How Do You Teach?

Planning for Challenge and Variety

In Chapters 2 and 3, you gathered information about your students and examined your curriculum to determine what's essential to teach. On your curriculum map, you also identified potential places for differentiated activities by thinking about times when your students were typically in different places in their learning or could benefit from more advanced work. Now you are ready to find out how differentiated your current instructional plans are and to design, as appropriate, additional or alternative activities.

Many of you already have components and aspects of differentiated instruction in your plans. With some reflection on how you teach and how your students best learn, and with some careful review and revision of your instructional plans, you will be well on your way to a differentiated classroom.

Two familiar educational models, Bloom's taxonomy and Gardner's theory of multiple intelligences, can be applied to differentiation. In this chapter, you'll first review the different levels of thinking in Bloom's taxonomy, which can enable you to identify how challenging various learning activities are. Then you'll further explore the different ways of thinking and learning reflected in Gardner's model. You'll try out new ways to use the familiar.

This chapter describes how you can apply these two familiar models to your curriculum map in order to create a matrix plan for differentiated activities. Many teachers have found that the matrix formats make it quick and easy to use Bloom's and Gardner's models in their planning. Matrix plans can be an essential first step in differentiating instruction since they take what is and allow you to design what's missing. Matrix plans let you look systematically at your current instruction so you can more skillfully design differentiated learning activities that represent a spectrum of challenge and variety.

Challenge: Bloom's Levels of Thinking

Looking at instruction through **the lens of *challenge* means considering the rigor, relevance, and complexity of what you're teaching.** Learning that is challenging demands:

- higher-level thinking that motivates all students to achieve.

- substantive instruction that is clearly related to the essential curriculum.

- content that has both depth and breadth.

Challenge does not mean simply more work, especially not more work of the same kind. Students rightfully resent being asked to take a challenge when it's clear to them that all it means is more work.

Educational psychologist Benjamin Bloom's *Taxonomy of Educational Objectives* presents a useful and time-tested model for examining and differentiating the challenge level of activities. His classification can help you design activities that are appropriately rigorous, relevant to essential curriculum, and sufficiently complex. He describes six levels of thinking: knowledge, comprehension, application, analysis, evaluation, and synthesis. (See Figure 6, page 68.) All are important.

Students who are more academically talented will often need less time developing the solid base of facts, concepts, and ideas represented at the knowledge and comprehension levels of Bloom's model. At the same time, students who are less academically ready, or who generally require more time and practice to learn, also need to use higher-level thinking skills. We've all known students who had great difficulty remembering facts but were so creative they

could easily function at the higher level of synthesis. We've known others who would have given up in frustration and boredom if their tasks were too often limited to lower-level thinking. All students need opportunities to work at all levels.

Keep in mind that, by its very nature, **Bloom's higher levels of thinking reteach or reinforce basic content.** For example, when you ask students to identify the problem presented in a story and come up with an alternative solution, you're asking them to work at the level of analysis and evaluation. But to do this they need to revisit the story, recall what happened and recall the original solution. Thus you are reteaching the story through a more rigorous learning activity. Do all students need content knowledge? Absolutely. Do some students need more time than others to develop their content knowledge? Yes. Offering more time to students who need it while providing sufficient challenge for all is part of what differentiated instruction is about.

Bloom's taxonomy enables you to categorize activities by their level of challenge and complexity. You can then modify or adapt your activities— or even design new ones—to offer a wider range of thinking challenges and more opportunities for all students to use higher levels of thinking.

In the list below, you'll notice that synthesis, rather than evaluation, is presented as the highest, most challenging kind of thinking and doing. When Bloom first introduced his taxonomy, synthesis came before evaluation in the hierarchy. However, most educators are now convinced that to come up with something new is more challenging than evaluating what already exists.

FIGURE 6

Bloom's Taxonomy*

Knowledge: The least complex kind of thinking asks students to recall facts and other information they have previously learned. When you ask students to tell, list, define, and label, you are eliciting this kind of thinking. *Example:* List China's most important exports.

Comprehension: The next level asks students to show their understanding of what they have learned. Directing students to explain, summarize, retell, or describe encourages them to think at the comprehension level. *Example:* Explain the reasons the Great Wall of China was built.

Application: The application level of thinking asks students to do something with what they have learned. When students demonstrate, construct, record, or use their knowledge, they are thinking at the application level. *Example:* Organize a time line of the Ming Dynasty.

Analysis: When you ask students to take apart an idea and examine it critically, you are expecting analytical thinking. Activities like comparing and contrasting, classifying, critiquing, and categorizing call for analysis. *Example:* Compare and contrast the judicial systems of China and the United States.

Evaluation: Evaluation means determining the value or worth of something based on a set of criteria. Evaluation is usually preceded by analysis; in order to evaluate or judge something, students must look closely at (analyze) its characteristics or elements. When students judge, predict, verify, assess, or justify, they are thinking at the evaluation level of challenge. *Example:* Who do you think was the most influential figure in early Chinese history? Defend your choice.

Synthesis: Synthesis means putting things together in a new or different way, that is, inventing or reinventing, not simply reformatting. Synthesis requires creative thinking. Use care in distinguishing between application and synthesis. For example, an illustration involves *application* if the student simply uses or demonstrates factual knowledge, such as in a time line of historical events. Putting information into a new format (for example, from a textbook paragraph to a chart) is not synthesis since it does not require original thinking. An illustration involves *synthesis* if it demands original thinking. Asking students to compose, hypothesize, design, and formulate encourages this challenging kind of thinking. *Example:* Compose a letter to the editor of a Chinese newspaper suggesting possible ways to resolve the conflict between the government and the people on personal rights and freedom.

Using Bloom's Taxonomy to Differentiate Instruction

In differentiating instruction, a critical step is to ask, "How challenging is this learning activity?" To help you answer this question, Figure 7 (page 69) provides quick definitions of each of Bloom's levels, as well as verbs that you can use to develop and categorize activities at each level.

*Based on *Taxonomy of Educational Objectives: Book 1 Cognitive Domain* by Benjamin S. Bloom, et al. (New York: Longman, 1984). Described in Resources, page 18.

FIGURE 7

Challenge Levels

Level	Definition	Action	Activities
Synthesis	Put together in a new or different way	Create It	compose, hypothesize, design, formulate, create, invent, develop, refine, produce, transform
Evaluation	Determine worth or value based on criteria	Judge It	judge, predict, verify, assess, justify, rate, prioritize, determine, select, decide, value, choose, forecast, estimate
Analysis	Examine critically	Examine It	compare, contrast, classify, critique, categorize, solve, deduce, examine, differentiate, appraise, distinguish, experiment, question, investigate, categorize, infer
Application	Use what you have learned	Use It	demonstrate, construct, record, use, diagram, revise, record, reformat, illustrate, interpret, dramatize, practice, organize, translate, manipulate, convert, adapt, research, calculate, operate, model, order, display, implement, sequence, integrate, incorporate
Comprehension	Show your understanding	Understand It	locate, explain, summarize, identify, describe, report, discuss, locate, review, paraphrase, restate, retell, show, outline, rewrite
Knowledge	Recall facts and information	Know It	tell, list, define, label, recite, memorize, repeat, find, name, record, fill in, recall, relate

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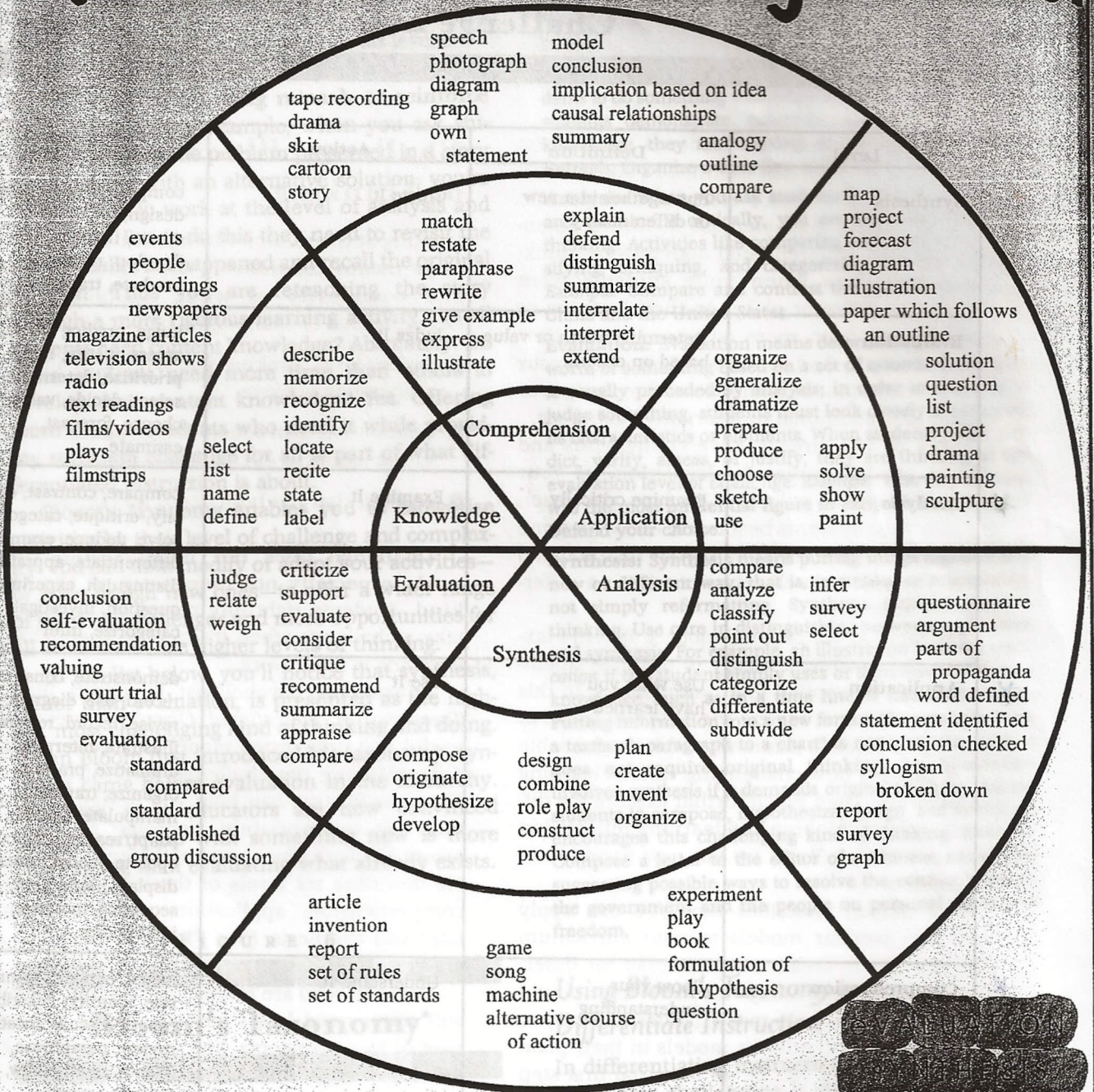
Bloom's Taxonomy
Question & Task Design Wheel

Knowledge
select, list, name, define, describe, memorize, recognize, identify, locate, recite, state, label

events, people, recordings, newspapers, magazine articles, television shows, radio, text readings, films/videos, plays, filmstrips

Comprehension
match, restate, paraphrase, rewrite, give example, express, illustrate

speech, photograph, diagram, graph, own, statement, tape recording, drama, skit, cartoon, story

explain, defend, distinguish, summarize, interrelate, interpret, extend

model, conclusion, implication based on idea, causal relationships, summary, analogy, outline, compare

Application
apply, solve, show, paint, organize, generalize, dramatize, prepare, produce, choose, sketch, use

map, project, forecast, diagram, illustration, paper which follows an outline, solution, question, list, project, drama, painting, sculpture

Analysis
compare, analyze, classify, point out, distinguish, categorize, differentiate, subdivide, infer, survey, select

questionnaire, argument, parts of propaganda, word defined, statement identified, conclusion checked, syllogism, broken down, report, survey, graph

Synthesis
compose, originate, hypothesize, develop, design, combine, role play, construct, produce, plan, create, invent, organize

article, invention, report, set of rules, set of standards, game, song, machine, alternative course of action, experiment, play, book, formulation of hypothesis, question

Evaluation
judge, relate, weigh, criticize, support, evaluate, consider, critique, recommend, summarize, appraise, compare

conclusion, self-evaluation, recommendation, valuing, court trial, survey, evaluation, standard, compared, standard, established, group discussion

Analyze your district standards and outcomes. To promote student thinking at the same level as the indicators, use the appropriate levels of Bloom's Taxonomy to design questions and tasks for your students to complete.

EVALUATION
SYNTHESIS
ANALYSIS
APPLICATION
COMPREHENSION
KNOWLEDGE