Differentiated Instruction

Definition: Differentiation is a process through which teachers enhance learning by matching student characteristics to instruction and assessment. Differentiation allows all students to access the same classroom curriculum by providing entry points, learning tasks, and outcomes that are tailored to students' needs. In a differentiated classroom, variance occurs in the way in which students gain access to the content being taught, the process by which they acquire information, and the manner in which they demonstrate understanding (Hall, Strangman, & Meyer, 2003).

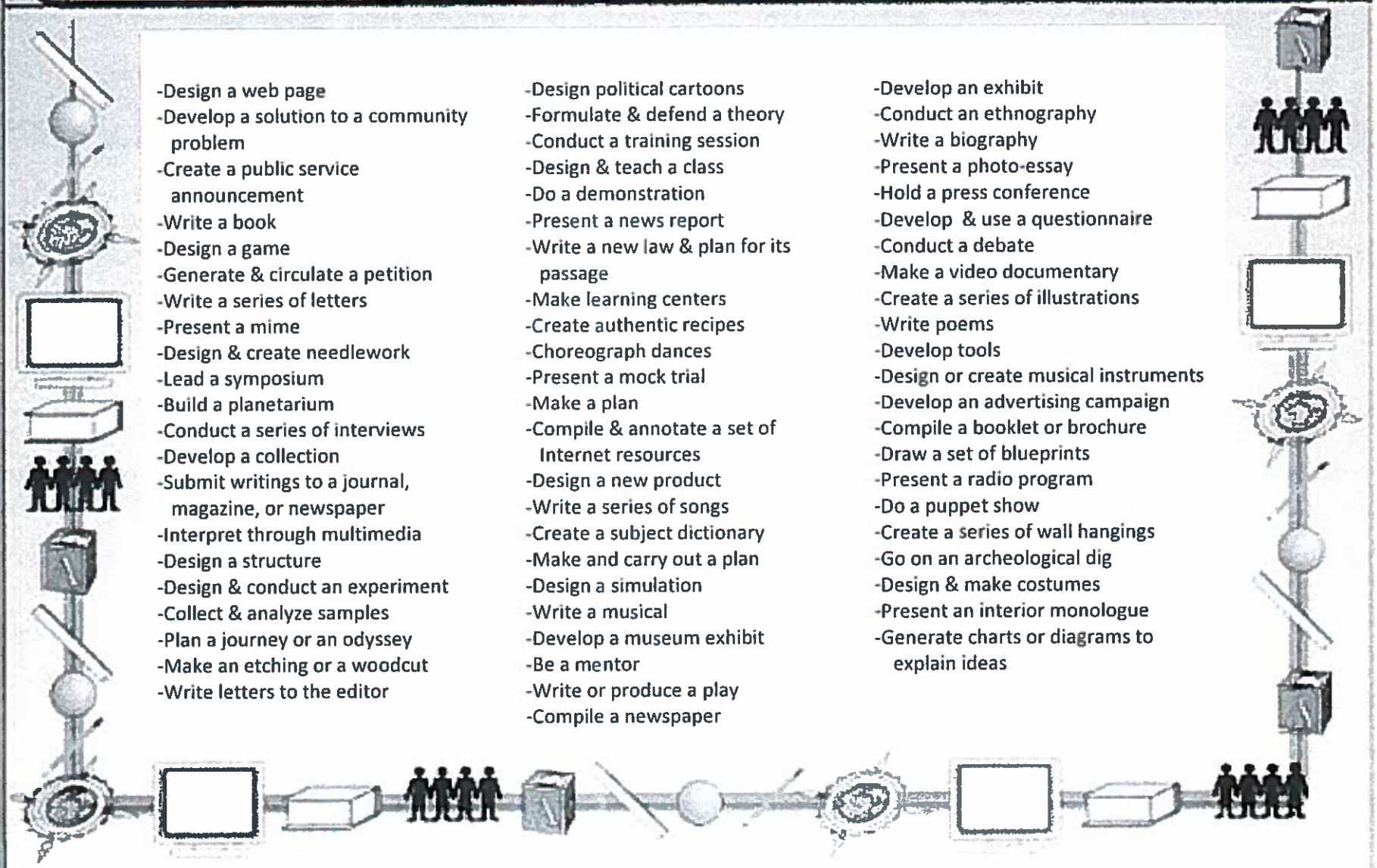
Strategies to Differentiate Instruction

	Content	Process	Product
What it is?	• What the teacher plans to teach. • What the students need to learn.	• How the students will access the information. • Activities in which the students engage in order to make sense of or master the content.	• How the student will demonstrate what s/he has learned.
What it could look like:	• Determined through formative assessment • Using reading materials at varying readability levels • Putting text materials on tape/CD • Using spelling/vocab lists at readiness level of students • Presenting ideas through auditory, visual, kinesthetic, & tactile means • Using reading buddies • Flex grouping*** • Compacting • Meeting with small groups to reteach idea/skill, or to extend the thinking/skill • Multi-leveled questions • Modeling	• Tiered activities through which all learners work with the same information, understanding, & skills, but proceed with different levels of support, challenge, or complexity. • Centers/Stations • Developing personal agendas • Manipulatives • Varying the length of time a student may take to complete a task • Cubing • Learning logs or journals • Note-taking organizers • Graphic organizers • Highlighted materials • Jigsaw • Think, Pair, Share • Learning Menus • Webquests • Labs • Role Play / Simulations	• Choice boards • Podcast • Blog • Presentation • Quiz/Test • Using rubrics that match and extend students' varied skill levels. • Encouraging students to create their own product assignment as long as it contains required elements. • Enabling students to use contemporary media/technology as tools to demonstrate knowledge and understanding • See attached list for more options**

~Created By: Steve Figurelli & Kristen Tsaoys, Staff Development

Reproduced from How to Differentiate Instruction in Mixed-Ability Classrooms by Carol Ann Tomlinson, 2001 pg. 89

FIGURE 13.2
PRODUCT POSSIBILITIES



- -Design a web page
- -Develop a solution to a community problem
- -Create a public service announcement
- -Write a book
- -Design a game
- -Generate & circulate a petition
- -Write a series of letters
- -Present a mime
- -Design & create needlework
- -Lead a symposium
- -Build a planetarium
- -Conduct a series of interviews
- -Develop a collection
- -Submit writings to a journal, magazine, or newspaper
- -Interpret through multimedia
- -Design a structure
- -Design & conduct an experiment
- -Collect & analyze samples
- -Plan a journey or an odyssey
- -Make an etching or a woodcut
- -Write letters to the editor
- -Design political cartoons
- -Formulate & defend a theory
- -Conduct a training session
- -Design & teach a class
- -Do a demonstration
- -Present a news report
- -Write a new law & plan for its passage
- -Make learning centers
- -Create authentic recipes
- -Choreograph dances
- -Present a mock trial
- -Make a plan
- -Compile & annotate a set of Internet resources
- -Design a new product
- -Write a series of songs
- -Create a subject dictionary
- -Make and carry out a plan
- -Design a simulation
- -Write a musical
- -Develop a museum exhibit
- -Be a mentor
- -Write or produce a play
- -Compile a newspaper
- -Develop an exhibit
- -Conduct an ethnography
- -Write a biography
- -Present a photo-essay
- -Hold a press conference
- -Develop & use a questionnaire
- -Conduct a debate
- -Make a video documentary
- -Create a series of illustrations
- -Write poems
- -Develop tools
- -Design or create musical instruments
- -Develop an advertising campaign
- -Compile a booklet or brochure
- -Draw a set of blueprints
- -Present a radio program
- -Do a puppet show
- -Create a series of wall hangings
- -Go on an archeological dig
- -Design & make costumes
- -Present an interior monologue
- -Generate charts or diagrams to explain ideas

***The basis for grouping varies between responding to student readiness, interest, or learning style. A useful tool for making purposeful decisions about how to group students is TAPS – an acronym used to refer to four different options for grouping: Total Group (T), alone (A), in partners (P), and in small groups (S). The table below illustrates the features of each of these groupings as well as provides suggestions for situations that lend themselves especially appropriate for utilizing each.

TAPS Grouping Options and their Uses (Modified from Gregory & Kuzmich 2004, p. 125)

GROUPING STRATEGY	Works well for these strategies
TOTAL Whole class instruction	Presenting new information Pre-assessment Modeling new skills Videos, guest speakers, presentations, demonstrations
ALONE Students work on a variety of tasks based on readiness or interest	Pre-assessment Self assessment Reflection Journaling Projects/independent study Individual reading Note taking; summarizing; study skills Practice and mastery of skills
PAIRED Students work with a partner based on based on task or interest	Brainstorming Think, pair, share Checking for understanding; processing of information Checking homework or daily work Peer editing; peer evaluation Researching Planning Practice and mastery of skills
SMALL GROUPS Homogeneous for skill development-based on readiness	Practice and mastery of skills Re-teaching (with teacher while other classmates practice skills) Reading partners
SMALL GROUPS Heterogeneous for cooperative groups based on task or interest	Brainstorming Problem solving Interest centers Cooperative learning assignments Group investigation

~Created By: Steve Figurelli & Kristen Tsaoys, Staff Development

Glossary of Differentiated Instruction Strategies

Adapted from *The Differentiated Classroom: Responding to the Needs of All Learners*
by Carol Ann Tomlinson

Term	Definition	Characteristics
Agenda	- a personalized list of tasks that a particular student must complete in a specified time.	• Generally lasts 2-3 weeks on each agenda • Student choice on order of completion • Used in conjunction with other strategies
Centers – Learning, Interest	-a learning center is a classroom area that contains a collection of activities or materials designed to teach, reinforce, or extend a particular skill or concept. -a interest center is designed to motivate student's exploration of topics in which they have a particular interest.	• Exploratory in nature • Teacher constructed tasks • Focus on learning goals • Contain materials that promote individual growth toward those goals • Use diverse materials and activities, intentionally created to meet the needs of that group • Provide clear directions for students • Offer instructions about what a student should do if he needs help • Use a record-keeping system to monitor what students do at the center.
Choice Boards	-a board with permanent pockets but changing assignments that is organized by levels of difficulty or student interest. The board is used to direct students to locations to find the instructions for the tasks.	• Well-suited for dealing with readiness and interest differences among students. • Used primarily to "direct traffic"
Compacting	-the process of pre-assessing a student's knowledge base on the content and assigning meaningful work in place of repeating learned content	3 stages of documentation: 1. Assessing what a student already knows about the content 2. Determining the gaps of understanding of the content 3. A plan for meaningful and challenging use of time the student will "buy" due to prior attainment of knowledge

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Complex Instruction	-a strategy developed to deal with the wide range of diversity in a heterogeneous classroom focusing on the use of small groups engaged in intellectually challenging materials.	Complex instruction tasks: • Require students to work together in small groups • Are designed to draw upon the intellectual strengths of each student in the group • Are open-ended • Are intrinsically interesting to students • Are uncertain • Involve real objects • Integrate reading and writing • Draw upon multiple intelligences in a real world way • Use multimedia • Require many different talents in order to be completed adequately
Entry Points	-different avenues to explore a given avenue, focusing on the multiple intelligences profiles of students	• Narrational: using story or narrative • Logical: using numbers or deductive/scientific approaches • Foundational: examining the philosophy and vocabulary • Aesthetic: focusing on the sensory features • Experiential: using a hands-on approach
4MAT	-planning instruction based on 4 learning preferences: mastery, understanding, personal involvement, synthesis	• Instruction is planned for each of the four preferences during the course of several days on a given topic • All students participate in all lessons to make sure that preferred modes are addressed and weaker modes are strengthened
Group Investigation	-a strategy to investigate related topics to content being studied in class. Teacher guided groups created by learner interest work collaboratively to process these topics.	• Focuses on student interest • Go through these teacher guided steps: 1. Plan the investigation 2. Carry out the investigation 3. Present findings 4. Evaluate outcomes
Independent Study	- allowing students to explore most any topic with varying degrees of structure based on the students readiness for independence, readiness, interest, and learning profile	• Develops curiosity • Allows students to pursue topics of interest • Focuses on intriguing questions • Teacher and student should create a plan that defines the focus, time management, forms of presentation, goals and criteria for assessment

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Jigsaw	- a large amount of content is divided among different groups with the purpose of learning a piece of the content and being responsible for teaching their piece to the rest of the group.	• Division of the content into manageable parts • Assign the parts to groups, with specific directions on what is to be learned in each group. • Students share their learning with the group through various products. • Product types: 1. Verbalize (oral reports) 2. Write (journaling) 3. Create (physical model) 4. Perform (role play) 5. Solve (demonstrate solution)
Learning Contracts	-a negotiated agreement between teacher and student that gives students some freedom in acquiring skills and understandings that a teacher deems important at a given time	• Assumes it is teacher's responsibility to specify important skills and understandings and make sure students acquire them • Assumes students can take on some of the responsibility for learning themselves • Delineates skills that need to be practiced and mastered • Ensures students will apply or use those skills in context • Specifies working conditions to which students must adhere during the contract time • Sets positive and negative consequences for adhering or not to working conditions • Establishes criteria for successful completion and quality of work. • Includes signatures of agreement to terms of the contract by both teacher and student
Orbital Studies	-independent investigations, generally 3-6 weeks, revolving around some facet of the curriculum, allowing students to select their own topics	• Focuses on a topic of student interest related to some facet of the curriculum • Teachers help students develop a clear question for study, a plan for research, a method of presentation, and criteria for quality
Portfolios	-a collection of student work over time that demonstrates growth	• Student chooses representative pieces • Allows for student differences in readiness, interest, and learning profile
Problem-Based Learning	-activities structured around solving an unclear, complex problem	• Teacher presents the problem • Students seek additional information, define the problem, locate and appropriately use valid resources, make decisions about solutions, pose a solution, and assess solution's effectiveness.

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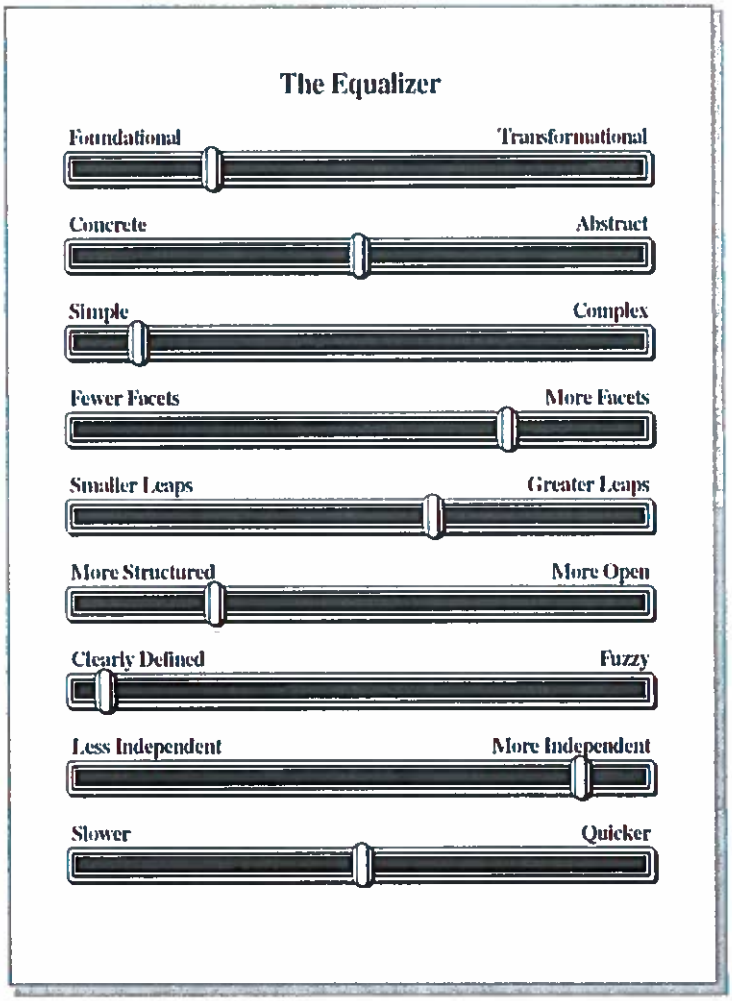
Stations	-different spots in the classroom where students work on various tasks simultaneously	• Allow students to work with different task • Invite flexible grouping • Allows for variation of the amount of time a student needs on each task • Different from centers in that each station is a variation of the same concept or content. • Allows for both teacher and student choice
Tiered Activities	-activities that allow all students to focus on the same essential understandings and skills but at different levels of complexity, abstractness, and open-endedness	• Select the concept or skill • Think about the students the activities should reach • Create one activity that is interesting, clearly focused, and requires high-level thinking • Develop the activity along a "ladder" where the lowest rung is the version of the activity for students with less developed skills or understanding and work up the rungs. • "Clone" the activity enough times to meet the diversity in the room • Match students with the appropriate level

The Equalizer

When teachers design tiered lessons or tasks to respond to differences in student readiness, they are trying to adjust the difficulty level of the task so that all students experience a challenge that is neither too great nor too small.

To visualize the various ways an assignment or activity can be adjusted or "tweaked" for students at varied readiness levels, it's helpful to use the Equalizer, a tool devised by Carol Ann Tomlinson (Tomlinson, 1999). The Equalizer suggests nine continuums along which the difficulty level of lesson content, process, or product may be located. It can help teachers expand the repertoire of ways they think about varying the challenge level of a specific task.



The Equalizer works in the same way that you might adjust the volume, bass, treble, or

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balance on your audio equipment. In general, as a task is moved to the right on the continuum, the more challenging it becomes. The idea is for the teacher to adjust one or more of the continuums in an effort to vary the difficulty level of student work.

Using the Equalizer to Meet Student Readiness Needs

When examining sample tiered lessons, many teachers find the Equalizer to be an excellent tool for analyzing just exactly what the teacher did to adjust the difficulty level from task to task. They also find it useful in considering good ways to adjust a lesson for their own students. The table below illustrates some readiness needs advanced and struggling students may have.

Advanced students may need	Struggling students may need
To skip practice with previously mastered skills and understandings.	Someone to help them identify and make up gaps in their learning so they can move ahead.
Fewer opportunities for direct instruction or supervised practice.	More opportunities for direct instruction or practice.
Activities and products that are quite complex, open-ended, abstract, and multifaceted, drawing on advanced reading material.	Activities or products that are more structured or more concrete, with fewer steps, closer to their own experiences, and calling on simpler reading skills.
A brisk pace of work, or perhaps a slower pace to allow for greater depth of exploration.	A more deliberate pace of learning.

It is easy to get stuck in a rut of adjusting difficulty only by making a task more or less concrete or more or less scaffolded. The Equalizer expands our thinking in multiple ways about how a task might vary in difficulty. The following includes information adapted from Carol Ann Tomlinson's work with these continuums over the years (for example, Tomlinson, 1999 and 2001).

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1. Foundational **Transformational**

Information, Ideas, Materials, Applications

Elements	Foundational	Transformational
Information, ideas, materials, and applications	Build a solid foundation of understanding. They are presented or experienced in a way that is basic, straightforward, and close to the already known.	Cause students to stretch, bend, or modify the idea beyond the way it was presented in class or in the textbook, and to see the intricacies of the material.
	One child may benefit from a more basic task of classifying animals by the types of body covering.	Another student may need the more transformational task of predicting how changes in environment would likely affect the body covering of several animals.
	In a math class, one young learner may be ready for a basic application of the concept of fractions by cutting fruit and placing it to reflect a given fraction.	An appropriate challenge for another student may be the more transformational task of writing measures of music that represent certain fractions.



2. Concrete **Abstract**

Representations, Ideas, Applications, Materials

Elements	Concrete	Abstract
Representations, ideas, applications, and materials	Focus on key information, are tangible, can be physically manipulated, or deal with specific events.	Focus more on meaning, implications, principles, and interrelationships.

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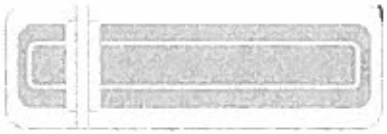
	In a science class, some students may work with principles concerning wind and water current via hands-on experiments.	Others might work from a list of these principles and make predictions about future trends.

Working with concrete information should open a door for meaningful abstraction later on. For example, grasping the idea of plot (more concrete) typically has to precede investigations of theme (more abstract). Ultimately, however, all students need to delve into the meanings of stories, not just the events. The issue here is readiness or timing.

3. Simple  Complex

Resources, Research, Issues, Problems, Skills, Goals

Elements	Simple	Complex
Resources, research, issues, problems, skills, and goals	Deal with one or few events or meanings; perhaps in a big picture that provides a framework skeleton without many details.	Deal with multiple events or meanings that include many details.
	Some students may be ready to work with the theme in a story (a single abstraction).	Other students look at inter-relationships between themes and symbols (multiple abstractions, or complexity).
	In a class store, some elementary students may work at making change.	Others keep an ongoing tally of profits and losses.

Most learners need to begin with the simple before moving to the more complex. Even adults often find it helpful to read a children's book on black holes, for example, before they tackle the work of Stephen Hawking.

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4. Single Facet — Multiple Facets

Disciplinary Connection, Direction, Stages of Development

Elements	Single Facet	Multiple Facets
Disciplinary connection, direction, and stages of development	Require one or few steps, actions, and applications.	Require more steps, actions, and applications.
	In a math class, some students need to work with word problems that require only one step to solve.	Others are ready for multiple-step word problems.
	Most students in a high school English class may work on writing interior monologues based on specific characters from a novel.	Others may take on the additional step of interpreting and performing the monologues.

5. Small Leap — Great Leap

Application, Insight, Transfer

Elements	Small Leap	Great Leap
Application, insight, and transfer	Students apply ideas in settings relatively like those they have already mastered, or make connections among ideas that are comfortable or familiar to them.	Call for putting ideas to work in unfamiliar settings or making connections among far-flung fields and ideas.
	For some students, learning about how to measure area and then applying that learning by estimating and verifying the area of the hamster house compared to the teacher's	Other students may be able to move from estimating and verifying area to estimating materials needed to a building project and proportional cost implications of increasing the building

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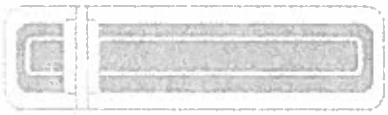
	desk may be enough of a leap of application and transfer, at least in the beginning.	area. In both cases, students make mental leaps from reading information on a page to using that information. The latter task calls for relatively greater leaps of application, insight, and transfer.
	Some students may be able to make a connection between what they studied in science today and what they studied last week.	But others might need to be challenged by making connections between subjects that scarcely seemed related before, such as science and art.

Notice that this continuum does not provide the option of "no leap." Students should always have to run ideas through their minds and figure out how to use them. Activities that call only for absorption and regurgitation are generally of little long-term use.

6. More Structured  More Open

Solutions, Decisions, Approaches

Elements	More Structured	More Open
Solutions, decisions, and approaches	Tasks provide for more guidance from the teacher for students to complete them, or include fewer options with which to work.	Tasks involve relatively greater improvisation or decision making for students to complete them, or include many options.
	Novice drivers begin by managing the car on prescribed driving ranges or delineated routes.	More experienced drivers are ready to take unknown routes that may contain new obstacles.
	Being new to a computer or word processor often requires completing programmed and closed lessons that involve right answers.	When students become knowledgeable and comfortable with basic computer operation and keyboarding, they are ready to move on to more advanced and open-

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		ended tasks such as selecting varied uses of graphics to illustrate ideas in a formal presentation.
	For a beginner, following a predetermined format for a writing assignment or a chemistry lab often makes more sense than improvisation.	At some point, students are ready to craft their own essays designed to address a communication need, or create a chemistry lab that demonstrates principles of their choosing.

Sometimes students need to complete tasks that are fairly well laid out for them, where they don't have too many decisions to make. In this case, modeling helps most of us become confident enough to eventually wing it. But when modeling has served its purpose, it's time to branch out and get creative.

7. Clearly Defined Fuzzy Problems

In process, In Research, In Products

Elements	Clearly Defined	Fuzzy
Problems in process, research, or products	The steps and methods of solution are easily evident, all variables are relevant to the solution, and there is a right answer.	The problem itself is not clearly defined, the method of solution is ambiguous, irrelevant variables are mixed with relevant ones, and there is no single or right answer.
	Some students might be assigned to examine two proposals for community planning and make a recommendation to policymakers.	Others might be asked to examine the impact of future demographic shifts on community planning and analyze how those shifts might influence a city's master plan.

The simplest problems are straightforward. They usually have one right solution or limited ways to go about solving them. An example of a simple problem is 1+1=2. As

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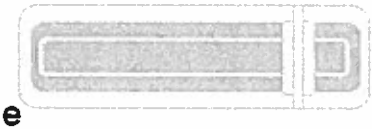
the possibility of many solution methods or answers to the problem increases, the problem becomes fuzzier. The problem may be unknown or ill-defined. Students may have to figure out which path to take to solve the problem, and there may be more than one acceptable answer or no answer at all. For example, what is the best way to solve current economic problems?



8. Less Independence More Independence

Planning, Designing, Monitoring

Elements	Less Independence	More Independence
Planning, designing, monitoring, and establishing criteria for success	The processes of completing assignments are largely prescribed and modeled by the teacher.	The processes rest more on the student.
	Some students may need multiple check-in points when working on a long-term project.	Others need to check in with the teacher less frequently or perhaps even self-check their progress.

A goal for all learners is independent study, thought, and production. But just as some students gain height more quickly than others, some will be ready for greater independence earlier than others. Student needs in developing independence generally fall into one of the following four stages:

- **Skill building,** when students need to develop the ability to make simple choices, follow through with short-term tasks, and use directions appropriately.
- **Structured independence,** when students make choices from teacher-generated options, follow prescribed time lines, and engage in self-evaluation according to preset criteria to complete longer-term and more complex tasks.

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- **Shared independence,** when students generate problems to be solved, design tasks, set time lines, and establish criteria for evaluation. The teacher helps tighten or focus the plans and monitors the production process.
- **Self-guided independence,** when students plan, execute, and seek help or feedback only when needed.

9. Slower — Quicker

Pace of Study, Pace of Thought

Elements	Slower	Quicker
Pace of study and pace of thought	Enable additional practice or allow greater depth of study.	Enable brisk exploration of the essentials or eliminate practice that is unnecessarily redundant for a given learner.

Of all the continuums, this one is the most likely to require some jumping around. There are times when students with great readiness in a subject need to move quickly through familiar or minimally challenging material. But at other times, some of those same students will need more time than others to study a topic in depth.

You can adjust the speed of learning experiences for students who are struggling with key ideas by allowing them to work more slowly at first, but then letting them move quickly through tangential areas of study, thus freeing up some time for further work with the key ideas.

It is not necessary to adjust all nine Equalizer buttons for each activity! Choose the continuums that seem to offer the greatest potential for appropriate challenge with your topic and your students.

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