



# Stage 6 IPT syllabus support

Supporting syllabus changes in  
Information Processes and Technology



Participant workbook

Technology Unit, Curriculum K–12 Directorate  
< <http://www.curriculumsupport.education.nsw.gov.au/> >



# Acknowledgements

The Technology Unit of the Curriculum K–12 Directorate has developed professional learning workshops for secondary technology teachers in NSW public schools to provide practical strategies, ICT tools and resources to support teachers of Information Processes and Technology.

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## Aims of the workshop

The aims of the workshop are to assist teachers to:

- become familiar with the amended Stage 6 Information Processes and Technology (IPT) syllabus
- produce programming and assessment that reflects the *NSW Quality Teaching model*
- improve their practice, increase student engagement and have more fun delivering the IPT course
- integrate authentic project work into every day delivery of the curriculum.

Ultimately, all we do must be to improve student outcomes.

## NSWIT course registration

The DET is a NSW Institute of Teachers endorsed provider of professional development for the maintenance of accreditation at Professional Competence.

Scope of endorsement – all Elements of the Professional Teaching Standards.

It is anticipated this course will address the following Professional Teaching Standards:

- 1.2.1 Apply and use knowledge of the content/discipline(s) through effective, content-rich, teaching activities and programs relevant to the stage.
- 2.2.3 Apply practical and theoretical knowledge and understanding of the different approaches to learning to enhance student outcomes.
- 6.2.4 Work productively and openly with colleagues in reviewing teaching strategies and refining professional knowledge and practice.

This DET course or program has been submitted to the NSW Institute of Teachers.

If the course is accredited, its completion will contribute **five** hours towards Institute Registered professional development.

## Stage 6 IPT syllabus support workshop agenda

TIME	SESSION FOCUS
9.00 am	<b>Welcome and workshop overview</b>
<b>Session 1</b> 9.10 am	<b>Syllabus changes</b> Overview of changes to the syllabus and the support document.
	<b>Activity 1a – Tools: ECAT and others</b> Explore the features, functions and applications of the Electronic Content Allocation Tool (ECAT). Practice using the tool on a programmed unit of work.
	<b>Activity 1b – Reciprocal teaching strategy</b> Become familiar with a teaching strategy that can help students to comprehend and respond to an article that uses complex language.
11.00 am	<b>MORNING TEA</b>
<b>Session 2</b> 11.20 am	<b>Projects – What's important and what works</b> How do you define <i>project</i> ? Is a student who has learnt by being involved in projects better prepared for the HSC? <b>Activity 2a – Choosing a high quality project task</b>
	<b>Activity 2b – Social and ethical issues, Big Brother?</b> Develop a teaching strategy that helps students to consider and articulate viewpoints.
1.00 pm	<b>LUNCH</b>
<b>Session 3</b> 1.40 pm	<b>Activity 3a – A marker's perspective</b> Mirror the process used by HSC markers. Teach your students to assess their own responses.
	<b>Activity 3b – Web 2.0 and its relevance to IPT</b> Use a wiki or a blog. Report back to the group on how you could use these tools to support learning.
	<b>FAQs</b>
3.20 pm	<b>Evaluation and Close</b>

# Session 1

## Activity 1a – Tools: ECAT and others

The purpose of this activity to:

- explore the features, functions and applications of the Electronic Content Allocation Tool (ECAT)
  - practice using the tool on a resource.
1. In groups of two or three, use the Electronic Content Allocation Tool (ECAT) supplied to map syllabus content from the supplied unit of work *Making a movie*. This resource is from the Board of Studies *Support document*. ECAT is available for download from Curriculum Support's web site [http://www.curriculumsupport.education.nsw.gov.au/secondary/technology/11\\_12/information/index.htm](http://www.curriculumsupport.education.nsw.gov.au/secondary/technology/11_12/information/index.htm) along with instructions for its use.
  2. Full instructions for use of the ECAT are found on pages 22 to 25 of the *Resource book* or the following summary may be adequate.
  3. Discuss with members of the group how you might use this tool.
  4. A spokesperson from each table is to make a brief report to the group.

### ***ECAT summary***

- a. Open ECAT and save immediately with a different name.
- b. If necessary, adjust the zoom so you can see unit columns 1 to 5.
- c. Where you find content in the unit of work that matches with the syllabus, fill in a 'Y' in the row matching the syllabus content and in the column matching the unit.
- d. Once the content has been mapped, click on the tab that corresponds to the unit of work. The syllabus content has been copied into this new sheet.
- e. Enter details about the name of the unit, class, time frame, teacher and room.
- f. Enter any notes you may have into the third column.
- g. Adjust the sizes of cells so that you can see all the content of relevant cells.
- h. Control-click on row numbers to select the cells you want to print.
- i. Select the print area (*Page Layout* group in Excel 2007, *File* menu Excel 2003)

- j. Check on *Print Preview* which pages you need to print.

## Activity 1b – Reciprocal teaching strategy

The purpose of this activity is to:

- become familiar with a teaching strategy that can help students to comprehend and respond to an article that uses complex language
- enhance students' knowledge of a specific technology.

The reciprocal teaching strategy assists students to construct meaning from text and gives them a means of monitoring their reading to ensure they understand what they read. It consists of four stages:

- Predict
- Clarify
- Question
- Summarise.

1. Use the four stages to analyse the article, OLTP, by Ben Rockwood, *Resource book*, page 29. You should work in groups of two or three, as students would do. Each group should analyse one paragraph, writing answers in the table on the next page.

**Predict** – what do you think the paragraph is about?

2. **Clarify** – use a highlighter and mark the words, terms or phrases that you need to clarify. Use the table on page 30 or the *Glossary of terms* on page 31 of the *Resource book* to help with clarification. Write the outcomes of these clarifications in the table.
3. **Question** – ask your group members questions about the text.
4. **Summarise** – write a summary of the paragraph in the table. In class, you would then collect and collate the summaries to make a complete summarised article written in accessible language.
5. Discuss this strategy and make suggestions as to how it may be used in class.
6. Write a question you could pose to test your students' understanding of the passage.

Stages	Notes
<b>Predict:</b> note the title and try to predict what the text is about. This allows you to link new knowledge contained in the text with knowledge you already have.	
<b>Clarify:</b> use a highlighter to mark words, terms or phrases that are more difficult or technical. Use your group members (or other means) to help you with clarification.	
<b>Question:</b> ask your group members questions about the text, identifying information that is most important and relevant.	
<b>Summarise:</b> write 1, 2 or 3 sentences that summarise the text in your own words.	

7. How might you use this strategy in class?

8. What question could you pose to test your students' understanding of the passage?





**2. What are the limitations or constraints in the school for the project?**

- a. How many weeks?
- b. What software and hardware are available?
- c. What equipment and room/facilities are available?
- d. What expertise is available to teach this project?
- e. Are there any other constraints?

**3. Is there an authentic need (purpose, users, participants) that has relevance to your students and allows you to address what you want students to learn (section 1) within the available resources (section 2)?**

(Note: An authentic need has real benefits, purpose and use; real user/s who can provide feedback; real limitations and a real context influenced by social, ethical and/or environmental issues.)

**4. What are the aspects of the project task that you can negotiate with your students?**

(Note: Student direction can relate to negotiation and management of aspects of project work, such as the need or opportunity, user, timing, budget, use of materials, facilities, equipment access to community support or expertise.)

**5. What is the project task I will set for the students?**

*(The following text is a scaffold that may assist you to write a project task for your students)*

By exploring \_\_\_\_\_

\_\_\_\_\_

you will design and produce an information system with the purpose of \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

The users are \_\_\_\_\_

\_\_\_\_\_

The participants are \_\_\_\_\_

\_\_\_\_\_

The hardware and software you will use \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

The following milestones in the project will need to be completed.

Date	Milestone

The information system will be successful if it is able to:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Activity 2b – Social and ethical issues, *Big Brother?*

The purpose of this activity is to develop a teaching strategy that helps students to consider and articulate viewpoints on social and ethical issues.

Social and ethical issues are given emphasis in many parts of the Preliminary and HSC syllabuses. For example, these *Learn abouts* come from the *Information Systems and Databases* HSC topic.

- privacy principles
- quality of data
- accuracy of data and the reliability of data sources
- access to data, ownership and control of data

And these, from the *Specifications* document

- current and emerging trends in the organisation, processing, storage and retrieval of data, such as:
  - data warehousing and data mining

1. Read through the extract from *Big, Friendly Giant... or Big Brother?* by David Smith, *Resource book*, page 32.
2. From what you know about the global penetration of Google, complete the round-robin activity. Take one minute to write a positive or negative impact on *one* of the issues. Each person in the group should write about a different issue.
3. Pass your page to the next person in your group. Choose an issue you have not yet written about and spend another minute writing about a positive or negative impact.
4. Repeat until you have all the issues covered.
5. In your group, collate the information from the sheets into your workbook.

6. Collate the information from your table's round robin activity sheets.

<b>Issue</b>	<b>Impact</b>	<b>Positive or negative</b>
<b>Privacy</b>		
<b>Quality of data</b>		
<b>Access to data, ownership and control of data</b>		
<b>Current and emerging trends, e.g. data warehousing and data mining</b>		

7. Write a question you could pose to assess students' comprehension of the passage.
  
  
  
  
  
  
  
  
  
  
8. In your group, identify other uses for a round robin activity in IPT classes.

### **Participant notes**

## Session 3

### Activity 3a – A marker's perspective

The purpose of this activity is to:

- practice marking in a mini-mirror of the process used to mark the HSC
  - develop an activity that you could use with students to improve their judgement of their own answers.
1. Read through the scenario in Question 21 2007 HSC, *Resource book*, page 33.
  2. For part c) of this question, make a decision about which plan is the most appropriate for the family. Use your *Keepad* to register your vote.
  3. In your group, read through the student scripts provided on page 34, *Resource book*.
  4. In the table below, rank the scripts from best to worst.

Rank	Script (A, B etc)
1	
2	
3	
4	

5. Use the *Notes from the marking centre* and the *Marking guidelines* printed in the *Resource book*, page 35 to allocate a mark to each of the scripts.

Script	Mark (0, 1, 2, or 3)
1	
2	
3	
4	

6. Use your *Keepad* to register your score for the scripts you considered.  
You will not necessarily agree with everyone else. You should, however, have a reason for allocating the mark you did.
7. Discuss in your group how you could use this strategy.

### **Participant notes**

## Activity 3b – Web 2.0 and its relevance to IPT

The aim of this session is to:

- demonstrate how a two-way-web technology could be used in class
  - build collaboratively a resource we can all use.
- 
1. Discuss the meaning of the term Web 2.0. Use your *Keepad* to respond to the survey.
  2. On your computer, navigate to the web site <http://www.iptworkshop.wikispaces.com>. Log on with the user name and password supplied for your group.
  3. Once you have logged onto the site, choose the wiki page your table has been assigned. Read through the material already posted on the wiki. As a group make one improvement to the page. Please keep the technical level of the material appropriate for Stage 6 students. If material posted on the page is not original, it must be legally and appropriately cited.
  4. If your group considers the entry to be complete, it is fine for you to create a new page on a related topic.
  5. Use your *Keepad* to respond to the survey.



6. In your group identify one content area from the IPT syllabus that would be suitable for a wiki or blog topic, describe the task in the table below.
7. Choose two elements from the *NSW Quality Teaching Model*, shown below, that are reflected in the task. How might you use the wiki or blog tool to support that element?

Tool	Content area	Brief description of task	Justify how this task supports one element from the framework
Wiki			
Blog			

<i>The framework...</i>			
Dimension	<i>Intellectual quality</i>	<i>Quality learning environment</i>	<i>Significance</i>
Elements	Deep knowledge	Explicit quality criteria	Background knowledge
	Deep understanding	Engagement	Cultural knowledge
	Problematic knowledge	High expectations	Knowledge integration
	Higher-order thinking	Social support	Inclusivity
	Metalinguage	Students' self-regulation	Connectedness
	Substantive communication	Student direction	Narrative

<http://www.curriculumsupport.education.nsw.gov.au/qualityteach/resources/phases/index1.htm>

8. Identify situations where other social softwares could be used to support learning in IPT.

**Participant notes**