Chapter 12
Inclusive Academic Instruction, Part II
Multilevel and Differentiated Learning Activities

CHAPTER GOAL

Understand need for improving instruction for all learners and a process for multilevel differentiated instruction planning.

CHAPTER OBJECTIVES

1. Understand strategies and tools for designing multilevel learning activities.
2. Know how to access and use multilevel learning materials that allow students to obtain information at their personal challenge level.
3. Utilize numerous strategies to support student learning including scaffolding and multiple intelligences.
4. Be able to design individualized differentiation for specific students.

Two Social Studies Classes: *One for Sleeping; the Other for Learning*

Let's visit two high schools to see how their efforts toward whole schooling are going. In a history class at Garland Heights High School, we watch twenty-eight students laughing and jostling; yet three others are asleep. Belinda, the teacher is reviewing a lesson about Vietnam for an exam. She has given a handout of facts she expects the students to know taken from the information required for the high school graduation test. She reads each question from the handout and has a student read the answer. "Any questions?" she asks after each one. Only about a third of the class is paying attention. "Frank! Turn around," she says as one student playfully smacks another on the leg. The special education teacher goes around to the eight students with disabilities in the class. The students obviously like her. "These students are having a hard time," she comments. "Jamal has low reading abilities," she says about a student whose head is down on his desk. Finally, Belinda passes out a fifty-item multiple-choice test. We hear groans and yawns and shuffling of feet as students start to work.

Next day, in a social studies class at Highlander High School, we find students all over the room in small groups. Ayo, the general education teacher, and Marla, the special education teacher, go

from group to group answering questions, talking, challenging, offering suggestions. Students occasionally laugh but are very intent on their work. They explain that the class is role-playing the passage of the Indian Removal Bill that led to the forced march of the Cherokee Indians from Georgia to territory in what later became Oklahoma. Each group represents a different constituency – the Cherokee Indians, the U.S. government under President Andrew Jackson, plantation owners and farmers, missionaries and northern reformers, and Black Seminoles. Each group is studying its own position, preparing a presentation for Congress, and trying to gain allies. The students are engaged, discussing very complex ideas (adapted from Bigelow, 1995).

After a while we locate students with disabilities in the class. Rihana, who has cerebral palsy and a mild cognitive disability, is with the Cherokee Indians group. She does not read well and uses a computer with key guards to type. Rihana is helping the group understand the rejection felt by the Cherokees based on her experiences with her disability. Juan, a bilingual student with learning disabilities, is part of the plantation owners group. He is a good artist and is making posters that document his group's perspective. Jonathan, a student with a severe cognitive disability, is part of the missionaries group. He has difficulty communicating more than a yes or no. As the group discusses strategies, they periodically turn to Jonathan and ask questions about what he thinks. Ayo explains, "It's interesting watching students with Jonathan. As they synthesize information to ask him yes and no questions, you can see that they are getting a clearer understanding of the material. Having Jonathan here is strengthening the learning of all the students in ways I didn't anticipate".

Back Pack
Universal Design for Learning and Project-based Learning

The Access Center is a program funded by the U.S. Department of Education whose mission is to provide technical assistance that strengthens State and local capacity to help students with disabilities effectively learn in the general education curriculum. Their website is filled with useful resources related to universal design for learning, multilevel learning and differentiated instruction. www.k8accesscenter.org/index.php

Edutopia Initiative of the George Lukas Foundation that provides information and much quality video regarding innovative teaching techniques including inquiry and problem-based learning. www.edutopia.org

Project-based Learning Online. A great resource that walks you through the process of designing project-based learning with many videos of classes in action. www.bie.org/index.php/site/PBL/pbl_online/

Whole Schooling Instructional Strategies

If we are to be successful with students we need to use approaches to instruction that (1) engage students in learning they feel is meaningful and interesting; (2) provide students a feeling of success and efficacy; and (3) support students in growing and learning starting with where they are now and helping them to move along to the next step. If all three of these criteria are not met students will simply not achieve and grow. Let's look at the three major approaches to instruction and explore how one, workshop learning, helps us fulfill these important criteria.

Introduction to Workshop Learning

In this chapter, we provide strategies for workshop learning and in Chapter 13 we'll see how workshop learning looks in school subjects. We'll start with an overview and then go into more depth.

As discussed in Chapter 11, we first *identify the topic and learning goals*. Sometimes, particularly if we are organizing workshop around a skill-based subject such as reading, writing, or math, we select the topics while allowing for some student input. However, in inquiry or problem-based learning, we help students select their own topic or question to pursue. We may also use authentic themes to link a variety of skill-based subjects as we explored in Chapter 11.

Workshop time begins with an introduction to the lesson or an activity to get the students interested. Once the learning process is underway, we will start each lesson with a short *mini-lesson* (usually 10-15 minutes) that provides key information, teaches skills, and engages students in discussion.

In all forms of workshop learning, students work individually, in pairs, and in small groups. This constant interplay of individual, paired, and small group work allows students to function as a learning community (see Chapter 9).

We then get students involved in the *learning process*. This involves the key way we will have students learning information, developing skills, and creating products that demonstrate their learning. In workshop learning the focus is on creating a product. All learning leads to and is organized around creating the final product—a poem, a story, a reflection, a report, an artistic rendition of an event, a play. The type of product depends on the field of study and the student's ability level. It's why we call this approach 'workshop'. Students are working, as in a home workshop, on an active project. For example, in one class students locate information on the Internet and create a

PowerPoint presentation on Penguins as part of nonfiction reading. At the same time others write in their journals about facts they have found, read books on their research subject and discuss their findings in groups. They are all reading non-fiction but in different ways.

As students are involved in the learning process they gather information and *draft* their product. Students *seek input and feedback to revise their drafts* in *peer conferences*. They meet with peers at an "editors' table" to review drafts and work with partners to revise their work.

During the class, teachers have several responsibilities. We move from student to student and group to group monitoring student work, answering questions, and providing needed assistance. We conduct *student conferences* to provide one on one assistance. We also conduct *mini-lessons* with small groups who need to work on similar skills. Now and then, of course, we to stop and address the whole group to clarify an issue or do a brief mini-lesson related to a topic about which many students are having difficulty.

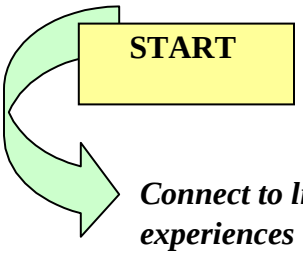
As student work is completed, we facilitate students *publishing* their products and *sharing and celebrating* their work by presenting to other students or to parents and community members via *student-led conferences* or learning fairs.
In workshop learning, all students are working on similar projects but can pursue their work at their own level of ability with support from the teacher, one another, and specialists, such as speech therapists, special education teachers or gifted consultants. In studying erosion of the soil, for example, some students make simple drawings of rain washing away soil. Others engage in complex mathematical analysis and present charts of erosion under differing conditions. If students need intensive support, this is easily incorporated into the workshop process.

Workshop-based learning exists in several variations. We may have *workshops for typical school subjects* such as reading, writing, math, and science. In these, the focus of the workshop is on skills or content associated with that subject as well as content linked around an authentic theme.

Inquiry and problem-based learning are two related approaches for thematic learning in which students in develop questions, seek answers to those questions, and develop products that demonstrate learning using the inquiry and authoring cycle shown in the figure below. This approach is particularly useful in authentic, thematic units that link several subjects. Inquiry and problem-based learning could involve the total class in the same inquiry. Alternatively, small groups or individuals may select different inquiry topics. We can also have students select different inquiry topics around an overall

theme. For example, students in Chapter 11 were involved in a class around the theme of "going to extremes". Some groups explored people going deep underwater, others, experiences in the Artic and Antarctic, and yet others outer space travel to the moon (Short, Harse, and Burke, 1996).

Inquiry And Authoring Cycle
Adapted from Short, Harste, and Burke (1996)



Connect to life experiences

Develop *questions* for inquiry & plan approach

Gather information, artifacts, engage in research, reflect

Draft product of inquiry – report, story, presentation, play

Explore meaning with others and gain new perspectives

Revise the content and self-edit for conventions

Others help edit for publication

Share, publish, celebrate.

Plan new inquiries

Build skills for inquiry

Expeditionary learning involves students in community activities organized around themes. An elementary school class, for example, focused on transportation and space exploration; activities included a demonstration of a hot-air balloon, a helicopter landing at the school, and a visit to an air show. In LaCrosse, Wisconsin, a school district developed a School on the River program in which students learn how to canoe, fish, and sample the ecosystem of the Mississippi River (Pitsch, 1994).

In a ***micro-society*** schools, teachers and students operate a miniature civilization that includes a legislature, courts, banks, post office, newspaper, businesses, and an internal revenue service. In the morning students typically attend subject classes which are taught with a focus on real-world applications. For example, in the English class the emphasis may be on writing and publishing; in mathematics, on personal and social economics; in social studies, on government. In the afternoon students go to their "jobs" in student-run businesses, government agencies, and newspapers. A miniature marketplace, currency, and legal system are utilized. Students have jobs they can accomplish at their level of learning (Sommerfield, 1992).

Community-based learning involves students in learning in the community. Such experiences may be associated with specific classes. For example, in one high school, students obtained English credit working at the local newspaper, a nonprofit organization newsletter, and a local book publishing company. *Cooperative work study* is a form of community-based learning in which students go to classes a half-day and then work in the community for a half day, obtaining school credit. Many schools require that students provide service in the community as part of their high school requirements. Such *service learning* experiences may include assisting in hospitals, museums, community agencies, schools, and other settings via internships and mentorships (Peterson, LeRoy, Field, & Wood, 1992; Richardson, 1994).

We will want to use a systematic process to link our learning activities related to a theme across disciplinary subjects that we teach. The figure below uses an adaptation of the multiple intelligences grid to link learning activities and multiple subjects.

Multilevel Learning Activities

Workshop learning activities facilitate students with substantial ability differences learning together. These can be broken into three broad categories:

1. ***Multilevel learning activities*** where learning goals, materials, and the nature of the learning activity allow students to naturally function at their 'just right' level.
2. ***Tiered lessons*** in which teachers design lessons with materials and assign activities at several levels of sophistication and complexity.
3. ***Individualized differentiation and curriculum adaptations*** that adapt or modify a lesson for an individual student.

Learning Activities and Subjects Matrix

Learning Activities	**Subjects**			
	Language Arts	**History**	**Math**	**Art**
Read the Bill of Rights as a group.	X	X		
Play regarding civil rights.				
Personal reflections: writing, tape, etc. Some students do individually, some in cooperative group based on choice.	X			X
Song or drawing to illustrate one of the rights. Present to the class.		X		X
Observe and take notes in a location in the community. Present conclusions. Group or individual.	X		X	x
Interview a lawyer or civil rights leader about one of the rights. Develop written report, video, etc.	X			x
Conduct study regarding rights violations in a community – legal costs, economics, #'s of complaints lost and won.	X	X	X	
Write a short story, play, or poem regarding reflections on the importance of one of the rights.	X	X		X

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Song or drawing to illustrate one of the rights. Present to the class.		X		X
Observe and take notes in a location in the community. Present conclusions. Group or individual.	X		X	x
Interview a lawyer or civil rights leader about one of the rights. Develop written report, video, etc.	X			x
Conduct study regarding rights violations in a community – legal costs, economics, #'s of complaints lost and won.	X	X	X	
Write a short story, play, or poem regarding reflections on the importance of one of the rights.	X	X		X

Multilevel learning activities allow students naturally to operate at their own level of challenge without requiring the teacher to create lessons at different levels. Typically such learning activities are based on open-ended assignments that aim at higher levels of Bloom's taxonomy. Multilevel learning activities involve both individual and cooperative group tasks in which students explore important and complex questions. Students draw from strengths of others in the group and teachers pay attention to the structure and interactions of the group (Cohen et al., Spring, 1999).

In Chapter 11 Sydney's moose project was a nice example of a multilevel lesson that involved aspects of both individual and small group work. If you'll remember, students were required to select a plant or animal about which they wanted to learn. They were to gather information and create a way to present what they had learned to the rest of the class. Students could do a good job on this project at very different levels of sophistication. You saw a bit of Sydney's work. These teachers also had several students who were considered gifted. One of these students, Marsha, produced a

complex PowerPoint presentation. She got so interested in various species of birds that she also made a chart showing the locations around the world in which they lived and how the environment had spurred the birds to develop different adaptations. Sydney did a good job on her project and got an A. So did Marsha. Yet their learning products were at extremely different levels of complexity and sophistication. That's the wonder of good multilevel instruction. It allows all students to be challenged but does not require extra work of the teacher.

Multilevel learning activities can occur in various formats. Let's look at some of these.

Skill Learning Via Authentic, Applied Activities Teaching skills such as reading, writing, and math are taught via inclusive, multilevel learning activities when students are involved in using the skills for a genuine purpose focusing on skills and using learning materials at their own level of ability.

For example, in ***reading workshop***, students read 'just right' books and other written materials at their own challenge level. Some students may be reading complex chapter or non-fiction books on a theme the class is exploring. Other students may be reading picture books.

In ***writing workshop***, students write for real audiences at their own level. Some students wrote poetry and fiction pieces working on using sophisticated metaphors. Other students told a simple story using pictures cut out from magazines and picture figures.

In ***math workshop*** students engage in applied activities using math. One class, for example, had groups of students develop and operate a business (either for real or in simulation). This allowed students to have varied roles and to use math skills in operating the business at their level of ability. As students in reading and writing workshop worked on skills and concepts at their own ability level, so students in math workshop worked on skills ranging from basic addition and subtraction to using complex statistics and algebra. We'll explore applications of inclusive multilevel activities and workshop learning in typical subjects more in Chapter 13.

Open-Ended Individual Projects Open-ended individual projects allow students to gather information and produce products at varied levels of sophistication. While projects may be individual projects, other students will also be involved. Other students review drafts. We have students share with one another their progress and learning in pairs or small groups. In 'individual study' in a workshop class we will see students reading, obtaining information from the internet, asking others students about

something they don't understand, having students review their drafts in the editors chair. In addition, student pairs and small groups can implement most open-ended individual projects.

Here are a few examples:

- Students gather information about different states or countries including their capital, economy, geography, and significant historical events.
- Students explore the concept of 'love and hate' as a theme linking several subjects over a semester. They are expected to find examples of various types of love and hate and how these have been expressed in the lives of people.
- Students compare and contrast three approaches to the economy: capitalism, communism, and fascism.

Independent Inquiry and Problem-based Learning If part of our goal as teachers is to create lifelong learners, then we need to structure part of our class where we encourage students to explore topics in which they are interested. We can work with them to identify areas to explore and the type of product they will produce. We can help link independent studies to required curriculum guidelines. Students may then do their own work and research on a project, with the guidance and support of peers and specialists such as special education teachers or gifted consultants. Students will develop a product to share with classmates. For example, in a unit on ocean life, a student says he wants to learn more about whales. We help the student develop inquiry questions and guide them in collecting information. They may develop a presentation to the class using a poster or PowerPoint. When we use independent studies we want to assure that students are engaged in 'just right' work at their own level of challenge to ensure high standards. We will help students develop a schedule for their project to help them stay on track and prevent procrastination. Having students use journals and logs to document their progress can be helpful.

Learning contracts Learning contracts are similar. However, instead of supporting students in selecting their own topics, in learning contracts the teacher specifies the necessary skills or knowledge to be learned and expectations for the lesson. However, we allow the student to decide how she will complete the lesson. This allows us to have control over student learning while allowing students to make choices based on their own learning styles and preferences. We also are teaching students how to plan and work more independently. For example, a student completes a learning contract for a social studies project. We want students to explore an important event during the period in which the United States gained independence. He is interested in how Indians were treated during this time. He indicates that he will read information on this, create

a poster explaining his findings, and write a report. We also ask the student to identify dates at which he will complete various aspects of the project. The contract is written out and signed by both teacher and the student.

Learning Centers are a way to manage interesting and complex learning experiences for individuals and small groups. We can create different activities on the same topic through which students rotate or we can create centers with different topics. We can also use multiple intelligences to focus the learning of one topic in eight interesting ways. This allows students to use their strengths to learn specific content. Centers are motivating to students when they involve interesting work and an element of choice. Centers can also be used as enrichment where students study topics beyond the general curriculum.

We should have centers that allow for different levels of complexity. Centers may allow students to engage at differing levels of ability with materials of different complexity. For example, a center on poetry might have a range of poems which students can read along with tape recorded poems and some poems on a computer program accompanied by graphics. In addition, we can create some centers that are more complex and some that are simpler. We would expect students to select 'just right' centers for themselves.

Authentic Homework In workshop learning, homework is not used for rote practice of skills. When students are required to do homework that is filling out a worksheet or practicing math facts it makes very little difference in student learning. However, when the learning is real and connected to what they are doing in school it can greatly improve what students get out of the context. Homework should have real life applications, receive immediate feedback, and involve the family in learning together.

For example, a 6th grade social studies teacher was exploring heroes and explorers important in history. She assigned a multi-week homework projects in which students were to interview a person about that person's hero and to share the information with someone else, not the person they interviewed, before they presented the project in class. I got a note back from the person with whom they shared. "One student", she explained,

> did a puppet show; another produced a video. One boy interviewed his older brother. His older brother's hero was Jackie Robinson so he found Jackie Robinson's baby picture and his brother's baby picture and made a poster. Another student made a poster on which were these words: 'leader, teacher, better person, and friend.' Each of the words represented a core theme from an interview with the student's mother. He had two pages of handwritten

materials, an amazing amount of writing for this student! I was very proud of him.

Homework moves from being an onerous chore to be avoided to engaging work that deepens understanding of key concepts and provides an opportunity for the student and family to connect.

Open-Ended Group Projects Open-ended group projects involve a group of students in study or development of a product (such as a play, poster, song, etc.) in which students can take varied roles, allowing differing levels of skill and ability. For example, one elementary class collaborated to investigate how their town looked and operated a century earlier. They then built a model of the town.

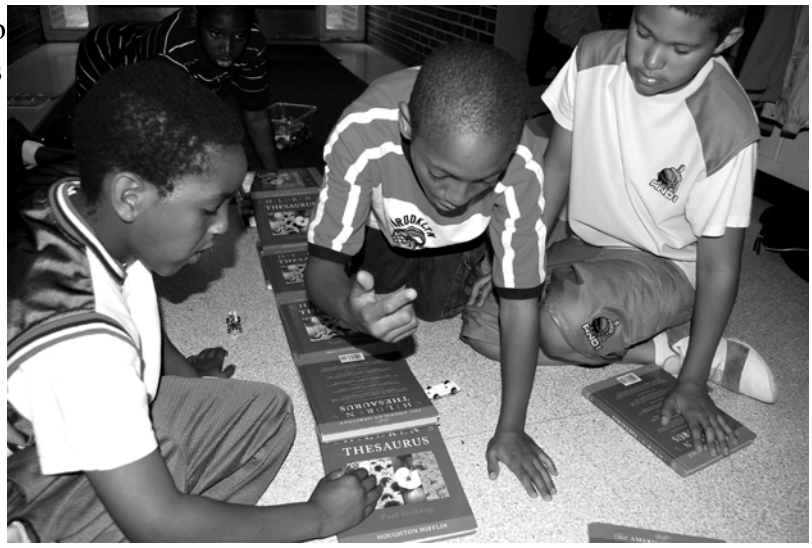
In group projects we ask questions that prompt students to think about where they might find information. We can design guides for conducting interviews and practice interviewing in class, give information on using particular resource tools, and bring materials and people into the class. We establish supports at the level of the student. For example, a student who has difficulty reading and writing is planning to gather information through interviews and collect artifacts from local people. Perhaps the student and a buddy can work together, one of them asking questions and the other writing down the answers. We can help them work out mutual responsibilities.

Here are a few examples of possibilities:

- In a unit about the Civil War, students choose to work in groups on one of four topics: free labor and slave labor, developing a profile of key leaders in the North and South, the emergence of the Ku Klux Klan and lynchings, and impact on the economy.
- Students collect and analyze information regarding weather patterns in different parts of the world and develop and confirm hypotheses regarding causes of these patterns.

Process drama is a very powerful group learning strategy that uses theater to engage students and teachers in living through experiences that engage emotions, mind, and body. This strategy is both a way of presenting information and engaging students in a powerful learning activity. Using this process, teachers engage students in a play of historical events taking different roles in the event, stopping periodically to reflect on what people may be feeling as the event unfolds. In these dramatic sessions teachers' problems with students virtually disappear. Many students who have trouble with writing and reading shine in dramatic learning (Rohd, 1998). Some students use these

experiences as a springboard to develop their own play. Others write a stories from the perspective of a character and read it to the class or draw pictures of the event (Douglas, 1997; Manley & O'Neill, 1997).



5th graders experiment with how different angles and loads affect the speed at which a small car goes down a student built ramp of books

Teacher-designed Leveled Lessons

In addition to multilevel lessons that naturally allow students to engage at multiple levels of ability, we can also design lessons where we create assignments with different directions and learning materials at different levels of ability. For sure this requires additional work on our part but is not as difficult as we might think at first. As we develop lessons, we can use them from year to year so that, over time, using leveled lessons becomes very manageable.

Tiered Assignments and Products The key strategy – tiered assignments – involves keeping the overall learning goals and content of learning the same but creating assignments with different levels of complexity for each of the levels of learning goals we discussed in Chapter 11. We can adjust the level of complexity of learning materials, break information into smaller steps, the number and complexity of expected student responses, the degree of abstractness versus concreteness, and the amount of support we may provide a student.

Tiered assignments may have three choices, each with a different level that can be assigned to a student. The best tiered lessons are all very interesting activities, but while children in multilevel tasks would be doing very similar work at different levels, tiered assignments are often very different in nature. The topic is the same, but what the children are doing can be very different. This is managed in several ways. Teachers create dice to roll with a different activity on each side. There are then different dice for different levels. A choice chart allows children to choose from different modalities to express their learning, and there would then be a different choice chart for each level. At this stage, great care must be taken so that we do not recreate ability grouping within the classroom, simply by grouping all the children who are similar in activity or level.

For example, as in Sydney's lesson, students were expected to identify and study a plant or animal. Another teacher did a similar lesson where she specified expectations at differing levels rather than providing overall criteria that students could do at each of their own levels. For the most basic students, she expected them to identify by name the plant or animal and provide a picture with them in their habitat the parts of which they could label. They were also expected to know the sound the animal made. Other students were expected to have this same information but also to write a 2 page report with pictures discussing how the animal functioned in their environment. Other, more sophisticated students were expected to do all this but also to gather statistical data on the population and movement over time of their animal and create a graphic using Excel, a spreadsheet. The teacher created modified rubrics for each level of project all using similar criteria.

Curriculum Compacting Curriculum compacting involves allowing students to move on to other curriculum topics if they already know what we are about to teach. To use curriculum compacting, we first assess the student to determine level of knowledge on the material to be studied and determine what skills or knowledge the student yet needs to master. If we decide that the student knows the materials, we develop alternate plans in enriched or accelerated study. For example, a third grade class is learning to identify parts of fractions. Two students already know this. We give these students an assignment of learning how to add and subtract fractions. As with other students, we establish a way students can demonstrate and share what they have learned. We will want to have conversations with students engaged in curriculum compacting regarding what we want them to do and how this may be beneficial to them. Providing options related to the interests of students can be helpful.

Tiered Games for Practice and Review An engaging way to learn information or practice skills is to participate in tiered games. Games involve the use of a skill and provide fun ways to practice a skill which have the same function as traditional worksheets but are much more engaging and motivating for students. To be effective games should allow for students of differing abilities to play together. If the higher functioning student is always winning, then the other students will be frustrated and shut down. Learning will not occur. There are several ways to think about games to make them multilevel. One way is to have the children create a set of handmade game-boards. Then, the students can play on the same game-board, but be using the skills that they need to practice. They can be practicing different math skills or using different sets of fact cards. Often the students create their own cards on different topics. However, they are having fun and learning together at different levels. Also, many traditional children's outdoor games can be structured so that there is an element of learning involved. In this case, most children can be involved at some level in the outdoor play

while learning the information. Another way to make the learning multilevel is to teach the children many games in the course of the class-time, then when the children are partnered up they can decide what game they want to play that practices a skill they both want to work on. The key is to provide elements of choice and the ability for any student to win, no matter the learning level. Here are some examples:

One game involves ***differentiated fact cards***. There is a stack of cards from which to draw in the center of the board with animals from varied habitats that students have been studying. Each student has a different section of cards spread out to look at for the match to that fact card. These cards are at different levels, but there is one in each level that connects to the same animal. The most basic has a picture of the animal and a picture of the habitat. The next level has a picture of the animal and facts about what it eats, where it lives, and what hunts it. The last level has very detailed facts. Students can learn at their own level, but yet they interact on the same game-board and they are hearing facts from all levels as the players read their matches out loud.

A second example would be a ***bingo game that is played as review at the end of a unit***. As the unit progresses, a word wall is developed about the subject. To review, they each select words that they have learned. This is where different levels are accommodated, as there are a range of words available. Then, instead of stating the word, the teacher reads a definition and the child matches the word. This is a fairly basic game that is intentionally leveled, and yet maintains that level of choice that children need.

A third example involves a basic game of tag that is altered to learn the food web process. One child is chosen as the predator. As the class forms a circle to discuss the game, the children list animals that are the prey of the chosen predator. Each child chooses one prey to be. They start at one end of the area, and the goals is to get to the other end without being tagged. The predator says he is hungry for some antelopes and all the children who chose antelopes run across the path. If they get tagged, they become another predator. When all children have had a chance to run, another predator is chosen. Between rounds, the teacher gathers them into a circle and talks about what happens when there is plenty of prey. All the predators are healthy and multiply. Following rounds, they discuss what happens when there is limited prey, the predators die out, or what happens when a specific prey is eaten too much of. The game is used to teach the concepts while involving children in active play together.

Multiple Intelligences: ***A Tool for Inclusive Workshop-based Learning***

Multiple intelligences is a useful tool in designing inclusive workshop lessons. Howard Gardner (1993) developed the idea of multiple intelligences in response to his dissatisfaction with typical intelligence tests. He posited that there are eight forms of

human intelligence, or ways of being smart. The figure below provides a simple description of these intelligences and sample teaching techniques. As we focus on the ways students *think*, what they *love*, and what they *need,* we dramatically improve learning.

For example, students who have strong spatial intelligence think in images and pictures; love designing, drawing, visualizing, and doodling; and *need* art, movies, imagination games, mazes, illustrated books, and trips to art museums. Students with high levels of kinesthetic intelligence think through bodily sensations; love dancing, running, jumping, building, and touching; and *need* role play, drama, movement, construction projects, sports, and hands-on learning. If students truly do *need* these types of activities, if they do not have them they will learn less, be less motivated, and often create problems (Armstrong, 1994).

If we take seriously the argument that students with various intelligences *need* particular experiences, then we must pay attention to this need. For example, allowing students to stand or lie on the floor while reading is a good start, but we could do more. Acting out parts of the text, having students represent concepts through art or illustrations, creating quick "body figures" that portray a key emotion or idea stretch the whole community's thinking and our comfort levels so that we have to learn along with our students (Armstrong, 1994).

There is often a mismatch between the multiple intelligences of students and typical instruction in schools. Teachers have estimated that 75 to 90 percent of the learning in schools relies heavily on linguistic and logical–mathematical intelligences. However, a minority of students excel in these intelligences. An estimated 60 percent of children in schools have high abilities in visual–spatial intelligence, in part because of the increasing prevalence of media. As children spend more time watching TV, playing video games, and surfing the Internet, this percentage continues to rise. Approximately 33 percent express their learning through music, while around 17 percent are strongly bodily–kinesthetic and another 17 percent are interpersonal (Gardner, 1993; Jensen, 1998).

MULTIPLE INTELLIGENCES

DESCRIPTION OF INTELLIGENCES	THINKS . . . LOVES . . . NEEDS . .	TEACHING MENU (A FEW IDEAS)
1. ***Linguistic:*** The capacity to use language to express ourselves and to understand other people. Examples: poet, writer, orator, lawyer, teacher.	Thinks in words. . . . Loves reading, writing, telling stories, playing word games. . . . Needs books, tapes, writing tools, paper, diaries, dialogue.	Use storytelling to explain. . . . Conduct a debate on. . . . Write a poem, legend, short play, or news article about. . . . Conduct an interview about. . . .
2. ***Logical–mathematical:*** Ability to use numbers effectively and to reason well logically. Examples: mathematician, accountant, computer programmer, scientist.	Thinks by reasoning. . . . Loves experimenting, questioning, figuring out logical puzzles. . . . Needs things to explore and think about, science materials, manipulatives.	Translate a . . . into a math formula. Design and conduct an experiment on. . . . Make up syllogisms to explain. . . . Describe patterns of symmetry in. . . .
3. ***Spatial:*** Competence to represent the spatial world internally in our mind and to use materials to impact the environment. Examples: hunter, scout, artist, architect, inventor.	Thinks in images and pictures. . . . Loves designing, drawing, visualizing, doodling. . . . Needs art, video, movies, imagination games, mazes, illustrated books, trips to art museums.	Chart, map, or graph. . . . Create a slide show, video, or photo album of. . . . Create a piece of art that illustrates. . . . Draw, paint, sketch or sculpt. . . .
4. ***Bodily–kinesthetic:*** Expertise in using our whole body to express ideas and feelings and ability to use our body to make or change things. Examples: actor, athlete, sculptor, mechanic, surgeon.	Thinks through bodily sensations. . . . Loves dancing, running, jumping, building, touching. . . . Needs role play, drama, movement, construction, activities, sports, hands-on learning.	Create a sequence of movements to explain. . . . Build or construct. . . . Plan and attend a field trip to. . . . Bring hands-on materials to demonstrate. . . .
5. ***Musical:*** Ability to think in music; to hear patterns, recognize them, remember them, manipulate them. Examples: singer, songwriter, composer, music critic.	Thinks via rhythms and melodies. . . . Loves singing, whistling, humming, tapping feet. . . . Needs sing-along time, music playing, musical instruments, music.	Give a presentation on . . . with musical accompaniment. Sing a rap or song that explains. . . . Explain how the music of a song is similar to. . . . Make an instrument and use it to demonstrate. . . .
6. ***Interpersonal:*** Ability to understand thoughts, feelings, motivations of other people and to interact well with them. Examples: politician, salesperson.	Thinks by talking with other people. . . . Loves leading, organizing, talking, mediating, partying. . . . Needs friends, group games, social events, mentors.	Conduct a meeting to address. . . . Participate in a service project to. . . . Teach someone about. . . . Practice giving and receiving feedback on. . . .

DESCRIPTION OF INTELLIGENCES	THINKS . . . LOVES . . . NEEDS . .	TEACHING MENU (A FEW IDEAS)
7. ***Intrapersonal:*** Understanding of ourself—of our feelings, and reactions to others—and ability to act on that understanding. Awareness of inner moods, capacities for self-discipline and deep reflection. Examples: philosopher, poet, counselor.	Thinks by reflecting deeply inside self. . . . Loves setting goals, meditating, dreaming, being quiet. . . . Needs secret places, time alone, self-paced projects, choices.	Describe qualities you have that will help you. . . . Develop a plan to. . . . Describe a personal value about. . . . Write a journal entry on. . . . Assess your own work in. . . .
8. ***Naturalist:*** High sensitivity and responsiveness to living beings (plants, animals), the natural world, and the environment. Examples: "street smart" student, hunter, farmer, botanist.	Thinks by interacting with nature and the environment. . . . Loves camping, moving around the community, organizing the environment. . . . Needs time in nature or the community, organizing events.	Create observation notebooks of. . . . Describe changes in the local community. . . . Care for pets, wildlife, gardens, or parks in. . . . Draw or photograph natural objects or the community.

Source: From Multiple Intelligences in the Classroom, by Thomas Armstrong, Alexandria, VA: Association for Supervision and Curriculum Development. Copyright © 1994 ASCD. Reprinted by permission. All rights reserved.

Given this reality it is interesting to note that the number of children identified as having learning disabilities has grown rapidly. The areas in which these children have the most difficulty are language and mathematics, the two intelligences on which schools focus the most (Armstrong, 1994; Campbell & Campbell, 1999). We also know that these students often have high abilities in one or more of the other intelligences. For example, at age fourteen Brad was identified as having a learning disability and was doing poorly in school. He felt stupid. Yet at home he designed and built shelves and cabinets and had a gift for repairing the lawn mower—talents that many of his linguistically oriented classmates did not share.

Multiple intelligences theory has several important implications (Armstrong, 1994):

1. ***Each person possesses all eight intelligences.*** We must not attempt to label students based on intelligences. Although some intelligences are more developed, most people can develop all eight intelligences to a reasonable level. This means that we should structure opportunities for development of all intelligences.
2. *Although we describe the* ***intelligences*** *separately, they* ***interact with one another.*** For example, when we cook a meal, we read a recipe (drawing on linguistic intelligence), decide whether to double or halve the recipe (logical–mathematical), modify the recipe for the likes and dislikes of family members (interpersonal), and actually cook

the food (bodily–kinesthetic—and perhaps interpersonal, if we are cooking with a partner or two).

3. *There is* ***no one correct way to express any intelligence at a high level****.* For example, a student who cannot read may be an amazing storyteller or speaker. Conversely, a person may be an avid reader and writer, yet fumble when asked to communicate orally.

Understanding multiple intelligences helps us recognize and build on students' strengths. We will often be amazed at positive attributes of students. For example, when we use drama and movement to teach concepts, we will note students who excel. When we ask students to express mathematical concepts through music or art, we will have other opportunities to identify student strengths. The student's strengths can then be used to bridge the gap to the weaker areas. The Multiple Intelligence Planning Matrix below illustrates how we can think about planning instruction using multiple intelligences.

We can use multiple intelligences to identify how a student *misbehaves* in class. Often such "behavioral problems" are expressions of the student's need to use a particular intelligence that is being stifled. For example, highly spatial students often doodle instead of taking notes. Musically intelligent students may hum constantly or daydream, listening to the music and rhythms in their minds. Kinesthetically intelligent students may move constantly, leave their seats, or tap the desk. (Often these children quickly get identified as having ADD, or attention deficit disorder, when they may in actuality be demonstrating an intelligence that is not very welcome in the classroom.) These behavioral clues can help us identify strengths while giving us strong signals that we need to allow these intelligences into our classroom.

Other good indicators of student intelligences are the ways they spend their free time. What do students choose? Do they read books, draw, talk with other students, move around the room from place to place, sit in the study carrel listening to music, or roam the Internet? We can keep a journal with observations and notes about our students to identify needs, particularly with those students who pose the greatest challenges.

A final useful strategy can be a simple checklist that helps us think about students' intelligences (Armstrong, 1994). A word of caution is needed here, however. Traditional intelligence tests, which measure linguistic and logical–mathematical intelligences, have been used to identify *deficits* of students. Multiple intelligences theory, in contrast, is used to identify *strengths* of students. We must be careful about labeling students in a new way—as the "art smart kids" or the "deep thinkers," for example.
Teaching students about multiple intelligences helps them better understand their own

strengths and abilities. Ask specific questions: "How many people excel at speaking? How many love to write?" (linguistic). "How many of you love math? How many people enjoy science experiments?" (logical–mathematical). The more we incorporate the language of multiple intelligences into our daily speaking, the better students will get at understanding their strengths.

Multiple intelligences theory provides one lens to help teachers design instruction that will reach students with diverse abilities. The concept of multiple intelligences also is a natural fit with interdisciplinary instruction. That is, from one perspective the multiple intelligences correspond to many disciplines in the school—language arts, math, science, social studies. Knowing this, we can create different ways of approaching a topic. Learning in any subject area can be strengthened when students draw upon multiple intelligences. Similarly, any particular intelligence can be strengthened through the others. Areas of strength can also be used to bridge the gap to areas that are struggling. This is particularly important when we have students who are struggling in a particular arena.

Let's look at an example. We are working in a high school as part of an interdisciplinary team involving social studies, language arts, and art to help students understand their own culture and learn how to interact respectfully with people of other cultures (interpersonal intelligence). We engage students in gathering information about and reading literature of cultures (linguistic intelligence), have multicultural events at which different customs and food are represented (bodily–kinesthetic, spatial, & musical intelligences), and dramatically act out a key event in the history of an ethnic group (bodily–kinesthetic intelligence). We recommend the following steps in using a grid to plan lessons based on multiple intelligences:

1. Identify your theme and the learning goals and objectives.
2. Brainstorm ideas that will actively engage students and that will help them demonstrate what they know and understand. Don't try yet to connect these ideas with the multiple intelligences. When you have several ideas for good learning activities, write these on the planning form in the Learning Activities column.
3. Use the matrix to indicate which of the multiple intelligences is strongly used in a particular activity. Then analyze the degree to which all the intelligences are utilized and make changes as needed.
4. Finalize your plans, adding more details for how each activity will be implemented in your class or with other teachers.
5. Use your awareness of multiple intelligences to devise alternative evaluation strategies for understanding what students have learned.

Multiple Intelligences
Planning Matrix

THEME: Human and legal rights

LEARNING GOALS AND OBJECTIVES FOR UNIT

- Understand the relationship between the Bill of Rights and the human rights it is designed to protect.
- Understand and describe specific examples of legal and advocacy strategies groups use to address human rights protected by the Bill of Rights.

LEARNING ACTIVITIES	Ling	Log-Mth	Spat	BodK	Mus	Inter	Intra	Nat
Read the Bill of Rights as a group.	X					X		
Play regarding civil rights.	X		x	X		X		
Personal reflections: writing, tape,etc. Some students do individually, some in cooperative group based on choice.	X					x	X	
Song or drawing to illustrate one of the rights. Present to the class.	x		X		X	x	x	
Observe and take notes in a location in the community. Present conclusions. Group or individual.	x			x		x	x	X
Interview a lawyer or civil rights leader about one of the rights. Develop written report, video, etc.	x	x				X		
Conduct study regarding rights violations in a community – legal costs, economics, #'s of complaints lost and won.	x	X				x		x
Write a short story, play, or poem regarding reflections on the importance of one of the rights.	x		x	X	X		X	

X= Primary intelligence associated with activity. x = Secondary intelligence associated with activity.

In the example in the figure above, the teacher wanted to help students learn about the Bill of Rights. She created many good ideas for how to engage her students. As you can see, in this example the intelligences are often interactive, and both learning activities

and demonstrations involve several intelligences at once.
Multiple intelligences is strength-based; as such, it removes pressure from an area of difficulty, identifies and builds on strengths, and uses the other intelligences to "surround" a weak area. Let's look at an example that is illustrated in the figure below.

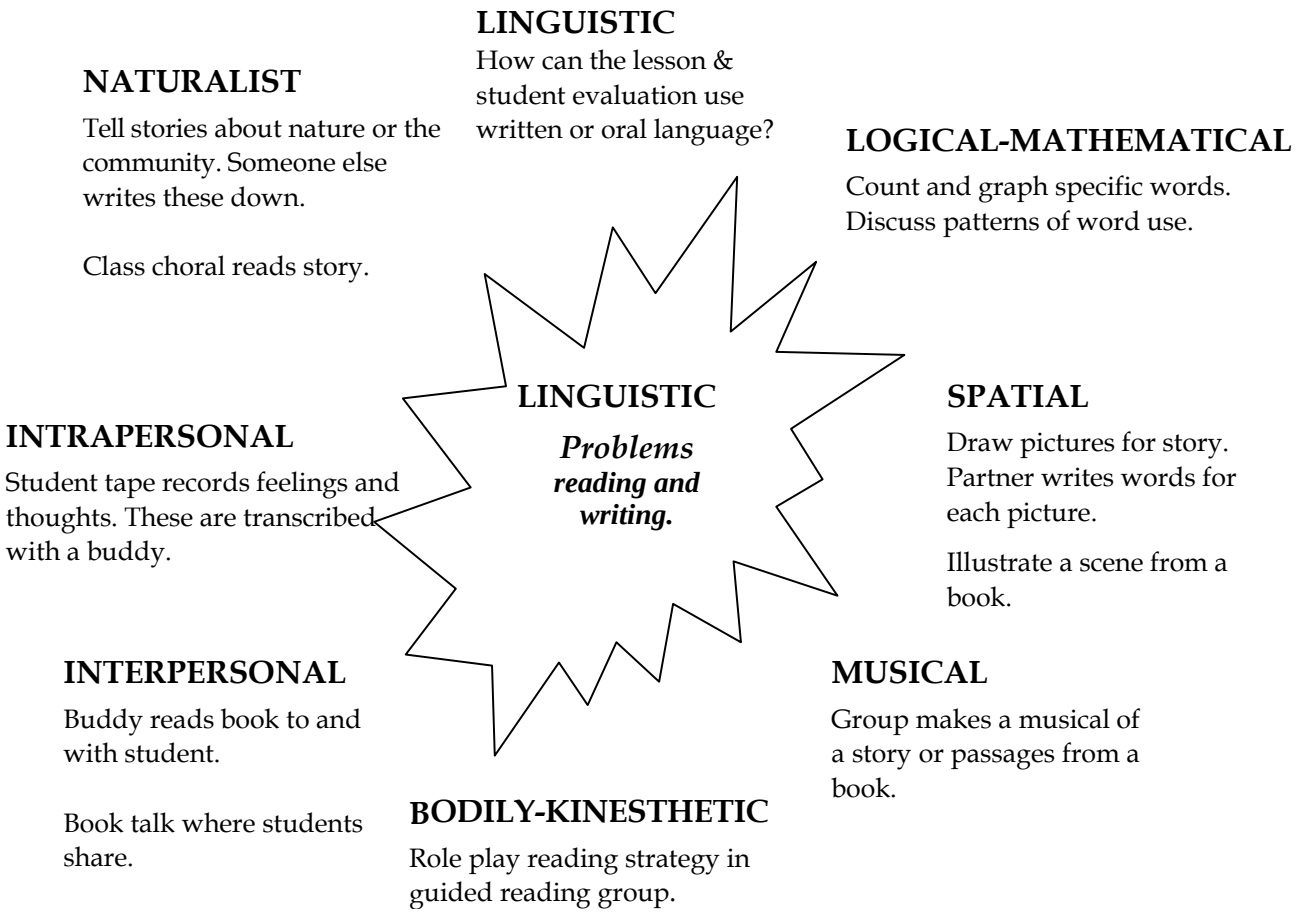
This student had a great deal of difficulty writing. He had to concentrate so much on controlling the pen or pencil that he was extremely slow. The teacher, in consultation with the student's parents, built on his strength—oral communication. She did not require him to write at all and had him read text only periodically for fun. Instead he listened to the text via text to speech software on the computer (while often following along in the book). The pressure to read and write, to struggle with areas in which he was having problems, was taken away. The student listened and participated in class assignments. Over time he gradually learned to use a computer for papers (a different form of writing production) and began reading to his infant sister. Ultimately, he began to read text that was closer to grade level; simultaneously, he was doing complex projects on the computer involving both mathematics and graphics (Smith, O., 1997). His area of strength bridged the gap to the area that was weaker.

When we talk with teachers about multiple intelligences, they often say, "But don't we want children to read?" Of course we do. However, it is counterproductive to pressure students to try harder on strategies that are not working. Recall our discussion on brain-based learning and the importance of "relaxed alertness." When we push students to perform in areas in which they feel like failures, they will not learn. In the example of the student with writing difficulties, the teacher and parents were able to work together to create a condition of relaxed alertness and to provide multiple avenues toward learning course content. The strategy worked. When we have children of differing abilities learn together, we provide them support and assistance to reach to the next level of learning—Vygotsky's (1978) "zone of proximal development." The term scaffolding is often used to refer to this kind of support, in which teachers, other adults, or more competent students help students perform tasks that are within their zone of proximal development (Ormrod, 2000). Morocco and Zorfass (1996) describe effective scaffolds as (1) multilevel, (2) inclusive, (3) promoting higher-level thinking, and (4) dynamic and evolving.

Construction crews use scaffolds to support a building while it is being constructed. Scaffolds in the classroom are similar. Teachers provide supports and assistance so that a student can perform a task or activity *just beyond* their actual level of ability. Therefore, scaffolding engages students in work at a higher level while simultaneously supporting their learning and achievement. The teacher (or other helper) can provide the support before the activity to help activate student background knowledge, during the activity

to build concept understanding, afterward to extend thinking, or a combination of all three (Graves & Graves 1994; Berk & Winsler, 1995). Scaffolding helps us avoid lowering our expectations—whether of gifted students or of students with special needs—to the point where children are not learning in our class, just occupying space (Graves & Graves, 1994).

Using Other Intelligences to Strengthen an Area of Need



What are some examples? Kathi Tarrant-Parks conducted research investigating scaffolding strategies that promote inclusion in literacy instruction. Some additional examples include the following:

- A teacher or student reads a book to a student that the student likes but could not read independently.

- As a student reads, a more competent reading buddy reads along and helps with words the student doesn't know.
- One student records in the math journal for another student who has difficulty writing.
- A teacher arranges spaced blanks for words in a sentence for a child who has difficulty writing and separating words. The child then writes each word on its blank.
- A teacher provides a pictorial guide for a student to use in conducting a student-led conference. The teacher remains available to help the student, if needed, in conducting the conference.
- New vocabulary in a reading assignment is pre-taught and then highlighted for the student, so it is easily identified.
- Students act out an emotional scene in a novel to understand concepts.
- The teacher or another student reads a student's work aloud so the student can hear which words are missing.

Morocco and Zorfass (1996) describe a project that illustrates how scaffolding and authentic learning build student strengths. In a middle school, an interdisciplinary team of teachers decided to engage in a "we-search" unit (Macrorie, 1988) organized around the theme of water ecology. The unit used an adaptation of the authoring cycle involving four phases: (1) identifying thematic questions for exploration, (2) developing a search plan, (3) gathering and integrating information, and (4) drafting, revising, and "publishing" a product.

First, teachers and students explored the topic. Teachers worked as an interdisciplinary team. Activities included viewing a video on water pollution, using a computer simulation on pollution and the environment, listening to an invited speaker from the local water commission, reading Spanish and English comic books about waterborne diseases; in addition, the teachers took one hundred students on a hike to the local river to collect and test water samples.

To ensure active involvement and learning for all, the teachers broke the students into cooperative learning groups, and each teacher (social studies, science, English, and special education) coached five to six groups, monitoring their progress. Scaffolds included worksheets to track progress as well as teacher discussions with each group regarding what they knew, what they wanted to know, and how they could obtain information. All teachers ensured that all students, including students with learning challenges, were an integral part of the project.

As the learning groups identified questions, they developed a plan to answer their questions. The teachers required each group to gather information in four ways:

reading, watching, asking, and doing. They helped the groups develop a logistical plan and made sure that the groups established responsibilities and gave each group member support for doing his or her task.

As the groups began to gather information, the teachers recognized problems in students' interactions. Some were not taking responsibility. Others were dominating the groups. They decided that the special education support teacher, who was very skilled at dealing with emotional frustrations, would work with each group and "teach them how to discuss their frustrations constructively, using 'I' statements instead of fighting" (Morocco & Zorfass, 1996, p. 173). All the teachers helped students solve problems, using one another as resources. Teachers helped students identify interview questions for speakers and develop an interview guide for telephone interviews. Robert, a student with learning disabilities, was one student who conducted phone interviews. At one point, with help from the teacher, his group conducted a group interview with a speakerphone. This demonstration provided a model for Robert, who then rehearsed with support from the teacher and classmates. Though he was nervous and unsure at first, by the end of the rehearsal sessions his voice became confident. He learned much as he attempted to talk to people in government offices.

Finally, students used word processors to develop their reports. Again, teachers provided a detailed guide. Periodically a teacher would conduct a mini-lesson regarding a particular skill—grammatical structure, how to develop a lead, and so forth. Robert had great difficulty writing, so he talked about what he had discovered while another student wrote down his comments. Students invited more than 200 people to hear them as they shared their findings and made recommendations for how to solve some real ecological problems facing their community.

In this example, students were challenged at multiple levels and teachers used a range of constantly changing scaffolds. They modeled, conducted skill lessons, worked in small groups to further understanding, and arranged for a student to write for a peer who had difficulty. By participating in an engaging and meaningful problem-solving task, students who began at different levels arrived at a shared understanding. Robert could not have done this complex an activity on his own. With support from teachers and his peers, however, he was able to record his findings about water, conduct a phone interview, and learn about government bureaucracy. However, scaffolding should be thought of not as a teaching technique for struggling students but as a key strategy for all students. It extends students' zones of proximal development and gives them common experiences to talk about, write about, and share (Graves, 1994; Berk & Winsler, 1995).

A range of tools are useful in supporting scaffolding. A few include: copy search, journaling, and organizers. *Copy search* is a useful multilevel tool to teach conventions in any subject. When students are having difficulty with any particular part of their work (e.g., how to start a paragraph or how to employ the scientific method), teachers have students look for models in resources. For example, if students are having trouble creating strong story leads, we would then ask them to work in groups to find examples of leads that grab their interest. "See what you notice. Share at your table." Such sharing helps to structure language in the minds of students. The class then compiles a list of types of leads or of books with good examples to be referenced later. This approach allows all students to contribute (Schiller, 1998).

We can use modify materials to help students understand. A few strategies include:

- ***Highlighting*** the important information in written materials. This can be done with a yellow highlighter by the teacher or aide or by peer helpers.
- ***Summarizing*** key points and information from texts and materials.
- Developing *study guides* for lessons.

Students play an active role in learning when they are constructing meaning based on what they already know. One way to help students construct meaning is to have them maintain written *journals* in which they record their thoughts, reactions, questions, and feelings about a subject. The writing is short, can be a combination of sketches or words, and is often used as a springboard for discussions. Journals can take many forms and are a useful tool to help students organize and retrieve thoughts and ideas. Students, for example, may write in a journal after a science lesson to record key facts or after a social studies lesson to review a concept discussed. They might use a math journal to describe how they understood a problem, or students might record their feelings about an event in their daily life and use this account later as an idea for a project. The figure below illustrates some types of journals students may do.

Another way to help students construct meaning and enhance understanding is to use ***graphic organizers*** which assist students in focusing on key elements of either fiction or expository text. By combining words, pictures, and color in story maps and webs, children remember important information in an easily accessible manner. These tools are particularly helpful for students with reading difficulties and can be applied across curriculum areas (Rhodes & Dudley-Marling, 1996; Strickland, 1995; Tomlinson, 1999). Schools are increasingly using software such as Inspiration, which allow easy construction of such tools using computers (Genesis Technologies, 2001). Through consistant modeling of these tools by the teacher, children learn to organize their thoughts and learning. This is important as many children come to school without the

skills to plan and organize. Some teachers use certain types of graphic organizers consistently with the same type of material to encourage connections within children's minds as they process information. Many teachers of writing teach in depth web making prior to writing to organize thoughts and plots.

Types of Journaling

Freewriting	Students write as much as they can in a given time span on a given topic.
K-W-L	In three columns students write what they know, what they want to know, and later what they learned.
Dialogue journals	Written conversation about a topic goes back and forth between teacher and student or between student and student.
Learning logs	Continuous writing about what was learned that day, in an academic subject or a given topic. A student's learning log is a place to hold sketches, K-W-Ls, etc.
Book journal	Thoughts, predictions, likes/dislikes, or feelings about a story read.
Double entries	Journal pages divided into columns, where on one side problems can be worked out and on the other side the rationale is explained.
Writer's Notebook	Journal where ideas for a writing, snippets of thoughts, great descriptions of a single item or event, or lists of ideas are created for later use in the writing process.

Step 5. Individualized Differentiation of Learning Activities

Sometimes our initial lesson design does not adequately meet the needs of an individual student. We may need to develop individualized differentiation of instruction for that student. We'll find, of course, that the more effective we are at using multilevel and tiered teaching strategies, the less we will need to develop individualized differentiation or curriculum adaptations for students. As we discussed in Chapter 4, anytime we need to do this, we will want to evaluate ways we could incorporate these into the overall design of our lesson. Individualized differentiation will most often be needed for student at the far ranges of ability – those much higher or much lower in ability than the average in our class.

Schools to Visit

Effective Adaptation of Curriculum

Powell Valley Elementary School
Gresham, Oregon

Powell Valley Elementary School has 518 children in grades K through 5.

Curriculum adaptation is at the heart of the success of inclusive schooling at Powell Valley. When teachers look at upcoming activities and consider how they optimize every child's learning, they collaborate with other teachers, assistants, and the Supported Education Team. Collaboration and teaming meet the students' needs with the best of ideas while saving time.

Together the teachers have learned that adaptations begin with the work the whole class is doing. Some adapations are on the spot, such as a fold in the paper or the highlighting of some problems. Other ideas take a little more time and planning, but ideas always expand beyond one child, often being used to enhance the learning of many students. Teachers have discovered that when they begin designing adaptations by focusing on the work everyone in the class is doing, they set up a natural opportunity for students to work together. If an "adaptation" is something totally different, peers can't help one another, because it isn't always clear what the work is about or how it ties to the current lesson. Consistently, teachers have discovered that when they look at another way to teach the general lesson to fit a certain child, they improve their own teaching and reach more children.

Curriculum adaptation is a product of teamwork and a belief in children. When teachers believe all children learn best when they are actively involved in their learning and when they use real-life situations for problem solving, every child has the opportunity to learn within his or her own learning style. When teachers practice the belief that all children can and want to learn, all children are welcomed and valued for what they as individuals bring to the classroom community. When teachers build a caring school community based on the belief that all children need to feel a strong sense of community and collaboration, all children are involved not only in their own learning but in the learning of others.

By Patti McVay, edited by Michael Peterson

Sometimes we find that teachers think that students must be advanced students working above their grade level to effectively engage in projects. We certainly could create expectations where this would be true. However, if we are using truly multilevel goals and learning activities that can be pursued at differing levels of sophistication all students should be able to be successful. As we discussed in Chapter 4, we can provide additional supports to students and modify or adapt lessons to provide individualized differentiation around the needs of specific students. For example, for students with severe cognitive disabilities, we may need to simplify the information to its basic concepts.

We can use all the strategies discussed above to help us think about individualized differentiation of learning activities for students. Such differentiation will need to focus on the specific needs of the student. Often, the focus will be on the *cognitive level of learning.* When this is the case, we will want to modify our lesson to allow the student to engage in learning and her level of ability. If the student is having *social or emotional challenges*, we may need to adapt the way students are working together, providing additional guidance and support and helping students problem solve. Students may also be having difficulties that deal with physical or sensory abilities. If a visual or hearing disability, for example, is getting in the way of learning in a lesson that relies heavily on either vision or hearing, we'll need to obtain resources to help or modify the lesson in some way.

As we seek to make adaptations and differentiation for individual student we have a range of general strategies from small to larger changes. The figure below illustrates these strategies. Let's discuss these.

Strategies for Differentiation Of Cognitive Level of Learning

- ***No differentiation*** - same goals, activities, teaching strategies and materials
- ***Adapted teaching strategies*** -same goals, activities and materials
- ***Adaptations to all parts of the lesson –*** changes in learning goals, materials, teaching strategies, and activities
- ***Parallel activities*** - different learning goals, learning activity, teaching strategies, and materials

At the simplest level (#1) there is ***no differentiation needed*** at all. Goals, activities, teaching strategies, and materials are all the same. Again, this will occur most often if we intentionally are designing our learning activities using multilevel and tiered strategies. Let's use the example of Sydney and the lesson on learning about animals in Chapter 11 to look at these strategies. Sydney needed slight differentiation in this lesson. Gifted students needed no differentiation in this lesson though all students understanding that they would work at their 'just right' level was critical.

Secondly, we can ***use different teaching strategies***, different ways that students may obtain information. This may involve using multiple intelligences, scaffolding of

learning (see below), learning styles (see Chapter 7), and other resources. In this step, learning goals, learning activities, and materials may stay the same or have minimal changes. In Sydney's lesson, she did need assistance in accessing information. Teacher's helped her locate information on the internet, used a screen reader to help her read material, and provided support to her in writing our her report and poem.

Third, we may ***adapt all aspects of the lesson - learning goals, materials, learning activity and teaching strategies***. A student with a severe cognitive disability, for example, may have participated in the lesson on learning about animals. However, learning goals were made simpler for this student – to be able to say the name of the animal and recognize a picture of the habitat in which the animal lived. For such a student, a helper (peer, paraprofessional, or special education teacher) may have worked one on one with the student holding out pictures of different animals and asking, "Which one do you want to study? This one or this one?" The student then chooses. The helper would sit next to the student and find information pointing out pictures and asking simple questions along the way. They may use a program such as Boardmaker to create simple pictures that represent key information.

Students in a writing group share and discuss their writings.

For example, three animals might be presented and a helper asks the question: "Which one is the penguin, Sherie?" Sherie points to her animal, the penguin, etc. When designing adapted lessons of this sort we want, on the one hand, to create lessons at their level of ability but also keep the learning activity and materials as similar to those used by other students as possible. For a gifted student, it would be possible to modify the assignment so that the student would be expected to, for example, collect data by direct observation of an animal in the local area and gather information from government offices concerning the situation of that animal locally.

Finally, with students with significant differences in cognitive abilities we may have them ***engaged in a different activity altogether with different learning goals and using different materials***. Again, it is helpful to keep the lesson as related to what the rest of the class is doing as possible. Again, a student with a significant cognitive disability

might be working on knowing colors while the rest of the class is working on the animal project. In this case, a paraprofessional or peer might use colored pictures of different animals and ask the student to name colors. Again, for a gifted student, we might decide to totally exempt that student from the study of animals and allow them to develop an individualized learning contract to engage in another study that would relate to a learning goal of the district curriculum. Perhaps in science the student is very interested in understanding energy alternatives that are being considered with the growing cost of oil. The student might engage in inquiry learning as discussed above. We make an agreement with him and he agrees to develop a learning product, present information to the class, and design a way that students in the class can engage in a knowledgeable discussion about the topic. He also agrees to allow Kendall, a student with a cognitive disability, to work with him on this project.

We can also use multiple intelligences to develop strategies for individualized differentiation. The figure below illustrates how this worked for one student.

Tools and Strategies for Inclusive Workshop Learning

So far in this chapter, we have discussed how workshop learning looks in summary and explored multiple intelligences and strategies and tools for designing inclusive learning activities in workshop learning classes. In this section, we want to discuss the tools of workshop learning that we introduced at the beginning of the chapter. These tools can facilitate students of very different abilities and characteristics learning together. They build on and contribute to the way we organize our classroom (Chapter 7), use assistive technology (Chapter 8), and build a sense of community (Chapter 9 and 10). These procedures provide the context in which we use the inclusive learning activities we just discussed. We'll see more clearly how workshop learning looks and feels and how we can support students in learning.

Whole Class Mini-lessons and Discussions

When effective multilevel teachers present information, they work to insure that all students have some level of understanding and comprehension. Teacher talk will be interspersed with times when we ask students to turn to one another and summarize what the teacher said, or give an example, or check the understanding of their partner and help them understand if they are not clear.

Using Multiple Intelligences for Individual Differentiation

Intelligence	POTENTIAL PROBLEMS	SOME SOLUTIONS
Linguistic	Verbal and written language abilities either higher or lower than those of the majority of the class	Reading materials at multiple levels Buddies and partners who assist the student Study guides
Logical–Mathematical	Difficulty in thinking in logical sequences Difficulty in understanding mathematic concepts	Thinking organizers Task analysis Hands-on activities
Spatial	Visual disability Difficulty with spatial relationships (gets lost in the high school halls) Inability to draw or represent graphically	Using touch in place of sight—feeling objects, sculpting rather than drawing Orientation to the layout of the school by an orientation and mobility specialist Stick-figure drawing Supporting effort at own level
Bodily–Kinesthetic	Physical disabilities—uses wheelchair, weakened by physical Poor physical coordination Tactile–defensive	Modified rules of games to allow participation Unified Sports Play supporting role in sports—leading fan, etc
Musical	Tone deaf Difficulty with rhythms	Allow to participate at own level (if tone deaf, sing but moderate
Interpersonal	High needs for attention Frequently angry and acting out Withdraws from other students	Listen, understand what student is feeling Connect with supportive students Circle of support
Intrapersonal	Fear of being alone Difficulty understanding own feelings	Develop opportunities for student to work with others in class projects Provide lessons to all students about how to identify emotions and healthy ways to respond

As we teach a mini-lesson at the beginning of a workshop session, we want to engage students in thinking about the lesson. We will be involving students of varied abilities in this process and want to assure understanding of all while pushing all to higher levels of thinking. It's a bit of a balancing act. We prepare a list of questions about the topic the class will be studying and pose these questions to the class. We may need to vary the complexity of the questions or restate them depending upon the ability level of the student. We'll encourage all students to ask and answer follow-up questions in the discussion. We also ask questions and give students a chance to write their ideas and then talk to a partner.

In a whole schooling classroom, it is important for teachers to avoid calling on the same children all the time. We want all children to be thinking about the topic and yet we want to keep children in the relaxed state that will help them learn. This can be hard to do when students are waving their hand in the air, anxious to answer. One way of making sure that all students have something to share, is to use partners. If the teacher posits a question, and then asks the students to discuss the question with their partner. When she calls on a student to answer the question they will have something to share, no matter what level the student functions at. It is also imperative to create a rountine that does not allow hand wavers and excited noises, as this will prevent students from learning. The brain will literally shut down, as they know someone else has the answer. So, creating a signal for raising hands is important.

Beyond the routines of discussions, what do we discuss? A K-W-L (What do we know? What do we want to know? What did we learn?) is an excellent thinking strategy. At the beginning of an idea, a K-W-L mini-lesson helps students plan their work by brainstorming what they know and what they want to know. Subsequently, the teacher models and assists them in organizing ways to research information, with different members of the group engaging in different research activities. As usually happens, when the biology teacher applied these strategies, the two students who had difficulty reading did much better. First, they participated as part of a group, engaging in tasks that required less sophisticated reading. Then one of the two students interviewed a parent who is a biologist to learn answers to some questions. The other student was the artist of the group. In addition, as the group reported back and discussed what they were finding, all the students learned through this oral communication more readily. One very gifted boy decided that he would like to include complex pictorial descriptions in his projects and began to do so.

At other times when we are sharing information in a whole group setting, it is very important to teach children by the use of visuals. The brain needs something to connect the information we are sharing to. Given the rising number of children who are visual

learners, teachers will increase the potential for retaining the information by outlining it in a graphic organizer. Some teachers have different graphic organizers for each type of information. Also, increasing the number of pictures and realistic examples that are shared with the information will help as well. The more teachers model using graphic organizers, the easier it is for students of all ability levels to begin to create their own. We can use a range of strategies to organize students into learning groups in inclusive workshop-based instruction.

Flexible Grouping Students work as part of many different groups depending on the task and/or content. Sometimes students are placed in groups based on readiness, other times based on interest and/or learning profile. Groups can either be assigned by the teacher or chosen by the students. Students can be assigned purposefully to a group or assigned randomly. As part of the workshop process, the knowledge we have about what students need is constantly changing. We are gaining new insights daily through conferencing, therefore the groups will change often. Whether this is done every few weeks through a set assessment, or whether they change based on observational data.

The groups are short term and are constantly changing. We avoid having stable ability groups, knowing this changes the tone of our community and does not really focus on what exactly the students need to know. This strategy allows students to work with a wide variety of peers and keeps them from being labeled as advanced or struggling. For example, in a reading class, we may assign groups based on readiness for phonics instruction, where each group focuses on a different phonics sound. The teacher would then allow students to choose their own groups for book reports, based on the book topic. To use flexible grouping and avoid stable ability grouping we need to use these guidelines:

- ensure that all students have the opportunity to work with other students who are similar and dissimilar from themselves in terms of interest, readiness, and learning profile
- alternate purposeful assignment of groups with random assignment or student selection
- ensure that all students have been given the skills to work collaboratively
- provide clear guidelines for group functioning that are taught in advance of group work and consistently reinforced

Class-wide Peer Tutoring is a teaching strategy that involves students in acting as both teacher and learner. The class is divided into two groups with the teacher aiming to assure equal levels of ability. Students work in pairs. One presents a stimulus such as a spelling word, a math problem, or direction for reading a passage aloud. The other

student responds answering the question or following directions. The teacher student indicates whether or not the answer is right. Later, the two students switch roles. Learning tasks for each student are based their abilities.

Class-wide peer tutoring has the two groups compete for the highest scores. Students obtain points for correct answers – 2 points for a correct answer with no help and 1 point for a correct answer with support. Totals for all pairs on each team are totaled and reported. Class-wide peer tutoring incorporates 7 features that are responsive to concepts of inclusive teaching and universal design for learning:

1. ***Multimodal****:* students "hear", "see", "say", and "write" their responses thus tapping into various learning modalities.
2. ***Reciprocal*** *practice:* Students are both teacher and tutee and get multiple opportunities for practice.
3. ***Immediate correction of errors****:* Students are immediately corrected and given the opportunity to practice three times.
4. ***Gaming****:* Students love to play games and this process incorporates that sense of enjoyment assuring that all are successful, thus avoiding some of the problems associated with traditional competition.
5. ***Built in reinforcement****.* Students naturally congratulate and support one another; all feel good when they cheer for their team.
6. *Success for every student:* Since learning tasks are developed to match each student, all are successful and challenged at their own level.
7. ***Measured outcomes*** are built into the process.

Class-wide peer tutoring is particularly useful for engaging students in multilevel learning of information that is based in skills and content knowledge. It is less useful in open-ended exploration and inquiry tasks. However, teachers have experienced the approach as a fun way to engage students (Terry, 2005).

Partner Reading In partner reading we pair students to read together. They sit side by side, reading the same book, taking turns reading and discussing the events of the story. Students of different ability levels can be paired together (Englert et al., 1995).
As a natural extension of partner reading, *literature circles* bring several children together to read and discuss a book. The students set up their own schedule and decide how they will share. Teachers often also assign simple jobs that rotate, such as finding a moving passage to get the conversation started. Literature circles take conversation to a new level, as students use their personal viewpoints as a springboard to analyze the text. Every child has a viewpoint to share (Daniels, 1994).

Work Groups Small groups can meet to work on a variety of projects, depending on the subject and topic. In math, a study group meets to work on division problems similar to those they have encountered in class or to go over the homework. In another class, a work group is involved in a complex science or social studies project.

"**Jigsaw**" Organizing students into groups enables them to work together to find information and delve more deeply into a subject. The whole class may discuss a topic and divide it into smaller pieces. Different groups study different aspects of the material but are responsible for teaching their particular information to the rest of the class (Johnson & Johnson, 1989b).

Partner Clocks Students need to be able to work in pairs in a manner that is easy to access and encourages students to work with those outside of their normal group. This helps the community grow and ensures a heterogeneous mixing of students. One such idea is the *partner clock*. This circle with twelve lines around it allows students to have a set partner for each hour. Then any hour can be assigned as the partner for that activity. This easily becomes part of the common routine.

Students as Experts When we identify the skills of our students and encourage them to help one another, we greatly expand our learning resources. We take an environment that typically has one expert and too many children to reach and we teach children to rely on each other for support. Such student-to-student teaching occurs with teacher guidance and observation. For example, Lisa was writing a story but not using needed quotation marks. The teacher said to her, "Writers use quotation marks." She then asked Lisa to look for examples in books. "You've got it!" she said when Lisa shared what she had done. "Will you be willing to help others now?" Lisa said that she would. Later, when another student asked for help with quotation marks, the teacher said, "John, Lisa is good at quotation marks. Ask her for help." As John learned about quotation marks, the teacher asked him if he too would help other students. For the rest of the year, John and Lisa were the teachers for quotation marks.

Another teacher facilitated this process by developing a "yellow pages" that listed student skills. Students were asked to identify two or three skills in which they excelled and write an advertisement for themselves. These were compiled into a class yellow pages book. Students often consulted this book when they needed help on topics and as the class learned new skills, new advertisements were included. This project gave every child the opportunity to be the teacher, including students with special needs (Fisher, 1995; Kent, 1997; Schiller, 1998).

Experiments should be ongoing in every classroom. For example, students may be studying light. Some students set up an experiment in which plants of the same type get exposure to differing amounts and types of light and record the plants' growth. Another student might have a different idea they want to try using plants. Teaching children to explore their own ideas using the scientific process allows for multi-level instruction. Experimenting is best done in groups of two to four, often with each student playing a different role—observer, recorder, setup person, reporter, and so on. These roles allow children to interact at multiple levels (American Association for the Advancement of Science, 1989).

Small Group Mini-lessons

Sometimes students need explicit instruction on skills or content information. While we typically begin each day's lesson with a short mini-lesson with the whole class, we will often find it helpful to identify students who have similar needs and periodically group these students for short mini-lessons. Different lessons focus on different things for different groups.

In mini-lessons we are careful to truly be flexible in the way that we group students, assuring that we do not create stable, ongoing ability groups. Most of the time we will have groups of students with varied skill levels even if they need to work on a similar skill. For example, one teacher had small groups of students working on reading with expression and fluency. In this group in the 4th grade were students who read on very different ability levels – on one the 1st grade and another on the 7th grade. However, each student was reading aloud to a partner and then to the whole group materials at their level of challenge seeking to create meaning through engaging oral reading. When we do group students by ability level we are careful to mix students up and not create ongoing ability groups of the same students.

To get started, we call a group together during workshop time when other students are busy with their projects. We may announce that we are going to conduct a mini-lesson on a skill and invite all students who want help to attend. Alternatively, we may ask certain students to join, mentioning that we noticed they have been struggling in this area and would find the helpful. When we can show how a skill will be helpful in work in which the student is engaged, students are usually interested and they learn the valuable skill of assessing their own work. Often there will be more students than anticipated at the meeting.

The mini-lesson can address anything from choosing books that are just right to fluency and expression in reading to borrowing in subtraction (Calkins, 1994; Fisher, 1995;

Kohn, 1999; Schiller, 1998). mini-lesson s should be short, no more than 10-15 minutes, should focus on the same idea for several lessons, and should give the students something to try when they are done. Tools for mini-lessons include:

Strategy Lessons We use students' materials to focus on specific skills; for example, spelling sound combinations, editing skills, or other content area skills. The teacher calls groups to practice working on how to spell the long o sounds, as they are misspelling them in writing. This can be done through a scavenger hunt that looks for all the words that have the long o sound and sorts them by spellings. They can play a game to practice these sounds, such as listing many choices on the board together and then playing hot potato and saying a long o word each time. Then, they take it back to their own writing and edit the words. For editing skills, a small group can be called to work on indenting for paragraphs. They spend time looking in books and identifying what a paragraph is. Then they take turns reading their own work and having children put a thumb up when they think a new paragraph is needed. If students are needing additional work on adding fractions, they meet to use manipulatives to work on how this concept works. They take time to add them on paper and with manipulatives or they solve a real world problem using pizza or candy bars to share.

Group Reflections and Dialogue When students meet in groups, it is often to discuss an idea they are still struggling with or to reinforce something they are learning. For example, students who have a misconception about how day and night works can be called for small group lessons in which they read books together, use a globe and a flashlight to act out how it works, and watch a short video clip, all the while discussing what they see. When the class is hearing a instructional read aloud, the teacher calls one minilesson of students who need more support in understanding the motivations of the main characters. They talk about what the character is doing and why. They act out the scenes that let them know that and create questions to share with the class to help them understand the ideas.

Learning Logs Students keep "process journals" describing how they have approached an inquiry. Children are constantly writing what they are thinking about anything we are working in in class, whether that is science centers, a research project that involves early settlers, or the math topic of fractions. Then, mini-lessons are called together to discuss what the students are writing. This gives the teacher insights into what the children are retaining and thinking. It allows her to group students again for mini-lessons based on thoughts she wants to push, and gives the students another chance to hear the information in a different form.

At the end of the mini-lesson students write in their journals or planners making plans for what they will do next in the skills they need to learn . Of course, we don't expect one mini-lesson to provide all the learning students need. They use skills in ongoing lessons. We regroup students later to work on various aspects of the skills. Using mini-lessons, however, we can provide systematic, explicit instruction without stable, ability-based groups.

Student Conferences

When students are working, they are expected to confer with the teacher to share what they have learned and discuss what they'll do next to improve. Conferences are usually one-on-one and can focus on developing reading strategies, testing comprehension, sharing a new writing skill, editing a paper, or drafting a web to organize a writing or project . Student conferences give teachers a wonderful window into a child's learning, and the time for these vitally important conferences is one of the benefits of workshop style learning. They are structured so that other children are working individually or in small groups while the teacher is conducting conferences (Calkins, 1994; Daniels & Bizar, 1998). Teachers keep anecdotal records that indicate what the child is working on so that at the next conference, it can start with, "so how did the work on…go?" This provides consistency from conference to conference and keeps the teacher informed of each students progress toward their goals.

Peer Conferences and Testing

As students are ready, they *draft* their product—a poem, a story, a reflection, a report, an artistic rendition of an event, a play. The type of product being produced depends on the field of study and the student's ability level.

Students share with others to gain new perspectives and explore the meaning of their work. Several strategies are useful:

- Sharing circles, in which students share work in progress and solicit comments, ideas, and reactions from others.
- Conferences—individual meetings with the teacher or another student to review work and obtain feedback.
- Student presentations to the entire class regarding their work; classmates ask questions, give feedback, and so on.

In *peer conferences,* students work with one another to exchange feedback on drafts. Schiller (1998, p. 54) suggests that students comment using prompts such as the

following: "This seems to be about . . . ," "What if . . . ," "I thought, . . . ," "I wondered. . . ." We ask students to keep records of their conferences in work folders. To get peer conferences started, we model the process for the class. Teachers can also select students to work with one another. For example, one teacher often linked students with higher and lower abilities to conference together. This raises the level of learning for both students, as one sees higher thinking modeled and the other learns at a deeper level by explaining material. Conference records provide an ongoing assessment record of the students work. Students will *revise* the product and subsequently obtain assistance for *final editing* for publication or presentation. This occurs in several ways; students meet at an "editors' table" to edit one another's work, or they work with partners to revise content.

Publishing

When students are learning in a workshop style environment, they have to publish their work to show what they have learned. When we are teaching, there is a different set of expectations for finished work then works in progress. Students can publish their work at many levels of sophistication. This works for multilevel teaching, as all children can work on a similar project and be expected to have brought it to different levels by the finished project. For example, children writing historical fiction create stories at a simplistic level with two or three facts inherent in the story or they can create complex stories with many facts, including accurate clothes and games descriptions from the time period. This can also be set-up in a tiered environment, where teachers provide different publishing choices for the different levels. Regardless of the design, publishing for a purpose is an important part of authentic learning.

Sharing and Celebrations

Finally, students *share* their work. There are many ways of doing this in order to recognize and celebrate every student's achievement.

- Incorporate sharing of student products in student-led parent conferences.
- Compile products (poems, stories) around a theme and have a "book signing" at a local bookstore.
- Pair the students' writings with pictures of the students, compile them in a binder, and add to the binder blank sheets that say "We welcome your comments." The teacher may then send the book home, first to those parents the teacher knows will write something to encourage others to contribute.
- These student books are added to the classroom library and enjoyed by others during quiet reading time.

The sharing chair is a valuable tool for student sharing of their work. Students come together as a group and the student sits in a special chair or other props specifically set aside for this purpose. Some teachers use a decorated chair while others use a podium. We make it a special occasion. Tables are set with tablecloths and hot cocoa and donuts is served in a coffeehouse style. We may have students present to one another, to other classes or send invitation to parents and family.

When students share learning, they may use media such as art, video, music, computer technology, projects, plays, or poetry. For example, students create a mural to depict what they have learned in a book, write a poem about the differences between two countries, or create a multimedia presentation on the ocean. If students are learning about economics, have them make holiday cards, then market and sell them. One multiage teacher states, "In my class, I have seen students who could not memorize facts about the unit they were studying, but when given the freedom to create, they made creations that took my breath away and illustrated a depth of understanding that surprised me" (S. Huellmantel, personal communication, September 2001).

Multilevel Learning Materials

A key to effective multilevel teaching and workshop-based learning is availability of learning materials that allow students to learn about topics at their own level of ability and also provide us many different ways to present information to students in multiple modalities with multiple forms of representation. This means that good multilevel teachers are on the constant outlook for good books and other resources at different levels of ability. Most budgets include funds every year for purchasing such materials. These include:

- Written materials regarding topics on many levels of ability. Some publishers provide identified reading levels of their publications. We should use such information, however, to guide students rather than restricting them to identified levels. We particularly should not have students self-identifying their level in a particular system. Rather, teach them how to choose material they can read no matter where it is found.
- Use of graphics materials – photographs, figures, and drawings.
- Use of tools by which written materials may be read aloud: text to speech software; students reading to one another; reading by a special education teacher or paraprofessional; books on tape.
- Software programs that combine words spoken with graphics, emphasizing of key words.

- Use of quality internet sites that combine text and graphics with key links to information, often in combination with text to speech software.
- Videos on topics.
- Having students obtain information in the community by interviewing community members and parents recording on audio or videotape as well as taking notes.
- Provide *picture booklets* showing step-by-step instructions. These could be developed by a support person or student. Making such booklets could even be part of a group activity and would help all the students better understand the procedure.
- Powerpoint presentations of key concepts in reading materials that incorporate graphics to illustrate key points.
- "Thinking Worksheets". Effective inclusive teachers often use forms developed for various projects that ask students to record observations, journal notes, conclusions, questions, and more. These provide ways for students to record what are essentially working notes that the teacher can use to check for understanding.

When we use a range of learning materials that are based on combinations of varied learning styles (chapter 7), multiple intelligences (see later in this chapter), and ability levels using varied modalities and different ways of presenting information, we help students make connections and engage the material so that they will better understand and remember information and deepen skill development.

Let's also be clear about what learning materials are not multilevel and make inclusive teaching more difficult. These include:

- Using a *textbook* as the main source of instruction and learning. By definition, a textbook is at one level of ability. Students don't then use other materials such as trade books that may be written at differing ability levels. Effective inclusive teachers use textbooks as one resource, often as a reference book.
- *Worksheets of basic* skills that are presented at only one level again make it difficult for students with both higher and lower abilities than presented on these materials. Effective inclusive teachers do not often use these types of worksheets but instead use "thinking worksheets" we discussed in the list above.

Including Students in Lecture-Worksheet-Test Instruction

Despite the usefulness of workshop learning, it is still possible, though more difficult, to successfully teach students of varied abilities successfully in lecture-test classes. First, lecture-test teachers should work to make their lectures more engaging and interesting and provide some opportunities for student engagement. Here are a few suggestions that will help you reach more students and facilitate learning:

- ***Lecture and group discussion:*** Introduce information and content and pose a question to the students. Involve them in a group discussion going back and forth between lecturing and discussion. Call on a variety of students taking care to provide all students opportunities for sharing.
- ***Think-pair-share:*** Again, introduce information and content and ask a question. Ask each student to think for 60 seconds, the share with a partner, and then for that group to share with another group or the whole class.
- ***Powerpoint:*** Using transparencies, or better yet, presentation software such as Microsoft Powerpoint or Apple's Keynote. At best provide simple summaries of the content via the presentation slides. Use graphics, video, and music to introduce additional modalities.
- ***Supports for note-taking:*** If you want students to take notes, provide them training and support in taking good notes. Print out your presentation slides and give them to students as a handout. For students who have difficulty taking notes, consider asking one student to share her notes with other students, perhaps using carbonized paper to easily make a copy of the notes.
- ***Alternatives to lecture:*** Consider some alternatives to lecture and testing on material. For example, you could have students work in small groups and develop summaries of reading materials. You could ask groups to present to the total class or engage in a group discussion. This will assure that students read the material. Use assistive technology to provide written materials on tape or text to speech software. For students with cognitive disabilities, you might ask other students in the group to do simple summaries of the material using pictures and graphics.

Second, you can use strategies that improve the validity of typical tests for students with a range of abilities. You can use these related to worksheets of content and skills. Here are a few suggestions:

- ***Tests at differing ability levels:*** You will want to create tests on the material at differing levels of ability so that students who are considered gifted, middle range students, and students with cognitive or learning disabilities get material at different levels of complexity. You'll need to experiment with this over time. At first, this will require more work. However, you should be able to use each test

you develop multiple times. One of the difficulties with this strategy, as with tiered assignments we discussed above, is that you have to decide which students get what test. You can get assistance from specialists such as special education teachers, bilingual consultants, and gifted consultants.

- ***Number of items:*** Some teachers ask students with lower abilities to do a smaller number of items and students with higher abilities to do more.
- ***Review sheets:*** Provide review sheets at each level that state exactly what is going to be tested. Give students time to study in study groups within the class period and take time for questions that have come up in their review prior to taking the test.

Making Schools Work for All Students: *The Beginning and End of the Journey*

We talked not long ago with a group of teachers in a school that is seeking to become an inclusive school. A student with a very severe disability, Denise, is in the sixth grade with support by a paraprofessional. Several students with autism are also in general education classes full time. One day we watched as Denise's whole class was energetically engaged in discussing questions they would e-mail to a man who was making a movie in the northern part of the state. The students called out all sorts of good ideas; a student recorder wrote them down. I thought, "This is a terrific authentic writing project." Afterward the teacher explained to us that the man making the movie is Denise's father, to whom she is very close. Partly because he'll be out on the movie set for the next few months, Denise has been very down and depressed. The teacher came up with this authentic activity, connected to their ongoing class objectives, to help Denise feel better. "Denise," she said to this student, whose eyes sparkle and connect as the teacher talks but who has no verbal language, "we are going to ask these questions to your dad and he's going to write us back!" Denise laughed.

We held a focus group discussion with teachers regarding their progress toward inclusive teaching and listened carefully as Denise's teacher talked. "What we have to realize," she said, "is that we don't ask ourselves, 'How do I include this one kid?' We ask ourselves, 'How do I help create a culture and way of teaching in my class that welcomes all, where all students can work to their own potential?'"

We agree with Denise's teacher. In this chapter we've reviewed some best practices in teaching. We've suggested that these practices offer us many strategies to help students learn at multiple levels. Our challenge and opportunity is to teach and to build a classroom culture in ways that really do support students in learning together. As we think about it, the sun shines a bit more brightly in our mind's eye. We see schools full of teaching and learning and laughter and interest, beyond the dark and dismal images of learning that lie behind us on this road we are traveling.

Traveling Notes

For many teachers, it's a bit of a wonder to realize that best strategies for instruction are the same as those that facilitate our including students with a wide range of differences and abilities in learning together. How might we make these the center of our teaching practice? Following are a few notes to remember.

1. Traditional teaching practices ensure failure among many students. Their emphasis on narrow skills and worksheets causes many students to get bored and lose interest in learning. In addition, "one-level" instruction is far below the level of many students, offering them no challenge; for many others, it is too high-level and frustrating.
2. Both research and the judgment of national professional organizations call for moving away from such traditional practices to more engaging, hands-on, collaborative ways of learning.
3. Three fundamental formats for teaching are apparent in classrooms: lecture-test instruction, direct instruction, and workshop-based learning. Workshop learning involves students in active learning where they work individually, in pairs, and in small groups to access information and develop products that demonstrate their learning.
4. Multiple intelligences theory helps us design instruction based on eight ways in which students can be smart, thus building on student strengths.
5. Multilevel instruction allows students to learn and be challenged at their own level of ability while working with others at different levels: materials at differing levels, open-ended projects, and group work in which students take differing roles are some of many strategies.
6. Tiered instruction allows children to work on different assignments about the same topic at their level of instruction.
7. There are several ways to provide individual differentiation for students who need support beyond that they already get in multilevel instruction. These range from making minimal adaptations to creating parallel activities, a seldom used strategy.
8. Workshop learning involves a range of tools and strategies that include: mini-lessons at the beginning of instruction and in small groups, multilevel and multimodal learning activities, peer conferences to review drafts, teacher conferences with students, publishing, and sharing and celebrations of work.
9. Scaffolding helps us support students in moving to their next level of challenge in learning and strengthen their learning.
10. Inclusive teaching in lecture-test classes is possible when teachers find ways to make lectures more engaging and connected, provide alternative ways that students can access information from the text, and make modifications to tests.

Stepping Stones To Whole Schooling

Following are some activities that will help extend your understanding and actions you may take to use best practices and the four building blocks in your teaching practice.

1. Outline a thematic unit based on the concepts of inclusive, workshop learning, using a format following these steps:
   - Sketch your learning goals and levels of goals.
   - Identify learning products and assessment strategies.
   - Brainstorm some engaging learning activities based upon open-ended individual and group projects.
   - Use the learning activities – subjects matrix and learning activities – multiple intelligences matrix to see how the activities match to both subjects and intelligences. Study the matches. Make modifications to assure coverage of the multiple intelligences and linkages with subjects.
   - List the materials you will need.

   - Now consider various students in your class – those with learning challenges, gifted students, etc. and make notes regarding how they will participate at their level of ability based on their needs.
2. Develop a rubric based on the ideas in this chapter regarding inclusive, workshop learning. Conduct an analysis of the strengths and needs in your own teaching. If possible, get another teacher to do this also or a teacher team (3rd grade teachers, 7th grade team). Discuss strategies for working on improving your teaching as an inclusive, workshop teacher.
3. Consider your own "intelligences." What are your strongest areas of performance and learning? If you were to design a perfect school just for you, what would it look like? What would students do? How would teachers teach? What are the implications for your own teaching practice?
4. Teach students about multilevel learning and setting personal best goals and engaging in just right work. Lead a discussion about what this means in the classroom. Get their ideas.
5. Teach students about multiple intelligences and learning styles. Have them determine their own intelligences and learning styles. Have them talk with each other and get ideas for how they might learn the best.