

# TABLE OF CONTENTS

<b>INTRODUCTION</b> .....	<b>1</b>
<b>CRITICAL THINKING SKILLS</b> .....	<b>13</b>
Attributing - TRAITS .....	14
Comparing and Contrasting - SAD .....	17
Classifying - CLUE .....	21
Sequencing - SORT .....	24
Prioritizing - RANK .....	27
Drawing Conclusions - DRAW .....	30
Determining Cause and Effect - CHAINS .....	33
Analyzing for Bias - BIAS .....	36
Analyzing for Assumptions - ASSUME .....	40
Solving Analogies - SOLVE .....	43
Evaluating - RATE .....	47
Decision Making - JUDGE.....	50
<b>CREATIVE THINKING SKILLS</b> .....	<b>55</b>
Brainstorming - THINK .....	56
Visualizing - IMAGES .....	59
Personifying - LIVE .....	62
Inventing - SCAMPER.....	65
Associating Relationships - RELATE.....	68
Inferring - INFER .....	71
Generalizing - RULE.....	75
Predicting - BET.....	78
Hypothesizing - THEORY .....	82
Making Analogies - MAKE .....	85
Dealing with Ambiguity and Paradox - DUAL.....	88
Problem Solving - IDEAS .....	91
<b>APPENDIX</b> .....	<b>94</b>
<b>BIBLIOGRAPHY</b> .....	<b>95</b>

# INTRODUCTION

## Questions Teachers Ask About “Mental Menu”

### Background and Rationale: Just What Are Mental Menus?

As we become attuned to thinking about our thinking, the analogy between the mind and the computer becomes more and more obvious. Monitoring the thought processes and cognitive paths the mind takes in performing thinking skills is much like the flow of operations needed to run a program on the computer. So, too, the menus that are called up on the screen can be likened to the mental menus that are available to our thinking processes, if we consciously think about our thinking, metacognitively.

There is a riddle that states: “Your brain is smarter than you are.” In fact, the brain is the most marvellous computer of all. It seeks structure, perceives patterns, recalls associations and creates relationships. Actually, if we trust our brain to guide us, it *seeks* to channel information for us into some organized format. The brain invites order to help us understand and make sense of the world about us.

For example, as we are faced with a circumstance, our mental menus pop up. Almost intuitively, our brain begins to organize the information by sequencing, prioritizing, grouping and building analogous relationships. The brain seeks to analyze and synthesize as it evaluates information that lead toward reasoned thought. In fact, the brain “shifts” to the appropriate menus almost on its own.

Our task, then, is one of consciously tracing this phenomenon by articulating the processes that occur; to bring them to a level of awareness. Once we become adept at tracing these thought processes, they become familiar patterns for thinking. Then, as we encounter situations, we can consciously select the model or menu for thinking through the task. Thus, our mental menus are essentially the explicit thought patterns we use to solve problems, make decisions and design creatively. These mental menus become the patterns that we can deliberately call upon as we become critical and creative thinkers.

The purpose of this book is to provide models of those patterns for thinking: our mental menus! Through continued and consistent practice with the models, we become proficient users of the skills.

Over time, applying the thinking skills successfully, by sprinkling them throughout the curriculum content, you and your students will begin to develop your own versions of mental menus. For this little book is only a beginning. The substantive benefits are found, as always, as we begin to draw upon the richness of our own resources from within; as we adopt and design and experiment on our own. *Mental Menus* is merely the catalyst to ignite the creative capabilities inherent within us to think metacognitively about our creative and critical thought processes.

### Content: Just What Skills Are Covered in Mental Menu?

To model the use of concrete examples that clarify abstract concepts, we have selected the computer as the basis of our metaphor: Mental Menu. The menus are elaborations of the cognitive processes that occur as we engage in critical and creative thinking.

To extend the computer metaphor further, the skills are presented within the framework of computer lingo. This glossary of terms illustrates the terminology used throughout the book.

### Mental Menu: A Glossary of Terms

**PROGRAM** the explicit thinking skill

**PASSWORD** an acronym of the skill concept

**DATA BASE** a definition of the skill

**LIST** a list of synonyms for the skill

**SCAN** a look at specific examples of the applied skill

**ENTER** when to use the skill

**MENU** directory of operations used in doing the skill

**DEBUGGING** trouble-shooting; what to do if...

**VISUAL LAYOUT** formats, structures, patterns to use with the skill

**FILE** a specific example of a classroom application of the skill

**INDEX** a list of suggested subject area applications for practice

**TEACH THEM THINKING**

**THE EXPLICIT SKILLS**

Twenty-four explicit thinking skills are extensively developed in *Mental Menus*. These skills are divided into critical thinking and creative thinking skills. The authors differentiate between this duality of skill categories in this way.

Critical thinking skills require analytic, evaluative processing while creative thinking skills dictate synthesis and a generative model of thinking.

**Critical Thinking Skills:**

1. Attributing — TRAITS
2. Comparing and Contrasting — SAD
3. Classifying — CLUE
4. Sequencing — SORT
5. Prioritizing — RANK
6. Drawing Conclusions — DRAW
7. Determining Cause and Effect — CHAINS
8. Analyzing for Bias — BIAS
9. Analyzing for Assumptions — ASSUME
10. Solving Analogies — SOLVE
11. Evaluating — RATE
12. Decision Making — JUDGE

However, a word of caution is warranted here. Although we have purposefully separated the skills, in reality they are often used almost *simultaneously* as we process an idea. So the division is somewhat artificial as we consider a more holistic approach to problem solving, decision making and creativity.

With that thought in mind, the specific skills illustrated within this framework are outlined here:

**Creative Thinking Skills:**

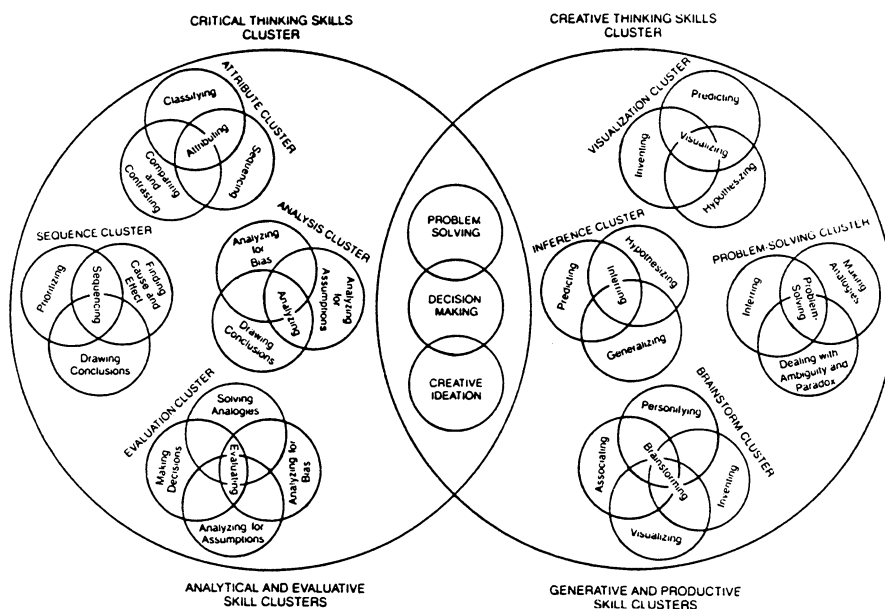
1. Brainstorming — THINK
2. Visualizing — IMAGE
3. Personifying — LIVE
4. Inventing — SCAMPER
5. Associating Relationships — RELATE
6. Inferring — INFER
7. Generalizing — RULE
8. Predicting — BET
9. Hypothesizing — THEORY
10. Making Analogies — MAKE
11. Dealing with Ambiguity and Paradox— DUAL
12. Problem Solving — IDEAS

**The Cluster Curriculum:**

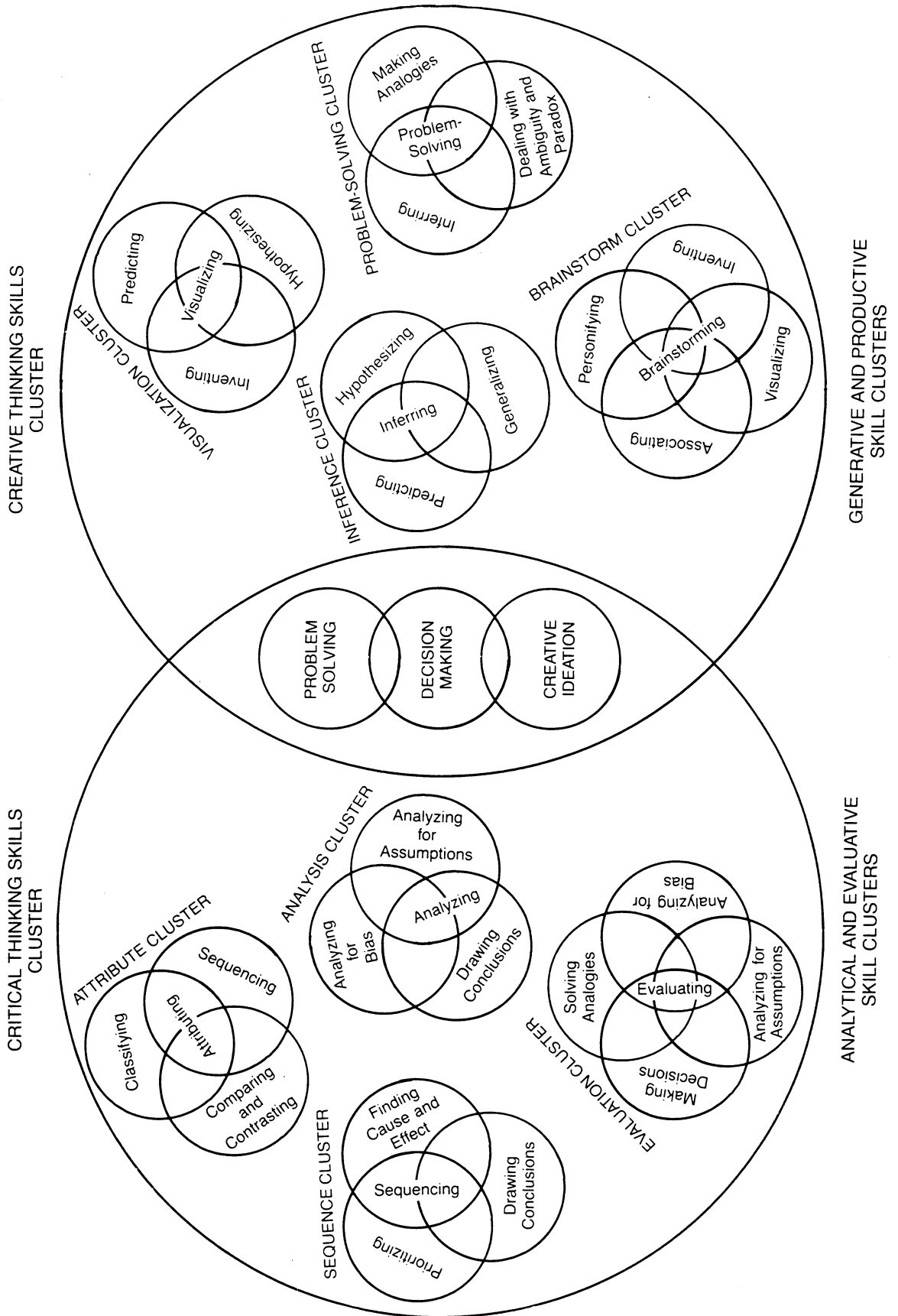
The listings are not intended to suggest a hierarchical structure, although certain skills do seem to logically fall into a cluster of sorts. For instance, attributing must precede skills such as comparing and contrasting and classification since these latter skills

are ascertained through determining attributes. Therefore, attributing is a target or foundation skill for other thinking skills. The diagram illustrates suggested skill clusters.

**THE CLUSTER CURRICULUM**



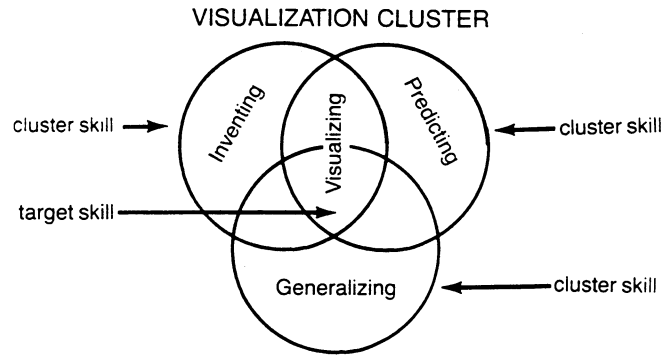
THE CLUSTER CURRICULUM



## TEACH THEM THINKING

Each skill cluster includes a target skill as the centre and several related skills in the outer cluster circles. The target skill provides the foundation upon which

to build more complex or associated skills. For example:

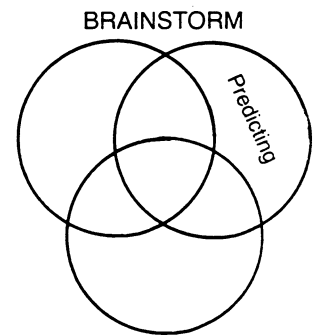
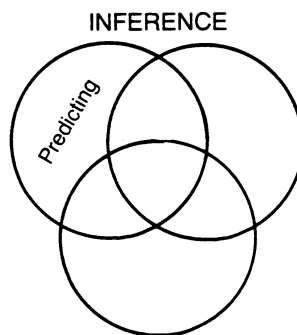
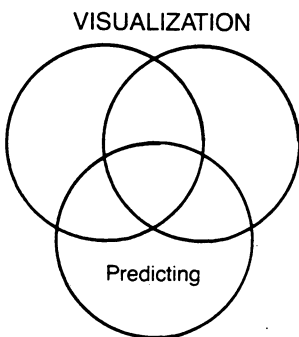


Visualization is the *target* creative thinking skill that will ease the learning of outer cluster skills such as inventing, predicting and hypothesizing. Once students have had practice visualizing and imaging, for instance, they can more readily form predictions by “seeing” the possible or probable outcomes.

However, the skill of prediction also seems to fit into the INFERENCE CLUSTER, since predicting

is often based on inferences drawn from available information. Other possibilities include placing the prediction skill in a BRAINSTORM CLUSTER, as we consider the generative process involved in making predictions.

Therefore, predicting can be included in any one of the three clusters or in all three or in other clusters you create.



The cluster arrangements are intentionally presented as arbitrary, permitting fluid constructs of skill clusters as deemed appropriate by you. Yet, by using the idea of clusters, you have a guide to lead you in the selection of a few appropriate skills to work on in the classroom. Much like selecting food from the five basic food groups, you can be assured that you are sampling different skills from different clusters and giving students a “well balanced”

curriculum in the area of thinking skills, without being required to use the skills in a structured order. Again, you must decide what skills are most appropriate to “plug into” your curriculum. The cluster curriculum is merely a suggestion that may help in articulating a scope and sequence of thinking skills as you develop a comprehensive integration of thinking skills into your classroom.