**Chapter 11**
**Inclusive Academic Instruction, Part I**
***Planning Inclusive Lessons and Units***

## CHAPTER GOAL

Understand need for improving instruction for all learners and a process for planning multilevel instruction that will support students of varied abilities learning together in inclusive classrooms.

## CHAPTER OBJECTIVES

1. Explore best practices in learning and teaching and critique ineffective traditional instructional practices.
2. Understand the steps involved in developing inclusive unit and lesson plans.
3. Learn how to develop authentic topics of study that link several subjects
4. Be able to state why multilevel instruction is important
5. Know how to articulate overall learning goals and expectations of various levels of student learning.
6. Learn how to use a range of assessment tools and strategies to support inclusive academic instruction.
7. Understand strategies for enhancing student performance on standardized tests.

In this chapter we will begin a discussion of strategies for inclusive academic instruction. Can this really be done? Can students who are highly gifted really learn well together with students who have significant cognitive disabilities or other learning challenges? It's a great question. The answer, of course, is yes!! If we use strategies aimed at helping every student begin from where they are and move to the next level, we'll find, in fact, that teaching is more rewarding, that learning increases, the students really enjoy our class, and that we are too!

One day we visited a 5th grade class that was a fully inclusive class. Donald, a student with a severe disability, was a member of this class. He clearly had many friends who helped him in many ways in the class. We talked with Joshua, his best buddy, who explained how Donald used alternative communication devices. He had a few words to say as to how the tool should be improved to help Donald. We thought how much this student was learning some ways of thinking like an engineer. Later we watched the class working on a project related to maps of their state and watched Sylvia and Donald working together. We also had a conversation with the entire class about diversity and about their experience of having Donald in their class. Donald, of course, was part of

this discussion which he clearly enjoyed. We were amazed at these kids. In many ways they said, "We have learned so much by having Donald in our class". That very day, in fact, they had been reading a story about the holocaust and talking about how people of difference lived together. These students were clearly experiencing this lesson as they learned with Donald.

So let's explore inclusive academic instruction together. Let's start with an example of a lesson designed in a way that allowed students of very different abilities to learn together at their own level.

**Journey into the Classroom**
**Sydney's Moose Project**

*Sydney is now in the 9th grade in Southfield High School. "I really like my school," she explains. "I like math. I like my teachers. I like my friends". Her grandmother, Delores, with whom she now lives says she is doing very well, particularly in algebra. "I work with her on her lessons," she says, "But she really does understand the concepts and is able to do the problems. I am proud of her." "Math is my favorite subject," Sydney comments. "My second favorite subject is biology". Sydney is a very active student. She plays clarinet in the band and is active in soccer and baseball. "She is a sports fanatic," says her grandmother with a smile. Sydney is taking all general education classes though she can go to a media center in the library for help from special education teachers if she needs it. She doesn't do this much though. "She had some great teachers this year," comments Delores. The algebra teacher even volunteered to meet with her after school.*

*We first met Sydney when she was in the fifth grade at Kenbrook Elementary School. That year, after many years of tentative steps towards inclusive teaching, the school staff had decided to close their separate classrooms for students with cognitive disabilities and to teach these students in general education classrooms. Sydney was one of those students. She has a cognitive disability, having been born with Down Syndrome. Sydney did well that year, which provided a base for her to do well in coming years as well, being exposed to a much more demanding, and interesting, curriculum than she had been receiving in separate special education classes. One project, of which she was particularly proud was what she called her 'moose project.' In fact, Sydney came to a university class to read her poem and her moose report as a good example of multilevel instruction.*

*Sydney's Moose Project illustrates nicely some key elements of good authentic, multilevel instruction. (Two fifth grade teachers collaborated on many lessons this year. They taught across the hall.) The project: students had to select a plant or animal and find out specific information. Note how this assignment is open-ended. While criteria were identified, students could successfully complete this project at very different levels of sophistication. The teachers in this*

*class expected each student to work at their **personal best level**. Similarly, Sydney got the highest rating on the rubric and made an A on the project. Does this mean that Sydney was necessarily functioning 'at grade level.' No. But she worked hard, learned, made progress, and met all the expectations of the assignment. (You can see a bit of her work below). Other students considered gifted in this class were expected to gather information and develop much more sophisticated products. Sydney wrote one of her teachers, Rod Moeller, a letter of appreciation at the end of school. The teacher particular thought this statement was important: "I was doing my important work." In other words, Sydney felt successful, valued, and engaged in learning that matters. You can't ask for much more than that in a student!!*

## Disabled Curriculum and Instruction
### *'Official' and 'Classic' Theories of Learning*

Early in the twentieth century, the "factory" model of schooling—in which students sit in straight rows, listen to lectures, fill out worksheets, read from texts under the watchful eye of the teacher, and are tested by filling in blanks, responding to multiple-choice items, or answering true-or-false questions—was questioned and challenged, most notably by John Dewey (1938, 1943). He argued that rote study promoted shallow thinking and a dislike for learning; experience in meaningful, real situations, he claimed, was the key to learning.

These critiques continue. For example, Frank Smith (1998) contrasted what he called official and classic theories of learning. The "official" view says that learning is hard work, limited, dependent on rewards and punishment, based on effort, individualistic, easily forgotten, and assured by testing and memorization. However, Smith points out that students are learning all the time, even though this . . .

> is a frightening thought for many teachers . . . and the students can't help it. They even learn things they might be better off not learning. The problem in school is not that many students aren't learning but what they are learning. . . . If they leave thinking that "school things"—such as reading, writing, mathematics, or history—are boring, difficult, and irrelevant to their lives and that they are "dummies," . . . they learn to be nonreaders or . . . non-spellers or that they can't do mathematics. (Smith, F., 1998, p. 10)

Yet, according to the classic view of learning, learning is continual, effortless, independent of rewards and punishment, and social. Very simply, says Smith, "you learn from the company you keep . . . you become like them. . . . This is learning that is permanent. We rarely forget the interests, attitudes, beliefs, and skills that we acquire simply by interacting with significant people in our lives" (Smith, F., 1998, p. 9).

None of the individual elements of traditional teaching is ineffective in itself. Worksheets, lectures, and textbooks can all have an effective place in a best practice class. The problem, however, is that such strategies often form the bulk of instruction. As a group, worksheets, lectures, and textbooks fit together into a paradigm—an integrated overall approach that, according to Kohn (1999) and Haberman (1998), has the following problems:

- The emphasis on memorization engenders little understanding, leading to shallow understanding and lack of motivation.
- Mastery of certain skills—mathematical algorithms, spelling, writing conventions—is seen as separate from the use of such skills and teachers seldom engage students in using skills for real-world purposes.
- Teaching materials are largely textbooks written at one particular level so students for whom the material is too difficult and students for whom it is too simple are both frustrated.
- Instruction occurs largely through strategies that put students in passive roles – lecture, videotapes, and periodic field trips, all. Many students simply disengage.
- Schoolwork is seen as an individual rather than a social effort. Students sit at desks in straight rows and get in trouble if they talk. Consequently, school fails to help students learn critical social skills simultaneously ignoring a powerful source of learning.
- As students get frustrated and bored, they find ways to make the class more interesting. Some act out, play jokes or get in fights. Others simply withdraw. As a result, teachers spend much time maintaining classroom control.
- Evaluation largely occurs through tests that emphasize short-term memorization—multiple-choice, fill-in-the-blank, or true/false exams. Such exams don't require students to demonstrate meaningful understanding or application of skills.

Despite these and other ongoing critiques, traditional schooling practices continue in large part, according to Tyack and Cuban (1995), because this is the mental image people have of what "school is." Public Agenda (1997) conducted a national survey of high school students exploring two questions: (1) What could teachers do to help you in your learning? (2) Do your teachers do these things? The answers were revealing and troubling. Students wanted teachers to know their subject, use engaging learning approaches, and present information in an interesting way. Yet only a small percentage of students reported that their teachers did so.

**What Helps Students Learn & What Teachers Do**
**Feedback From Students**

| Statement | % Who Say Would be Helpful | % Who Say Teachers Do |
|---|---|---|
| Tries to make lessons fun and interesting. | 78 | 24 |
| Is enthusiastic about the subject they teach. | 71 | 29 |
| Knows a lot about the subject they teach. | 71 | 46 |
| Treats their students with respect | 69 | 41 |
| Gives students a lot of individual help. | 69 | 31 |
| Uses hands-on projects and class discussions. | 67 | 22 |
| Explains lessons carefully. | 66 | 33 |
| Challenges students to do better. | 66 | 33 |
| Cares about students. | 64 | 30 |
| Knows how to handle disruptive students | 46 | 29 |

New York, NY 10016-0112From a study conduct by Public Agenda
Getting by: What American Teenagers Really Think About Their Schools
Education Week, April, 1997, pp. 20-21

These results correspond with those of another major study of U.S. schools in which researchers found, for example, "a repetitive reinforcement of basic skills . . . throughout the twelve grades—a heavy emphasis on mechanics, textbooks, workbooks, and quizzes emphasizing short answers and the recall of specific information" (Goodlad, 1984, p. 207). More recently, Haberman (1998) and Hale (2001) report that such ineffective instructional approaches continue to be the norm, particularly in schools that serve low-income, urban children of color.

## The Debate about Good Instruction

While there are many, many variations on teaching strategies, three basic forms stand out: (1) lecture-worksheet-test instruction; (2) direct instruction; and (3) workshop learning.

The most traditional approach to instruction is ***lecture-test instruction***. We all know what this looks like. As in the history class at Garland Heights High School above, teachers assign reading in a textbook and then lecture on that same material. Often

teachers will include worksheets for practice and homework. Such worksheets typically focus on basic skills: fill in the blank questions, matching words to one another, picture to word match, etc. Students take notes and sometimes view videos. Teachers then give tests– most often multiple choice or true and false.

The second approach is ***direct instruction.*** This approach focuses on instruction in skills, most often used in reading and math. Students are taught skills by completing worksheets and drills on skills out of the context in which such skills are used. For example, if a teacher wants young children to learn phonemic skills, the most basic sounds in our language, the teacher may lead a lesson reading from a script in which she says words with the long 'a' sound and then the students repeat the words.

Interestingly, both lecture-test and direct instruction have a symbiotic relationship. Lecture-test instruction often results in students who have difficulty functioning in these narrowly designed classes. Students are seen as lacking prerequisite skills. For students with special needs, this almost always results in direct instruction of skills – phonemic awareness, phonics, math skills, etc. in a separate resource or special education classroom.

***Workshop learning*** actively involves students in gathering information, studying critical questions, and working to create products that demonstrate learning. Skills and facts are learned in context of authentic activities. The focus of workshop learning is understanding, meaning, and critical thinking related to important issues.

For sure there are many variations on lecture-test, direct instruction, and workshop learning strategies that go by many names. Teachers also combine aspects of lecture-test and workshop learning to create a hybrid. Many strategies can be used to make lectures and direct instruction more interesting and involve some student interaction. This moves towards workshop learning. However, the basic structure is still the same. Additionally, all workshop classes involve sharing information with the total class to begin with and conducting mini-lessons for direct instruction on skills. Some teachers may even lecture and have students take notes but spend most of their time in workshop learning. Despite these potential overlaps and variations, it's helpful to understand clearly these very different approaches to instruction and their impact on successful inclusive teaching.

Interestingly, despite its prevalence, there is no advocacy supporting lecture-test learning. No research suggests that lecture-worksheet-test learning is effective. Quite the opposite. The primary debate has been between advocates of meaning-focused workshop learning and direct instruction. The story of this debate is filled with curious

political complexities. One issue is what research actually shows. The other issue relates to how research results have been communicated. Let's look at both of these related to debates regarding learning how to read.

To talk about what research shows, we need an agreement on what research is valuable. You might think that the answer is: "All research is valuable if it is conducted based on scientific standards". However, in the recent political environment you would be wrong. There are two major camps of research: quantitative and qualitative. Quantitative studies measure outcomes of various treatments that can be reduced to numbers – eg. counting the number of syllables spoken correctly, scores on a test, etc. Experimental studies, where a 'control group' that does not receive the treatment or learning strategy of interest is compared to an 'experimental group', is considered to be the standard among quantitative researchers. Qualitative studies, on the other hand, engage a researcher in observing students in the process of learning. They may gather information including student written work, observe students in reading and writing, interview students about what they are learning and their perceptions of the classroom, for example. Qualitative studies aim to understand dynamics of learning and look at processes and results that are too complex to be reduced to simple numbers.

In recent years, much has been made of 'scientific research', a phrase imbedded in the United States in the No Child Left Behind law. In that law, research is largely not considered valuable unless it is quantitative and uses experimental control groups. You might think, "So?" The bottom line is that this throws out thousands of valuable studies and tends to classify research that supports direct instruction as the only good research. However, true experimental research is difficult for many reasons. One is that the variables are always compounded. To compare, for example, a phonics direct instruction program with meaning-based reading instruction is difficult because children in the phonics program typically also get opportunities to read focusing on meaning and meaning-based reading approaches also incorporate phonics skills instruction. Further, true experimental research is difficult because it would require withholding what is thought to be better instruction from some students.

The result is that many experimental studies involve students in experimental procedures that don't much matter and also don't really say much about students' use of skills in authentic situations. For example, much research that claims that direct instruction is superior for helping students to develop reading skills involves students in reading 'nonsense words' – eg. collections of letters that are given as isolated lists and that are not part of real words. When students who engage in direct instruction are shown to be able to better 'read' these nonsense words than students who are in meaning-based instruction, researchers draw the conclusion that direct instruction helps

students to read better. The presumption is that if students can 'call' nonsense words that they can read better. However, reading nonsense words is actually not reading at all. Reading involves taking meaning from text and using it for an authentic purpose. Such studies don't evaluate how well students understand or how much students read based on their own interest nor how well, for example, students are able to spell when doing their own writing. The results that more balanced researchers find is very different.

However, these problems have not kept such researchers from announcing publicly and with much fanfare that direct instruction is more effective. While there are many details in reading, writing, math, science, and more, the story is the same in all these fields. Let's look further, as an example, at what happened in recent years in the United States related to how children learn to read.

In 2000, a panel of experts was gathered by the U.S. Department of Education as the National Reading Panel with a goal of ending the 'reading wars' between direct instruction and whole language advocates by conducting a comprehensive assessment of reading research. Unfortunately, that's not exactly what happened. Since the education officials of the administration at that time were advocates of direct instruction, they took action to assure that direct instruction was identified as the best instructional method. They did this several ways: (1) the panel included a large predominance of advocates for direct instruction who were largely researchers; only one person who had ever taught reading was on the panel; (2) out of some 100,000 research studies on reading they carefully considered only 428 and used only 38 as a basis for their conclusions (Smith, 2003). The majority of these studies were based on teaching children sounds in clinical experimental situations. Most did not involve children in actually reading for meaning. Finally, (4) the report summary actually contradicted reviews of research published in its comprehensive report that suggested that meaning-focused workshop learning was more effective than direct instruction. The summary report stated, incorrectly according to its own reviews, that 'scientific investigation' showed direct instruction to be superior in teaching children to read.

Based on this report and the requirement that direct instruction be used when federal funds are provided for reading initiatives, programs for teaching phonemic awareness and phonics as separate programs, disconnected from actually reading, have proliferated. Some programs actually mandate that children not be allowed to read real materials until they have learned the designated phonemic awareness skills.

As we shall see below, numerous researchers have been working hard to provide a more balanced view of research and to promote educational practices based on a more

engaging, effective approach to learning. Learning of skills, of course, is important but in these approaches skill development is incorporated into authentic, engaging learning tasks and reinforced in numerous ways in a rich learning environment.

We may well find ourselves in a school where the administration has believed the publications of direct instruction advocates and government agencies that promote direct instruction practices. What to do? First, we need to be clear about our own position and be able to explain it to others. We need to incorporate skill development into authentic learning and be able to explain to parents, other educators, and students themselves how this works. Our experience has been that we will get lots of support, over time, when . . .

(1) Our students love being in our class, including students who have never felt successful in school. Parents will notice this and express appreciation and let our principal know as well.
(2) Our class does better on the state standardized test than students in other classrooms (a frequent experience).

We also, however, should seek to understand the debates related to educational research and be able to explain this to others. Of course, research is a very technical and complicated world so we need resources that can translate that world into real words! The figure below provides a few resources that we have found helpful related to literacy.

**Guidelines for Effective Instruction for Diverse Learners**

If traditional practices in schools based on lecture-worksheet-test and direct instruction are not effective, how *should* we teach? It is here that we begin to see effective instruction for all children and inclusive teaching come together. In this section we'll look at recommendations from a wide range of professional sources. We'll note that these all are variations on what we've called workshop learning. As we discuss these sources, note the overlap and congruence of ideas and strategies.

**What to Look for in a Classroom**

Alfie Kohn (1998) described an effective inclusive classroom as well as pointing out practices that should cause us concern. See the figure on page 425. Kohn paints a picture of what we will expect to see in an effective classroom and a classroom that is ineffective for many students. It's helpful to get a picture of each in our minds as we talk more about effective learning.

## What To Look For In A Classroom

(Alphie Kohn, 1998. Used With Permission.)

| | Good signs | Possible reasons for concern |
|---|---|---|
| **Furniture** | ❑ Chairs around tables to facilitate interaction.<br>❑ Comfortable areas for learning. | ❑ Desks in rows or chairs all facing forward. |
| **Walls.** | ❑ Covered with student projects.<br>❑ Evidence of student collaboration.<br>❑ Signs, exhibits, or lists created by students rather than teachers.<br>❑ Information about, and mentors of, those who spend time together in the classroom. | ❑ Bare.<br>❑ Decorated with commercial posters.<br>❑ Lists of consequences for misbehavior.<br>❑ List of rules created by an adult.<br>❑ Stick or star chart or other evidence that students are rewarded or ranked.<br>❑ Student assignments displayed but they are (a) suspiciously flawless, or (b) only 'the best' students' work, or (c) virtually all alike. |
| **Sounds.** | ❑ Frequent hum of activities and ideas being exchanged. | ❑ Frequent periods of silence and/or teacher's voice the loudest or most often heard. |
| **Location of teacher.** | ❑ Typically working with students so that it takes a moment to find. | ❑ Typically front and center. |
| **Teacher's voice.** | ❑ Respectful, genuine, warm. | ❑ Controlling and imperious.<br>❑ Condescending and saccharine sweet. |
| **Student reaction to visitor.** | ❑ Welcoming and eager to explain or demonstrate what they are doing or to use the visitor as a resource. | ❑ Either unresponsive or hoping to be distracted from what they are doing. |
| **Class discussion.** | ❑ Students address one another directly.<br>❑ Emphasis on thoughtful exploration of complicated issues.<br>❑ Students ask questions at least as often as the teacher. | ❑ All exchanges involve (or directed by) teacher. Students wait to be called on.<br>❑ Emphasis on facts and right answers.<br>❑ Students race to be first to answer teacher's "Who can tell me?" queries. |

| | Good signs | Possible reasons for concer |
|---|---|---|
| **Tasks** | ❑ Different activities take place at the same time. | ❑ All students usually do the same thing. |
| **Around the school.** | ❑ Inviting atmosphere.<br>❑ Students projects fill hallways.<br>❑ Bathrooms in good condition.<br>❑ Faculty lounge warm and comfortable.<br>❑ Office staff welcoming toward visitors and students.<br>❑ Students helping in lunchroom, library, and with other school functions. | ❑ Stark, institutional feel.<br>❑ Awards, trophies, and prizes displayed, suggesting emphasis on triumph rather than community. |

**Brain-Based Learning**

In recent years many scientists have conducted research on how the brain actually learns, brain-based learning (Caine & Caine, 1991, 1994; Goleman, 1995; Jensen, 1995, 1998). The implications of these findings on education are enormous and exciting. Quina (1995) synthesized these findings as follows.

First, the brain simultaneously makes connections between multiple ideas and engages in many activities and thought processes at once. Given this, the step-by-step lecture and worksheet design of most U.S. schools inhibits meaningful learning. Brain-based teaching, in contrast, facilitates deeper learning by building connections between multiple stimuli; for example, storytelling and drama to enhance learning, body sculpture to teach syntax, and metaphorical stories read to music.

Second, the brain processes parts and wholes at the same time. The "left brain," which breaks content into parts, and the "right brain," which sees wholes, interact constantly. This is how the brain builds patterns and connections for learning. Thus, when teachers focus only on parts—skills, phonics, multiplication tables—they limit learning. Students need more learning time when facts and skills are taught in isolation rather than in context.

Third, the search for meaning is automatic and basic. The brain needs the familiar and novel simultaneously. Therefore, we should build into every lesson (1) security (the familiar) and (2) novelty (the search for new connections and possibilities).

Fourth, emotion and cognition are linked in the hard wiring of the brain. They cannot be separated. Teachers must deal with both together. The brain will "downshift" under threat; when students feel threatened thinking and learning literally stop. We must build a sense of community, safety, and support if learning is to occur.

Caine and Caine (1991, 1994, 1995) worked with staff of the Dry Creek Elementary School to develop approaches built on the findings of brain researchers. They articulated three simple but powerful principles:

**1.** Ensure ***a state of relaxed alertness*** in a challenging but nonthreatening environment. "Relaxed alertness" is a condition in which children feel comfortable, safe and at ease but also engaged, interested, involved and curious. This combination creates the psychological state that is conducive to learning. On the other hand, when children do not feel safe, the control shifts to the brain stem. This part of the brain controls the basic needs to survive, and when children are upset the brain reverts to the 'fight or flight' syndrome and they literally cannot focus on learning.

**2.** ***Orchestrate immersion in complex experience***. The brain thrives on complexity, seeking naturally to create its own sense of order out of multiple inputs. When structure is imposed rather than emerging as students grapple with complex materials, again learning is reduced. To maximize learning, we *maximize experience*, looking simultaneously at the big picture and small parts. We do not break learning down into small segments and present these in a sequence. Teachers guide, shape, and orchestrate experiences so that needs for order, safety, and novelty are met.

Two students play a game called "seal hop" in Mishael Hittie's fourth-grade class. They have been studying frozen worlds as a year long theme and this game is played by Eskimo children in Alaska. This game provides an opportunity to move while

**3.** Continuously ***engage in active processing of experiences*** to consolidate emerging mental models. To help the brain create its own structure, reflection, talk, and dialogue about experience is critical. Classroom discussions, journal writing, e-mail groups with students in other schools, small group discussions—all help learners process, understand, and remember what they've learned.

**Best Practices:** ***Emerging Standards for Teaching and Learning***

In recent years, national professional organizations have worked to develop standards for the content and process of learning in various fields of education. A common consensus regarding best practices for teaching and learning emerged from an analysis of this work that is consistent with brain-based learning, Smith's classic approach, Kohn's picture of an effective classroom, and inclusive teaching. Classrooms, this consensus holds, can be engaging, caring places where learners of different races, cultures, abilities, and learning styles draw from one another. In addition, these national reports mirror research findings in regard to many specific groups—students with learning disabilities, gifted students, students with mental retardation, and others (Cline, 1999; Faltis, 1997; Freeman & Alkin, 2000; Vaughn, Gersten, & Chard, 2000).

The reports call for less emphasis on traditional lecture–text–test–grading and more emphasis on learning that is active, cooperative, authentic, and inclusive. In such classes students work on real issues that integrate several subjects at once. Classes are abuzz with activity, work, and learning noise as students take responsibility for projects from start to finish—developing ideas, finding information, developing products and methods of presentation. Evaluation is based on actual evidence of learning—presentations, writing, plays—rather than on traditional tests (Zemelman, Daniels, & Hyde, 1998). Seefigure below.

Classes that use best practices create space for students of differing abilities, learning styles, and strengths to flourish. Authentic learning activities let students of different abilities work together on the same project. In one classroom example, students studied the construction of space stations. A student with severe mental retardation carried materials and learned some key words. When time came to build the mock space station, he helped color key parts and copied letters for signs. What better way to meet his IEP goals of following sequences, learning his letters, and increasing dexterity?

**Common Recommendations**
**Of National Curriculum Reports**
(from Zimmelman, Daniels, and Hyde, 1998)

| LESS of . . . | MORE of . . . |
|---|---|
| ❑ Whole class, teacher-directed instruction (eg. lecturing)<br>❑ Student passivity: sitting, listening, receiving, and absorbing information.<br>❑ Presentational, one-way transmission of information from teacher to student.<br>❑ Prizing and rewarding of silence in the classroom.<br>❑ Classroom time devoted to fill-in-the-blank worksheets, dittos, workbooks, and other 'seatwork.'<br>❑ Student time spent reading textbooks and basal readers.<br>❑ Attempt by teachers to thinly 'cover' large amounts of material in every subject area.<br>❑ Rote memorization of facts and details.<br>❑ Emphasis on competition and grades in schools.<br>❑ Tracking or leveling students into ability groups.<br>❑ Use of pull-out special programs.<br>❑ Use of and reliance on standardized tests. | ❑ Experiential, inductive, hands-on learning.<br>❑ Active learning in the classroom, with all the noise and movement of students doing, talking, and collaborating.<br>❑ Diverse roles for teachers, including coaching, demonstrating, and modeling.<br>❑ Emphasis on higher order thinking: learning a field's key concepts and principles.<br>❑ Deep study of a smaller number of topics, so that students internalize the field's way of inquiry.<br>❑ Reading of real texts: whole books, primary sources, and non-fiction materials.<br>❑ Responsibility transferred to students for their work: goal setting, record keeping, monitoring, sharing, exhibiting, and evaluating.<br>❑ Choice for students (eg. choosing their own books, writing topics, team partners, and research projects)<br>❑ Enacting and modeling of the principles of democracy in the school.<br>❑ Attention to affective needs and the varying cognitive styles of individual students.<br>❑ Cooperative, collaborative activity; developing the classroom as an interdependent community.<br>❑ Heterogeneously grouped classrooms where individual needs are met through individualized activities, not segregation of bodies. |

## Culturally Responsive Pedagogy

Important work has also occurred in recent years to develop schooling practices that are responsive to culturally diverse students. Such instruction is based upon seven key principles and associated practices (Education Alliance at Brown University, 2008; Richards, Brown, & Forde, 2006):

1. ***Positive perspectives on parents and families***: Teachers aim to partner with parents inviting participation in the education of the child while being aware of and responsive to cultural differences in families.
2. ***Communication of high expectations:*** All students should be given the message that they can attain high standards of learning.
3. ***Learning within the context of culture:*** Teachers should learn about the cultures of their students and work to bridge the frequent gap between school and home cultures, adapting lessons to reflect ways of communicating and learning that are familiar to students.
4. ***Student-centered instruction:*** Learning should be cooperative, collaborative, and community-focused where students are encouraged to direct their own learning and work with other students on projects that are relevant to them.
5. ***Culturally mediated instruction:*** Teachers should aim to use different ways of knowing, understanding, and describing information that draw from different cultural perspectives.
6. ***Reshaping the curriculum:*** The curriculum should be meaningful, student-centered, and interdisciplinary connecting with topics and interests related to the background and culture of students.
7. ***Teacher as facilitator:*** Teachers should function primarily as guides, consultants, facilitators and advocates for students helping them to connect their lives and cultures with learning that occurs in school.

**Universal Design for Learning**

As students with special needs have increasingly been in general education classrooms, researchers have been building on the ideas of universal design of physical spaces (see chapter 6 and 7) to work to create methods of learning that fit the ways that students are different. While much of this work has centered around the use of computers as learning tools, these educators have moved to develop a powerful framework and set of guidelines that insures positive learning for all. The figure below illustrates the key principles along with practical instructional examples. According to this framework, to help student learning we must (1) use multiple ways to present information; (2) provide multiple pathways for students' action, expression, and (3) provide multiple ways to engage students including collaborative, interactive structures. We highly recommend two online resources filled with practical resources that support effective inclusive teaching: Universal Design for Learning website hosted by the Center for Applied Special Technology (http://www.cast.org/policy/ncac/index.html) and the Access Center, a site devoted to enhancing access to the general education curriculum by students with disabilities (http://www.k8accesscenter.org/index.php).

## Universal Design for Learning

| **1. Use multiple ways to present information** | **2. Provide multiple pathways for students' action and expression** | **3.Provide multiple ways to engage students** |
|---|---|---|
| *Provide multiple examples*. Show the range of examples, provide examples and counter-examples. (e.g., persuasive writing v. factual article in a newspaper) | *Provide flexible models of skilled performance* (e.g., Math demonstration (a) draw lines, (b) use manipulatives. | *Offer choices of content and tools* (e.g., choice of (a) books to study literature; select tragedy from a list, (b) report: written, drama, tapped presentation) |
| *Highlight critical features* (e.g., teacher tone of voice, marker underline or highlight, point to words or phrases) | *Provide opportunities to practice with supports* (e.g., teacher prompt a multi-stepped task, provide a rubric/checkbox to edit writing) | *Provide adjustable levels of challenge*: (e.g., range of materials at different reading difficulties, provide response formats with prompts v. open-ended) |
| *Represent information in multiple media and formats* (e.g., text version of book, books on tape) | *Provide ongoing, relevant feedback* (e.g., (a) questions and answers in classroom, (b) quiz or test) | *Offer a choice of rewards:* (e.g., provide a menu of reinforcements) |
| *Provide supports for limited background knowledge, and establish a context for learning* (e.g., classroom resources, peer tutoring) | *Provide flexible opportunities for demonstrating skill.* (e.g., written, oral, or visual presentation, explanations, word process) | *Offer a choice of learning context* (option to work in study carrel v. open classroom, student use headphones) |
| | *Provide novel problems to solve* (e.g., unique problems outside the initial instructional set to promote generalization and transfer) | |

## Differentiated Instruction

Differentiation is an instructional approach in which teachers seek to understand student learning profiles, including their readiness or ability level, and use strategies of instruction that will meet them where they are, providing assistance to move to their

next level of skill and knowledge (Hall, Strangman, & Meyer, 2003). Teachers can differentiate content, process, and/or product for students (Tomlinson, 1997).

Differentiation of content refers to a change in the material being learned by the student. For example, if the classroom objective is for all students to write persuasive paragraphs, some of the students are learning to use a topic sentence and supporting details, while others are learning to use outside sources to defend their viewpoint. Differentiation of process refers to the way in which the student accesses material. One student explores a learning center while another student collects information from the web. Differentiation of product refers to the way in which the student shows what he or she has learned. For example, to demonstrate understanding of the plot of a story, one student creates a skit, while another student writes a book report.

When teachers differentiate, they do so in response to students' readiness, interest, and/or learning profile. Readiness refers to the skill level and background knowledge of the child. Teachers use diagnostic assessments to determine students' readiness. Interest refers to topics that the student want to explore or that will motivate the student. Teachers can ask students about their outside interests and even include students in the unit-planning process. Finally, the student's learning profile includes learning style (for example, is the student a visual, auditory, tactile, or kinesthetic learner), grouping preferences (for example, does the student work best individually, with a partner, or in a large group), and environmental preferences (for example, does the student need lots of space or a quiet area to work). When a teacher differentiates, all of these factors can be taken into account individually or in combination (The Access Center, 2008).

Differentiated instruction has its roots in efforts to create opportunities for quality learning for gifted students in regular classrooms. The tools of differentiated instruction and the approach are very valuable, however, for all students. Differentiated instruction accommodates children at multiple levels in one classroom. However, we have preferred the term "multilevel" to emphasize the fact that our students function at many differing ability levels without having to create a separate lesson plan for each level. The idea of multi-level teaching takes the idea of working at different levels one step further. Instead of planning different activities or instruction for each level, multi-level teachers plan lessons in which students can automatically function at different levels.

**Authentic Multilevel Instruction**

In 2002, ten general and special education teachers who had been identified as exemplary multilevel teachers met one day per month for a year to discuss authentic, multilevel instruction. They identified principles that guide and describe practices in

their classrooms that are highly effective for students with differing ability levels. These correlate very well with the studies and guidelines discussed above. We have found the ideas and strategies developed by this group of teachers to be useful as a guide. According to this panel of exemplary teachers, effective instruction will have the following characteristics:

***Authentic.*** Authentic learning is foremost and central. Rather than involve students in 'school work,' authentic learning teaches through tasks that occur for a real purpose. For example, rather than writing practice letters to no one in particular, authentic writing involves students in such tasks as: writing a company regarding how they may improve their product, thinking about and substantiating suggestions; writing a letter to parents on mother's and father's day;

***Engaging higher order thinking.*** In authentic multi-level teaching, teachers involve all students in higher order thinking, in complex learning and projects at the higher end of Bloom's taxonomy.

***Inclusive.*** Teachers include all students with special needs in general education classes, assuring use of heterogeneous grouping and pairing in the classroom. Ability grouping is used minimally and under careful conditions. When ability groups are used, they are based on specific skill needs in common with other students – mini-skill lessons – and are short-term.

***Multi-level.*** Students are engaged in learning activities that allow them to function at their level of ability, yet are challenged at their zone of proximal development to continue growing and learning. 'Just right' work for all students is expected and supported. Students are taught to understand the concept of multi-level instruction, helping to challenge and support one another.

***Multi-modal.*** Multi-model methods of obtaining information, engaging in learning, and demonstrating learning are used flexibly and naturally, including multiple intelligences and learning styles.

***Scaffolding.*** Students are given support and assistance to move from their present level of functioning to the next level. Students are explicitly and systematically taught to help, support, and challenge one another as part of building community in their classroom. Specialists assist students and the general education teacher in the design of multi-level lessons and providing needed specific skill instruction, support, and assistance.

***Guided student leadership and direction.*** Children are given voice in the classroom and explicitly taught to help, support, and challenge one another. Students are taught how to judge 'just right work' and provided choices, instruction and support in learning how to take responsibility for choices.

***Evaluation based on learning and growth.*** Student evaluation is based largely on (1) learning and growth, and (2) effort rather than standard levels of expected functioning (eg. 'grade level'). Assessment is performance-based and authentic and skills are assessed in the context of authentic tasks.

When we compare these different efforts to create more effective teaching practices, the similarities of approaches are remarkable. We now turn to exploring in detail strategies, tools, and resources to make these ideas real as we teach our students.

**Back Pack**
***Assistive Technology Resources***

The **Center for Applied Special Technology** develops innovative resources and strategies for educators based on the principles of universal design for learning. This site has a wealth of materials. http://www.cast.org/index.html

**Project Zero.** Project designed to "to understand and enhance learning, thinking, and creativity in the arts" based on the ideas of multiple intelligences. www.pz.harvard.edu/index.cfm

**Steps for Planning**
**Authentic Multilevel Instruction Units and Lessons**

To start at the beginning of how we create this ideal in our own classroom, we need to look at the basics of how we plan for units, lessons, and the students we have in our individual classrooms. All teachers have some method of planning for what they teach. However, if we seek to design our lessons in ways that are both authentic and multilevel, we need to include some additional considerations. The figure below lists the key steps. Here we'll introduce these steps and then look at each step in detail in this chapter and Chapter 12.

1. Select authentic, interdisciplinary theme
2. Develop multilevel learning goals
3. Design product, assessment, and evaluation
4. Engage students in authentic multilevel learning activities

## 5. Differentiate lessons for individual students

***Step 1: Select an authentic theme*** that will be of interest to students which can link various subjects. While all our instruction will not necessarily be linked around authentic themes, the more this is the case, the more successful we will be in promoting higher levels of learning.

***Step 2: Develop multilevel learning goals***. Define an overall learning goal for the unit or lesson that is linked to one or more strands in the district curriculum. Once we know the overall learning goal, we think about the range of functioning of our students and articulate optimum expectations for our highest, lowest, and average level learners.

***Step 3: Design product, assessment, and evaluation***. Next we design student assessment. What product(s) will they develop? How will they demonstrate learning and how will we assign grades?

***Step 4: Engage students in authentic multilevel learning activities using workshop-based learning.*** We then design learning activities in which students obtain and use information at their own ability level while working collaboratively with other students. We use multilevel, learning materials that allow students to access information at their level of ability in multiple modalities with multiple forms of representation.

**Step 5:** ***Differentiate lessons for individual students***. Finally, we consider special needs of students and individually differentiate lessons for some to insure their participation and learning. We connect lessons to individual plans such as IEPs and plan how to use support from specialists such as bilingual paraprofessionals, special education teachers, and speech therapists (See Chapter 5).

The figure below provides a form to detail these steps. Of course, most of the time we do not complete such forms (though they are required in some schools). *Learning to think* naturally through our unit and lesson planning *using this process is the goal*. Let's explore each step in greater detail. But first let's look at a good example of a multi-level lesson and the work of one students with special needs.

**Journey Into the Classroom**
**A DAY IN THE LIFE OF A MOOSE**
***Plant and Animal Adaptations Unit Plan***

Let's begin our exploration with a lesson done in the 9th grade. We will look at the lesson plan and look at a bit of work by Sydney, a 9th grader with a cognitive disability.

You can see how the lesson allows students to pursue the same subject at very different abilities. You can also see how excellence in the project can allow for individual excellence at many different ability levels. You will enjoy this I suspect.

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**Lesson plan: What you will learn**

- The parts or structure of the plant or animal
- Where it lives (habitat)
- Adaptations it has made to survive
- It's survival needs (where is it on the food chain – pedator/prey, consumer/producer, herbivore, carnivore, omnivore?)
- Interesting or unusual facts about your plant or animal

**What you will do**

Your research

1. Choose a plant or animal that you want to learn about. Find books and internet sites that will help you in your research. You must use at least two different sources of information.
2. On index cards write what you are learning about your plant or animal. This should be written in your own words. Include the title of the website, book, or other materials where you found the information.

Your product

1. You will create a story about your plant or animal. You may use one of the two story starters below to get going. The more you know about your plant or animal, the more interesting and detailed your stories will be.

   *Story starters*

   - A day in the life: Describe a typical day in your life as if you are your plant or animal. (For example: What kind of place do you live in? How do you spend your day? How do you get along with other animals near you? How do you communicate with other animals?)
   - What would it be like: Describe creatively what it would be like to have some of your plant or animal's characteristics. For example: How does it feel to be able to change your skin color and patterns? What does it feel like to have a

body temperature that's exactly the same as the air temperature around you? What is it like to have two eyes that can each see different things?

2. In addition, you will choose a way to present your learning to the class. Possible ideas are: a riddle book, a Powerpoint slide show, poetry, create a habitat, a skit, or a song.

---

**Self-evaluation rubric**
**A DAY IN THE LIFE OF A MOOSE**
*Plant and Animal Adaptations Rubric*

**Name: Sydney Jones** **Grade: A**

| **Benchmark Ratings** | **1** | **2** | **3** | **4** |
|---|---|---|---|---|
| 1. This doesn't sound like my project. | | | | |
| 4. This sounds like my project. | | | | |
| **My Research** | | | | |
| I used my time wisely in class. I stayed focused and on task. I organized my learning and took care of my products, supplies, and materials. I met my deadline for completing my project. | | | | **X** |
| I turned in my research notecards and used the facts I learned to write my story and make my presentation. I used at least 2 different sources. | | | | **X** |
| **My Products** | | | | |
| My narrative story was well written and revised for the Six Traits. | | | | **X** |
| I answered all the questions I was asked about my plant or animal. | | | | **X** |
| My project was a quality product that clearly demonstrated what I learned. | | | | **X** |
| **My Presentation** | | | | |
| I spoke clearly and loud enough to be heard. I had rehearsed and was well prepared. | | | | **X** |
| My presentation was well organized, well written and a quality product. | | | | **X** |

**A DAY IN THE LIFE OF A MOOSE**
Excerpt of report by: Sydney Jones (2004)

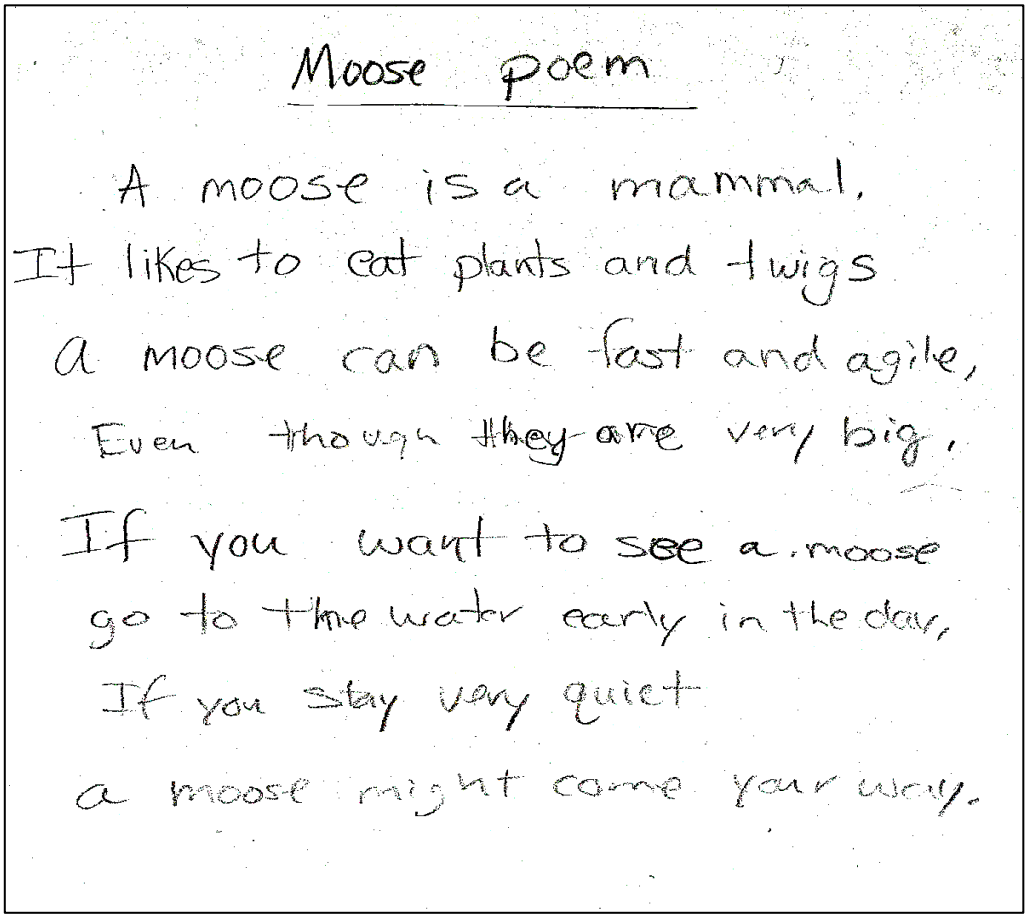
I am the largest member of the deer family. I can be found in the northern forest in North America, Europe, and Russia.

I spend most of my day eating. My favorite foods are weeds, grasses, roots, willow, birch, and aspen twigs.

I will drink water in the lake and walk around. I like to see other animals around me.

When walking through wet areas, I spread my toes apart and it makes it possible to move with ease. Some call me a clumsy looking animal, but despite my large size, I'm very fast. I can vanish without making a sound.

Below is a poem Sydney wrote about the moose. Enjoy.



Moose poem

A moose is a mammal,
It likes to eat plants and twigs
A moose can be fast and agile,
Even though they are very big.
If you want to see a moose
go to the water early in the day,
If you stay very quiet
a moose might come your way.

### Step 1. Select an Authentic, Interdisciplinary Theme

***Themes*** provide a powerful way to organize teaching around key topics or issues that are important or of interest to students. Themes improve instruction in many ways. First, interesting topics engage students and increase their motivation. Second, when teachers link several subjects, we more effectively cover many topics simultaneously. Third, themes allow students to see connections among the various subjects and to apply them practically, enhancing understanding. Finally, thematic instruction creates opportunities for students of different ability levels to work together.

When thematic instruction is authentic instruction, it engages students in tasks connected to real life—to family, community, or larger society; to real-life problems they are likely to encounter outside of the classroom. It can be incorporated into many instructional approaches but most often operates as a type of workshop-based learning. Newmann and Wehlage (1993) stated that authentic learning:

- Promotes higher-order thinking
- Seeks depth of knowledge (fewer topics are engaged in greater depth)
- Engages students in connecting to the world beyond the classroom
- Encourages student construction of knowledge

**Romeo and Juliet Today**
**9th Grade English Multilevel Lesson**

What *is* real? What is authentic? Two key aspects of authentic instruction are most important: (1) the topic of focus and (2) the method of engaging students. Topics are authentic when they connect directly to the lives of students and the local community in which they live. This does not mean that we ignore state, national, or global issues, but it does mean that we use the lives of students as the starting place. Sometimes such topics simply involve students in studying real places, events, or people in the community. Frequently topics center on concerns or issues for individuals or the community. A few examples might be useful (see after the figure). A student interviews individuals he considers "heroes" and learns about their lives, developing written materials, a poster, a video, or another depiction.

- Students study a forest at the edge of the school grounds, inventorying the types of animal life they see, writing stories as if they lived in the forest.
- In order to learn to write letters, the class writes a letter to the newspaper regarding an issue. When their letter is published in the paper, they get 600 responses!
- A student's grandparents visit from a country that is in the midst of war. The class

studies the country and class members write letters welcoming the grandparents to the United States.

A local industry has just closed, and many people have been laid off. At the same time a new shopping mall is opening and a high-tech industry is being built in a nearby town. A high school class studies why this is happening.Following the choice of topics, there is the question of teaching strategies. At best, authentic learning engages students in activities that are meaningful, that are intended to make an impact on the environment or the social life of the community. Students don't do "practice" letters; they write real letters to real people about real issues for real purposes. Students read books for enjoyment, not materials programmed according to certain letter sound combinations. Students gather information regarding real issues.

Authentic learning, then, is not about *preparing* for life. Rather, authentic learning is about *living* life. Through such living experiences students learn at a deep level (Dewey, 1943). We will find that many different levels of ability can be naturally incorporated.

**Create Interdisciplinary Themes**

How do we identify authentic themes? Here are a few suggestions. First, obtain these materials:

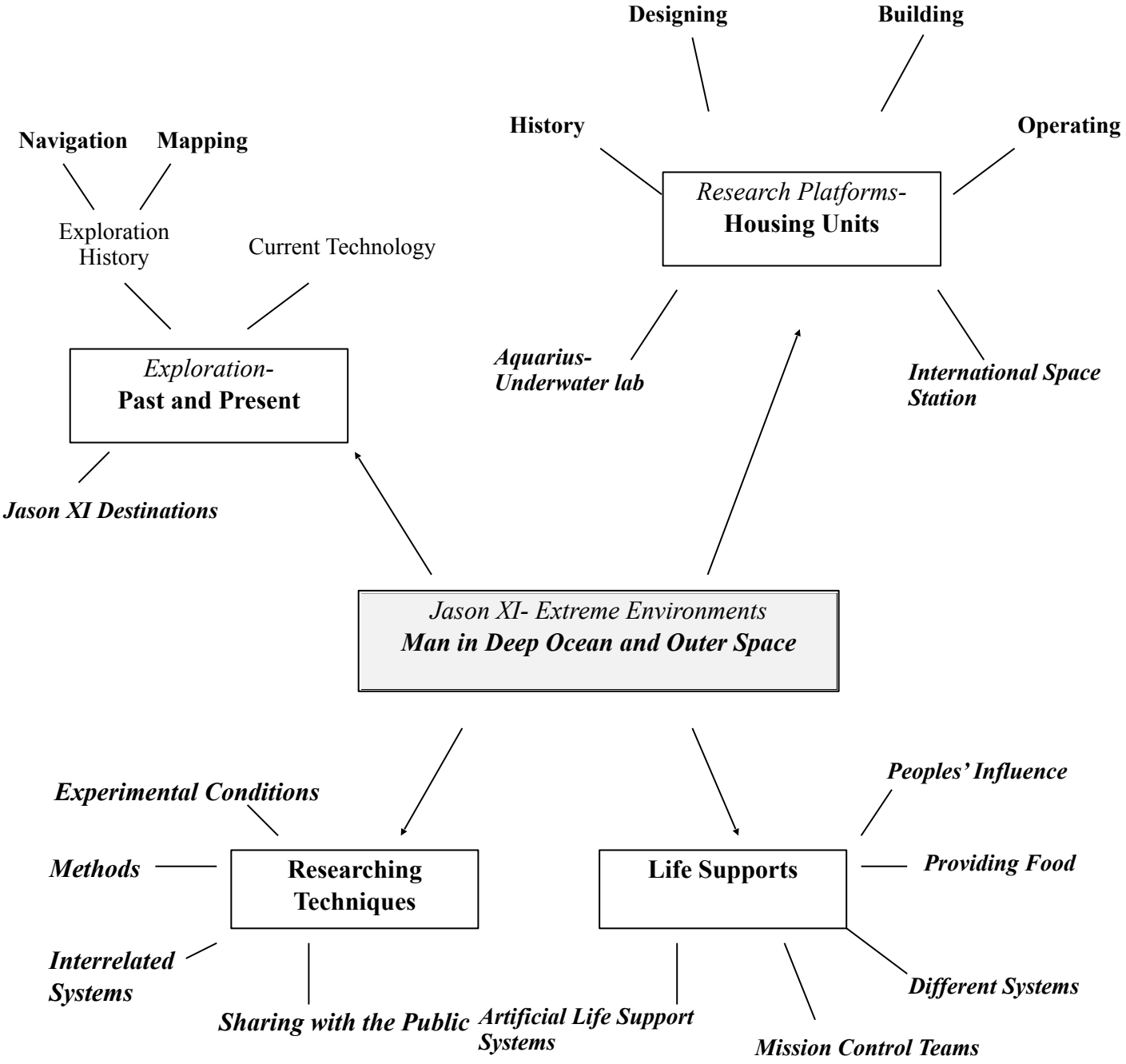
- District curriculum (not the textbooks but the concepts to teach)
- School calendar of card-marking dates
- Regular calendar
- An organized format to record the ideas (computer, monthly planner)
- Textbook of any subject with a mandated order

Then consider the following questions. How long do I want my themes to be? 4 weeks, 10 weeks? Would I prefer to organize themes around science or social studies? (These two subjects are the most natural source of authentic lessons as both deal with occurrences and objects in the real world).

Start by looking at the curriculum guidelines for either social studies or science. Roughly plot a schedule for covering topics. Now look at the curriculum guidelines for other subjects and look for themes to link these together. Sometimes we can make obvious links as in the following examples: connecting pro/con writing with the civil rights movement; linking legends with the early history; putting a unit on motion with the industrialization period. In other cases, we conceptualize an underlying theme that

is used to link many topics such as: conflict between human beings; love; fear; beauty. Some concepts make sense at a certain time of year.

**Curriculum Web**
**"Going To The Extremes"**



Plants are better in the fall or spring; civics, around an election or at the beginning of the year when our class is creating its structure. The key is to use a topic that is clear but also very broad and open-ended. Such topics help structure multilevel lessons. Once we have a topic, name it and then provide a short description. Here are a couple of additional examples:

- *Ancient Worlds*: *How land was formed and original people lived.* This unit includes rocks and rain from science, Native Americans history, fossils, and how glaciers formed in our state.
- *Exploration and New Beginnings*: *How they came and why they stayed.* This unit includes explorers and early settlers, how day/night and seasons are formed, energy in various forms, and the reading comprehension strategy of sensory images.

One useful tool in this process is a **curriculum web**. The figure above illustrates a web organized around a school-wide theme—"Going to the Extremes," a study of how human beings fare and adapt in outer space and the depths of the ocean (Hittie, 1999a). Themes are used at all grade levels effectively. Elementary teachers use this process to link subjects in their own class. Many middle and high schools are developing interdisciplinary teams who link language arts, social studies, science, math, and the arts in longer time blocks around authentic themes.

Once we have the themes for the whole year, we introduce them to students. We start with finding out what connections they see across the subject areas. In daily conversation and activities, we are constantly bringing the focus back to the connections we want the students to build in their mind. We frequently ask: "How does this connect to something else that we have learned?" For example, using the science topic of day/night and the seasons, we ask students how seasons and the passage of night would have affected the explorers - when they traveled, the time of year to travel, jobs early settlers had.

*An eighth grade teacher team obtained input from their students around the following topics: racism, poverty, and how and why wars happen. This suggested a theme of conflict in communities around which they could link literacy, social studies, and math. Some students gathered information about conflicts in their community. They looked at information on the internet, in magazines and books, and interviewed people. Students worked in small heterogeneous groups to gather information and present it to the class. Each group developed a plan that included individual responsibilities and ways to supprt one another. Literacy was involved as students read, wrote notes, and developed their presentation. Students used math to count, graph and analyze information; gathered information about the economy, socio-economic*

*status, and use of land in communities to see how economics related to these conflicts. The total class shared their results in an evening program for parents and the local community.*

*Students with special needs were able to participate fully in these groups. Each group identified key roles that each student played and support they needed. For example, Keith, a student with a cognitive disability who reads on the 2nd grade level, was very involved in interviews with a partner. He likes to draw and help make presentation materials for the group. He participated in all group discussions about the information and brought his uncle to class who had been very involved in civil rights.*

**Involve Students in Selecting Topics for Learning**

We can also involve students in selecting themes, asking them to brainstorm ideas that are interesting to them or to pick from several that we have developed. We can involve students in selecting themes on which the total class may work. If we use inquiry or problem-based learning in which students are involved in both individual and group learning project, we will particularly want to engage them in selecting a topic of interest.

We do this by helping students reflect on their own lives and their interests, developing questions to ask. We can help students *formulate questions* in which they are interested. Students use a writing notebook in which they write down ideas about what matters to them, about things they want to know. Strategies to get students started include:

- Break students into pairs, have them interview each other, and publish the interviews as part of a class newspaper.
- Ask students to interview their families and write "family stories" to share with the class.
- Students create a scrapbook of their lives to introduce themselves to others.
- Students are given daily time to reflect on what is going on in their lives, what questions they have about learning or their future, and create lists of things that puzzle them or worry them.

Teachers provide students with guidance in *planning* how to proceed. If students are to produce poetry or a short story, for example, we have them use a list, web, or sketch sequence to plan and organize important points. We model how this looks, sharing our thoughts out loud. Then, we assist them in creating their own. If they are to be involved in a collaborative project on a community issue, their plan may involve various methods of gathering and displaying information.

Students engage in these activities at multiple ability levels. In a high school social studies class, for example, a student with mental retardation interviewed his father and recorded the interview on tape. He listened carefully to the tape and used "picture writing" to develop a story. A classmate later transcribed the story into conventional text.

**Why Multilevel Differentiated Instruction is Important**

Engaging students at multiple levels simultaneously is a critical part of best practices for several reasons. First, for students, the challenge of working with classmates of truly diverse abilities is an important "complex experience" all by itself. At an inclusive middle school, we once met with several eighth graders who had been a circle of friends for May, a student with Down syndrome. As these young people shared their experiences, we were amazed at their critical thinking and problem-solving skills. Working with May had provided them with an authentic course of study in critical thinking, management, and social issues, leading to deep learning.

Second, because students vary dramatically in their abilities, if we do not teach in a way that supports students at their own levels, we exclude students who cannot "keep up." School becomes a place of competition, of winning and losing, rather than a place of support and refuge. Learning is literally shifted downward, as students revert to the brain stem portion of their brain and the emotional reactions of fear, anger, and hostility became more prevalent. So multilevel teaching is a critical component of helping all students learn at the highest possible levels (Caine & Caine, 1995).

In multilevel teaching we design our teaching so that students of very different abilities can learn together, each at his or her own level of ability. When we base our teaching on brain-based learning and thematic, interdisciplinary instruction, our classes provide many *opportunities* for students to learn at multiple levels together. However, we must intentionally take advantage of these opportunities.

Vygotsky (1978) described an important concept for multilevel teaching, the *zone of proximal development*—the range of tasks just beyond a student's present level of ability that the student cannot yet perform independently but can perform with the help and guidance of others. We seek to take students where they are, provide support and assistance for tasks they can not accomplish on their own, and challenge them to go to the next level. Thus, multilevel teaching does not mean that some have it "easy" and others must work "harder." Multilevel teaching means that all children are challenged to do their very best, no matter what their abilities.

Now contrast this scenario with what is more typical. Traditional schooling has all children learning the same material at the same level and at the same pace. In a traditional class we often hear people saying things like "He just can't do eighth-grade work. I think he should be referred to special education." In that same class we also usually observe some students who never study at all and yet always get A's. The first student daily experiences the message "I cannot learn" and probably comes to believe it. The other student thinks, "I am so smart I don't have to work." Neither message is healthy.

We should be clear that multilevel teaching counters traditional thinking. Typically, the goal is that every student will be on 'grade level.' Grade level, on the one hand, outlines typical developmental expectations of children. However, said a different way, grade level is simply a point in a developmental continuum at which 50% of students will be above and 50% below. For many years now, we have asked teachers this question: "What is the range of grade level functioning of students in your room?" The very minimum response has been 3 grade levels. However, when teachers are honest they say 6-10 grade levels, *not counting* students with identified disabilities. If this is the case, focusing on instruction to the middle assures that some students will be far beyond that level of instruction and others will be below. Both sets of students will be frustrated. This is what we call *mono-level instruction*, an approach directly contradictory to the best practice frameworks we discussed earlier in this chapter.

For multilevel instruction to work, students must be expected to engage in what teachers *call just right work* or *personal excellence***.** We teach students that all people are different but that, in our class, all are expected to work at their personal level of challenge and that all are to be supported and respected. Throughout the year, we help students understand how they are different and we teach them ways to help others learn. We teach students about multiple intelligences as part of this process and how they can better use their strengths to bridge the gap to the areas that are more challenging. Therefore, the next step in teaching using multilevel instruction is to develop multilevel learning goals.

**Problems to Avoid in Designing Multilevel, Differentiated Instruction**

We need to avoid several traps as we work toward multilevel teaching. Let's first talk about situations we've seen in which students have been locked rigidly into specific ability levels. Any level planning is simply a template that changes as students grow and we better understand their abilities. It is also vital that we teach students to choose for themselves developmentally appropriate work that stretches their thinking. When we provide different levels of an activity, we do not preselect and assign students to an

ability level. They will make mistakes that we will need to discuss, but that is all part of the learning process.

Some teachers do, in fact, lock students in and limit their abilities by creating elaborate leveling and management systems for different subject areas. One teacher codes books by colored stickers and assigns students their color to read. Another teacher uses blocks with different activities on the various faces and assigns each child a particular face (Kronberg, 1999). One teacher gives her students three choices of activities but designates these as A, B, and C activities for each particular child. These designations represent the highest grade that child could get in each activity, even if the work was at the child's level (Nunley, 1998). In all of these approaches students have no knowledge of how to choose appropriate work when the teacher is unavailable; nor do they have strategies for completing work that is more difficult by relying on those around them.

Schum, Vaughn, and Leavell (1994) suggest a pyramid for planning at three levels (1) what *all* students should learn; (2) what *most* but not all students will learn, and (3) what *some* students will learn (the highest level and the top of the pyramid). This approach helps us differentiate learning for students with higher abilities. However, this strategy may be problematic for teaching that includes students with severe disabilities, depending on how we define "what all students should learn." If, for example, teachers routinely identify learning targets that are beyond the capabilities of a student with severe disabilities, what is to be done? At worst, this could easily result in the conclusion that the general education classroom is inappropriate for this student. At best, the process simply provides no guidance.

As we design instruction, we also must not develop automatic and stereotypical approaches based on disability categories. There is no formula. Each student is unique, and our planning of multilevel instructional adaptations will be unique for each student. Similarly, we must also not be stuck in the mindset that we cannot teach this particular type of child because we do not have the training to deal with that. Multilevel

teaching is as much a mindset as it is a set of tools for teaching. Once we have the mindset that we can teach all students, then regardless of the disability we will find a way to make it work.

## Step 2. Develop Multilevel Learning Goals

Developing multilevel learning goals involves three key steps: (1) identify the overall goal of learning in a unit or lesson; (2) state anticipated demonstration of learning at different levels by students with highest, average, and lowest abilities in our classroom; and (3) consider needs for alternative learning goals for some of our students.

One of the difficulties that teachers often experience with both high and low ability students is that we don't really understand what to expect. If, for example, a teacher expects that a student with a cognitive disability will function on grade level, she will be very frustrated and feel she is a failure when this does not happen. The clearer we can be about the type of performance that would demonstrate real learning for students of varied abilities, the better we will recognize their learning when we see it.

### Develop Overall Learning Goals For the Unit Or Lesson

Developing overall learning goals is very important. If we are using authentic themes to link several subjects, we'll want a learning goal statement that helps clarify the focus of the lesson. We'll also want to phrase learning goals in a way that supports higher order thinking and multilevel instruction. In our work with exemplary inclusive teachers, we've been struck with how they articulate learning goals and how they describe these to students. Consistently, these teachers state open-ended learning goals that require higher levels of thinking, whereas teachers who are not skilled at multilevel teaching identify learning goals largely as memorization of facts, a low level of learning.

Let's look at two contrasting examples of learning goals:

1. Students will memorize definitions of the parts of a plant.
2. Students will understand and demonstrate how plants grow and reproduce.

While these may seem similar, in fact, they represent very different ways of framing the learning goal. The first learning goal is very traditional. Classrooms are replete with similar examples: memorizing state capitols, body parts. This is similar to the focus on 'getting the right answers' in math calculations. What's the problem with these as learning goals? Several. First, for all students, and particularly those with higher

abilities, such goals simply are not interesting or challenging. The prevalence of such learning goals in classrooms helps explain the frustration of parents of gifted children who want lessons that engage higher levels of thinking. Curiously, at the same time, such goals make it much more difficult for lessons to be multilevel where each student can learn at her own level of ability. If the goal is to memorize parts of the plant, if a student cannot do this, the only thing to do is to create a parallel goal – eg. naming a plant. While this is an important strategy on occasion, having learning goals that naturally allow students to move to their level of challenge makes instruction both easier and more effective.

Look at the second example. This is an open-ended goal in which students can learn in many different ways and at many different levels. For example, a student with a cognitive disability, who reads at the first grade level, could use learning materials with many pictures and text that is read aloud on a computer to achieve the goal of learning about plants reproduction. This student's understanding may be basic but still meet the learning goal. At the same time, a highly able student can pursue this question at a very sophisticated level. Such a student could examine the process of plant growth in great technical detail, seeking to understand the impact of various environmental factors on plant health and growth. Indeed, many scientists have organized their entire careers around such a learning goal.

District curriculum guidelines typically state learning goals for different grade levels. These broad learning goals are often conducive to multilevel learning goals. Listed below are some typical examples. All of these goals are open-ended allowing us to facilitate multilevel learning.

- Reading: Students will comprehend technical information in nonfiction.
- Spelling: Students will improve their spelling of words in their writing.
- Math: Students will improve their computation skills.
- Science: Students will utilize the scientific process to conduct research and experiments.
- Social Studies: Students will understand how the New World was founded.

As we explore the district or state curriculum guidelines, they become the basis for our lessons. We can easily demonstrate how our instruction is directly linked to the curriculum whenever this is needed, as ideas are pulled directly from these sources. This reinforces the validity of using best practice teaching. Use of district curriculum guidelines can also be very useful as we develop individualized plans for students with special needs. Law requires that all students with disabilities have *access to the general education curriculum*. If we use curriculum guidelines to target individualized learning

goals for students, we better link such individual plans to ongoing instruction in our classroom.

Courses should be organized around *big ideas* and key knowledge. Three key questions can articulate these big ideas as course organizers: (1) Why are students learning information? What is the fundamental purpose for understanding and skill development; (2) What do people in various fields *do*? How might we involve students in learning based upon activities of professionals in various fields – physicists, mathematicians, statisticians, historians, writers, etc. Thinking this way will lead us to important questions that will be open-ended and allow multilevel instruction to occur. They also lead to learning activities which are engaging and practical, connected to real occupations and fields of study (Wiggins & McTighe, 1998).

*Bloom's taxonomy* of educational outcomes also crafts goals for higher order thinking and multilevel instruction (Bloom, 1956; Fowler, 1996). The figure on page 450 describes Bloom's taxonomy. Note that the closed goals we listed above are part of the lowest level on Bloom's taxonomy – knowledge of facts. As we move up, outcomes involve students in higher orders of thinking and tend to make learning more engaging. It is simply more interesting to use information for a purpose, analyze data, synthesize various viewpoints, or evaluate the effectiveness of a program than to memorize and passively understand. These higher levels of outcomes naturally move towards authentic learning related to the real world.

Is it important that students know facts? Of course. However, the magic is that the higher levels naturally incorporate lower levels of learning. For example, if you are going to evaluate you must use facts and analyze and synthesize information. If you are going to apply information, you must understand and know it. As we involve students in interesting, complex tasks we find that they will remember more effectively rather than just memorizing facts for the test and then forgetting them.

At all levels, from knowledge to evaluation, there are degrees of sophistication or levels of ability that can be demonstrated. For example, if a class is involved in gathering water specimens in the creek next to the school, analyzing the water (analysis), and drawing conclusions about the effectiveness of a water filtration process that is supposed to help make the water more clean (evaluation), could a student with a cognitive disability be involved in this process? Absolutely. Let's say the student has no functional language except a reliable "Yes" and "No" made through sign language. How would this student be involved? One strategy: other students in the class get his input by asking him yes and no questions while presenting simplified information to him. The wonder of this strategy is that these students are gaining much as they must

put information and questions in very clear terms. They are also learning how to communicate highly technical information in typical language. In other words, the learning of all is being strengthened. This is a far cry from what typically happens with students with cognitive disabilities. Such students typically have a more simplified curriculum where they are taught to memorize the most basic of facts using very structured, closed learning materials for their entire school career.

**Bloom's Taxonomy of Educational Outcomes**

| Competence | Skills Demonstrated |
|---|---|
| **Evaluation** | **Presenting and defending opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria.** *Question Cues* assess, decide, rank, grade, test, measure, convince, select, judge, explain, discriminate, support, conclude, compare, summarize. |
| **Synthesis** | **Compiling information together in a different way by combining elements in a new pattern or proposing alternative solutions.** *Question Cues:* combine, integrate, modify, rearrange, substitute, plan, create, design, invent, what if?, compose, formulate, prepare, generalize, rewrite. |
| **Analysis** | **Examining and breaking information into parts by identifying motives or causes; making inferences and finding evidence to support generalizations.** *Question Cues:* analyze, separate, order, explain, connect, classify, arrange, divide, compare, select, explain, infer. |
| **Application** | **Solving problems by applying acquired knowledge, facts, techniques and rules in a different way.** *Question Cues:* apply, demonstrate, calculate, complete, illustrate, show, solve, examine, modify, relate, change, classify, experiment, discover |

| Competence | Skills Demonstrated |
|---|---|
| **Comprehension** | **Demonstrating understanding of facts and ideas by organizing, comparing, translating, interpreting, giving descriptions and stating main ideas.** *Question Cues:* summarize, describe, interpret, contrast, predict, associate, distinguish, estimate, differentiate, discuss, extend |
| **Knowledge** | **Recalls facts, terms, basic concepts and answers.** *Question Cues:* list, define, tell, describe, identify, show, label, examine, tabulate, quote, name, who, when, where, etc. |

Adapted from Bloom (1956), Fowler (1996), and Counseling Services

**Describe Expected Performance Levels for Learning Goals**

Once we develop effective overall learning goals, we describe expected levels of learning by students of differing ability levels. At first, making a few written notes will help us clarify our thinking. As with all aspects of this planning process, the more experience we have the more intuitive this will become. We want to consider students who are our lowest functioning students, those who fall into the average range, and those with the highest abilities. We've labeled these in order levels 1, 2, and 3.

A level 1 learning goal would involve the simplest demonstrations of learning we would expect. Theoretically, there is no bottom level. However, we will target the lowest-functioning students in our class. A level 2 goal focuses on skills achievable by most students in the class. A level 3 activity will reflect what we'd expect of our highest ability students. We must be careful, however, to not create learning activities that separate students based on our expectations. We are then recreating segregation. The figure on page 452 illustrates an overall learning goal and multilevel expectations of a unit associated with the Jason Project.

**Design Needed Alternative Learning Goals and Expectations**

We may also need alternative learning goals for some students with more significant learning challenges. If we have effective multilevel learning goals, almost all students will be able to achieve this goal at some level. However, if we have a student for whom this is not realistic, we may continue to have them be involved in the learning activity and general topic for different purposes. If we differentiate and adapt the learning goals, activity and materials, we will keep these as close as possible to what the rest of the class is using. In Chapter 4, we learned how to use a curriculum matrix to connect

IEP goals (and similar goals for other students with special needs) to our classroom lessons. We can use the curriculum matrix to consider alternative or additional learning goals. For example, take the student involved in studying plants. In addition to learning about plants, however, the goal being addressed from his IEP is to identify colors and to interact well with other students. This can easily be incorporated into the lessons we have already created. Truth is, we will almost always have such additional alternative goals in our minds for all our students, even if we don't state them as a learning goal of the lesson.

**Multiple Levels Of Teaching Goals**
***Example from "Going to the Extremes" – Jason Project***

| | | |
|---|---|---|
| **UNIT THEME: Human beings living in extreme conditions – *space and deep in the ocean*.** | | |
| **Overall Learning Goal**<br>Understand the conditions under which plants can grow<br><br>**Learning Activity:** small groups conduct a hydrophonic experiment (growing plants without soil as scientists are doing in space), record multiple data, and compare results of data from two different sources. | | |
| **Level 1.**<br>Help set up materials, work in a team<br>Do basic recording of the responses of the plant. | **Level 2.**<br>Learn how to work as a team.<br>Plant seeds, record growth, and write simple conclusions**.** | **Level 3.**<br>Learn to lead a team.<br>Plant seeds, record growth, and do projections of growth. |

From Hittie (1999

In considering alternative goals, we also consider changing the amount or difficulty of work (Deschenes, Ebeling, & Sprague, 1994). Examples include:

- Allow calculator use in math.
- Have a student draw quick sequential sketches to record journal responses to a story read by the teacher or books on tape.
- Change the standard by which we evaluate the product a student produces (e.g., give credit for a simpler product).
- If the class is reading a Shakespeare play, have one student read a simpler version.
- Simplify directions by limiting words or number of steps.

- Adjust the number of pages of writing or reading, number of spelling words, length of a speech or presentation, or the number or length of homework assignments

We can also provide students opportunities to take additional time with the material. Three general strategies are useful (Deschenes, Ebeling, & Sprague, 1994).

- *Additional guided practice*: We gather students for miniskills lessons; peer buddies provide in-class or out-of-class review and tutoring; we arrange occasions such as science nights when families engage in fun learning together.
- *Changes in the pace of instruction and performance*: We slow or increase the rate at which students are asked to obtain information and perform tasks. For some students, we provide additional time (often for fewer responses or performance tasks). For other students, we require more rapid performance on certain tasks.
- *Extra time*: We allow extra time within or outside of class for students to complete their work. If we give other students an hour to finish a project, we might give a particular child two hours. Of course, this also means that we may have to exempt the child from other work that some students complete.

**Help Students Understand Fairness**

How do we handle the situation when one student may get an A for work that is clearly not as sophisticated as the work that earns a C for another student? How do we respond when some students turn in very sophisticated and complex projects and another student turns in only a simple drawing? What about when one student reads three complex chapter books and another three simple picture books? How do we explain this to students and parents? Some people will say that this is not fair.

We'd like to respond by telling a story. We go to the playground and watch the children playing baseball. To our surprise we see a boy in a wheelchair at the batter's box. The boy hits the ball over first base and begins wheeling as fast as he can go. He manages to get to first base before the ball is thrown. Yet the umpire shouts "Out!" The crowd yells in anger. The umpire explains, "He is supposed to run to first base. He used a wheelchair. That is not fair."

This is obviously not a true story. Yet we think it illustrates the point. Using his wheelchair was not unfair at all. In fact, it was quite the opposite. The wheelchair helped this child perform more equally. We can state a simple guiding principle about fairness: *Fairness is not about providing the same thing but about providing what each student needs.* We can think of other obvious examples. When people who are blind use braille,

tape recorders, or readers, they are engaging in a task in a way that helps equalize their opportunity; the same is true with sign language interpreters, or when students who speak Spanish have texts in Spanish to read in class.

In an effective class we help students understand and appreciate how they are each different. As we have differing options and standards based on individual capacities and needs, students understand that we provide what each student needs rather than expecting them all to be the same. We will be surprised how much students understand and appreciate this approach. In fact, if we provide the same curriculum and expectations to all people despite their different intelligences, learning styles, and ability levels, this *is* unfair (Tomlinson, 1999; Zemelman, Daniels, & Hyde, 1998).

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**Bumps in the Road**
***Segregated Functional Skills Training Rather than Education***

Many educators believe that academic instruction for students with moderate to severe disabilities (like Sydney) doesn't make sense. They argue that their program should focus on ***functional skills***: personal hygiene and care; household chores such as making beds; learning to do simple food preparation; using a bus for transportation; and basic work skills often involving sorting, stacking, and moving objects. Such instruction typically occurs in segregated classes. Schools develop sheltered workshops where students engage in simple work tasks, for little or no pay or use 'community-based instruction' in which small groups go into the community where, for example, they purchase food at a McDonalds or a grocery store. Separate vocational training schools provide pre-vocational and vocational training.

These educators do not believe that learning academic skills is of value to these students. They believe that students need to learn such skills to be more independent in the community.

However, the evidence simply doesn't show that such programs meet their goals. In part, this occurs because few people learn such functional skills until and unless there is an authentic need for them. Further, most of us learn such skills in the context in which they will be used – at home, in the community – with people who know how to use such skills.

Of great concern, of course, is that such programs segregate these students. Further, when we assume that a student cannot benefit from academic learning, we automatically shut them out of rich learning experiences that broaden their world. Research is demonstrating that students with significant disabilities can benefit tremendously from participation in the general education curriculum where they obtain an education based on critical skills such as reading, writing, and being part of a community (see Chapter 2).

For sure all people need to learn functional skills. However, this can be done in a way that does not segregate students and is based on skills they actually need as they engage in activities at home, in the community and on the job. Children typically learn, for example, how to shop for groceries when they need to buy food to eat, most often going with parents or friends sharing notes about how to get the best buys. Many people naturally develop these skills as they go to events in the community - movies,

restaurants, shopping at the mall. Most children learn cooking, home chores, and more from their parents or, later, with roommates. Many inclusive opportunities do exist in schools for development of functional skills – school stores, homemaking courses, after-school programs, and many activities in typical classroom instruction. In addition, most high schools operate vocational education and work-study programs in which students get credit for working part-time in community jobs obtaining job related instruction from teachers. All of these are options that help students with special needs engage in functional activities the way the rest of us do without segregating them and restricting them from learning opportunities.

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### Step 3. Design Product, Assessment, and Evaluation

After we are clear about the goals of learning, we want to design ways of assessing and evaluating students. Assessment has two interactive purposes: (1) determining *what* students have learned; and (2) determining *how* students best learn. Assessment information guides teachers in developing, delivering, and differentiating curriculum and instruction. Evaluation involves making a judgment regarding the quality of student work. In most schools evaluation translates into assigning grades. While assessment and evaluation are related, they are very different functions.

Assessment should directly relate to the learning goals we establish for lessons and units. Some districts have developed report cards that are based on curriculum guidelines that list skills and content knowledge. Some provide developmental statements and allow a rating of quality of performance and knowledge. We can use district curriculum guidelines to help us develop learning goal statements and then develop tools to assess student performance of these skills. Rather than an overall semester grade that provides little information, such competency-based assessment helps us communicate clearly to parents and administrators the growth and learning of students.

Note, however, that we want to avoid rating students on skills as at, below, or above grade level. This implies comparison to other students and says little about the actual level of competency of the student or learning and progress they have made. For students who have cognitive and learning disabilities, this practice also insures that they will always have low grades no matter how much they learn or how hard they work.

Of course if this process of assessment is to be effective, much depends upon the quality of the curriculum guidelines of the district. At best, such guidelines will focus on various skills (reading, writing, mathematics, scientific inquiry) and content knowledge (science, social studies, etc.). However, while the mission statements of most school districts indicate that they hope to develop the whole child, including responsibility,

positive mental health, social skills, and citizenship, the fact is that districts seldom have ways of assessing and reporting such learning on the part of students. Some report cards do have places for items related to such issues but typically focus on student behavior. However, if we consider such areas important we can develop our own list and include this in the assessment process of our lessons and the way we report learning to parents.

We will use assessment to carefully determine how students are progressing and ways we may need to change instruction and support to help them. The math standards of the National Council of Teachers of Mathematics (NCTM), for example, state that one of the most important tools is to listen to students talk as they learn (1987, 1991). When teaching at multiple levels, we must assess students continually so as to know if they are being challenged at their level of success (Armstrong, 1994). If we do not know that all students are being challenged, then we do not know if they are all learning. When students are making a choice that is too easy or too hard, we discuss it with them. Does it stretch their abilities? Are they finishing too quickly? If they decide a new choice is in order, then we commend them for thinking it through. Given the proper support, students often make good choices.

We also work with specialists, such as speech therapists and special education teachers, to collaboratively conduct both assessment and assignment of grades in the class. Specialists should not take total responsibility for assessing and evaluating students with special needs. This must be a team effort. If students have IEPs or other individualized plans we will need to track and assess their achievement of the goals and objectives listed on these plans. We will track achievement of these on a special form, rating scale, or task analysis list. We may report numbers of responses, compute the percentage of a goal/objective completed, produce a qualitative narrative evaluation or rating, or simply complete a checklist that indicates satisfactory performance of various skills.

**Products that Reflect Learning**

Effective assessment is based on students developing authentic products that demonstrate their learning—reading real books at their own levels, producing a range of materials (drawing, building a model, writing a song or reflective poem) that demonstrate deep understanding of content, writing real stories, or participating in a student-developed play about a historical event. Rather than having students learn first and then show us what they learned, they learn while demonstrating. For example, if students are learning to write short stories, they don't read about writing and then write. They learn by writing, receiving critiques, rewriting, and editing (Daniels & Bizar,

1998). This approach to assessment helps schoolwork make sense to students with learning difficulties and deepens learning. Authentic assessment allows students to demonstrate learning at their own level (Neill, Bursh, Schaeffer, Thall, Yohe, & Zappardino, 1995; Tomlinson, 1999; Wolf, 1989).

**Portfolios**

Portfolios are collections of students' work that demonstrate growth and learning. Students choose examples of their best work in each subject, as well as work that shows improvement. They also complete an information sheet that describes what they learned and what they could have done better. In one high school class, for example, students included an early piece of work, a later piece of work, a description of their learning, and a reflective essay. Two copies of each portfolio were made, and one was sent home with a cover letter and photos of the student and the class (Kent, 1997; Wolf, 1989). Portfolios are typically used in student-led conferences. Once again, this form of assessment and sharing is based on personal excellence and just right work for each student.

**Anecdotal Records**

Anecdotal records are narrative records of what we see and hear as we observe students. The teacher carries a clipboard and jots notes regarding several students each day. By the end of the week she has made notes regarding all students in her class. We can also use Post-it notes placing them in a notebook with a section for each child. Observations help us gather valuable information (Calkins, 1994). The figure below illustrates one fifth-grade teacher's notes regarding her students' reading. The teacher took these notes when reading individually with students during reading workshop. The reading levels of books range from grade 1 to grade 7. Although some students are reading at a lower level, they receive good grades because they are working hard and are progressing in reading and comprehension at their level.

**Teacher Observation Notes**
**on Students' Reading Performance**

**Grading Notes**

C Roger: Shiloh p. 27. Cases—got second time. Sounded out families. Sack = snack. Wheat = what. Reads kind of rough. Missing basic words like A and there that I know he knows. Bottles = boatels. Deposit = disposal. Totally missed aluminum. Needs to work on long vowel spellings.

A Cathey: A Wrinkle in Time p. 79. Great flow. Not sure Cheshire—used magic E rule with prompt to figure out. Want = what. Discussed how to make inferences. Very interested in this genre.

A Bryant: Spiders. It's = it is. Smooth flow—halted over few words not sure. Is = can. Halted over purring and fourth. Work on R controlled sounds needed. Was not exhibiting high interest.

B Joey: Chang's Paper Pony p. 48. Pete = pat. Galloped = growled. Dust = treasure. Spread = sprout. We worked on getting meaning. Check number of words missed on one page and make sure the level is not to hard to read independently.

A Aaron: Soccer Stars p. 90. Reads nice flow. Corrected that to though. Needs more expression. While = we'll. Corrects most words but pauses to think. Pull for mini-lesson on reading fluency.

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**Rubrics** When teachers create rubrics for projects or assignments, they are beginning the teaching with the end in mind. They know exactly what they want the students to learn and show, and the students are able to frame their learning as well. A rubric or checklist of specific skills or behaviors can be used as we conference with students, observe student work in progress, or evaluate a final project. For example, a teacher creates a checklist of key reading and verbal expression skills. He checks a skill with a date when he sees that skill mastered. When a teacher assigns a project, he gives students a rubric so they are aware of expectations. This tool can be particularly valuable in engaging children in thinking about what makes a quality example of the work. We can then guide them to create their own rubrics. The figure below illustrates a rubric for a computation game project.

**Rubric for Computation Game Project**

Name: _____

| Item | Possible Points | Points Received |
|---|---|---|
| Gameboard with interesting path | 20 | |
| Gameboard with interesting path | 5 | |
| Cards with math problems | 10 | |
| Answer sheet included and readable | 10 | |
| Thoughtful/ Creative/Colorful | 10 | |
| Directions include set-up, playing, and winning | 20 | |
| Explain to group in class and play | 10 | |
| Self-evaluation of game | 10 | |
| **Total** | 100 | |

**Performance Assessment**

In performance assessment we evaluate products or performances of students—a story, a play depicting an episode in history, a science experiment, research on a social issue. We can assess skills involved as well as quality of the product and effort. One teacher had students write and illustrate stories. To do this we need to analyze each product to determine skills and knowledge that is demonstrated. These can then be placed on a rubric.

A middle school teacher had students create artwork with captions in response to a novel they read. A high school football player brought in a shoe box and told a story with an action figures. The teacher wrote everything down the student said and handed him the text, saying: "You are a writer" (Herman, Aschbacher, & Winters, 1992). This allowed the student to express what he learned, while giving him exciting feedback on his progress as a learner.

**Classroom Tests**

Classroom pencil-and-paper tests can be useful, although they should be used sparingly. If students are learning through projects in which they develop projects, we will find that classroom tests don't assess well what is being learned. Often teachers divide the curriculum so that different groups of students study different parts of the same topic and then are expected to share. In this jigsaw approach, if pencil-and-paper tests are used, different groups take different tests. Classroom test questions can also be open-ended and can encourage a variety of answers. One teacher we know allowed her sixth-grade students to use any resource in the classroom to find answers they did not know. This required them both to know information and to possess research skills for finding answers. Another teacher formed study groups for the children to review for the tests and study for retakes. This group met during class time to share what they were still struggling with and go over answers to questions. This teacher knows that in reality children need strategies for taking tests, however we also need to develop supports for being successful in this arena.

If we are relying primarily on multiple-choice or true/false tests, we may need adaptations for some of our students. Some strategies include (Deschenes, Ebeling, & Sprague, 1994; Wood, J., 1998):

- Reducing the number of test items or simplifying concepts
- Allowing all students to retake tests
- Having a student respond to the test orally and tape-recording the exam or having it recorded by a writer
- Allowing the use of helping devices on exams—computers and calculators
- Allowing time extensions
- Providing alternative test formats—short-answer, multiple-choice, oral, or essay questions
- Splitting administration of an exam over more than one session

**Student-Led Conferences**

In student-led conferences students show and explain their work and learning to parents. With teacher guidance, students decide which pieces of their work they put in their portfolios. The examples chosen demonstrate individual growth and progress, show exemplary work overall, or represent the individual student's interests and talents.

During the conference, the teacher serves as a greeter and facilitator as he greets each family and hands each student his or her portfolio. Multiple student-led conferences are conducted simultaneously. The student leads, showing each piece of work in the portfolio. Students also show their families around the classroom, demonstrate daily routines, introduce classmates, and show parents classroom resources. Math activities, experiments, or other key learning activities are set-up in which parents can participate. Student-led conferences provide opportunities for students to be positively involved in bridging home–school communications (Kent, 1997; Wolf, 1989).

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**Schools to Visit:** ***Making Teamwork Fun***

Theodore Roosevelt High School
Wyandotte, MI 48192

Roosevelt High School is located in Wyandotte, Michigan, a southwest suburb of Detroit, known as "Down River". Most of the 1,300 students come from blue collar, working class families. In 1987, Roosevelt High School began its journey towards inclusive education. They developed a process of team teaching between general and special education teachers to provide support to students with mild to moderate disabilities in general education. Beginning with a small number of teachers, the program has grown. Certain classes are identified as team-taught classes. The general and special education teachers have, over the years, worked out very positive relationships and enjoy their work together. The special education staff sees itself as a support for all students in the class. They've also been about team building in the support for all students in the class. They've also been about team building in thervice-learning credit and help students participate in general education classes.

Roosevelt has a strong program of vocational-technical education and a strong art program. Students with special needs have particularly found such programs helpful. The horticulture program helps students apply biology knowledge through a school-run greenhouse and florist shop.

Recently, in concert with an initiative by the superintendent of the school system, general and special education staff have begun to work together to expand hands-on, activity-based learning throughout the school curriculum. Special education staff are catalog of many practical examples of ways to teach using active learning methods that better meet the needs of students with special needs and other students as well.

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**Grading and Report Cards**

When teaching students with diverse abilities, grading and assessment can be confusing. Will grades be adjusted to accommodate for individual students' disabilities? Will these adjustments be indicated on report cards? Will all students be graded on the same activities? These questions fit into the broader issues concerning best practices for evaluation and grading. As teaching practices shift from lecture and worksheet to best practices, evaluation of students changes as well.

Although much research indicates that grading is counterproductive to learning (Kohn, 1999), most schools continue to use some version of the traditional A–E grading system. A typical problem in grading practices is that some students work very hard and yet get low grades, while other students do little and get all A's. The more we emphasize grades (or any type of test performance, for that matter), the more students lose interest in learning, focusing primarily on how they did rather than on the substance of what they are learning (Christiansen & Vogel, 1998; Kohn, 1999). If we are nevertheless required to give grades, as is the case in most schools, then we must strive to grade in a way that encourages and rewards students when they put forth effort and demonstrate an interest in learning. Effective inclusive teachers we have seen use the following three criteria for giving student grades:

**1.** Effort
**2.** Growth and improvement
**3.** Goals reached

Such a scheme is more fair than the typical method of assigning grades based on absolute criteria or on the percentage correct on a test. It also allows us to make good use of best practice assessment strategies described above.

Grading should also be aligned with instruction. For example, if students have been writing stories by choosing their own topics and conferencing with peers, we do not then grade them by supplying a topic that they have to complete on their own.

We ask students to set goals for themselves in our classes. A goal might be expressed as a number of books to be read; as a set of skills on which a student would like to improve; or as a product, such as a short story, play, or artistic depiction, that the student would like to develop. Once students set goals, we provide simple forms on which they record progress toward such goals. However, know that students need explicit instruction and modeling on how to plan for goals and strive to reach them. Many of our students, particularly those living in poverty, come to us without this background knowledge, so we need to be very specific in teaching them how to plan and think in terms of long range goals.

One useful strategy involves students in evaluating themselves and making grade proposals and justifications. At the end of the card-marking period, teachers ask students to propose the grade they should receive and to provide evidence that justifies this request. The forms that they use to track progress would be cited as evidence. We can also ask students to write reflective journals regarding what they have learned over

a particular period. These strategies help involve students in thinking about their progress, thus increasing the meaning of the grades they receive.

Laura Schiller, a sixth-grade teacher, explains how she uses this process: "I have a range of kids in my class," she says, and "some talented and gifted kids have gotten E's because they did not push themselves and take risks." If students typically receive A's, their parents may be concerned about failing grades. However, we have students keep self-evaluations so when parents inquire the teacher simply explains her grading process and asks students to show their parents the papers in their folder. Lower-functioning students may get good grades if they are pushing themselves and working hard (Schiller, 1998).

In some cases we need to differentiate or adapt grading for students with special needs. In some cases no modification of grading is required. This occurs when the learning objectives are the same for all students, even though some additional specialized objectives may be included. However, when needed, we modify our grading procedures with these strategies (Christiansen & Vogel, 1998; Janney & Snell, 2000a; Price, Mayfield, McFadden, & Marsh, 1998):

- Grading based on the accomplishment of learning goals established on the IEP or our own agreement with a student.
- Grading based on (1) improvement and (2) effort—standards of grading that some teachers prefer for all their students.
- Providing additional projects for students to bring up grades.

This type of individualized grading should be consistent with what we use for all of our students. At best we will establish individual learning goals for each student that we negotiate with them—and if we do so, this is very similar to what we will do with evaluating learning objectives established in IEPs.

How grades are recorded on a report card for students with special needs varies. Some schools indicate on the report card that the grade reflects an "adjusted" grading system. Other educators argue that grades are subjective in all cases and simply cannot reflect a uniform measure of student achievement. These educators do not indicate adaptations or "adjustments" in the grading system.

**Standardized Tests**

Standardized tests play a powerful role. Student scores on these tests often drive community opinions of schools. The tests themselves also drive what we teach, as these

tests are based on the state standards. Although standardized tests have always been used in schools, in recent years their use has expanded dramatically and most schools are under great pressure to produce high test scores.

Many policymakers see standardized tests as procedures by which schools can be held accountable for producing effective learning (Popham, 2001). Others see them as harming effective learning. These analysts argue that tests focus on memorization of facts rather than on deep understanding (Kohn, 1999; Ohanian, 1999) and lead teachers to feel pressured to produce high test scores, even if this means a shift away from best teaching practices. Many schools are spending an increasing amount of instructional time in explicit preparation for tests (Hilliard, 2000; Kaiser, 2000; Kohn, 1999, 2000). Test scores may even be used to determine promotion from one grade to another or graduate students from high school, a purpose for which such tests were not designed (Heubert & Hauser, 1999; Popham, 2001; Townsend, 2000). Test results themselves are related to the socioeconomic status of students' parents (Heubert & Hauser, 1999; Hilliard, 2000).


Educators have hoped that the increased focus on standards, combined with IDEA's requirement that students with disabilities have access to the general education curriculum would assist students with disabilities in being included and better educated in general education classes (Office of Special Education Programs, 2000a). Others, however, are concerned that increasing numbers of students will be referred to segregated special education classes when they are not able to "keep up" with the standardized curriculum; some hope to exempt students with learning differences from the tests (Heubert & Hauser, 1999) or seek not to count these students' test scores so as to increase schools' average scores (Heubert & Hauser, 1999; Peterson, Tamor, Feen, & Silagy, 2002; Thurlow, 2000).

What are best practices in relation to standardized testing? First, we keep the tests in perspective. We use standards to focus on topics to teach but resist organizing our

teaching around the test. We understand that the best hope both for learning *and* for higher test scores is to use best instructional practices.

Second, we prepare students for the test using best teaching practices. We teach tests as a special genre of literature, teaching students to break the test apart, think about what it is really asking, and understand the tricks inherent in the test. We involve them in brainstorming strategies. Students write their own questions and share their efforts. We teach students that skilled test takers are those who can move easily from the text to questions and back. Students spend time learning to write and think in the formal English that test writers use. They learn not to expect the test to be interesting. In other words, we teach them the unwritten rules of test-taking that good test takers know. (See Calkins, Montgomery, Santman, and Falk,1998).

Third, IDEA requires students with disabilities have the same opportunity as other students to take state standardized tests. This requirement was intended to prevent schools from unilaterally exempting all special education students so that their scores would not depress the scores of the school. The Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973 require accommodations in the testing. To access accommodations, however, a student must have either a 504 plan or an Individualized Education Plan (IEP). Accommodations may include:

- Reading the questions to the student
- Having someone write the responses the student dictates
- Providing visual aids to enlarge the examination
- Presenting the exam in alternative formats—braille, the native language of the student, and so on
- Administering the exam in a location that is quiet
- Allowing for breaks and an extended time period

In addition, for students with moderate to severe disabilities, for whom the regular state test is deemed inappropriate, each state is required to develop an *alternative assessment* (Individuals with Disabilities Education Improvement Act [IDEA], 2004). Only a maximum of 2% of students receiving services in special education, however, can take this alternative assessment.

Fourth, we can provide information to parents and others regarding how tests work and explain to parents their rights regarding exemptions for their children. In some states taking the standardized test is mandatory. In others, parents have the right to exempt their children. The decision as to whether a child with learning difficulties should take standardized exams must be made with consideration of the impact on the student.

Many parents exempt their children from these examinations. Many teachers, too, are concerned about the negative impact of failing these exams on students' self-concept. Others want their children included in these tests if other students are required to take them (Peterson, Tamor, Feen, & Silagy, 2002).

Finally, we can connect with the growing national movement to challenge standardized tests. We can educate ourselves regarding the impact of standardized tests, develop our own opinion, and become part of the effort to influence policymakers to create the conditions most effective for learning. See Kohn (1999) and Ohanian (1999), and see the FairTest website (www.fairtest.org) for comprehensive critiques of standardized testing.

### Learning Styles and Assistive Technology

**Knowing How You Learn**: "Schools Attuned At San Francisco's Gateway High School, a diverse group of students learn how their brains work and how to accommodate their learning styles. Most important, they discover that there is no one "right" way to learn". www.edutopia.org/knowing-how-you-learn

**The Sound of Learning**: **Albano Berberi** "Assistive technology helps a blind computer science student and devoted gamer pursue his passions".
www.edutopia.org/assistive-technology-albano-berberi-video

### Towards Whole Schooling Academic Learning

There's no doubt that shifting from a goal of having every child on 'grade level' to having every child learn at their personal best level is a major shift in the way we think about schooling. However, with a bit of reflection, we can see that the notion of grade level is actually the stranger goal. Clearly, the idea is literally based on seeing schooling as a type of factory. We all know how factories work. For what they are intended to do the structure of a factory is very useful. The steps to produce a product are broken down, standardized, and set in a series of steps each of which is performed by a different worker. The production line, of course, must stay on schedule. If one worker is too slow, the entire production line slows. That's the model on which keeping students on grade level is based. We have standardized ideas about the 'product' – thus standardized tests – and we have to stay on time and target to end up with this goal.

Does such a standardized, regimented structure work for the education and development of human beings. Many thoughtful people that we discussed early in this chapter think that is does not, for human beings simply are not and cannot be standardized. We vary in all sorts of ways. When we treat human beings in formation –

eg. children – as standardized pegs in a production line, we ignore their strengths, needs, unique gifts, challenges. In fact, if we are successful, in creating a standardized product, we precisely rob students of some of their humanity and potential contributions in the process. By being successful, we lose.

It's why igood teaching that affirms that we should celebrate differing levels and types of outcomes of learning is so critical for having good schools for all children. We move beyond standardization to creating a process of learning where students, on the one hand, learn together as a community but also, on the other hand, achieve their personal best, nurturing their own gifts and talents framed by personal life goals.

**Traveling Notes**

When we design authentic multilevel instruction we are using practices that are highly supported by research and the positions of many educational organizations. We will be creating classrooms where all students experience success based on their personal capabilities while being part of an inclusive classroom community. Here are a few notes regarding positive practices from this chapter.

- Despite best practice information to the contrary, lectures, worksheets, and textbooks continue to form the bulk of teaching in classrooms. This leads to shallow learning.
- The brain can process many things at one time. This allows teachers to combine ideas and teach complex processes and minute parts simultaneously.
- Educators from many perspectives are calling for more hands-on, relevant, multi-modal learning in classrooms to reach all types of students including brain based learning, best practices of national educational organizations, culturally relevant pedagogy, and universal design for instruction.
- Multilevel instruction reaches all students at their ability level supporting them in moving to the next level, while enabling them to work with children at all levels in the classroom.
- Planning for multilevel instruction involves several steps: plan a theme, plan multilevel goals, develop learning activities, look at certain students and make alterations to learning activities, and plan assessment.
- Creating products becomes learning in and of itself as students develop representations of information and knowledge.
- Effective assessment allows students to demonstrate learning in multiple and interesting ways – journals, portfolios, products, student-led conferences – moving away from multiple choice, fill-in-the-blank tests.
- Students do better on standardized tests when multilevel instruction is used. Students with special needs can take these tests with appropriate accommodations.

**Stepping Stones To Whole Schooling**

Following are some activities that will help extend your understanding and actions you may take towards multilevel instruction in your school.

1. Ask a teacher who does multilevel teaching if you can sit in on a planning session with him/her. How does the teacher create thematic lessons and plan lessons that reach all levels of students?
2. Use the district curriculum and identify themes that could link multiple subjects throughout the year. Identify overall learning goals and describe varied levels of learning you might expect from students with differing abilities.
3. Discuss the ideas of multilevel learning goals and multilevel assessment with a group of teachers (at best a team with whom you teach). Identify ways you might begin to incorporate these ideas and strategies into your teaching practice.
4. Observe in a classroom where the school puts great emphasis on being on "grade level" and utilizes one set of grade level materials for all students. What problems do you see? What do you learn from this?
5. Develop a plan for using multi-modal assessment tools in a unit of lessons in which students have options and choices.
6. Keep a journal about your feelings, thoughts, questions, and ideas. How do you feel about teaching using what we've called best practices? How do you feel about engaging learners at multiple ability levels? Why?