Appendix

Two Models to Guide Differentiated Instruction

Figure A.1 is a model for thinking about how to differentiate instruction in academically diverse classrooms. It emphasizes differentiation by student readiness. The model is discussed more fully in the sources cited at the end of Chapter 2.

In brief, the model suggests that all **content** for all learners should demonstrate the characteristics in the box on the top left. **Processes**, or activities, for all students should demonstrate the characteristics in the top center box. **Product** assignments for all students should demonstrate the characteristics in the box on the top right. All students should experience learning environments with the characteristics listed around the perimeter of the box.

The lower row of boxes contains sample instructional strategies to help teachers achieve differentiated content, process, and product. These strategies, too, are useful with all students. While these lists are not exhaustive, they reflect a current understanding of best educational practice.

The "buttons" beneath the two rows of boxes are drawn to look like a stereo or CD player's buttons, which listeners slide to adjust tone, volume, and balance. Such mechanisms are called "equalizers." To differentiate for learner readiness, a teacher should begin with solid, focused, significant instruction. Then the teacher should move the equalizer buttons toward the left or right, based on a learner's starting point. For example, a learner who knows a great deal about outer space and who reads quite well might need to use complex research materials to prepare for tomorrow's presentation. A classmate who doesn't read well and whose background knowledge is less extensive may need to use simpler research materials to prepare for the presentation.

As with a stereo, it is not necessary to move all the buttons at the same time. Also, students may need several equalizer buttons pushed toward the left when they begin work on a topic or skill, but as a unit progresses, their activities and products should reflect movement of the buttons toward the right.

Figure A.2, "Thinking About the Equalizer," provides some descriptors to help teachers and curriculum developers consider ways to modify curriculum and instruction along various continuums. For example, if a learner is struggling with a particular idea or skill, a teacher may want to design a task that is foundational, or basic, for that child.

Figure A.1
A Planning Model for Academic Diversity and Talent Development

Flexible Grouping

Content	Process	Product
Concept and generalization-based High relevance Coherent Transferable Powerful Authentic	Concept and generalization driven Focused High level Purposeful Balancing critical and creative thought Promoting cognition and metacognition	Concept or issue centered Skills of planning taught Skills of production taught Requires application of all key skills and understandings Uses skills of the discipline Real problems and audiences Multiple modes of expression
<u>Differentiation through</u> Multiple texts and supplementary print resources Varied computer programs Varied audio-visuals Varied support mechanisms Varied time allotments Interest centers Contracts Compacting Triarchic-based orientation Complex instruction Group investigation	<u>Differentiation through</u> Tiered assignments Learning centers Triarchic model assignments Multiple intelligences assignments Graphic organizers Simulation Learning logs Concept attainment Concept development Synectics Complex instruction Group investigation	<u>Differentiation through</u> Tiered product assignments Independent study Community-based products Negotiated criteria Graduated rubrics Triarchic-based orientations Multiple intelligences-based orientations Complex instruction Group investigation

Active Orientation

Escalating Expectation

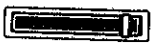
1. Foundational — Transformational

Information, Ideas, Materials, Applications

2. Concrete — Abstract

Representations, Ideas, Applications, Materials

Figure A.2
Thinking About the Equalizer



1. Foundational — Transformational

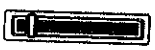
Information, Ideas, Materials, Applications

-close to text or experience	-removed from text or experience
-expert idea and skill to similar or familiar setting	-export idea or skill to unexpected or unfamiliar setting
-use key idea or skill alone	-use key idea or skill with unrelated idea or skill
-fundamental skills and knowledge emphasized	-use but move beyond fundamental skills and knowledge
-fewer permutations of skills and ideas	-more permutations of skills and ideas

2. Concrete — Abstract

Representations, Ideas, Applications, Materials

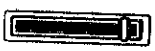
-hold in hands or hands-on	-hold in mind or minds on
-tangible	-intangible
-literal	-symbolic or metaphorical
-physical manipulation	-mental manipulation
-event based	-idea based
-event to principle	-principle without event
-demonstrated and explained	-not demonstrated or explained



3. Simple — Complex

Resources, Research, Issues, Problems, Skills, Goals

-use idea or skill being taught	-combine idea or skill being taught with those previously taught
-work with no one, or few abstractions	-work with multiple abstractions
-emphasizes appropriateness	-emphasizes elegance
-requires relatively less originality	-requires relatively more originality
-more common vocabulary	-more advanced vocabulary
-more accessible readability	-more advanced readability



4. Single Facet — Multiple Facets

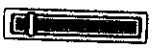
Disciplinary Connections, Directions, Stages of Development

-fewer parts	-more parts
-fewer steps	-more steps
-fewer stages	-more stages

5. Small Leap — Great Leap

Application, Insight, Transfer

-few unknowns	-many unknowns
-relative comfort with most elements	-relative unfamiliarity with many elements
-less need to change familiar elements	-more need to change familiar elements
-requires less flexible thought	-requires more flexible thought
-few gaps in required knowledge	-significant gaps in required knowledge
-more evolutionary	-more revolutionary



6. More Structured — More Open

Solutions, Decisions, Approaches

-more directions or more precise directions	-fewer directions
-more modeling	-less modeling
-relatively less student choice	-relatively more student choice

7. Clearly Defined Problems — Fuzzy Problems

In Process, In Research, In Products

-few unknowns	-more unknowns
-more algorithmic	-more heuristic
-narrower range of acceptable responses or approaches	-wider range of acceptable responses or approaches
-only relevant data provided	-extraneous data provided
-problem specified	-problem unspecified or ambiguous

8. Less Independence — Greater Independence

Planning, Designing, Monitoring

-more teacher or adult guidance and monitoring on	-less teacher or adult guidance and monitoring on
• problem identification	• problem identification
• goal setting	• goal setting
• establishing timelines	• establishing timelines
• following timelines	• following timelines
• securing resources	• securing resources
• use of resources	• use of resources
• criteria for success	• criteria for success
• formulation of a product	• formulation of a product
• evaluation	• evaluation
-more teacher scaffolding	-less teacher scaffolding
-learning the skills of independence	-demonstrating the skills of independence

9. Slower — Quicker

Pace of Study, Pace of Thought

-more time to work	-less time to work
-more practice	-less practice
-more teaching and reteaching	-less teaching and reteaching
-process more systematically	-process more rapidly
-probe breadth and depth	-hit the high points

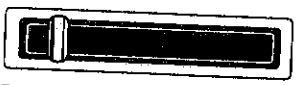
Figure A.1—*continued*

A Planning Model for Academic Diversity and Talent Development

Continual Assessment and Adaptation

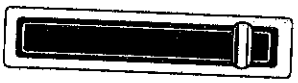
The Equalizer

3. Simple — Complex



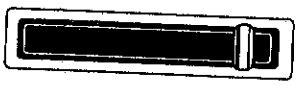
Resources, Research, Issues, Problems, Skills, Goals

4. Single Facet — Multiple Facets



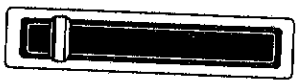
Disciplinary Connections, Directions, Stages of Development

5. Small Leap — Great Leap



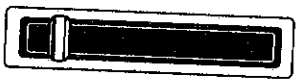
Application, Insight, Transfer

6. More Structured — More Open



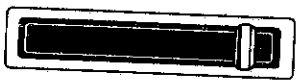
Solutions, Decisions, Approaches

7. Clearly Defined Problems — Fuzzy Problems



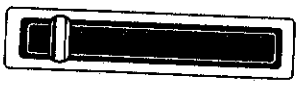
In Process, In Research, In Products

8. Less Independence — Greater Independence



Planning, Designing, Monitoring

9. Slower — Quicker



Pace of Study, Pace of Thought