

TL Module 3: Pedagogy

Unit 3: Strategies for Integrating ICT into Learning



Objectives:

Teachers should be able to incorporate appropriate ICT activities into lesson plans so as to support students' acquisition of school subject matter knowledge. (UNESCO ICT-CFT, TL.3.)



Duration:

Total of 4.5 notional hours – 1 hour lecture, 2 hour computer practical session, 1.5 hour group tutorial.



A] Lecture Content (1 hour)

Notes to Facilitator

The purpose of this lecture is to build on from Unit 1 which focused on teaching. This unit should provide an overview of how ICT can support the *learning* process. Ideally, the learning envisaged here emanates from Didactic teaching, i.e. processing and monitoring. There should, therefore, be an emphasis on participants demonstrating that they have learned something from the teacher's initial stimulus. An accessible way to achieve this is to look at ways of using the tools in Office Suite software. This lecture looks at a set of strategies the students could be encouraged to use in order to exploit ICT to enhance the learning process. Gardner's Multiple Intelligences theory is used here to provide an opportunity for both teacher and students to use different tools to present and demonstrate content and learning in a Didactic manner.

Introduction

In Unit 1 we looked at how ICT can support Didactic teaching methods. We also looked at a number of different ways a teacher could present information and data to the students. The aim here is to put ICT tools in the hands of the students. How might these tools be used for them to learn and/or demonstrate that they have learnt something?

Recap: Didactic structure and activities

In Unit 1 we looked at how a typical Didactic lesson might be structured. We'll review this here:

Step 1: The 'Hook', provided by the teacher, is designed to engage interest.

Step 2: The lesson's objectives are shared with the students.

Step 3: The teacher input is usually as exposition on content or a demonstration of skills.

Step 4: Students engage with the content/skills, through a set of activities.

Step 5: Learning against the objectives is checked through a series of formative assessments

Step 6: Students and the teacher interact to summarise the important points of the lesson.

The students play a more active role in the last three steps. Opportunities to internalise information, values and skills take place and they are involved with assessing learning. It is in these areas that we

can look at how ICTs could enhance their learning. However, before we look at technology, another piece of education theory that is often used as justification for the introduction of technology in the learning process needs to be introduced: Gardner's Theory of Multiple Intelligences.

Multiple Intelligences

Traditionally, the lecture has been the typical Didactic method of instruction, strongly reliant on listening and language skills, but recent developments in ICT have made it easier to create and use multimedia, providing instructors with novel ways to instruct students. This is significant because it has made it easier for lecturers and teachers to exploit Howard Gardner's theory of *Multiple Intelligences* (1983). This passage outlines his theory.

"The concept of Multiple Intelligences was first formulated by Howard Gardner in his 1983 book, *Frames of Mind: The Theory of Multiple Intelligences*. Whereas linguistic and logical-mathematical intelligences are centrally addressed and nurtured by the three 'R's of traditional education, other forms of intelligence, including musical, bodily-kinesthetic and spatial forms, provide alternative means of accessing knowledge, according to Gardner's scheme. Gardner's theory catalogues the different styles of learning that students bring to the classroom.

Linguistic	Verbal communication abilities
Logical-mathematical	Mathematical and logical skills
Musical	Performance, composition and appreciation of musical patterns
Bodily-kinesthetic	Using the body and bodily to solve problems or understand the environment
Spatial	Ability to navigate space, understand, map and apply spatial patterns
Interpersonal	Using an understanding of human motivation/behaviour to further personal goals
Intrapersonal	Using self-knowledge to organise their life

Other candidates for multiple intelligences include 'naturalist', 'spiritual', 'existential' and 'moral' but these have not been formally included in Gardner's template." [Read more... [Multiple Intelligences](#) at Interaction-Design (CC: BY ND) or access the cd version [here](#)]

The matrix below is not comprehensive but it does illustrate that there are numerous ICT tools available for students to use that suit specific learning preferences. As teachers we need to look for ways to incorporate these tools in student activities and/or assessment tasks.

	Presentation Program (e.g. PowerPoint)	Word Processor (Open Office Writer)	Spreadsheet (MS Excel)	Video Editor (Movie Maker)	Graphics Package (Photoshop or Paint)	Podcast Editor (Audacity)	Social Networks (Facebook)	Music Programs (Bandstand or Songsmith)	Blogs (Word Press)
Linguistic	✓					✓			
Logical-mathematical	✓	✓							
Musical	✓							✓	
Bodily-kinesthetic				✓					
Spatial				✓	✓		✓		
Interpersonal									
Intrapersonal									✓

In the tutorial, later, you will have an opportunity to identify your own learning preference but for now it is important that you understand that your class will have multiple preferences. It's often impossible to organise your lesson to cater for all but it is possible to offer them opportunities to exploit their strengths in the way they report back to you in the lesson activities, assignments and lesson assessment tasks. Then in the Computer Practical we will have an opportunity to do some online tutorials that will attempt to link students' processing needs with various ICT tools.



B] Computer Practical (2 hours)

Notes to Facilitator

The purpose of this practical is to provide participants with a deeper knowledge of both Gardner's Multiple Intelligences theory as well as consider how ICT can support Didactic practices. The interactive website allows participants to discover their own learning preferences. Connectivity is therefore preferable as the paper based version is static.

Facilitator Introduction

"If you are going to provide students with the opportunity to choose ICT tools that exploit their learning style preferences it's a good idea to identify your own learning preference. Which of the eight areas of intelligence is your preference and what does this mean in terms of how ICT might support your lesson design?"

1. Navigate to *Multiple Intelligences for Adult Literacy and Education* at <http://literacyworks.org/mi/home.html> or use the non-interactive CD version [here](#).

2. The class should review the *Introduction* section and specifically, the “We Have Many Intelligences” page which outlines the areas of intelligence and discusses each area in turn. Ensure that everyone is clear about how each area emphasizes a different trait.
3. With practical participants working in pairs, navigate to the *Assessment* page and, first one member and then the other, complete the online questionnaire.
4. As a group, discuss how different technologies and/or software might support each of the different learning preferences. Remember, however, that the technology must also support the achievement of knowledge, understanding and application objectives/outcomes.
5. Record the group’s observations in your Word Processor Journal.



C] Tutorial (Total 1.5 hours)

Notes to Facilitator

Provide participants with access to the reading below either make the participants read it before the tutorial or provide a group reading. Participants will need to link Gardener’s theories covered in the practical with this more practical tool orientated text.

Click [here](#) to access the CCTI reading on *Uses of ICT in Schools*

Tasks

- 1] As a group identify specific hardware & software tools might support:
 - Gathering information
 - Facilitating communication
 - Demonstrating learning
 - Familiarization of ICTs
- 2] Keeping in mind Gardiner’s multiple intelligences theory which ICT tools could be used to encourage children who prefer particular learning preferences:
 - Language (Linguistic)
 - Spatial
 - Logic/Math
 - Body Movement (Kinesthetic)
 - Musical
 - Social (Interpersonal)
 - Self (Intrapersonal)
 - Nature (Naturalist)



Resources Used in this Lesson Unit

CCTI. (2011). *Uses of ICT in Schools*. (Prepared for SchoolNet SA by GEID). Available online at http://ace.schoolnet.org.za/cd/ukzncore1b/activities/core1b_activity1.htm Accessed 03/11/11. (© Free to use for educational purposes)

Reinhard, Julia. (2006). *Multiple intelligences*. Available online at Interaction-Design.org. Available online at http://www.interaction-design.org/encyclopedia/multiple_intelligences.html. Accessed 08/07/2011 (CC: BY ND).

Literacyworks. (ND). Multiple Intelligences for Adult Literacy and Education. Available online: <http://literacyworks.org/mi/home.html> Accessed 08/08/2011. (No Copyright Information, Free use online).