

# TL Module 3: Pedagogy

## Unit 1: Integrating ICT to Support Didactic Teaching Methodologies



### Objectives:

Teachers should be able to describe how didactic teaching and ICT can be used to support students' acquisition of school subject matter knowledge. (UNESCO ICT-CFT TL.3.a)



### Duration:

Total of 5 notional hours – 1.5 hour lecture, 2 hour computer practical session, 1 hour group tutorial, 30 minutes' self-study at a computer.



### A] Lecture Content (1.5 hour)

#### Notes to Facilitator

The purpose of this lecture is to provide an overview and position Didactic teaching methods in contrast to other methodologies. Didactic teaching, however, needs to be the focus as Constructivist and other methods will be covered in detail later in Knowledge Deepening. Learners need to be aware that they will in all likelihood use multiple methods in their teaching and ICT can be employed to support each method.

#### Preparatory Readings:

Anderson, T. (2008). [The Theory and Practice of Online Learning](#). p14-44. (CC: BY NC)

Wikibooks. (2006). [Learning Theories](#). p4-15 (GNU Free Documentation License)

Open University. (2011). [The Constructivist Model of Learning](#). Unit 3.2. (CC: BY NC SA)

#### Introduction

Your current studies will have introduced you to a number of different teaching methodologies to support the teaching of your subject. Two popular methodologies often used by teachers include Constructivism and Didacticism. You might want to revise these two methods by reviewing the following two Wikipedia articles:

“**Constructivist teaching** is based on [constructivist learning theory](#). This theoretical framework holds that learning always builds upon knowledge that a student already knows. Because all learning is filtered through pre-existing knowledge, constructivists suggest that learning is more effective when a student is actively engaged in the learning process rather than attempting to receive knowledge passively. A wide variety of methods claim to be based on constructivist learning theory. Most of these methods rely on some form of guided discovery where the teacher avoids most direct instruction and attempts to lead the student through questions and activities to discover, discuss,

appreciate and verbalize the new knowledge.” [Read more... [Constructivist Teaching Methods](#) (Wikipedia CC: BY SA)]

“**Didacticism** is an artistic philosophy that emphasizes **instructional** and **informative** qualities in literature and other types of art. The word "Didacticism" finds its origin in the Greek "didaktikos" or "διδακτικός"; the meaning of the Greek word is 'related to education/teaching'. The primary intention of didactic art is not to entertain, but to teach. Didactic plays, for instance, teach the audience through the use of a moral or a theme. ... The term "didactic" is also used as a criticism for work that appears to be overly burdened with instructive, factual, or otherwise educational information, to the detriment of the enjoyment of the reader. Edgar Allan Poe called didacticism the worst of "heresies" in his essay The Poetic Principle.” [Read more... [Didacticism](#) (Wikipedia CC: BY SA)]

Information & Communication Technology (ICT) can support either methodology but in different ways. The purpose of this lesson is to investigate specifically how ICT can support a teacher-led instructional approach to teaching and learning, namely, the Didactic approach. In the next section, Knowledge Deepening, we will investigate how ICT supports other methodologies. However, it needs to be acknowledged at this point that a typical teacher will ‘mix and match’ methodologies and is rarely an advocate of one method exclusively. Issues of time, complexity of the subject matter, objectives, assessment requirements and student preparedness will all impact on a teacher’s decision to adopt a particular method for a section of work.

### Characteristics of Didactic Teaching

The Didactic teaching method can be characterised by noting the roles both teachers and students play in the teaching and learning relationship. Study this table:

#### The Didactic Classroom

What the Teacher Does	What the Students Do
Identifies desired learning outcomes and selects tasks accordingly	Follow the teacher's plan and do pre-selected tasks as required
Presents information (for example, how osmosis works in plant cells or why smoking is bad for you)	Read, watch or listen to new learning content
Models procedures or techniques (for example, how to conduct an experiment or calculate a percentage)	Observe and then copy or imitate
Orchestrates activities and manages behaviour	Do as told (or not)
Asks questions to check understanding and recall of information	Try to recall the information they received to answer questions
Selects assessment foci and creates assessments to check understanding and recall	Prepare for assessment by revising previously learned, pre-selected information
Feeds results and comments on performance back to students (through marking or verbal comments)	Listen to or read feedback and (possibly) try again

(From Microsoft Educator Learning Journeys)

If you think about this lecture, for example, the roles we are assuming as teacher and student fit perfectly with the didactic method!

### **Typical Structure of a Didactic Lesson**

Obviously, lesson structure is shaped by your teaching preferences, the requirements of the objectives and time available, among others. Below is a typical example of the structure of a didactic lesson:

#### **Step 1: The 'Hook'.**

The teacher evokes a stimulus of some type such as a story, an activity or a question designed to engage the students' attention and interest.

#### **Step 2: Lesson Objectives Shared**

The teacher identifies the lesson objectives or outcomes and shows how these fit into the overall learning plan.

#### **Step 3: Teacher Input**

The teacher provides necessary information, skills, procedures, etc.

#### **Step 4: Student Activities**

Students are given an opportunity to engage with the content/skills, usually through a set of activities in order to internalise the information or behaviours.

#### **Step 5: Learning Check**

Actual learning against the objectives is checked through a series of formative assessment opportunities. Teacher ascertains needs for both support interventions and/or extension work.

#### **Step 6: Review**

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

### **Typical Activities in a Didactic Lesson**

It is clear that the teacher's role above is pivotal. The teacher needs to have designed the lesson and leads the students through Steps 1-3. The students engage with teacher-designed activities and complete any assessment tasks set by the teacher. Finally, the teacher leads a summing-up activity. We can divide these activities into 3 categories:

- Teacher exposition (Steps 1-3)
- Student processing (Step 4)
- Teacher and students monitor progress (Steps 5-6).

### **The Didactic Method Supports Specific Objective Types**

If a Didactic method is to be used for a section of work, it must suit the objectives you have selected for that particular section of work. The Didactic method supports learning where the students are supposed to know the content and information, understand issues and concepts, and perform a skill. We could say the Didactic approach supports:

- Knowledge-based objectives or outcomes
- Understanding-based objectives or outcomes
- Application-based objectives.

So how can ICT support Didactic teaching activities in order to achieve these types of objectives?

### **Tools to Enhance Teacher Exposition**

Research suggests that learning retention rates are low if we rely largely on our students' ability to listen. A lecture mode of exposition, or talking to the students like I am doing now, is considered an inefficient way to get information across to students. Research suggests that the more senses we

can engage the better the retention of a lesson’s content. Research also suggests that the best way to learn something is to teach it to someone else! It is in light of these findings that ICT can offer a teacher a number of tools to enrich the lesson’s content or provide ways to make the transfer of knowledge more palatable to the students.

There are numerous technology/software combinations on hand when it comes to presenting or the distribution of information. A typical but not comprehensive list could include the following tools:

- A presentation package (e.g. MS PowerPoint, OpenOffice Impress)
- A word processor (e.g. MS Word, OpenOffice Writer)
- Movie and/or photo editing software (e.g. Adobe Photoshop, MS Windows Live Movie Maker, [GIMP](#))
- An audio file or podcast creator tool (e.g. [Audacity](#))
- An online distribution platform for media like [Slideshare.net](#) for presentations, [Flickr.com](#) for photos, or [YouTube.com](#) for video streaming, etc.

In the rest of this module we will investigate a number of these packages with an eye to integrating them into your Didactic lessons.



## **B] Tutorial (1 hour)**

### **Notes to Facilitator**

The purpose of this tutorial is to provide participants with a deeper appreciation of the tools available to enhance teacher exposition. Use an empty version of the grid below and encourage students to brainstorm and discuss what ‘value added’ characteristics the tools offer teachers in getting the lesson’s message across.

### **Tutorial Introduction**

As a group, using the empty form below, brainstorm what enhancements the technology tools identified in this table can bring to the teaching process:

<b>Technology Tool</b>	<b>Suggested Feedback</b>
<b>Hardware</b>	
Data Projector/ SmartBoard	
MP3 Player/iPod	
Smartphone	
<b>Software</b>	
Presentation Package (PowerPoint)	
Graphic Package (Photoshop or Paint)	
Word Processor (MS Word, Open Office Writer)	
Video Editor (Movie Maker)	

*Tutor's version of the form*

Technology Tool	Suggested Feedback
<b>Hardware</b>	
Data Projector/ SmartBoard	Allows not only lesson notes projected large onto the wall but also web content directly from the Internet. This will allow the teacher to show concrete, real world examples of the conceptual work being covered. For example, a geometry lesson on triangles could use imagery of the construction of bridges, where this shape is being employed, etc. Sharing of supplementary material is easy when projected large for all to see. Could also be used to project the teacher's pre-prepared PowerPoint slides (text, visuals and sound) to the class.
MP3 Player/iPod	Audio players could be used to first capture a lesson and then allow it to be played back as revision, either at school or later on the bus or at home. The teacher could also use the device to bring external expert voices into the lesson.
Smartphone	Sophisticated cell phones come with a number of tools that could be employed: text messaging, camera and video, not to mention numerous apps, some that have an educational focus. The teacher SMSes the main points or a summary of the lesson to the class members, or uses a camera to record local examples of the lesson's focus for inclusion in PowerPoint.
<b>Software</b>	
Presentation Package (PowerPoint)	Excellent tool to present text, images, video and audio clips to class in a structured, linear manner. Also an easy way to develop graphs and charts.
Graphic Package (Photoshop or Paint)	A tool to help teachers develop graphical material to illustrate their lesson content.
Word Processor (MS Word, Open Office Writer)	Essential tool to develop lesson plans, class notes and worksheets in a clear and professional manner. Eliminates the problem of handwriting legibility. Spelling and grammar is checked, and it's very easy to revise the master document year in, year out. Can be printed out or distributed electronically, which is more cost effective. Allows the incorporation of images and clip art.
Video Editor (Movie Maker)	Tool to help teachers develop video content to support their lesson. Videos can be captured using cell phone video cameras and then edited into a usable form for the lesson.



### **C] Computer Practical (Total 2 hours)**

#### **Notes to Facilitator**

Set up the venue so that the participants can access the computers. They will need to cover 'Computers and Peripherals', 'Operating Systems and Controls', 'the Desktop' and 'File Systems'. Ideally you can take them through a tour of the content making it fun and asking them to engage with the components. If however you would prefer the participants to consult a text then use the attached textbook. They should use the online version but if bandwidth is limited they can access the version on the CD.

You have already been exposed to a number of ICT tools in previous modules such as the Internet browser and you have also begun to master MS Word. In this practical we will start to have a look at some additional tools but also spend some time explaining the computer set up. While the jargon we use might sound sophisticated you will find that once you start using the correct terminology using a computer is easy enough! Access the textbook called 'Basic Computing Using Windows' and study pages that cover these topics:

1. Computers and Peripherals
2. Operating Systems and Controls
3. the Desktop and
4. File Systems

Online version of Basic Computing Using Windows: [http://en.wikibooks.org/wiki/Basic\\_Computing\\_Using\\_Windows](http://en.wikibooks.org/wiki/Basic_Computing_Using_Windows) or use the CD Rom version [here](#)

Then see if you can answer the following questions on this [Worksheet](#). Compare your answers with your neighbor.



## **D] Self-Study (Total 30 minutes)**

### **Reading Assignment 1 (30 minutes)**

Read the following article.

Wikibooks: The Uses of ICTs in Education?

“Each of the different ICTs—print, audio/video cassettes, radio and TV broadcasts, computers or the Internet—may be used for presentation and demonstration, the most basic of the five levels. Except for video technologies, drill and practice may likewise be performed using the whole range of technologies. On the other hand, networked computers and the Internet are the ICTs that enable interactive and collaborative learning best; their full potential as educational tools will remain unrealized if they are used merely for presentation or demonstration. ICTs stand for information and communication technologies and are defined, for the purposes of this primer, as a “diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information.” These technologies include computers, the Internet, broadcasting technologies (radio and television), and telephony.”

Access at [http://en.wikibooks.org/wiki/ICT\\_in\\_Education/The\\_Uses\\_of\\_ICTs\\_in\\_Education](http://en.wikibooks.org/wiki/ICT_in_Education/The_Uses_of_ICTs_in_Education) or use the print version on the [CD here](#).



## Resources Used in this Lesson Unit

Wikibooks. (2006). *Basic Computing Using Windows*. Available online at [http://en.wikibooks.org/wiki/ICT\\_in\\_Education/The\\_Uses\\_of\\_ICTs\\_in\\_Education](http://en.wikibooks.org/wiki/ICT_in_Education/The_Uses_of_ICTs_in_Education) Accessed 11/11/11 (CC: BY SA)

Skills for a Changing World. (2009). *Basic Computer Terminology Worksheet*. (CC: BY)

Wikibooks. (2006). *Learning Theories*. Available online at [http://en.wikibooks.org/wiki/Learning\\_Theories](http://en.wikibooks.org/wiki/Learning_Theories) Accessed 5/10/11. (GNU Free Documentation License)

Wikibooks. (2011). ICT in Education. Chapter on The Uses of ICTs in Education. Available online at [http://en.wikibooks.org/wiki/ICT\\_in\\_Education](http://en.wikibooks.org/wiki/ICT_in_Education) Accessed on 03/11/11 (CC: BY)

Wikipedia. (2011). *Constructivist Teaching Methods*. Available online at [http://en.wikipedia.org/wiki/Constructivist\\_teaching\\_methods](http://en.wikipedia.org/wiki/Constructivist_teaching_methods) Accessed 08/07/11 (CC: BY SA).

Wikipedia. (2011). *Didacticism*. Available online at <http://en.wikipedia.org/wiki/Didactic>. Accessed 08/07/11 (CC: BY SA).