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Introduction

Three years ago I wrote a book entitled *Tools for Teaching and Learning in the Integrated Classroom* (Hawker Brownlow Education, 1996). In this book I summarised a number of educational theories and showed how they could be used in a practical way in real classrooms. Because a *tool* can be defined as any instrument or device used to make one's work easier, more effective or more efficient, I called my method of using the theories 'tools for teaching and learning'.

In that book, I demonstrated ways to use these 'teaching tools' with several different versions of my *Individualised Student Lesson Plan* format. The format gives teachers a structure for lesson planning and allows them to be flexible in providing students with choices in their learning. I have come to call this method of lesson planning 'structured freedom' for teachers and their students.

During the past three years, I have been immensely excited and gratified to see how many teachers in schools throughout Australia and New Zealand are using my 'tools for teaching and learning' as they develop and write their lesson plans and curriculum units. I have worked with many schools, groups and individual teachers to help them in this endeavour.

As I work with teachers, one request I consistently hear is for me to write some representative units using all of the various tools and lesson plan formats in my book. With this in mind, my purpose in writing this book is to do exactly that.

This book has seven representative units on the following topics:

- Food Chains and Life Cycles
- Health and Diseases
- Inventors and Inventions
- North Asia
- Southeast Asia
- Transportation
- Weather, Climate and the Environment

Each of these units has student activities based on:

- Learning Styles (12 activities)
- Learning Modalities (12 activities)
- Bloom's Taxonomy (18 activities)
- Multiple Intelligences (24 activities)

The units are *integrated units*, that is, the learning outcomes for each unit come from the key learning areas. You will find the appropriate key learning areas and learning outcomes listed at the beginning of each unit.

How to Use This Book

I have written this book with the hope that you will find many of the activities in each integrated unit useful for your classroom. It is not my expectation that you will use *every* activity in *every* unit. Instead, pick the ones that suit you best.

Some of the activities in the integrated units can be done individually by students while others are best done in small groups or as a whole class. It is up to each teacher to use the activities in ways that work best in your classroom.

Some teachers may choose activities in just one category, such as the Learning Styles or Learning Modalities. Others of you may pick and choose certain activities from all of the categories, depending on what fits your curriculum content and your course outline.

Feel free to *change* any of my suggested activities to fit into your curriculum content. Simply use the activities and change the content details to personalise any of the units for your classroom.

If you pick activities from just one category in a given unit (such as all the activities in Learning Modalities), you may want to use them with one of the *Individualised Student Lesson Plan* formats from my book *Tools for Teaching and Learning in the Integrated Classroom*. These activities could become your student choice activities.

The first chapter of this book contains a review of each of the learning theories listed on the previous page. Use the brief checklists to remind yourself about each and/or to assess your students' modes and styles of learning. The end of the first chapter also gives you information about two other learning activities contained in each unit, the '*Encountering Creative Questions*' activity and a '*Tiered Lesson Plan*'.

The last chapter of this book is entitled 'Write Your Own Unit'. I provide the structure and key words. All you need to do is fill in the content of your own subject, learning area or unit of work and you're on your way!

The last page of this book has a form for you to duplicate and return to me. If you find these units useful and would like me to write additional units, please let me know what topics would be of interest to you. I will use your suggestions when I write another book.

Encountering Creative Questions

The **Encountering Creative Questions** learning activity consists of a wide variety of short questions having no one specific or correct answer. They encourage and direct students in higher levels of creative and critical thinking on a specific theme or topic. A number of different types of questions can be posed in this activity. They are summarised below.



- 1. Listing and Brainstorming Questions**

These are questions where students are asked to come up with as many different possible answers as they can. Such questions help students develop creative and productive thinking skills.

- 2. Compare/Contrast Questions**

These questions help students look at similarities and differences. Sometimes such associations seem obvious while at other times this may require stretching the mind and the thought process. Listing various elements or characteristics of the things to be compared and contrasted is a good way to begin. From this, similarities and differences are usually more obvious.

- 3. 'What Would Happen If...' Questions**

These questions increase flexibility and creativity by helping students let go of rigid thinking patterns, break traditional mind sets, and open their minds to consider all possibilities. Humour and learning to think 'outside the box' are keys to productive thinking with these questions.

- 4. Feelings/Opinions Questions: 'Would you rather...'
'How would you feel...'**

These are viewpoint or personal involvement questions. They open the door to student motivation, because they involve the emotion as well as the intellect. It is important for students to think through reasons for their feelings and opinions when answering these types of questions.

- 5. Fact and Detail Questions: 'What...', 'Why...', 'How...'**

The purpose of these questions is usually to gain viable information about a certain topic. Increasing one's knowledge base is generally the underlying objective.

- 6. Active Questions**

Active questions increase creative and critical thinking because the students must generate the questions rather than the answers. Active questions often use personification of animals or objects as well as historical or fictional people. The format for asking an active question is as follows:

Make a list of questions _____ might ask _____.

Student **A**ctivities *based on* **L**earning **S**tyles

Concrete Sequential

1. Make an outline of important facts about each member of a typical food chain.
2. Make a calendar for one month with a daily suggestion for creating a healthier ecosystem.
3. Make a chart showing 5 things humans do that are harmful to food chains and food webs.

Concrete Random

1. With a partner, brainstorm possible answers to the question: “What might happen to the food chain if sharks disappeared from Australia’s oceans?” Design a visual to illustrate your ideas.
2. Write and illustrate a story for young children which shows why all living things are important and interconnected. Read your story to a prep class.
3. Design a postcard showing your favourite herbivore. Write a message on the back of the postcard explaining its importance and send your postcard to a teacher or a friend.

Abstract Sequential

1. Make scientific predictions about what would happen if algae was eliminated from the ecosystem of the Great Barrier Reef. Outline your predictions and give specific reasons for each.
2. Figure out how you could increase the population of koalas in various parts of Australia. Write a letter giving your ideas and suggestions to an organisation interested in wildlife conservation.
3. Keep an observation log of the species of wildlife you see near your house. Diagram their most likely food chain(s).

Abstract Random

1. Find out what a keystone species is. With two or three classmates, design a game that shows the importance of the keystone species to every other species in its environment.
2. With two other classmates, act out the process of photosynthesis. Include the importance of oxygen, carbon dioxide, water and sunlight.
3. Dress as a koala and explain to your class why you are totally dependent on one other species — the eucalyptus tree.

Student Activities *based on* Bloom's Taxonomy

Knowledge

1. Make a list of 10 animals who eat only plants, 10 who eat mainly smaller or weaker animals and 10 who eat both.
2. Identify 4 essential biogeochemical cycles with a brief explanation of each.
3. Define each of these terms in relation to a food chain: producer, consumer, decomposer, autotroph, heterotroph, herbivore, carnivore, and omnivore. Write each definition on a poster and include a picture of an example of each.

Comprehension

1. Design a mural that illustrates the phrase: "The earth is an excellent recycler."
2. Explain why a compost heap or a rubbish bin is the perfect environment for a decomposer. Include a cartoon or a diagram in your written explanation.
3. Write a paragraph explaining the difference between predators and prey. How do some of the prey of every species survive when predators are around?

Application

1. Make a model of a typical ecosystem in a tropical environment, a desert environment or a temperate environment.
2. Make a chart showing 5 different animals and ways they protect themselves from predators.
3. Observe and draw a diagram of a food chain or a biogeochemical cycle (water, oxygen or nitrogen cycle) in your local area.