might aim to show
educators what the next steps are in their own skills, knowledge and application of ICT to support their teaching.

The objectives for this topic are that educators should be able to:

- Provide examples of how appropriate use of ICT resources contributed to other teachers' professional development.
- Identify their own personal professional development goals.
- Consider how ICT could support these goals.
- Create a professional development plan that uses various ICT tools to achieve their professional development goal(s).
- Identify peers, support staff or other individuals who can serve as resources, mentors and/or collaborators in the use of ICT for professional development.

**Course Assessment (35 minutes)**

The assessment aims to see how well the educators have mastered the objectives. Educators are presented with questions covering the content from each unit. The question pool is randomised each time the assessment is attempted. A score of 80% or above in the 20 questions is needed to pass the assessment and receive a certificate of completion. Educators can take the assessment more than once. You could encourage them to attempt the assessment on completion of the course as this will help to provide feedback on their developing understanding. If they have saved the downloadable summaries from each of the units, they may find it helpful to review these before completing the assessment. This might then also act as a reminder of the progress they have made through the course.
Chapter 4: Scenarios for Support
Chapter Overview and Objectives

This chapter will present different scenarios for helping facilitators identify strategies to support the educators. Your role is to help the educators achieve the learning objectives rather than simply facilitating the logistics and practicalities of working through the course materials.

There are five scenarios:

- Face-to-face sessions in a blended learning approach.
- Supporting e-Learning Sessions.
- Managing Online Sessions and Activities.
- Maintaining Motivation and Engagement.
- Self-organising Learning

Each scenario is divided into sections to help structure the example and to support the important stages of facilitation:

- Background
- Preparation
- Facilitation
- Follow-up
- Forward Planning

These scenarios provide a range of possible contexts for, and uses of, the Teaching with Technology content. It’s unlikely that you’ll be faced with exactly the same scenario, but the approaches outlined below may help give you ideas to support your own facilitation. One of the key ways in which facilitation differs from more didactic teaching approaches lies in the importance of modelling the approaches advocated and in supporting the learners as they apply the skills or techniques to their own practice. This means facilitating action, not just encouraging talk and reflection.

Many of the suggestions for facilitation can be adapted from online support to group tasks and activities in a face-to-face setting, where exchanging ideas and brainstorming ideas can be more easily managed. You may need to adapt the ideas if you are working with a localised version of the curriculum.
Background

Anya is leading an initial face-to-face session to launch a Technology Literacy Professional Development program, which is a collaboration of a consortium of local primary schools. She is the ICT (Information Communication Technology) coordinator from one of the schools and has extensive experience of supporting educators in developing the use of technology in the classroom in a face-to-face setting. She worked through the different courses over the summer to make sure she was well prepared to facilitate the content and the learning outcomes.

All the educators and support assistants from the five schools will attend, about 80 people in all. They have all been asked to complete the self-assessment as preparation for an after school professional development session, which will run from 4:30 to 7pm, and to bring a copy of the printout with them. The plan is for the introductory session to kick off this professional development endeavour, and for the educators to complete it over the course of the term. They will meet up again in a few months when the aim is to have completed the courses indicated by their self-assessments, and any additional learning they choose to complete.

One of the schools is hosting the event. There is a computer suite available, but there will not be enough space to work with the group as a whole. So Anya has decided to run an initial presentation on the benefits of the professional development, its aims, and the underpinning UNESCO framework. Then she decides to split them into three groups which will rotate between activities (about 20 minutes each). One group will log on to the online materials and be introduced to the content.
environment and then encouraged to start one of the units. One group will discuss their self-assessment results and think about their personal development needs. The third group will focus on the implications for support for the staff development in each of their schools over the rest of the term. The session will end with each group coming back together and sharing their experiences and insights.

**Preparation**

Anya makes sure that she has forwarded the information to each of her school contacts and checks that they understand that all of the educators should complete the self-assessment before they come. She circulates details of the session by e-mail, and the logistics about things such as getting to the school.

A few days before the planned session and after finishing her day’s teaching, she visits the venue where the event will be held. She knows the ICT coordinator at this school and is sure that everything will be ok with the arrangements. She wants to check the computer she will be using for the introductory presentation and the computers in the computer suite to make sure the educators will not have any problems with things like plug-ins for Adobe Acrobat Reader or pop-up windows. The school has agreed to arrange refreshments, so she double-checks the timings while she is there.

She has asked the schools’ support technician to set up a shared area on the learning platform used by all local schools so that educators can post to a discussion board and upload resources and materials to share as they make progress through the curriculum.
She prepares an introductory presentation, editing some of the facilitator slides and adding in some screenshots and links to other material she aims to highlight. She also wants to inspire the educators with what is possible, so she adds a few video clips of children using technology to support their own learning, which she developed for another presentation. The presentation is brief (about 25 minutes) as she wants to encourage the educators to talk to one another as a basis for online communication later.

**Facilitation**

In the session she introduces, the UNESCO ICT-CFT (as she knows it) will not be familiar to most of the educators. She expects that many will undertake the course that covers it, and discusses how an educator’s practices in the classroom connect to broader education policy. She makes explicit the links both with their national context and the specific development goals of the school consortium. She has decided to lead the group session on meeting personal needs and asks each educator to make some brief notes about their expectations and goals, which they will review when they meet up at the end of the term and complete their action plans. One of the other school’s ICT coordinators supports the educators in logging on to the online learning materials and getting started on a unit that has been indicated by their self-assessment. One of the head teachers leads the group focusing on wider staff development needs and issues to do with the integration of ICT across the curriculum, so that development work in other areas can be supported by the Technology Literacy curriculum, making the learning more relevant and meaningful.
At the end of the evening they meet as a large group in a plenary session and Anya outlines the timetable for the rest of the team. She explains how the ICT coordinators in each of the schools will support the educators and emphasises the importance of trying things out in their own teaching as well as supporting one another with ideas about where technology can help learning. She and the Principal take questions from staff about the plans.

**Follow-up**

There were some minor queries from educators that Anya noted, which were brought up in the group sessions. She plans to post responses to these on the discussion list, and she checks that the shared site and discussion board are working by e-mailing the other ICT coordinators in each of the schools and asking them to try it out (by posting introductory messages and uploading some resources to the shared area). She wants to support the educators in working through the units and not lose the momentum they gained from the initial meeting.

**Forward Planning**

Anya sets up a meeting with the IT coordinators from the other schools about halfway through the term to plan the follow-up session at the end of the term and to review any facilitation and support issues. She knows the main challenge will be to encourage educators to work through the materials and apply the ideas as they go. They agree to review the progress of the educators more frequently and to support and encourage those who are not making as much progress. Anya agrees to send round a general e-mail which can be followed up in each school more personally. The ICT coordinators agree to keep in contact with each other by e-mail to update each other with progress in the different schools.
**Scenario Two: Supporting an eLearning Session**

**Background**

Juliana is facilitating a group of trainee educators undertaking the Teaching with Technology online curriculum as part of their initial teacher education course. They are training to be educators across the 5-18 years old school age range, but with different age and subject specialisms. Juliana is going to be using the trainees’ course Virtual Learning Environment (VLE) to support the students, as this has easy-to-use group and course e-mail facilities, as well as discussion and blog tools with shared folders to support participation and active engagement.

The students have to pass the course assessments and make a specified number of postings to the VLE to get credit on their teacher education programme. Juliana did not support this decision, as she was worried that the students would aim to complete materials but may not engage with the learning outcomes, particularly in using the ideas in their practice and in evaluating the benefits of technology on students’ learning in school. However she accepts that this will ensure a higher completion rate, and that students participate in the VLE activities. She reminds herself to support the quality of participation to ensure the teachers do not post because they have to in order to get credits.
**Preparation**

She asks the students to collect examples of where they see technology being used in schools to support learning and to post them to a blog on the VLE. She has set up subject-specific and age-specific discussion pages for those being educated to teach different age groups or curriculum subject. She is expecting them to post short verbal descriptions and she provides an outline of what she is expecting, but suggests in the e-mail that they could include photographs or even short video clips if they want to. She advises them to be careful to check with the school to make sure they follow guidelines and requirements about the use of images of students taken in schools.

**Facilitation**

She responds encouragingly to the first few posts, with some questions to prompt reflection on the learning, rather than the engagement that the students observed, and comments on how useful it is to have some pictures to help show the classroom context and the detail of the learning activities. She encourages the trainee educators to compare the activities and outcomes, so that they focus on the learning objectives underpinning the students’ activities, rather than the technology itself or the novelty of the activity.
Follow-up

Juliana is surprised at the level of interest that this simple task has generated. She thinks it was partly that the students just wanted to find out how technology was being used in the different schools where they were placed for their teaching experiences, and this encouraged them to post photographs of what they saw in schools, as this was an effective way of sharing what they saw. She checks with a few individual trainees that they had permission to take and post pictures of children where she knows the schools are more cautious about this. Most of the students used the cameras on their mobile phones, though a few asked to borrow a digital camera. She mentions the collection to some of the tutors on the course, so they can refer some of the examples in their teaching sessions to stimulate discussion about the way that technology can support learning in different subjects of the school curriculum.

Forward Planning

Juliana decides to try a similar activity with the trainee educators on Course 5: ‘Organise and Manage the Use of ICT in Your Classroom’ where they will be looking at different ways of organising learning with technology. She thinks the photographs will work well to illustrate these. She considers trying something similar for Course 6: ‘Technology Literacy and Your Professional Development’ on identifying where technology makes educators’ wider professional role more effective. She knows this will be harder than focusing on students’ learning or the physical layout of a room, but wants to capitalise on the success of the earlier activity. She thinks that it might work well if she asks the trainees to get the educators on their school placements to suggest where technology is particularly helpful and ‘snapshot’ these ideas.
Scenario Three: Managing Online Sessions and Activities

Background

Ibrahim is facilitating an online course where participants ‘meet’ in a chat room to exchange experiences and ideas about each course as they complete it. The participating educators are from across the country and work in very different schools and settings. The discussions so far have tended to be dominated by a few educators, though he knows that many more educators are ‘lurkers’ and get a lot from the discussion but are reluctant to post.

They have all made introductory postings and he knows that some of the educators now use their personal social networking sites and chat accounts to keep in touch in small groups. In fact, he has encouraged this as a way of getting educators to support each other informally. However he is concerned that not all the educators are getting the most from the courses for their professional development.

He decides to try a few other activities to encourage participation and the sharing of experiences, ideas and resources. The educators are just completing Course 4: ‘Use Basic ICT Tools to Support Teaching and Learning’, so Ibrahim wants to focus on developing Internet skills.
**Preparation**

Ibrahim knows that feedback to participants about their contributions is the best way to encourage participation, so he sets up a wiki in SharePoint with pages for different curriculum areas. He works with a technician in his local high school who is knowledgeable about SharePoint, as the site is hosted through the regional school authority.

He adds one or two website links to each page with a set structure outlining who owns the site, the kind of resources, the particular topic focus, and the age range they would be appropriate for. He knows there are many other similar web pages available, but sees this as a way of getting the educators to achieve some of the learning objectives for the course in a practical way, where the links are relevant to their national and local context.

**Facilitation**

He asks the educators to choose a curriculum subject and then find two good websites they can add to the appropriate wiki page. He circulates a short instruction sheet to help the educators add their entries to the wiki, which he suggests they print out to make it easier to refer to. As the list of favourite sites grows, he encourages them to develop and extend each other’s entries. In response to requests from the educators, he adds a section to the entries so that they can put short comments about how they find the link useful.
Follow-up

Ibrahim researches how he can add a feature to the wiki pages so that educators can rate the entries more easily by clicking on an ‘I like this’ button, and another so that they can choose to be notified by e-mail when a page is updated. He thinks these features will help sustain the pages after the educators have completed the course. He checks on the pages and sends some of the educators a personal e-mail about their entries as well as some general e-mails to groups of educators as the pages develop to encourage them to keep visiting.

Forward Planning

Ibrahim reflects on how educators might be able to use wiki pages in their own teaching with their students, so he prepares a short ‘how to’ guide based on his own experience and the software used locally, as some educators have seen the potential of using the technology themselves. The key issue is ensuring it supports the critical use of web resources, rather than just providing a page of links to be followed. He thinks about whether something similar would work for Course 6: ‘Technology Literacy and Your Professional Development’ or whether a blog would be more effective, as this might encourage educators to reflect on their learning more deeply. He decides to add a focus to this course about synchronous and asynchronous tools and their advantages and disadvantages in order to challenge the more technically advanced teachers.
Scenario Four: Maintaining Motivation and Engagement

Background
Mei is working with a diverse group of educators who are struggling with some aspects of the Teaching with Technology curriculum. Most of them are progressing through the learning, but she is not sure how much they are applying that learning to their own practice. She decides to focus on engaging educators with very practical ways to develop ICT in their own classrooms. She hopes that this will help maintain their motivation during the course. They’re currently working on Course 3: ‘How do technology and pedagogy mix?’

Preparation
Some of the educators are not using the shared site Mei has set up to access and upload resources. A few of them are sharing resources, but most are just working through the online materials without undertaking any of the tasks and activities. Mei has some PowerPoint presentations that she’s used in her own teaching, which she uploads with brief descriptions of how she adapted them for different learning outcomes.
**Facilitation**

Mei sends out an e-mail with one sample PowerPoint presentation attached. This is a simple ‘odd one out’ task as a didactic lesson starter-activity with a message saying ‘More of these online!’ She includes a reminder of how to access the shared space. She e-mails two of the educators and asks them to upload an example. She encourages them to adapt the presentations for their own needs and post them back with a comment about how useful they found the presentation in their teaching.

She knows the ‘buddy’ system she has set up is not working as well as she hoped, so she asks the group to adapt a presentation to share with one of their two ‘buddies’, the other online colleagues they’re working with. She reviews some of the presentations and identifies some of the features of the technical skills the educators have used, such as different builds and animations that have a clear pedagogic purpose and hide and reveal buttons for the answers to questions in a whole class session. She then sends some e-mails to highlight these, which will provide positive feedback to the contributors, but also get educators thinking about how the features of the software can help fulfil particular learning outcomes. She hopes that, as a result, they will reflect more deeply on the software features that can support learning, rather than just focusing on the presentation of subject content.

She schedules some time when she will be available online to text or video-chat with participants on a voluntary basis. She circulates the times and basic instructions by e-mail.
Follow-up

Mei reviews some of the posts from educators and identifies a few other sites that they may find useful to download and adapt presentations from. She sends a couple of e-mails to groups of educators who are either teaching the same age range or the same subject and encourages them to share websites they have found useful for presentations. She finds some useful ‘how to’ videos online about adding hyperlinks and action buttons and circulates the links to these to some of the educators. Finally she uploads a guide to PowerPoint to the shared space as she knows some of the educators are struggling with multiple windows, so may find it easier to print out a copy for reference as they’re working on their own presentations.

Forward Planning

Mei identifies a couple of other opportunities on Course 4: ‘Use Basic ICT Tools to Support Teaching and Learning’ and Course 5: ‘Organise and Manage the Use of ICT in Your Classroom’ to share examples and templates to encourage the educators to apply the ideas in their own teaching. She makes a note to remind her to help those who choose Course 4 with searching for specific file types and presentation files in particular. She is aware of the dangers of over-emphasising the more didactic aspects of presentation software, especially the course learning outcomes. However she is realistic about the levels of skills and confidence of some of the educators, and hopes to use success in this area to widen their perspective – for instance, encouraging group work in their teaching, where the outcome could be students presenting their learning using PowerPoint.
Scenario Five: Self-organizing Learning

Background
Some educators in different countries have ‘met’ online through the Partners in Learning Network and decide to support each other in developing their skills and knowledge through the Teaching with Technology learning content.

Some of the group of 20 are intending to lead facilitation for their colleagues in the countries where they will work in the future; others want to develop their own skills and understanding. Most are relatively confident in using basic technology applications, and a few have more advanced skills.

Preparation
The educators each prepare short video vignettes about themselves and upload them to a video sharing site. Then they ‘meet’ online to plan the way they’ll work together. They have each taken the self-assessment and decide that they will all work through the six courses, so that they are prepared to support colleagues with the materials. However they use the self-assessment to identify their strengths and weaknesses and where they feel they would be confident to lead other educators on the different courses. Each educator agrees to work as a member of a small team to lead a course and to support the rest of the group with additional resources.

They set up a shared folder space and a group blog to record their progress.
**Facilitation**

Each person involved in undertaking the curriculum works through the different units in a course individually and at their own pace. Some arrange to be online simultaneously and use social networking or chat programs such as Windows Live Messenger or Skype to support each other. They focus on identifying opportunities to apply the skills and ideas in their own practice and on sharing resources that they create with each other to help them with this.

At the end of the course they 'meet' online and the lead group takes the role of facilitators to support the discussion. This group checks through each unit’s learning outcomes and shares these with the other educators to ensure they feel confident that the outcomes have been achieved. They identify resources and websites that support the learning objectives.

**Follow-up**

The small group facilitating the course posts a summary of issues and ideas and an overview of any resources produced or exchanged that are available in their shared workspace on the group’s blog. The group ‘backchannel’ with e-mail and chat programs to agree on the posts and edits to the blog.

**Forward Planning**

When everyone in the group has finished working through the curriculum, they agree to keep in touch and to continue to post resources to their shared folders. Some of them are in regular contact through e-mail, online chat and the social networking sites they’ve been using.
Chapter 5: Summary
This Facilitator’s Guide was developed to support educators and trainers working with educators who are helping students acquire 21st century skills. These skills are needed for success in today’s global economy, and the integration of ICT in the teaching and learning process can help.

Microsoft worked with subject-matter experts worldwide to create a new professional development offer that is aligned with the UNESCO ICT-Competency Framework for Teachers (UNESCO ICT-CFT), Technology Literacy Strand learning objectives.

Three components make up this competency-based professional development:

1. An online self-assessment that identifies gaps in competency attainment and recommends an individualised learning path.
3. Summative assessments to assess understanding of the concepts covered.

It’s important to acknowledge that the courses offered represent only one way of developing the competencies for integrating technology in the classroom effectively. There are many ways that educators could undertake professional development in this area. Some educators may already be at a more advanced stage and may not need the support that these courses aim to provide. Others may need extra time to develop more basic ICT skills before they will be ready to integrate technology within their professional practice. As a facilitator you need to understand where your learners are at, and how best to use this curriculum to support them.

Positive feedback is at the heart of effective facilitation. Acknowledge educators’ ideas, contributions and examples to maintain their engagement with the learning materials. There is no trick or shortcut to effective facilitation: it is like other forms of teaching in which planning and preparation, attention to the detail of learning objectives, treating learners as individuals and valuing their participation and contributions are all important.

Preparing yourself for facilitating the courses in the *Teaching with Technology* curriculum could include:
• Familiarising yourself with the objectives of the UNESCO ICT Competency Framework for Teachers, Technology Literacy approach, and/or doing a standards alignment exercise to the framework that your region or district follows for example. ISTE Nets, Common Core).

• Being ready to draw on instances from your own practice that exemplify the learning objectives, so as to provide relevant examples of effective practice that will help educators apply the ideas in their teaching.

• Checking out the technical requirements for the self-assessment and online learning content to ensure the early activities run smoothly.

• Identifying the technology that your group of educators will have access to, so that you can meet their specific needs more effectively with relevant and realistic examples.
**Glossary for Facilitators**

**21st Century Skills**

Sometimes referred to as 21st century learning, this is a way of re-thinking the formal goals of education in terms of the ability to equip students to succeed personally and economically in contemporary society. Skills such as life and career skills, learning and innovation skills, and information media and technology skills are emphasised as well as traditional curriculum subjects. The Partnership for 21st Century Skills provides more information and resources.

**Asynchronous**

Literally not synchronised, going on at a different time from something else. An asynchronous discussion is where people post messages to a discussion forum but are not online at the same time. As a result, this kind of ‘conversation’ takes much longer to develop. See also *synchronous*.

**Backchannelling**

Where separate conversations develop in either an online or face-to-face session or where some of the participants carry on related conversations electronically. First used in technology settings to describe participants’ text chatting or e-mailing each other about the presentations in conferences. Also used to describe learners’ separate conversations about the activities or facilitators supporting groups of learners separately from the group. For an article on backchanneling and how you can use it in your classroom, see: [http://www.ncs-tech.org/?p=2886](http://www.ncs-tech.org/?p=2886).

**Blended Learning**

Where face-to-face and online or e-Learning approaches are mixed to support learning according to the benefits of the different approaches. The aim is to create a more integrated approach for both educators and learners, one which is beneficial in teaching and learning.

**Blog**

A website where an individual can add and maintain a regular commentary for other users of the site. The commentary can also include the addition of other material such as graphics or video. The word blog is a blend of the words ‘web log’. The Australian Department of Education has a useful site on using blogs.
in schools:
The Online Education Database has a list of the Top 100 Education Blogs.
http://oedb.org/library/features/top-100-education-blogs

**Buddying**
Where small groups of learners team up together to support each other’s learning. This is usually at peer level where people are learning together, so often supports motivation and engagement with the materials. Sometimes people arrange to meet up to work together as ‘study buddies’. This can be online, such as through the Microsoft Educator Network, or in person. It’s often very effective for professional educators who are already experienced in supporting learning. See: http://www.educationworld.com/node/11695

**Compujector**
A device consisting of a computer and data projector built into a single unit. It is relatively portable and easy to set up, and has a single plug with no other wires. See: http://www.youtube.com/watch?v=DOIUGnd6s58

**Computer Lab**
A room where there are computers set up for teaching, usually in a school or other formal learning setting.

**Discussion Forum**
Sometimes referred to as a discussion board. An online space where a conversation can take place in the form of posted messages between two or more people. Messages posted to the discussion forum are available for all people to read and comment on.

**e-Learning**
A broad term which involves digital devices such as computers and mobile or handheld devices that give the learner access to digital learning content, or the opportunity to undertake learning activities, whether alone or with other learners in collaborative activities. See also online learning.

**Facilitation**
A process of enabling people to work together in groups to achieve particular goals or objectives, whether in a classroom or an online setting.
**File Sharing**

The practice of providing other users with access to digital information, such as different kinds of documents and images. This can be achieved within an organisation by using a central server and giving people access to this, or globally over the Internet by using a product such as Microsoft’s SkyDrive ([http://explore.live.com/skydrive](http://explore.live.com/skydrive)). The sharing of copyright documents such as music or videos is illegal in many countries.

**Higher Order Thinking Skills**

The concept of higher order thinking skills goes back to the publication in 1956 of Bloom’s taxonomy of educational objectives. The taxonomy was updated by some of the original team in 2003, and has provided a helpful way of structuring the level of thinking challenge specified in learning objectives. The least complex thinking skills are learning facts and recall, through to developing understanding, with the most complex or ‘higher order skills’ of creative and critical thinking, analysis, and problem solving.

**ICT**

Information and Communications Technology emphasises the integration of digital technologies, such as computers, with communications technologies that let people create or access, store, transmit, and manipulate all kinds of digital information. ICT skills and education therefore play an important role in addressing many of the current global challenges in educational development.

**Interactive Whiteboard**

(Often abbreviated to IWB) A large touch-sensitive display surface that connects to a computer and projector. The computer’s desktop is displayed on the board’s surface, allowing users to control the computer using a pen, finger, stylus, or other device. The board is typically mounted on a wall or a floor stand. Most boards respond to a single touch or control point. Some boards have multi-touch surfaces and can be controlled with several simultaneous contacts.

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Online Learning

Usually refers to the different types of electronically supported learning and teaching made accessible through computers or devices connected to the Internet. It is sometimes referred to as web-based learning, and is closely related to e-Learning.

Microsoft SharePoint

Microsoft SharePoint makes it easier for people to work together. Using SharePoint, you can set up websites to share information with others, manage documents from start to finish, and publish reports to help everyone make better decisions.

Productivity Tools or Software

These are programs, usually small pieces of software, such as a desktop calculator or sticky notes on your computer. There has been a recent trend for these to integrate with each other and become web-based, so that a task list, for example, can also appear in your online diary.

SkyDrive

Windows Live SkyDrive is a free file-hosting service that allows people to upload their files to a ‘cloud’ storage space and then get access to them from a Web browser or from different computers and other digital devices. It is part of Microsoft’s Windows Live range of online services, and uses Windows Live ID to manage and control access to files, allowing people to keep files private, share them with contacts, or make them public.

Skype

Skype is an internet-based communication program owned by Microsoft. The service allows people to communicate with others by voice, video, and instant messaging over the Internet. Phone calls may also be placed to those on traditional telephone networks. Calls to other users within the Skype service are free of charge, while calls to landline telephones and mobile phones are charged. Skype has also become popular for its additional features, including file transfer, and video-conferencing.

SMS

‘Short Message Service’. The facility to allow text messages to be exchanged between mobile phone devices. Computers can also send SMS messages to
mobile phones using this technology. Messages are typically restricted to 160 characters in length.

**Social Networking**

A social network is a website service for a group of individuals who are connected by a common interest or by friendship. Popular examples of social network sites are Facebook, Bebo, LinkedIn, MySpace, and Habbo.

**Social Presence**

The ability of participants in a community to project themselves, socially and emotionally, as real people through a medium of communication.\(^5\)

**Synchronous**

Happening at the same time. A synchronous discussion takes place in real time, for example through audio messaging, video conferencing, or text chat via Skype or Windows Live Messenger. See also **asynchronous**.

**Technology Literacy**

The U.S. Department of Education defined technology literacy in 1996 as ‘computer skills and the ability to use computers and other technology to improve learning, productivity, and performance.’ It identified four goals related to technology literacy that ensure all students and educators have equitable access to and effective use of technology - (1) training and support, (2) access to appropriate equipment, which is (3) connected to the Internet with (4) effective software and learning resources. See also **UNESCO**.

**UNESCO**

The acronym for the United Nations Educational, Scientific and Cultural Organisation, an international body committed to the building of peace, the eradication of poverty, sustainable development and intercultural dialogue through education, the sciences, culture, communication and information. In particular it prioritises attaining quality education for all, lifelong learning, and

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building inclusive knowledge societies through information and communication.

**Wiki**

A website that allows the creation and editing of any number of interlinked pages by users with a common interest. It originated from the Hawaiian word for quick (‘wiki wiki’) as an easy way to create, edit and update webpages. The best known example is Wikipedia. In education one of the advantages is that any changes made to a wiki page are recorded so you can track the improvement in a page and see who has made the changes.

**Windows Live Messenger**

Windows Live Messenger is an instant messaging program that allows chat and video calls. It also integrates with social networking sites such as Facebook so that people can update their status or chat with their contacts. It was previously known as MSN Messenger.
Bibliography Used in Compiling the Facilitator’s Guide


Some Useful Web Links

‘A Teacher’s Guide to Moderating Online Discussion Forums: From Theory to Practice’ by Andrew Feenberg, Cindy Xin & Geoffrey Glass
http://webmarginalia.net/pedagogy/moderation-guide/

‘Creating Meaningful Online Discussion’s by Mary Harris-John
http://cnx.org/content/m14135/latest/

‘Facilitating Online: A course leader’s guide’ by Tony Carr, Shaheeda Jaffer and Jeanne Smuts (a pdf download)
The Innovative Schools Toolkit is an accessible and practical to begin the process of innovation with technology
http://www.is-toolkit.com/

The Microsoft Digital Literacy curriculum has three levels. The Basic curriculum features a course called ‘A First Course Toward Digital Literacy’. This course teaches the value of computers in society and introduces you to using a mouse and the keyboard. The Standard curriculum features five courses that cover computer basics; using the internet and productivity programs; security and privacy; and digital lifestyles. These five courses are available in three versions that use examples and screenshots from different versions of Windows and Microsoft Office. The Advanced curriculum features four courses that cover creating an e-mail account, creating a great resume, searching for content on the World Wide Web, and social networking. These may be a realistic alternative for teachers who are beginners in digital literacy
www.microsoft.com/digitalliteracy

Online Workshop Facilitation Guide developed by the Education Development Center for Online Professional Education
http://www2.edc.org/NetTech/facilitating1/FacilitationGuide.html

Microsoft in Education
The Microsoft in Education program provides innovative programs and professional development for teachers created by teachers
http://www.partnersinlearningnetwork.com/

Supporting Flexible Learning Opportunities by the Australian Flexible Learning Framework

Top Tips for Online Facilitation by Frankie Forsyth
http://community.flexiblelearning.net.au/teachingtraininglearners/content/article_4729.htm

UNESCO ICT Competency Framework for Teachers
Appendix 1: UNESCO’s ‘Technology Literacy Approach’

This Appendix provides additional details about the UNESCO ICT Competency Framework for Teachers (UNESCO ICT-CFT). These competency standards provide the structure that underpins the six courses of the Teaching with Technology Curriculum and the accompanying self-assessment which were introduced in Chapter 3 and presented in more depth in Chapter 4. In developing these standards, UNESCO worked in partnership with global education experts and representatives from the private sector, including Microsoft, Intel, Cisco, and the International Society for Technology in Education (ISTE).

The UNESCO ICT Competency Framework for Teachers

As technology plays an ever-greater role in contemporary society, all classroom educators need to be well prepared if they are to provide students with the skills that will enable them to live, learn, and work successfully in an increasingly complex, information-rich and knowledge-based society. The effective use of technology by students and educators is vital in today’s world.

Students need to be:

- Capable information-technology users.
- Information seekers, analysers, and evaluators.
- Problem solvers and decision makers.
- Creative and effective users of productivity tools.
- Communicators, collaborators, publishers, and producers.
- Informed, responsible, and contributing citizens.

The classroom educator is the key person in supporting students as they develop these 21st century skills using ICT as a key enabler. The Innovative Teaching and Learning Research clearly indicates that access to technology allied with innovative teaching practices is a successful means for imparting such critical skills to students.

UNESCO’s international efforts to support these developments in education indicate that we need a clearer common understanding of what is really meant by ‘ICT competencies’. There have been several attempts to develop such a definition by governments, researchers, academics and the private sector, but these revealed the lack of agreement on, and understanding of, common terminology in this important area. UNESCO therefore decided that setting clear standards would lead to significant progress in educator
development, and providing their member states with a global standards framework while still allowing the flexibility for local adaptation and contextualization.

The objectives of the UNESCO ICT-CFT are to:

- Constitute a common set of guidelines which professional development providers can use to identify, develop and evaluate learning materials and teacher-training programmes on the use of ICT in teaching and learning.
- Provide a basic set of qualifications that allows teachers to integrate ICT into their teaching and learning, to advance student learning, and to improve other professional duties.
- Extend teachers’ professional development so as to advance their skills in pedagogy, collaboration, leadership, and innovative school development using ICT.
- Harmonise different views and vocabulary regarding the uses of ICT in teacher education.

A series of documents setting out the policy background provide details of the specific areas of ICT competencies as a curriculum outline and offer broad guidance for implementation. Full details of the UNESCO ICT-CFT, its rationale and specifications can be found at: http://cst.unesco-ci.org/sites/projects/cst/default.aspx.

The UNESCO vision for development contains six themes and three approaches, producing a matrix that provides countries with a structure to help them move from Technology Literacy to Knowledge Creation, depending on their goals and specific needs.

The Teaching with Technology Curriculum addresses the first approach: Technology Literacy, while setting the foundation and visioning for Knowledge Deepening and Knowledge Creation. Each element in the grid forms the basis for a course in the curriculum.\(^6\)

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UNESCO, along with its partners and global subject matter experts, identified a set of ICT Teacher Competency Standards within the Technology Literacy approach. These form the basis for the Teaching with Technology courses and the specific objectives within each course (see chapter 4). The policy goal of this approach is to prepare learners, citizens and the workforce in taking up new technologies so as to support social development and improve economic productivity. Related educational policy goals include increasing school enrolments, making quality resources available to all, and improving basic literacy skills, not least technology literacy. Where the materials have been localised the order of the courses may vary from the grid shown above.

One of the course aims is to develop policy awareness so that programs make direct connections between policy and classroom practices. The Technology Literacy Approach also seeks to develop a basic knowledge of the curriculum and its assessment. Changes in the curriculum entailed by this approach might include improving basic literacy skills through technology and adding the development of ICT skills in relevant contexts. This will require time in the curricula of other subjects for incorporating a range of relevant ICT resources and productivity tools.

In terms of pedagogy, the aim is to integrate technology, as changes in pedagogical practice involve the integration of various technologies, tools, and e-content as part of whole class, group, and individual student activities to support instruction. The technologies involved in this approach include the use of computers along with productivity software; drill and practice, tutorial, and web content; and the use of networks for management purposes. This approach has little impact on social structure, other than, perhaps, the spatial placement and integration of technology resources in the classroom or in labs to support the organisation and management of technology. The implications
of this approach for teacher training focus on the development of digital literacy and the use of ICT for professional improvement.

**Teaching with Technology** comprises six courses that address these objectives (the full UNESCO syllabus can be found at the end of this Appendix). The course design also aims to support schools and teachers in acting as a catalyst for change in education, and to support the development and integration of 21st century skills. To identify which specific courses would best advance an educator’s current level of knowledge and skills, there is a self-assessment which educators can complete before they begin. You can then consider the needs of the teachers you are working with when determining which units of study will provide the greatest value to the teacher.

The UNESCO Syllabus

**Aims of the Technology Literacy Approach**

<table>
<thead>
<tr>
<th>Policy &amp; Vision</th>
<th>Curricular Goals</th>
<th>Teacher Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Policy</strong></td>
<td><em>Policy Awareness.</em> With this approach, programs make direct connections between policy and classroom practices.</td>
<td>Teachers must be aware of policies and be able to specify how classroom practices correspond to and support policy.</td>
</tr>
<tr>
<td><strong>Curriculum &amp; Assessment</strong></td>
<td><em>Basic Knowledge.</em> Changes in the curriculum entailed by this approach might include improving basic literacy skills through technology and adding the development of ICT skills into relevant contexts, which will involve time in the curricula of other subjects for the incorporation of a range of relevant ICT standards for students into the curriculum.</td>
<td>Teachers must have a firm knowledge of the curriculum standards for their subject, as well as knowledge of standard assessment procedures. In addition, teachers must be able to integrate the use of technology and technology standards for students into the curriculum.</td>
</tr>
<tr>
<td><strong>Pedagogy</strong></td>
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<td><strong>ICT</strong></td>
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<tr>
<td><strong>Integrate Technology.</strong> Changes in pedagogical practice involve the integration of various technologies, tools, and e-content as part of whole class, group, and individual student activities to support didactic instruction.</td>
<td><strong>Basic Tools.</strong> The technologies involved in this approach include the use of computers along with productivity software; drill and practice, tutorial, and web content; and the use of networks for management purposes.</td>
<td>Teachers must know where, when (as well as when not), and how to use technology for classroom activities and presentations.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Teachers must know basic hardware and software operations, as well as productivity applications software, a web browser, communications software, presentation software, and management applications.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Organization &amp; Administration</strong></th>
<th><strong>Standard Classroom.</strong> Little change in social structure occurs in this approach other than, perhaps, the spatial placement and integration of technology resources in the classroom or in labs.</th>
<th>Teachers must be able to use technology with the whole class, small groups, and individual activities and assure equitable access.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Teacher Professional Development</strong></td>
<td><strong>Digital Literacy.</strong> The implications of this approach for teacher training focus on the development of digital literacy and the use of ICT for professional improvement.</td>
<td>Teachers must have the technological skill and knowledge of Web resources necessary to use technology to acquire additional subject matter and pedagogical knowledge in support of teachers’ own professional development.</td>
</tr>
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</table>

The policy goal of this approach is to prepare a workforce that is capable of taking up new technologies so as to improve economic productivity. Related educational policies goals include increasing school enrolments and improving basic literacy skills, including technology literacy.
<table>
<thead>
<tr>
<th>Specific Objectives</th>
<th>Example Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Educators should be able to:</td>
<td></td>
</tr>
<tr>
<td><strong>II.A. Policy</strong></td>
<td></td>
</tr>
<tr>
<td><strong>I.A.1.</strong> Identify key characteristics of classroom practices and specify how these characteristics serve to implement policies.</td>
<td>Engage participants in a discussion of both national policies and common classroom practices. Identify the characteristics of practices that support policy. Have participants identify and analyze their own classroom practices in terms of policy.</td>
</tr>
<tr>
<td><strong>I.B.1.</strong> Match specific curriculum standards to particular software packages and computer applications and describe how these standards are supported by these applications.</td>
<td>Select a range of subject-specific software packages in the subject area; have participants identify specific curriculum standards that are associated with these packages and discuss how these are supported by the applications.</td>
</tr>
<tr>
<td><strong>II.B. Curriculum &amp; Assessment</strong></td>
<td></td>
</tr>
<tr>
<td><strong>I.B.2.</strong> Help students acquire ICT skills within the context of their courses.</td>
<td>Have participants prepare a subject lesson plan that includes teaching on the use of ICT, such as word processors, web browsers, e-mail, blogs, wikis, and other emerging technologies. Have participants demonstrate and teach the ICT skills to others.</td>
</tr>
<tr>
<td><strong>I.B.3.</strong> Use ICT to assess students’ acquisition of school subject matter knowledge and to provide students with feedback on their progress using both formative and summative assessments.</td>
<td>Have participants incorporate ICT and certain kinds of software for formative and summative assessment into their lesson plans, and then share these plans to receive recommendations from other educators in a professional learning community.</td>
</tr>
<tr>
<td><strong>II.C. Pedagogy</strong></td>
<td></td>
</tr>
<tr>
<td><strong>I.C.1.</strong> Describe how didactic teaching and ICT can be used to support students’ acquisition of school subject matter knowledge.</td>
<td>Describe how the use of ICT and specific types of software can support students’ acquisition of school subject matter knowledge and demonstrate ways in which the use of this technology can supplement didactic (in other words lecture and</td>
</tr>
</tbody>
</table>
### I.C.2. Incorporate appropriate ICT activities into lesson plans so as to support students’ acquisition of school subject matter knowledge.

- Have participants design lesson plans that incorporate tutorial and drill and practices software, e-resources and e-content. Have participants share these plans and receive recommendations from peers.

### I.C.3. Use presentation software and digital resources to support instruction.

- Demonstrate the use of presentation software and other digital media to supplement a lecture; provide a variety of examples of instructional presentations; have participants create a lesson plan that includes the use of presentation software; have participants use presentation software to design a presentation.

### I.D. ICT

#### I.D.1. Describe and demonstrate the use of common hardware technologies.

- Discuss and demonstrate the basic operation of various hardware technologies, such as desktop workstations, laptops, printers, scanners, and hand-held devices.

#### I.D.2. Describe and demonstrate the basic tasks and uses of word processors, such as text entry, editing text, formatting text, and printing.

- Discuss and demonstrate the basic tasks of word processors, demonstrate how they are used in instruction. Have participants create a text document in which they use these in generating a text document.

#### I.D.3. Describe and demonstrate the purpose and basic features of presentation software and other digital resources.

- Discuss the purpose of presentation software and demonstrate its general features and function. Have participants create a presentation on a topic of their choice using digital resources.

#### I.D.4. Describe the purpose and basic function of graphic software and use a graphic software package to create a simple graphic display.

- Discuss the purpose of graphics software and demonstrate the creation of a graphics display. Have participants create and share a graphic display.

#### I.D.5. Describe the Internet and the World Wide Web, elaborate on their

- Discuss the purpose and structure of the Internet and the World Wide Web
uses, and describe how a browser works and use a URL to access a website.

### I.D.6. Use a search engine to do a keyword Boolean search.

Demonstrate the use of a search engine; discuss and demonstrate simple keyword and Boolean searches; have participants search for websites on their favourite topics and discuss the keyword strategies they used with the group for discussion.

### I.D.7. Create an e-mail account and use it for a sustained series of e-mail correspondence.

Demonstrate the creation and use of an e-mail account; have participants create an e-mail account and create and send a series of e-mail messages.

### I.D.8. Describe the function and purpose of tutorial and drill and practice software and how they support students' acquisition of knowledge of school subjects.

Demonstrate a variety of tutorial and drill and practice packages in the subject domains of the participants and describe how they support the acquisition of subject matter knowledge. Have participants analyze specific packages in their subject area and describe how they support the acquisition of specific subject matter knowledge.

### I.D.9. Locate off-the-shelf educational software packages and Web resources and evaluate them for their accuracy and alignment with curriculum standards and match them to the needs of specific students.

Have participants search websites and catalogs to identify appropriate software for specified learning objectives or standards and analyze these packages for accuracy and curriculum alignment. Have participants discuss the criteria they used for analyzing and evaluating the software.

### I.D.10. Use networked record keeping software to take attendance, submit grades, and maintain student records.

Discuss the purposes and advantages of a networked recording keeping system, demonstrate the use of such a system, and have participants enter record keeping data for their class.

### I.D.11. Use common communication and collaboration technologies, such as

Discuss the purposes and advantages of various communication and
as text messaging, video conferencing, and web-based collaboration and social environments. collaboration technologies; and have participants use these technologies to communicate and collaborate with others in the group.

I.E. Organization and Administration

<table>
<thead>
<tr>
<th>I.E.1. Integrate the use of a computer laboratory into ongoing teaching activities.</th>
<th>Discuss and give examples of different ways that computer laboratories (or a set of classroom laptops) can be used to supplement classroom teaching, have participants create lesson plans that include the use of computer laboratory activities.</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.E.2. Manage the use of supplemental ICT resources with individuals and small groups of students in the regular classroom so as not to disrupt other instructional activities in the class.</td>
<td>Discuss and give examples of different ways that limited classroom ICT resources can be used by individual students, pairs, or small groups to supplement teaching; have participants create lesson plans that include the use of ICT to supplement classroom teaching.</td>
</tr>
<tr>
<td>I.E.3. Identify the appropriate and inappropriate social arrangements to use with various technologies.</td>
<td>Identify different hardware and software technologies and discuss corresponding social arrangements for their instructional use, such as individuals, pairs, small groups, and large groups.</td>
</tr>
</tbody>
</table>

I.F. Educator Professional Development

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<th>I.F.1. Use ICT resources to enhance their productivity.</th>
<th>Discuss different tasks that occupy participants’ time during the work day; discuss how ICT resources can be used to help with these tasks and enhance productivity; have participants use desktop computers, laptops, hand-held devices, and software, such as a word processor, blogs, wikis, or other productivity and communication tools to help with one of the identified tasks.</th>
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| I.F.2. Use ICT resources to support their own acquisition of subject matter and pedagogical knowledge. | Discuss different ICT resources that participants can use to increase their subject matter and pedagogical }
knowledge; have participants identify a personal professional development goal and create a plan for the use of various ICT tools to accomplish this goal, such as web browsers and communication technologies.
## References

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<tr>
<th>Microsoft’s Digital Literacy Curriculum</th>
<th><a href="http://www.microsoft.com/about/corporatecitizenship/citizenship/giving/programs/up/digitalliteracy/default.mspx">http://www.microsoft.com/about/corporatecitizenship/citizenship/giving/programs/up/digitalliteracy/default.mspx</a></th>
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<td>Innovative Teaching and Learning Research</td>
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<td>Microsoft Educator Network</td>
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