Chapter 13
Inclusive Academic Instruction Part III
Applications in Subjects

CHAPTER GOAL

Understand how inclusive workshop learning plays out in the different subject areas.

CHAPTER OBJECTIVES

1. Learn how to implement inclusive literacy workshop learning in elementary and secondary school.
2. Understand trends and guidelines for professional practice in mathematics education that support inclusive, multilevel learning.
3. Utilize inclusive workshop learning in science and social studies.
4. Understand how to include diverse students in art, music, and physical education.

Inclusive Literacy in Action: *A Visit to the First Grade and a High School Language Arts Class*

*We walk into Joanne Butler's **first-grade class** and see students all over the room, some on the floor, some at their desks, a few in groups of two or three. She welcomes us and explains that this is "reading workshop" time. All the students are reading—most in picture books with a few words, but a couple in chapter books. Joanne helps her students select books in which they are interested. "Earlier this week," she says, "we all got down on the floor and picked out books. They helped each other. I asked them to get one book that was easy, one that was just right, and one that they liked but was challenging." Some students are reading silently alone. Others are reading in pairs. Students meet together to talk about their books. This helps all the students have experiences with different books and learn to ask questions. Joanne reads some of the harder books aloud to the class as a group.*

Joanne points a few students out to us. One little girl, Midha, recently immigrated from Iran to this country. She reads with other students in pairs picture books with large words. "The other

children are really good with her. She is beginning to learn our language quickly". One student, Chad, has autistic like behaviors. He has taken an interest in reading books about dogs. "Rosalita, is my highest reader in the class," Joanne explains. "She, too, is reading about dogs and she and Chad get together now and then. They've been good for each other. I have worked out an arrangement with Rosalita where she is linking extra credit projects in science and even math with her interest in dogs. It's been fun."

Curious, we ask, "How are they learning their phonics?" She replies that she observes the students reading and writing and talks with them, figuring out what problems they are having. "I might cluster students for a mini-lesson, say on the different ways to say the letter g. As I figure out who is good at particular skills, I have students learn to come to one another for help so that I am actually ending up with twenty-four teachers in this room rather than just myself," Joanne laughs (Peterson, Tamor, Feen, & Silagy, 2002).

We also visit Akio Kudo's ***high school literature class*** *over several days. Students have been reading Alan Paton's Cry, the Beloved Country, a novel of South Africa, and have become intrigued with the history of Africa, colonialism, and apartheid in South Africa. They want to explore these issues more.*

Akio recently decided to push his teaching a bit by allowing students to propose projects and chose this topic to try it out. He's also been growing as an inclusive teacher. He moved recently from a very racially homogeneous school that also segregated students with special needs to Cortes High School, a very racially mixed school that also has been working over the last ten years to include students with special needs in general education classes. He was pleased to see that students with special needs worked well in all these projects and that his high functioning students were challenged as well, learning how to work with other students in leadership positions.

As a total class Akio helped students brainstorm ideas for projects. Once he approved these, students broke into groups based on their interests. One group wanted to compare racial relations in Africa and what has occurred in the United States and develop a multimedia presentation. Another group decided to develop a play of a key event in the historical struggle with apartheid. Yet another small group explored art in South Africa and how it related to social conditions in the country. Akio approved these projects and they got to work.

The class was abuzz. Students accessed information via google searches on the internet where they found good information, maps, and hyperlinked videos to some key events. Books in the library were also useful. Two students had family members who had been to South Africa when apartheid was enforced and students interviewed them. Nakia, a great dancer, developed an interpretive dance related to protest music and her partners videotaped her performance. Students often shared across groups.

Akio was amazed and excited at how engaged the students were.

After three weeks of work, students presented their projects. The presentations and discussion took two days but were amazing, involving students' thinking and feeling at a deep level. All of the students with special needs were given an integral part in the presentations. Students thought this was so cool they proposed to have a forum to involve other classes and community members in the same experience. (Adapted from (International Reading Association & National Council of Teachers of English, 1996)

In Chapters 11 and 12, we provided a framework and process for designing inclusive units and lessons across all subjects. In this chapter we'll look in greater detail regarding how these strategies for inclusive workshop learning play out in select subjects. Our intent, in this chapter, of course, is to help connect the strategies of inclusive teaching with effective workshop learning practices in various subjects. Many other books and resources provide strategies that are consistent with those that we are presenting in this book, even if the authors do not specifically use the language of inclusive teaching and multilevel, differentiated instruction. If we think about these connections, however, we discover that there are a great many possibilities for extending the ideas and strategies presented in this text. Let's start with literacy and language arts.

Back Pack
It's Just Good Teaching

It's Just Good Teaching. The Northwestern Research Educational Laboratory (NWREL) provides a series on inclusive classrooms in math and science downloadable as pdf documents.
www.nwrel.org/msec/resources/justgood.php

Annenberg Media provides teacher resources across ages and subjects. This site has many useful materials including video of exemplary lessons.
www.learner.org **Lesson Planning**

Literacy and Language Arts

Literacy is a foundational skill upon which much of our learning and human functioning is based. For all our students, helping them to become literate, in the broadest sense of the term, is very important for life success. Language arts and literacy, like all other subjects, are both similar and different in elementary, middle, and high school. Children obviously grow larger, know more, have more experiences, and move towards adulthood over time. Yet, no matter the age of the students, we teach them that

reading is an important part of their life. This is the focus of how we lead any workshop session.

Yet, in effective instruction there are many parallels between elementary and secondary school. For example, in elementary school, we involve students in reading for meaning: considering plots in a story, what characters feel, and issues that develop. We continue this in secondary school, often at greater depth and complexity. However, given that we will have students at all grade levels who function at very different levels of ability, in all classes students will be exploring themes and issues at differing levels of sophistication. As we discussed in Chapter 11, this is the heart of multilevel learning goals.

Another important shift, is that while traditional secondary teachers expect students to know the skills of reading and writing, the reality is that all students need to continue to expand and deepen their skills. There will be students in high school who read on a 3rd grade level, and they will need work on basic skills. All students will need continued work on strategies of comprehension. In writing, some students will be working on basic spelling, phonics, and grammar skills. All students (throughout their lifetime) will be working on how to write with clarity and meaning. So secondary language arts classes will also incorporate reading, writing, spelling, and grammar instruction in language arts classes. Below we explore a range of strategies that can be used in both elementary and secondary classes.

What *Is* Literacy?

Given that literacy is so essential, it's important that we are clear on **exactly what literacy is**. Literacy is a process by which human beings utilize symbols and tools in communicating. Traditionally, this has meant reading and writing. However, if the focus is on communication of meaning, we should consider an expanded understanding based upon diverse communication systems human beings actually use. These include (Oglan, 2003):

- Reading by which individuals construct meaning from print using their prior knowledge.
- Writing text in words.
- Speaking and listening.
- Viewing.
- Representing, either physically, in drama, movement, or in pictures.
- Signing, facial expression, and gestures of hands, legs, or other body parts.
- Using technology to facilitate access to written and graphic materials and to communicate in writing and orally.

What's the point? Simply this: if we are trying to get students to use symbols to convey or access meaning we have many choices. Using multiple options we can devise effective strategies for students who have difficulties.

Challenges in Literacy Education

Children who have been exposed to reading and books and given opportunities to express themselves come to school with a hunger to read and write. Yet, too often, this hunger is quashed by practices that make reading and writing an oppressive process that seems to have little to do with the actual lives of students. How does this happen? Here are some of the prevalent practices:

- Using curricula where a teacher reads out commands and students chant the desired answer in unison. This could involve 'reading' a nonsense word, a series of words that have the same sound, matching the meaning of different words. Students in such instruction are taught that learning is following commands.
- Filling out worksheets in which students complete phrases or match words to pictures and definitions.
- All students taking turns reading the same level text, regardless of what level they currently read
- Students being allowed to read only texts designed around reinforcing various phonics concepts even though the stories are not interesting and of poor quality.

In other words, students are involved in all sorts of drill activities related to aspects of reading and writing but spend *little, if any time actually reading and writing*. Advocates of direct instruction state that these strategies are necessary so that students may obtain basic skills such as decoding and spelling. Some suggest that such strategies may be learned as students are engaged in actual reading and writing. However, most teachers who use these strategies extensively find that there is not time to do both. Of course, the more difficulty students have in acquiring these basic skills, the more they are emphasized. Students who have special needs may, in fact, spend their entire public school career working on basic skills and never actually using them to read and write for an authentic purpose.

What is clear is that, for students with special needs, by the time they reach the 3rd or 4th grade, they have been told in many ways that they have difficulties in reading and writing. Lots of pressure has been put on them to work hard to improve their skills and they have spent more and more time in skills and drills. The result: these students begin to believe they cannot learn to read and write. More importantly, they quit trying. We participated recently in a study group of K-12 teachers in an urban school district that was trying to improve reading and writing of students with special needs. As part of this work they conducted an interview with several high school students regarding their previous involvement in literacy. Their high school teachers reported, "We can't get them to read anything!! Not comics, not materials about stuff in which they are interested. Nothing!" When did this start? The third grade. The fact is that few people will continue to work hard at a task that everyone says we do poorly. We move elsewhere and this is what these students did. This story is repeated over and over.

Does it have to be this way? Absolutely not. If we adhere to the standards of quality instruction and focus on involving students in reading and writing where meaning and purpose are the central focal point, all students can be productively involved in reading and writing. Will all be on grade level? No, human beings are too diverse for this to happen. However, all students can be literate at some level and enjoy and value the process, while making progress towards doing it more effectively. Effective learning in literacy involves two key components – reading and writing workshop. Let's look at how these work with diverse students.

Standards in Literacy Learning

The standards for language arts developed jointly by the International Reading Association and the National Council of Teachers of English (1996) indicate that students from elementary through high school should be engaged in active involvement in language, reading, and writing for authentic purposes, linking literacy to social studies, science, math, and other arenas of their lives as we saw in the two scenarios above. According to these standards, effective literacy and language arts instruction should include the following characteristics:

- Students read a wide range of literature and genres to develop understanding and experience personal fulfillment
- Students learn to use many strategies to understand written material drawing on their prior experiences, interactions, and knowledge of word identification strategies, sound-letter relationships, and writing structures
- Students learn to vary their use of language to communicate verbally and in

writing with different groups of people
- Students develop abilities to use language conventions (eg. spelling, punctuation, etc.) to critique and think about texts
- Students engage in research on issues by developing questions, posing problems, and gathering information
- Students use a range of information resources to gather information
- Students use language to achieve their own goals, to learn, persuade, and share information and ideas

In other words, we want students, based on their own interests, needs, and abilities to read, write, and communicate to accomplish important purposes in their own lives and become effective citizens in their communities.

Reading Workshop

Reading workshop involves several components that allow students of different levels to work together, and yet pushes all students to do their best. These include:

1. Reading assessment – identify skills and needs of students in decoding and comprehension
2. Instructional read aloud - a shared reading time that introduces new literature at higher levels and models comprehension strategies.
3. Mini-lessons and guided reading in small groups to work on reading strategies
4. Individual reading of 'just right' books
5. Student dialogue and sharing of books they have read
6. Assessment to demonstrate comprehension and understanding

We teach students how the process of reader's workshop operates so they know what to expect each day. We start slowly at the beginning of the year, adding one workshop piece at a time until the result is a complex time with many things going on simultaneously and flexible time for teachers. Let's look at the literacy workshop process in more detail.

In reading workshop many things are going on simultaneously. Students select books to read at their own level of challenge. During this time they may read alone, in pairs, or in small groups. Students write in journals regarding their books. We conduct conferences with students to talk about their reading plan, discuss how to think about a book, assess comprehension, or share reading strategies. We gather students together for a minilesson based on a specific reading strategy or to meet with guided reading groups. This structure allows us the flexibility we need to meet all their needs.

Reading Workshop Cycle

- Choose a Just Right Book
- Prove it is Just Right to the Teacher and set a due date
- Read the book- marking comprehension strategies with sticky notes
- Do a writing page that answers questions about the book
- Have a student orally test you on the book
- Take to teacher for a conference
- Choose another Just Right Book

Instructional Read Aloud At all grade levels, including middle and high school, read-alouds are a valuable part of literacy and language arts instruction. In a read-aloud all students get a chance to simply listen and think about the meaning of the words. During the read-aloud we model what is going on in our head. We stop to share connections we have, questions that we wonder, or to describe visual images that we see that go beyond what is written in the book. In other words, we model strategies of comprehension and facilitate discussion to prompt deeper understanding and thinking regarding the reading. Instructional read-alouds help promote the notion that good reading is not just 'getting through' with the book but engaging with the writer in a deep way.

Reading Assessment and Just Right Books At the beginning of the year, we test each student on fluency and comprehension to get an understanding of their reading level. We can do this using a formal assessment tool or simply have a student read a passage to us. This enables us to help students learn to identify what their Just Right level is.

In an effective multilevel classroom, we do not tell students their reading level nor do we publicly display on books a reading level and expect students to read only books in their tested level. This can promote a focus on 'reading level' and inadvertently make some students feel bad and others feel superior. Further, when we restrict students to certain reading materials coded at their level, we are not teaching them how to select books for themselves. Students should assume responsibility for choosing reading at their level.

We teach students to identify a Just Right book by how many words of which they are unsure on a page. Being unsure of 2-4 words shows the book is a Just Right book. If they don't know or are unsure of 5 or more words, it is too difficult. If they know all the words or are unsure of just 1, it is too easy. When students have difficulty finding books that have words they do not know, then a discussion of what content challenges and engages the mind without frustrating the child is relevant.

Individual Reading of Just Right Books We contract with students for how many books they will read. Depending upon the nature of the books the number can vary dramatically from student to student. For example, if a 7th grader is reading on a college level, she may read three complex novels in a marking period while another student, functioning at a second grade level, may read 30 books with lots of pictures. We give extra credit if the student wants to read more books than the minimum for which they have contracted. However, this new amount, in subsequent contracts, becomes the new 'just right' minimum. Again, we give options for extra credit and again increase the minimum requirements. We can do this at all levels of functioning, of course. It's a way to encourage students to read more without using a system that pushes reading by rewarding the students who read the most with prizes or points. This method of encouraging students to read lets students set their own pace and level of challenge.

We have students put post-it notes on pages as they make connections to their own experiences (to self), to other books they have read (to text), or to something in the broader world and environment (to world). They mark things they think will be important later in the book, questions that they have, and places where the words gave them a great visual image. The sticky notes have their own code to help identify the type of comprehension strategy they are marking. They then have detailed notes of their thinking to share with groups or the teacher or to review when they finish the book to deepen their thinking and understanding.

Book Clubs and Books the Whole Class Reads While it is important for children to read Just Right books individually, children also need the social aspect of reading with small groups or even the whole class to discuss what they are reading and deepen their understanding of various elements. Students meet on a daily or weekly basis, depending on the structure of the class, to discuss parts of the book, reactions to characters, and answer thought provoking questions. This particularly occurs in middle and high school. When students are reading books at one level, we'll need to provide scaffolds and support for students whose abilities are not at the level of the reading. As we've discussed in other chapters, we can use several strategies: (1) do read-alouds by the teacher for part of the reading, engaging students in discussion of the meaning of the text; (2) partner reading where a partner reads aloud to a student; and (3) oral reading technology such as books on tape or CD or text-to-speech software. Sometimes we can obtain software that will have text-to-speech capabilities that also incorporates graphics that help illustrate the meaning of the text. This can be helpful and enjoyable to all our students.

Strategy Mini-lessons begin in small groups after students have been reading with us individually for several weeks so we have time to identify strategies on which students need to work. While students are reading individually, we can pull students together to learn about a particular skill. The lesson varies depending on what is being studied. Students are often given an assignment to work on throughout the week while they are reading and the students bring their books to share how they have been working on their strategy with the group. Some examples of strategies include:

- Choosing Just Right books
- Reading with expression
- Reading fluently, using punctuation to mark breaths and pauses
- Skills for figuring out a variety of sounds in unknown words
- Figuring out the meaning of a word or phrase in context of known words
- Identifying comprehension strategies being used with sticky notes.
- Completing paperwork that shows what they know

There are many sub-strategies and skills that may develop. However note that we do not mention the strategy of decoding words. All students, not just the lowest functioning, need work learning the sounds of letters and combinations of letters that we attribute to decoding. However, this is a very different skill than reading. All students, not just the highest functioning, also need to learn to think about what they read to improve their comprehension. Reading is about understanding meaning from text: having pictures form in their brain as they read, thinking of questions and answers, what they think will happen next and why, issues in the plot of the story. Learning how to sound out words and spell them we call word study, more traditionally known as spelling. These are two very different ideas and no child should receive instruction in only one or the other. All students need both to learn and grow.

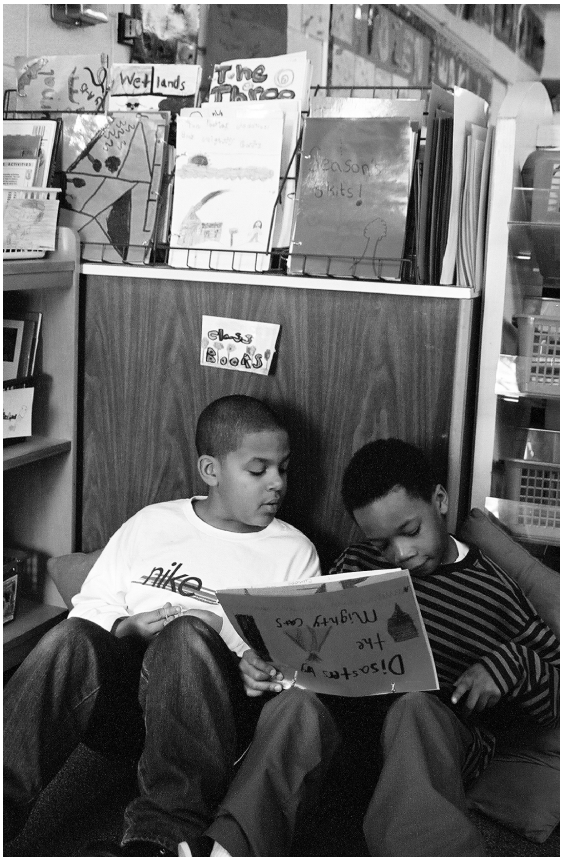
Guided Reading Guided reading is an approach to working with students on reading skills in small groups. We gather a small group who function at similar levels of ability, read a book together, and model and discuss specific reading strategies. In early elementary, we will use predictable books, choral reading, dramatic play of events in a reading section, and Big Books. We guide students in making predictions from pictures, have them read with partners, discuss the text, and write responses in journals regarding what they read. We use different levels of text involving students in re-reading several times during the week. . While students are grouped by ability, in a workshop based classroom, this would be the only occasion that might happen, and since it is only one small part of the literacy instruction it can be fun and motivating for students. If the students are not grouped by ability, then care will need to be taken to ensure that all have access to the literature.

Strategies for Comprehension As students read, we ask them to use strategies that help them understand and remember what they learn. We emphasize that good readers are always thinking about what they read and we are going to share some of the ways they think about reading. Any student, no matter what level they read at should work on the comprehension strategies that good readers do. These key comprehension strategies include: making connections, asking questions, visualizing, inferring, determining importance, and synthesizing (Harvey & Goudis, 2000). Let's discuss these key strategies briefly and how we teach students to use them.

1. ***Making Connections***: This refers to a reader's ability to think of other things while they are reading. For example, if reading about a character who told a funny story makes me think about last night when my husband told a funny story, then I made a connection. There are three kinds of connections: text to text, where I think about other books, text to self, where I think about things from my past and life, and text to world, where I think about things from the TV or area around me.
2. ***Asking Questions***: This skill is when a reader is always thinking about the questions of who, what, when, where, and why. For example, why did that character say something mean to his friend? A good reader is also always thinking of possible answers to the question. Hopefully, the story will either validate their thoughts or change them at some point.
3. ***Sensory Images***: Good readers are always running a picture in their mind, much like a personal television screen. They add details that are not listed in the story, thus personalizing the story and making it their own.
4. ***Determining Importance***: This refers to the ability to sense what is going to happen later in the story. Can the reader begin to think like the author and figure out what is going to be important to the overall plot as the story unfolds. For example,
5. ***Inference***: When students make inferences, they are making a prediction about what they think will happen next in the story, based on some piece of information that is in the story. If I think the character will run away from the slave owner, I base this inference on the fact that the character has been very interested in what the word freedom means and how you get it.
6. ***Synthesizing***: This is a complex skill that allows children to take a story and retell the most important points in a concise paragraph. When students synthesize, they are learning to make general statements that cover a host of small actions. This is done at the end of the book to share learning, at the end of the chapter, or after reading a magazine article.

For any of these strategies, students learn them by first hearing teachers model how they think about these things in their head, then they received guided practice with teachers and small groups of students, finally they move to working on their own. We also encourage students to read at home, communicating these expectations to parents. This helps students make reading really part of their life and not something they do just at school.

Sharing with Other Students We structure opportunities where students can share with one another about their reading. This pushes their thinking beyond simple recall and can be done a number of ways that include:



- Students making a presentation to the class about their book, particularly focusing on one particular section of the book.
- Making posters, media presentations, sculptures depicting key themes in the reading.
- Book Clubs where small groups come together to share about what they are reading. This can be particularly useful if we group students whose books have overlapping or connected themes.

Assessment We use multiple strategies to assess student understanding and comprehension of their reading if we are to get a clear picture. One useful strategy is to have students assess one another using a series of questions that we have generated. These are generic questions that can be applied to all fiction. The testing student can select one question from each section of possibilities. They simply rate the student on how well they responded.

Other strategies for assessment include:

- Individual conferences with the teacher

- Writing about the book
- Sharing with other students in small or whole group
- Paperwork on each book that includes an example of each comprehension strategy and details about what they thought

Teacher Conference We will also conference with individual students, setting a specific number each day. We check on the reading progress of students, have them read some to us to update our understanding of their skills, and identify the mini-lessons to which we will assign them to increase their skills.

Teacher Roles And Responsibilities The structure of reading workshop allows us to use our time helping and working with students individually and in small groups in many ways. These will include:

1. Individual conferences with students about progress on due dates and paperwork that is due when a book is complete.
2. Reading for 2 or 3 minutes with a student to help model comprehension strategies.
3. Meeting with small groups to teach a mini-lesson or conduct a guided reading session

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Bumps in the Road
Gifted Students and Inclusive Classes

Some people continue to argue that for students with substantive ability differences, particularly students with learning and cognitive disabilities and students who are gifted, the general education classroom simply doesn't provide adequate challenge or support. Parents of gifted students, in particular, are known for insisting on separate classes and even schools for their own students.

What to do?

Again, we have to be clear about our own beliefs. However, beyond beliefs we need information. In earlier chapters we reviewed research. However, here we'd like to share with you the experiences of one teacher who has some useful observations. Tanya Sharon, a 5th grade teacher, explained to use one day her experience in having gifted students and those with substantive learning challenges in her classroom.

I have found that the mix of abilities within the classroom is beneficial to all my students both academically as well as socially. When I taught in schools where "gifted students" were pulled out for special gifted or enrichment programs I found that they never became a part of the classroom community. They felt either isolated or superior, neither of which was helpful for the social growth. I also found that teachers, myself included, assumed that since the gifted kids were being serviced somewhere else my job was to follow the teacher's guide and teach the lesson scripted for me. I knew that there were kids in the class who were frustrated by the lesson because they did not yet have the skills or concepts needed and that there were kids who were bored with it because they were way beyond the skills or concepts being

taught/practiced in the lesson. There were a number of students who quietly did what they were told or doodled until it was time to go to their enrichment classes and there were those who because of frustration or boredom became discipline problems. The majority of the class didn't accept either the kids who were gifted or the kids who were having trouble doing the work. And I was constantly going through the assertive discipline steps.

In the last 6 years I have a mix of kids with no pull out programs (until this year I had no student who had a disability label though I had many who were in the process of being labeled). I have found that I individualize all of my teaching and that it is much better for the classroom environment. I can't say it is easier but once I got the hang of it it is not a lot harder. And I have much fewer discipline problems. Kids are not bored by the work or frustrated by it. They are mostly excited by it. They work with partners, sometimes I choose who they work with but most of the time they choose. It was surprising to me at first that 'gifted' students didn't necessarily pick other gifted students to work with. Now I understand that they are choosing partners based on interests. In this way each of them has something to offer the other. One student may be able to read higher level books while the other student may have more knowledge or experience or insight that is valuable to the first. They may share the same viewpoint or they may show each other a different way of looking at the same thing.

The most important part of this kind of a classroom is that the students learn through their own interests at their individual rate of learning and through their individual mode of learning. They also have the opportunity to respond to learning/books or to present their learning through their writing, art, drama, dance, etc. The materials available provide support and challenges for all kids and they have free access to those materials. And the strong community developed in the classroom supports the risk-taking necessary for learning.

Writing Workshop

Writing is also a very important piece of literacy that we stress should become part of the students lives. Writing workshop is very similar to Reading Workshop in that students are all working on different goals and writing materials at their own level of ability. Throughout the year, students will learn how to write various genres as we explore adventures and fairy tales to historical fiction, persuasive, nonfiction, and more. Between studying genres we intersperse short two week units on revising and structure. Most genre units take about a month to complete.

Writing workshop also involves several components that will be occurring simultaneously. These include:

- Assessment of student writing abilities
- Developing ideas for writing in a writer's notebook
- Mini-lessons on craft and editing ideas
- Individual writing work
- Students review drafts and provide feedback
- Editing

- Publishing
- Sharing

In elementary school, writing workshop will occur at least 3 or 4 times a week for 45-60 minutes. Writer's workshop for any less time than this will not be effective. While writing in other subject areas is important, it does not count for fulfilling this time. The workshop structure is important for students learning how to craft writing. In middle and high school, writing workshop more often occurs as part of a literature block in conjunction with reading. However, given the various levels of student ability, we must continue to grow their writing skills.

Assess Student Writing As in reading workshop, at the beginning of the year, semester, or writing unit we will want to assess student writing ability. We do this by having them write pieces that are meaningful to them—a journal entry about their daily life, a letter to a parent, or a story about a character in a book. We look for the following to determine writing strengths and needs:

- Can the student plan a story with a web and use it to follow a sequence?
- Does the student have interesting ideas?
- Does the student use a variety of words, or are the same words repeated over and over (ie: said, went etc…)?
- Does the student have a sense of structure, such as paragraphs, beginning/middle/end?
- Can the student use punctuation and grammar correctly?
- Does the writing have a strong, clear voice?

Developing Ideas for Writing: *the Student Writer's Notebook* This is a place for students to collect ideas for writing. They can make lists of things they love or that irritate them. Ideas can include pictures - from favorite people, trips, possession, to a beautiful sunset. The notebook can include maps of favorite places, descriptions of exciting events or something in nature that caught the eye. As students learn to look at the world through a writer's eye, the possibilities are endless. Teachers work in times on a daily or weekly basis to add to these ideas, modeling the many types of entries that children can include and sharing writing of their own.

A key in student writing is authenticity. Students should be writing for a real audience for a real purpose, not just as an abstract school exercise. This naturally leads into ways that students can share their writing once it is written. We can be looking at many places that students can publish their work, help students think about what they would like to say and help them locate places their writing can be shared.

Mini-lesson We typically start with a whole group mini-lesson that focuses on one topic for several lessons (10-15 minutes). We write and model for the students, thinking aloud as we write so students understand our thinking process. We may refer to a Word Wall or use other tools. Students may help us edit a drafted piece of work. We may read from a text, pointing out specific writing crafts that we encourage students to try. We focus on different parts of the writing process, a variety of topics and forms ranging form shorter, simpler pieces to longer, more complex writing.

Mini-lessons can involve basic skills but they will also involve helping students understand how to best convey meaning in their writing.

Individual Writing Students then write individually. Each child will be at different stages: planning, drafting, revising, editing, and publishing. In writer's workshop students most often make 3-5 drafts and conference with other students and the teacher. In writing workshop students select their own topics, often linked to their reading, a science project, or a social studies lesson using relevant genres—poetry, short stories, historical fiction, expository writing. Students keep journals regarding their writing process—ideas to write about, their feelings about the process, or a record of their activities. They write at their own level. As the teacher helps them complete a detailed web that plans the story, then the drafting process becomes much easier. The teacher helps them separate *drafting* from *editing* through such strategies as free-writing, in which students write whatever comes to mind with no concern about grammar or spelling. The mechanics come later when students give feedback and assist one another in editing. Teachers are involved in final editing for *publication* only (Calkins, 1994; Cunningham & Allington, 1999; Graves, 1983; Holdaway, 1979; Routman, 1996).

Review Drafts and Edit At the end the student works with other students to edit the writing, correcting spelling and grammar errors and assuring the piece communicates well. Students share ideas, get feedback, and meet on a regular basis so that they learn strategies for helping one another and develop trust. This kind of collaboration increases the number of helpers from one—the teacher—to many (Calkins, 1994).

Share Writing We end each day with a sharing time. This is very important in allowing students to hear good ideas and learn to identify them as well.

Publish At the end of the writing process, students are involved in ***publishing*** conferences – sometimes with students first followed by a conference with the teacher. Cunningham, Hall, & Defee (1998) consider this time a critical 'teachable moment' in which "both advanced and struggling writers can be nudged forward in their literacy development" (p. 656). Students' work is compiled into a laminated classroom book, which provides authentic purpose for their writing or is shared at classroom

celebrations. Even a student with a severe multiple disabilities is easily included in this multilevel process by working with a partner, who asked yes/no questions to help her write her own contribution to the book.

Teacher Roles and Responsibilities As students work, we are doing several things. We move around the classroom checking on students' progress and offering suggestions. We keep informal notes on each step -- planning, drafting, revising, and editing. In one classroom, for example, Bobby is working on capital letters and periods and can create stories a few sentences long with a lot of effort. Julie writes nicely edited stories but needs to tap her creative and descriptive skills. This allows us to check back later with that student and ask how that new idea is going. We may also:

- Set goals with students for a new piece of writing
- Meet with a small group for a mini-lesson on a related topic
- Model a type of writing on the overhead
- Identify students who have excellent examples of a strategy, topic, or skill being worked on to share with other students

Teaching Skills: ***Spelling, Phonics and Grammar***

In effective workshop reading and writing classes, we integrate skill learning into authentic reading and writing activities. Lets discuss some strategies for doing this.

Phonics and Spelling Many times in classrooms, teachers confuse the teaching of necessary phonics skills with teaching reading. Teaching phonics, or how the letters combine to make different sound combinations is an important part of literacy instruction. As students progress with their abilities, they will move to learning what suffixes and prefixes means\ and how to recognize words that have a Latin derivative to help them derive the meaning of the word. These are very important skills, and yet they are separate from teaching reading. Reading is the ability to ***find meaning*** in words and stories. Effective teachers have found that teaching phonics in the context of spelling instruction is a valuable strategy.

Individualized spelling lists may be selected from student writing, as illustrated in the figure below. We select words that are incorrect but close as we grade students' writing. We ask students to give each other spelling tests under our supervision. Such an approach allows students to be successful, pulling words from their own writing.

Individualized Spelling Lists
from Weather Journals

Cathy: probably, travels, autumn, evaporation, equator, movement, video, crystal, glacier, until
Norman: today, cloudy, explode, December, icy, windy, muddy, heat, earth, weather
Kami: revolves, half, certain, autumn, probably, glacier
Jordan: rain, snow, cloud, wet, year, make, some, black, sack, pack
Sean: eight, partly, temperature, degrees, which, blizzard, changes, climate, report, video

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In another useful approach, we group students for ***mini-lessons*** every 4-6 weeks by the type of spelling words they are missing. For example, we give a spelling placement test and group students who need to learn long "a" spellings and another group that is studying the rules for adding "s" or "es" to create plural words. Most teachers run five or less groups at a time. All groups are based on a specific need and change often. The reading workshop time is then extended so that students also work on spelling assignments. We meet with one guided reading, book club, or fluency group and two spelling groups a day as part of reading workshop.

Strategies for spelling and phonics instruction include (Cunningham, Hall, & Defee, 1998; Hittie, 2008):

- Practicing reading words that have the target skills.
- Create crossword puzzles of words with the target sounds.
- Playing games to practice the spelling or the sound, and listening to books identifying students hear the sound.
- Display high-frequency words organized alphabetically and have students practice saying the words, clapping, snapping, and writing.
- *Rounding up the rhymes* – reading poems with rhymes focusing on the rhyming parts of words.
- *Guess the covered word* This activity helps students check meaning with letter-sound connections. The teacher writes several sentences covering a word in each sentence. As students guess the word, the teacher uncovers the first letter, then the second. This allows students to carefully connect letter sounds to words but in the context of making meaning.
- *Scavenger hunt/ Work search* Ask students to search for a word type, such as an adjective or a word that ends with 'own', and mark them with stickies in their reading book to show you at the next strategy small group.

- *Word sort* Students manipulate small papers with many words and a few titles into groups. As they visually sort the words by sound and spelling, they help the brain see the patterns in the words.

One of the interesting things is that groups are not always divided up by reading level. Spelling and reading on grade level are not always connected. A child who reads on grade level could be mistaking the short e and short i and spend one card-marking in the short vowel group until he masters that. When he tests again, he might move up to easy prefixes and suffixes if he does not miss words until then. The students do not move through each list linearly. They also enjoy tracking their own progress as a measure of what they have learned.

Grammar As children progress through writing with more clarity and meaning, they will need some specific instruction on grammar. Grammar means the rules by which sentences are put together. It refers to the tense of verbs and the placement of words. As with other skills in writing workshop style, this can be addressed in several ways. It is not taught through worksheets that have students diagramming sentences. However, during whole group lessons, a particular skill may be focused on. A small group mini-lesson may be called to address another skill. If one student continues to struggle, a one on one conference may be needed. As with all other skills, it is addressed in the context of the work that is being created.

Individualized Differentiation in Literacy and Language Arts

We need many strategies to help students pursue personal excellence, learning that helps students achieve at their own level of capability yet pushes them to high standards. We can draw from many tools discussed in previous chapters. Here are a few key ideas.

Using Multiple Intelligences As we discussed in Chapter 11, multiple intelligences can be used to bridge the gap in reading instruction from the stronger areas to the weaker ones. For example, as we get to know our students, we learn that a child who is struggling in reading is gifted in music. During multiple intelligence centers, the child is given time to lead a center and share the talent. As the complexity of what she creates musically increases, so does her self-confidence. One day, a connection is made in the brain and the reading takes off (Campbell, 1994).

Multilevel Reading Materials in the Classroom An effective inclusive teacher will have a host of reading materials at a wide range of levels—trade books, picture books, reference books, and so on. We help students learn to select reading materials that are easy, just right, and challenging. Most of the time we want students reading *just right books*. At other times, however, reading easy materials is relaxing and enjoyable; and periodically students may want to challenge themselves, particularly in a subject of high interest (Cunningham & Allington, 1999; Duffey-Hester, 1999; Routman, 1996).

Individualized Differentiation in Reading Students who struggle may read with partners, as we teach both the struggling student and the reading partner how to read together. We choose several books at different levels that will appeal to the students and then ask students to examine them and choose a book in which they are interested that they think is at their just right level. This allows the students to make the choice. If they want to read a book that is too hard they can develop a plan with another student for how that will work.

Allowing students choices in what they learn is vitally important for making the connections within the brain that will help students feel relaxed, interested and able to remember what they learn. Yet, what do we do when students who are struggling in literacy have difficulty selecting books they are able to read but also want to read? Here are a few helpful suggestions (Fielding & Roller, 1992):

- Help students determine books at their level of ability
- Encourage students to read books the teacher has read as a read-aloud
- Suggest that students read with a friend and re-read books that they enjoy
- Set up programs where students can read to younger students (thus reading easier materials but in a way that does not stigmatize the student)
- Have many interesting and informational books with pictures available

Also, it's helpful to understand that there are at least 3 ways to 'read' a book each of which can be a valuable tool:

- 'Pretend read' familiar story books
- 'Picture read' by looking at a book with many pictures and talking about what you see based on the pictures
- Listening to the book read via tape, CD, talking software, or a reader, either a peer or adult volunteer or educator
- Reading the words of the text

Individualized Differentiation in Writing The multilevel nature of writing workshop makes it a centerpiece of effective literacy instruction that support all students. Writing is often a key road for students to become skilled readers. Often students who have difficulties with very simple reading texts can read their own messages in their writing notebooks and folders. We have many specific strategies that we can use in inclusive reading and writing workshop to scaffold and support student learning. The figure below lists some of these.

Literacy Scaffolding

* Daily model writing, procedures, verbalize thinking, math etc…
* Demonstrate key words: Who, What, Why, First, Next, Finally.
* Work banks/ picture dictionaries that students continually add to.
* Cognitive maps to organize reading and writing processes.
* Reader response logs to share thoughts.
* Choral and partner reading, writing, spelling practice.
* Flexible grouping (large group, small group, pairs, individual).
* Developmental spelling.
* Structures that encourage participation, inquiry, and student talk.
* Motivating activities that create desire to learn about a topic.
* Guided Reading strategies groups.
* Choral read sitting slightly behind student so they hear words and inflections.
* Reader's Theatre to interpret readings.
* Heterogeneous groups jigsaw reading and share with other groups.
* Pre-teaching vocabulary, content, and questioning
* Mark points in reading where students refer to question to encourage thinking.
* Group/ label semantic maps or create timeline to organize information.
* Providing deep content materials at different levels (eg. books, internet access, books on tape, videos, and community resources).
* Apprenticing students in effective strategies used in a discipline.

Adapted from Tarrant, 1999.

Using Assistive Technology Assistive technology can be used as a powerful tool in literacy learning. Text to speech software and books on tape or CD can help students be able to access written materials that they would have difficulty reading alone. Consider this question: When a totally blind student uses such tools is this considered reading for that student? Most people would say, "Yes." This is the modality that most blind people use to access text. If that is true, what about a student with a learning or cognitive disability? If they use these tools is this reading? Bill Henderson, principal of the fully inclusive O'Hearn Elementary School in Boston suggests that these students should be given such literacy supports as much as individuals who are blind. The key is to have

such students access written information and gain meaning and understanding, using written information for an authentic purpose.

Sights to See
Inclusive Academics in Action

View these videos thinking about strategies by which students with high and low abilities could participate in and learn in these great activities.

Cooperative Arithmetic: "How to Teach Math as a Social Activity A master teacher in Anchorage, Alaska, establishes a cooperative-learning environment in an upper-elementary classroom". Imagine how students with differing ability levels may engage in different roles in this learning activity. http://www.edutopia.org/math-social-activity-sel-video

First-Class Citizens: "Civics Isn't Just a Class Hudson High School has become a laboratory of democracy, challenging widely held assumptions about how schools can and should operate". www.edutopia.org/first-class-citizens-video

Mathematics

Students are very often intimidated by math. Let's visit a classroom in which students are working on a worksheet of algebra problems.

We see examples on the board as the teacher walks around helping. Several students are finished and look very bored. Most are struggling. One student in the back of the room is simply staring at his paper, his head down, his eyes sad as he attempts to decipher the exercise. A buddy leans over and explains again, but he shakes his head, saying, "I can't do it." Later, the teacher too shakes his head: "Angus tries hard but he simply cannot do basic algebra." We leave feeling sad that both Angus and the teacher have given up on his math abilities.

What is it about math that intrigues some and makes others incredibly frustrated? What do we do about students like Angus? Fortunately, important changes are happening in the way we teach math. Let's visit another another class where we see very different results.

Linda asks the students to gather at the front of the room. They are learning about place value, and two numbers are on the board. "Which one is the larger number?" she asks. She continues to

ask questions as the students get more descriptive explaining their thinking. Everyone gets a chance to share, no matter how sophisticated or simple their thoughts. After the discussion Linda asks the students to write what they think in their journals. They then play a game that teaches about place value. "Several students have had a lot of problems in math in previous classes," Linda says. "However, in here, although they are learning slowly, they love math and ask to play math games in their free time."

Challenges in Mathematics Education

Mathematics learning has become, over the years, for a great many people a fearful and distasteful process. In no other area of learning, besides early reading, is the emphasis on disconnected skill development and procedures for 'getting the answer' emphasized more traditionally than in mathematics. It's fair to say that the vast majority of students in geometry and algebra have no clue how the many algorithms they are expected to learn to use in school relate to anything in the real world. Most forget what they knew within a short time from leaving class. Given this situation, it should not be surprising that students with special needs also often have difficulty in traditional math instruction.

Standards for Mathematics Instruction

The National Council of Teachers of Mathematics (1989; 2000) has established a reformed model of teaching mathematics to address many of these problems that takes important steps towards inclusive teaching. The standards call for less emphasis on computation on worksheets and greater emphasis on mathematical reasoning and problem-solving in actually using mathematics. Three key features are important.

1. First, "knowing mathematics is *doing* mathematics" related to a purposeful activity.
2. Second, understanding mathematics shifts from the traditional sequence of algebra-geometry-precalculus that was designed largely for engineering and the physical sciences to understanding mathematics in ways that can be applied to many disciplines.
3. Thirdly, the new curriculum recognizes the dramatic changes that technology has brought about in providing tools for solving mathematical problems. The new curriculum calls for use of calculators and computers as tools for computation, along with learning computation in the context of problem-solving.

NCTM, on the one hand, recognizes that students vary dramatically in their mathematical abilities and interests but also suggests that all students must learn key

content while allowing that the depth and sophistication of knowledge may vary substantially across students. The content standards for high school state that all students should be involved in 3 years of mathematical study in high school with 4 years required for students who plan to go on to college. The core curriculum for all students in grades 9-12 includes the following content: numbers and operations; measurement; geometry; data analysis and probability; and algebra (Access Center, 2006; National Council of Teachers of Mathematics, 1991):

NCTM emphasizes students engaging in discovery learning, using mathematical ideas, thus deepening understanding. Mathematics should work to build a community of learners where exploration, voice, and mutual support are seen as critical elements using the following strategies (National Council of Teachers of Mathematics, 1991, 2000):

- More time for students to explore and invent alternative strategies for computing mentally
- Increased focus on concrete experience, using objects rather than symbols
- Focus on mathematics as a way of thinking; emphasis on teacher's listening to and understanding how students are thinking
- Discussion among students regarding approaches to solving mathematics problems
- Emphasis on taking students' thinking seriously—listening, coaching, reflecting, and challenging as students construct approaches to mathematical problems

The NCTM standards for teaching and learning help move mathematics learning in a very new direction that involves students in actually using and understanding mathematics at a deeper, applied level, moving from Bloom's lowest levels of understanding to higher levels of cognitive thinking. This move opens up opportunities for students with special needs to learn at a higher level and allows multilevel instruction to become a reality.

Inclusive Mathematics Instruction

Let's explore some valuable strategies for helping to make mathematics accessible to all students that respond to the NCTM guidelines.

A Daily Lesson Format Workshop learning in mathematics instruction involves a balance of whole group instruction, small groups, and individual work. Typically, we will meet with the entire class at the beginning of the lesson to connect with students personally, engage in a mini-lesson related to a particular skill, and allow students to

report on the status of projects on which they are working. Then students may work on learning projects, either as a whole class, individually, in pairs, or in small groups. We pull small groups together for mini-lessons on needed topics and facilitate support for individual students in collaboration with a special education teacher or paraprofessional. We organize inclusive lessons using individual or small group multilevel learning projects that are linked to authentic themes and other subjects, tiered lessons, centers based on multiple intelligences or learning styles, and extension activities available for all students based on individual choices.

As we organize daily lessons for diverse students, we pay attention to two interactive areas: (1) developing inclusive learning structures in our classrooms such as multilevel projects or tiered assignments; and (2) using instructional strategies that enhance learning for all students, thus insuring that students with special needs also are learning more effectively. Let's look at some key strategies for assuring effective learning for all.

Emphasize Conceptual Understanding by Emphasizing "Big Ideas": while there is much to learn in mathematics the major concepts are relatively few. Rather than 'getting through the book', we identify the key big ideas and use these to focus instruction (Choike, 2000).

Make Connections Between the Real World and the Use of Mathematics When students are presented with real world situations and guided in using mathematics for functional, useful purposes, students both see the value of mathematics but also can be guided to understanding how mathematics actually works. They begin to think at some level as a mathematician rather than simply memorizing formulas that they don't understand.

For example, Zemelman, Daniels, and Hyde (2005, p. 107) describe a teacher who introduced algebraic equations with a lesson entitled 'chocolate algebra.' The teacher led students through a discussion regarding how many combinations of purchases of chocolate bars may be made when they had $10 to spend and Hershey bars cost $2 and Tootsie Rolls $1. They constructed a table of options and gradually came upon the need to create an equation. The class itself constructed this simple algebraic equation out a real situation and need and experienced both how such an equation might be used as well as the logic behind it.

We use multiple strategies to help students visualize mathematical operations. Students work together in pairs or small groups, thinking about math and creating, for example, their own methods for adding and subtracting. Curiously, Davis and Maher (1996) indicate that "the present evidence suggests that it is *easier* to invent one's own methods

than it is to memorize methods conveyed by other people " (p. 71). Thus, students with learning challenges can excel as they are engaged in thinking with other students. Learning through hands-on activities is particularly helpful for students with special learning needs, as these activities make abstract concepts tangible (Romberg, 1995).

There is no doubt there is a bit of a trick of connecting the skills sets in mathematics with applied situations. The fact is that in the real world, we use many types of mathematics skills simultaneously. Effective teachers work to create real world connections for each skill set as did this teacher while, at the same time, creating opportunities where students may use mathematics skills to engage in functional activities where multiple types and levels of skills might be used at the same time. Here are a few examples:

- One set of teachers involved a class of elementary students in conceptualizing just "how big one million really is". They used real world objects to actually construct a representation of 1 million. In the process they used math skills of counting, multiplication, representation, and even a bit of algebra.
- Class Store – students may be involved in running a simulation of a store or even in having an actual class store where many math skills can be practiced.
- Interdisciplinary Links. Math, of course, is used in many disciplines, particularly relevant to science and social studies. Teachers can look for opportunities to use math skills in science experiments ranging from recording to making projections based on extrapolations of available data involving both statistics and algebra.
- Home – Community Connections. Have students investigate how math is used in their home life and in their community. Make connections with local scientists, community activists, business people to identify projects in which students may use mathematics.

Remember the 'curriculum matrix' in Chapter 4? We used this tool to make connections between individualized student goals to the curriculum in our classroom. However, we can also use a variation on that matrix to connect mathematics skills to other subjects, home, and community. Making mathematics authentic, connected to the real lives of students, while also involving students in thinking through the meaning of mathematical solutions, is the key to motivating students and to creating real understanding. It's also the key to having lessons that allow students to be working on different levels and types of skills simultaneously.

Link Mathematical Learning to the Interests of Student and the Local Community As we seek to involve students in concrete activities to explore and understand mathematical concepts, we will strengthen learning if we can connect to the interests of

students. Their motivation will be enhanced and their practical understanding will help deepen their understanding of mathematics as well. For example, perhaps a student has become interested in sewing or another student wants to get new wallpaper for her bedroom. Both provide opportunities for using a range of mathematic skills. Per the discussion above, we can involve students in helping identify places in their lives where mathematics can be used.

Move from the Concrete to the Representational to the Abstract Students can learn mathematics of all sorts most effectively when we move from concrete to representational to the abstract assuring understanding along the way. The Access Center (2008) has outlined three here steps:

- First, students use concrete materials to apply mathematical operations. These may include base 10 blocks, pattern blocks, or real-life artifacts.
- We next use semi-concrete representation of mathematic operations and concepts via graphics including circles, dots, stamps to imprint symbols, and other symbols.
- Finally, we move to the abstract using numbers and mathematical symbols only.

The Access Center (2008, p. 21) suggests these strategies for moving students from concrete to representational:

- Have students work on the computer to use virtual manipulatives.
- Develop guided worksheets.
- Use cooperative groups and encourage students to talk their way through solving problems.
- Vary the type of manipulative that is used.
- Provide songs, rhymes, or rhythms to help remember the basic facts.
- Use flashcards for individual or group review of basic facts.
- Teach number facts in fact families. Chunk pieces of information and facts in sets of three.
- Provide multiple opportunities for practice and demonstration.
- Simplify the problem.

Strategies for moving students from representational to abstract (Access Center, 2008, p. 22):

- Work with the student individually or in a small group to ensure that he/she understands the concept.
- Demonstrate how to solve problems with self-dialogue or think-aloud strategies.

- Fade the use of guided worksheets to prepare students for the abstract stage.
- Use cooperative groups and encourage students to talk their way through solving problems.
- Provide multiple opportunities for practice and demonstration.

Use Multiple Representations, Manipulatives and Other Concrete Materials
Relatedly, we want to provide students multiple ways to understand a mathematical concepts by providing numerous representations of a concept.

Math ***manipulatives*** are helpful tools: such as base tens, pattern blocks, and geo-boards to help students shift from knowing "how to do" a numerical operation (such as addition of three-digit numbers) to understanding "why it is done."

We can also use *multiple intelligences*. One example involves art and multiplication math facts. Even as late as April in a fifth grade room, there are a group of students who do not know their math facts, but they are talented in art. So, they spend a significant amount of time making detailed artistic flash cards. Each picture is significantly different and the fact and answer is written right over the picture. This helps the students learn them, as they associate the picture with the fact. Thus, the art bridges the gap.

Mnemonic strategies may be useful in helping students remember difficult material. This is a strategy that can be also applied in other subjects. A mnemonic is tool to help people remember information by associating the desired information with something easily remembered – an abbreviation, a poem, a symbol, an image, or even a sound. The human mind more easily remembers spatial, personal, surprising, or funny information much more easily than abstract sequences and data. The Access Center (2008) has identified several forms of mnemonics: (1) keyword; (2) peg-word; (3) letter; and (4) order. *Keyword* uses "a familiar word that sounds similar to the word or idea being taught" (Access Center, 2008, p. 25). For example, in teaching students the 2X family of multiplication tables, 2X2 might be associated with the word (and picture) "skateboard". *Pegwords* involving words that rhyme with numbers. For example, "fun" might be associated with the number "one". *Letter* uses acronyms. *Order* uses cute saying to help remember a sequence of operations. For example, the saying, "**M**any **D**ogs **A**re **S**melly" can be used to help remember that in a math problem like (6+10)-4*6 multiplication (M) and division (D) are to be done before addition (A) and subtraction (S) (Access Center, 2008, p. 34).

Graphic organizers can be valuable in mathematics as in other subjects as well. According to the Access Center (2008), three main types of graphic organizers can be used: (1) hierarchical diagrams in which the main idea is placed in the center connected

to supporting information or details in surrounding boxes or circles; (2) compare and contrast charts such as a Venn diagram; and (3) sequence charts which illustrate how events or tasks are arranged in chronological order.

Authentic Multilevel and Tiered Lessons As we use the strategies above, we'll find that our lessons naturally often become *multilevel lessons* authentically connected to the real world. For example, if we have students operate a store or work together to create a model of an ecosystem and gather data regarding different aspects of that eco-system students can function in different roles using different mathematics skills. When we involve the whole class in exploring a concrete problem, students will have different levels of understanding. We can provide support via special educators of peer supporters to help students have the key concepts understood.

We can also develop ***tiered lessons***. We might have an assignment with different expectations and assignment directions for different groups of students. For example, in one 4th grade class, students were engaged in a lesson involving measurement. Some students learned how to use a ruler and a scale to measure objects within the closest inch and weigh objects to the closest pound rounding off. Other students did the same activity but were expected to measure objects with two decimal places. Two students who had good skills in basic measurement measured the diameter of objects and then calculated the perimeter. All students graphed their results and shared them in a classroom discussion.

Here's another example of a tiered lesson. In a middle school class, the teacher posed this consumer application problem involving basic algebra (National Council of Teachers of Mathematics, 1991), p 132):

> Carlos deposits $100 in a savings account earning 6% interest compounded annually. Assuming a fixed interest rate, how much money will be in the account at the end of 10 years?

Several levels of learning may occur in this problem. In level one, the lowest level, students multiply $100 by .06, obtain a new total, and conduct this same calculation 10 times. In level 2, a student might express this calculation in an algebraic formula. In level 3 students could solve problems in which interest rates are calculated semiannually, quarterly, or monthly. In this scenario, students at level one would have opportunities to engage in similar problems to practice and understand the basic skill while students who functioned at a higher level could work on more advanced problems. More advanced students may provide peer support to lower level students deepening their understanding as they support another student.

We can ***use mathematical materials for various purposes*** to create tiered lessons. For example, we might use a worksheet for calculating division and multiplication problems for the class. We could create different versions of this worksheet at different levels of complexity. For a student still learning to identify basic numbers, we could ask the student to circle all the 2 and 5 numbers, for example. Or we could ask them to add instead of divide or multiple the same problems. This same strategy could be used with many materials.

We can also provide ***extensions*** for learners to extend their learning as they finish other work. In one teacher's class, two children finish the daily pages of the regular work. The teacher has created a chart with choices from which these students can pick. As they work, they look up from time to time and tune into the class discussion. Gifted learners have the ability to work on something else and listen to what you are doing.

Create Understandable and Clear Math Problems As we seek to involve students in actually using math, we'll want to present applied problems that involve use of various skills and concepts. As we do so, a few practical guidelines can help these be most effective. First, we'll want to be sure that details of the problems don't actually distract. (Choike, 2000) provides one example in which a problem was posed regarding a CD player that was on sale for a down payment of $ 13.80 and a monthly payment of $ 22.69. He suggests that using numbers is distracting. Rather, simplify and use a similar problem with a down payment of $5 and a monthly payment of $10. Additionally, we want to make sure that the language of problems is clear and without ambiguity. Finally, consider the settings in which problems are placed. Use those that are familiar to students expanding as needed into new contexts. Choike (2000, p. 4) provided this example:

> As an illustration, consider the following setting. A turtle walks at five feet per minute, and a snail crawls at three feet per minute. The turtle and the snail start from an oak tree and head toward an elm tree that is located thirty feet from the oak tree. In this simple setting, students can investigate, through multiple representations, patterns in words, tables, symbols, and graphs. By having students link these representations with one another, they experience a rich lesson in many of the big ideas of algebra. When the class is familiar with this setting, use it again but with an additional twist: give the snail a nine-foot head start on the turtle. Students can then investigate how the various multiple representations have changed.

Listen Carefully to Students and Recognize Emerging Understandings We need to listen carefully to students to see when they are developing understandings of a concept

even though they may not express 'the answer' in a traditional way. (Choike, 2000) gave this example. A teacher (who he called Mr. Relentless) posed this problem:

> "Frank's car travels twenty-five miles in thirty minutes. What is the car's average speed?" The answer that Mr. Relentless expected to this question was fifty miles per hour. In class, he called on Kisha to give her answer to his question. Kisha responded, "The average speed of Frank's car is 5/6 mile per minute." Mr. Relentless brushed Kisha's answer aside as he asked whether anyone else in class could give the correct answer to this problem.

Clearly, Kisha understood key concepts even though her answer was hardly traditional. Listening carefully is important for all our students but particularly for students with special needs who may have unusual (and often interesting) ways of framing understandings. The more we can capture emergent understandings, the more we can build on these to strengthen student learning.

Create a Sense of Safety, Community, and Belonging Most critical in mathematics classes is to create an environment in which the voice of all is heard and respected and students have a sense of safety. In the experiences of many people, mathematics classes were places of fear and humiliation. If we can help students know that they are safe in exploring, in being wrong, in thinking together, then we will go far to helping students learn at a higher level.

Have Students Reflect on the Meaning and Use of Mathematics We want to constantly involve students in thinking about and reflecting on their mathematical experiences. For example, students can keep *math journals* where they record work on different topics of interest to them. Writing about what they learn helps all students clarify the meaning and make stronger connections within the brain.

Science

Ms. Carrese was excited. A high school science teacher, she was returning from a conference at which she learned new approaches to teaching science. She decided to put these new ideas to work in a project she called "The Archeazoan Project." She set the stage for her students. "The town of Archeazo has no electricity," she explained. "The town board will hire several consulting firms representing solar, nuclear, chemical, hydro, and wind energy to develop proposals. The class will divide into groups forming consulting firms to advise citizens." She further explained that they were to prepare and present their proposals to include the following elements: "pros and cons, how your form of energy is converted to electricity, why yours is most beneficial, and hazards." "It was great. It was so much fun . . . and . . . I didn't have to stand there and say, 'This is solar

energy"". She talked about how helpful this project was to several students with disabilities. One student with ADHD seldom finished homework assignments. However, he became engaged with the hands-on Archeazoan activities and worked very hard. He was in charge of making the display that illustrated complex information in an interesting way. His parents were delighted that he was excited about learning (Adapted from Champagne, Newell, and Goodnough, 1996, p. 20-32).

Challenges in Science Education

Traditional instruction in science has centered on having students read text books, listen to lectures with an occasional video, and complete worksheets. At best, in such classes, students have been involved in very narrowly prescribed laboratory experiments. Traditional science education has also focused on memorization of facts rather than using the scientific method and research procedures. This approach to science instruction often results in students losing interest. Further, students do not experience science as a dynamic, problem-solving and learning process nor do they engage in science using tools and processes that are used by practicing scientists. The result has been poor results in science learning.

Standards for Science Instruction

Beginning in the 1980's in the United States, major initiatives have sought to reform science learning moving towards an inquiry-based model of workshop learning. In 1985, the American Association for the Advancement of Science (AAAS) began an initiative to reform K-12 science education in the United States entitled Project 2061. The resulting document, *Science for All Americans* (American Association for the Advancement of Science, 1989) was followed in subsequent years by the *Benchmarks for Science Literacy* (American Association for the Advancement of Science, 1993) and the *Atlas of Science* Literacy (American Association for the Advancement of Science, 2001) which provided a curriculum framework. The National Research Council worked on parallel project creating the *National Science Education Standards* (1996) followed in 2000 by the document *National Science Standards: A Guide for Teaching and Learning*. This document, along with the *Atlas of Science Literacy* provide practical and extensive guidelines for effective workshop learning in science (Zemelman, Daniels, & Hyde, 2005). Science for all suggests that *all students*, not just those who will go on for advanced studies in chemistry and physics, should know how science relates to their everyday lives.

Based on these recommendations, effective science instruction should include the following characteristics:

- Students must *do science* by conducting scientific inquiry not just cover topics
- Students should use a variety of scientific approaches and tools
- Teachers must focus on helping students develop fundamental concepts and the big ideas of science, not just memorizing facts
- Students learn via collaborative group work
- Assessment must focus on student's understanding and engagement in scientific processes not just the recall of facts

Traditional science instruction in schools has been based on a variation of lecture-test instruction: students listen to lectures, read a textbook, and conduct prescribed experiments whose purpose is to verify facts of the lecture and reading. Students are assessed to determine their recall of basic facts. As with all lecture-test instruction, this approach results in poor learning of material, little understanding, and often a dislike of science altogether.

In inquiry learning, however, we involve students in actively generating their own questions, deciding how to conduct their own experiments or studies, actually engaging in studies, and analyzing and reporting processes and results. Students immerse themselves in doing science rather than 'covering topics'. Teachers help students articulate good scientific questions and obtain good data and evidence to answer these questions. Students use a range of scientific research tools and strategies to engage in inquiry becoming familiar with various approaches to scientific investigation. Teachers involve students in small group as part of inquiry learning and assess student learning via portfolios and performance tasks.

Let's compare traditional science instruction and inquiry learning. In one class, Julie decided to teach how mice learn to use mazes. She lectured about mice and operant conditioning, writing words on the board as students sat in rows listening. She then had students observe mice in a maze. They were told exactly what to look for. Unfortunately, the mice didn't cooperate and do what they were supposed to. One students said in dismay, "We didn't get the right answer!" (Adapted from (Walker, 2007). The teacher also became embarrassed and frustrated as students had all sorts of other questions to which she did not know the answer: "What sex are the mice? How can you tell?"

While this teacher thought that she was doing inquiry learning since part of the activity was hands on, she actually was not. She generated the questions, designed the experiment, and was not interested in the actual questions students had. This lesson

demonstrates clearly how hands-on learning and inquiry are not the same thing.

Let's look at another lesson with another teacher, Sarah. She wanted to teach students about the sense of taste. She began by bringing all the students to the carpet area at the front of the room. She then began eating a banana. She asked, "Why does a banana taste like a banana? Why does it not task like something else?" The class began to discuss this question.

> Sarah provided the students with an investigation question to start them off; 'What effect does your sense of smell have on your sense of taste?' The students then had to develop a way of answering this problem themselves. Sarah, prompted the class by asking them questions like, 'What do you think will happen when you can't smell?' 'Why?' 'Have you ever actually tested that?' 'How could you do that?' The students were responsible for designing the experiment themselves, and at the end, they told Sarah what they had found. The students set up an experiment where one student was blindfolded and then fed different types of food. They had to guess what food it was. Next, the student had a peg put on their nose, and had to re-taste everything and guess again. The students found that it was more difficult to guess when you had a peg on your nose. (Walker, 2007, p. 10)

Sarah's lesson was closer to real inquiry. While she provided the initial stimulus question, she facilitated students asking their own follow-up questions and designing an experiment related to the question. These students took more control and thought about the issue in ways that Julie's students did not. In many classrooms, groups of students will be involved in creating different inquiry experiments, and the results of the original experiment will fuel the questions for the next experiment. Children learn that real science is a constantly rotating cycle of questioning and discovery.

Inclusive Inquiry Learning in Science

Inquiry learning in science is very conducive to authentic multilevel lessons. Students in small groups can take on roles involving varying degrees of ability and skill requirements. With scaffolding and support, all students, even those with the most severe disabilities, can participate in these lessons. Tiered lessons, particularly for individual projects, can also be useful.

Authentic, Interdisciplinary Themes Science provides a very natural arena to select themes around which we may link social studies, literacy, math, and the arts. We select themes involving social issues and the history, philosophy, and sociology of science that integrate science with other school subjects and the various science disciplines and build on student's curiosity. Two projects are rich sources of ideas for developing

interdisciplinary themes related to science: (1) *Science, Technology, and Society (STS)* seeks to promote acceptance and celebration of diverse student contributions (Yager, 1990); and (2) the *Jason Project* links students through the Internet and teleconferencing to investigations of recognized scientists. We can use broad themes to anchor many specific inquiries in which students may engage.

A Daily Lesson Format We can use a **daily process** to manage inquiry learning. Often we start the lesson with a mini-lesson related to a particular researching or experimenting skill or the content of a science concept. We can have students provide a brief review of the status or various projects. This allows students to have a sense of what others are doing. This is also a good time to brainstorm key challenges across projects to help us identify needed mini-lessons. Students are then given work time for their projects. They take notes, sketch experiment results, research topics, and graph data. Inquiry projects may be individual, small group, or even involve an entire class. The projects may be multilevel or tiered assignments and use helpful strategies such as centers based on multiple intelligences.

Let's look now at how the inquiry cycle looks in science learning.

Inquiry Lessons Chapter 12 provides a generic framework for inquiry learning that is the basis for workshop learning across subjects. This framework applies equally to science. However, science inquiry will add additional twists aiming to use tools and processes of actual scientists. Inquiry learning can be implemented as an individual assignment based on either multilevel or tiered assignments. However, it is most effective when we have small groups working together. In such a situation, students with varied abilities can take on varied roles that require different levels of ability.

As we begin an inquiry lesson with students, we first **introduce** the lesson or unit. If we have involved students in developing their own topics of inquiry, we can remind them of the steps they went through to identify the topic. We then aim to engage interest of the students facilitating dialogue regarding knowledge and misconceptions students presently possess regarding the topic of inquiry.

We then involve students in ***generating questions and a hypotheses***. We engage students in pairs or small groups in exploring and creating questions that they have about the topic. We can involve students in categorizing and synthesizing their questions, helping them to learn how to articulate effective questions. Students will then develop a hypothesis that can be tested using scientific data gathering and analysis procedures.

We next *facilitate student planning of an experiment* or other study to answer their questions and test their hypothesis. We help students directly connect their questions with the type of information that they will gather. In the process, we will be providing students with different models of scientific research: experimental studies with control groups; survey research; qualitative observations. We will walk them through decisions regarding what types of information they need, the variables that are important, ways to gather information, and ways they can analyze the information. Students will also make decisions regarding practicalities of gathering and analyzing data.

This step, of course, can vary from very simple to highly complex. Many people spend their entire careers devoted to understanding various types of research procedures. Involving students in planning studies helps them act and think as scientists and researchers and deal with the complexities of design and the practicalities of gathering information.

The obvious next step is ***conducting the study to gather and analyze data and information.*** We monitor students in actually following their plan, gathering information, making observations, setting up the experiment, and recording results. The study must be directly hands-on and directed by the students themselves. As students gather data, they will next be involved in recording, summarizing, and analyzing the results to determine the answers to their questions.

Finally, students will ***communicate and share results*** of their study with others. This will involve in creating posters, powerpoint presentations, or other tools that can be used to share their original question or hypothesis, procedures that were used to gather and analyze data, and their results. We want to help students connect their inquiry to their everyday lives exploring practical implications for their results. For example, if students have explored level of pollution in a local stream and have found high levels, they can discuss why this matters, what needs to be done. Students may also be able to connect their own results with other situations. For example, they might be interested in comparing levels of pollution in other rivers and lakes.

Let's now look at examples of inclusive, inquiry-based science learning in actual classrooms.

Layers of the Earth: ***Small Group Multilevel Project*** In Melanie's grade 3-5 multi-age class students are working on an introductory project to explore the layering of the crust of the earth. Students had previously worked in pairs and made models of the earth with colored modeling clay, one color for the inner core, one for the outer core, and one for the mantle. The crust was blue and green, with blue representing water and green representing landmasses. She provided a plastic knife to each team and suggested that

they either simply slice the model in half. Once teams started to get their models sliced open – not such an easy task – they all seemed to be amazed by the appearance of the cross-section. The students were excited about their projects and shared them with visitors in the class.

Rather than simply viewing pictures of the earth's layers, this activity involved students in a concrete way. Kevin, the student with a cognitive disability, had worked with a partner. However, all the students were able to examine the layers of the earth, and complete the work together. Following the whole class lesson, students who want to pursue this project further were encouraged to do so during the thematic research project time that occurs three times a week.

Exploring Sound: ***Multiple Intelligence Centers*** In Jasper's 5th grade class, students are invited to rotate through several centers in small groups related to sound. The musical center has a variety of musical instruments, noisemaker toys, and eggs with items in them. The students make different sounds and discuss how they work. Two students who play in the orchestra are leading this center. In the bodily-kinesthetic center students list places in the school they think will be the best for creating echoes. They try them out and record what happens. In the artistic center, students create visual renderings of sound waves and vibrations. The linguistic center contains picture books on sound which students read and discuss. In the intrapersonal center students watch a video and write their thoughts in a journal. Students work together using pop bottles with different water levels to create a tune in the interpersonal center. At the logical-mathematics table, students create tables showing time sound takes to reach different distances. All of the students are learning about sound, accessing information based on different intelligences but also at their own level of challenge.

Making a Light: ***Small Group Multilevel Project*** David, a 5th grade teacher, likes to give students experiments to help them discover what works, what does not, and why. Students recorded data in a science log. The experiments were set up so that all students can succeed. As one example, the class was studying energy and electricity. The teacher gave the students a bag with a battery, light bulb, and wire. The first part of their task was to make the light bulb light up and draw a picture of what worked and what did not. The second part of the task was to end with a new question that will lead their personal experiment at the following work time. Some students asked for additional materials to create a way to light up two light bulbs from the same battery. One group asked for extra batteries to make the light bulb bright enough that the visually impaired child in their group might actually be able to see it. The entire process was recorded on their experimentation log. Students worked in heterogeneous ability groups working together. One student with a cognitive disability worked with a highly gifted student

who explained some key concepts. A paraprofessional helped one group pose yes and no questions to involve a student with severe disabilities. All children, regardless of ability, went through the process of doing a teacher led experiment, to give them some background knowledge, and then through the inquiry process with their own experiment.

Understanding Density: ***A Tiered Lesson*** (Willis & Mann, 2000) provided this example of a tiered science lesson in middle school:

> At Brownell Middle School science teacher Marie DeLuca offers tiered assignments to help her 8th graders understand the concept of density. To start . . . DeLuca uses an introductory lab activity that allows the whole class to compare the differing weights of identical volumes of sand and oil. The object is to determine whether a ship could carry the same amount of sand as it could oil, and how this manifests the property of density. From this starting point, DeLuca assigns students an Internet activity that explores the causes of the sinking of the Edmund Fitzgerald—but at different levels of synthesis and analysis, depending on student ability. Homework assignments ask higher-ability students to design cargo boats, grade-level students to float an egg, and below-level students to determine which is more dense: a can of Classic Coke or a can of Diet Coke. They must perform a water displacement experiment to come up with the correct answer. All students complete lab reports that DeLuca evaluates using a rubric. . . Students can earn an A grade as long as they support their conclusions with evidence found in their own particular assignments. The tests DeLuca gives are also differentiated . . . "It wouldn't be fair for everyone to do the same assignment and the same test," says DeLuca, "because everyone has different talents. The important thing is for everyone to have a certain degree of challenge."

Schools to Visit
Change Towards Inclusive Teaching
Camden Elementary School
Camden, TN

Camden Elementary, a small school in rural Benton County in Tennessee, is a partner school of the Restructuring for Inclusive School Environments (RISE) project at the University of Memphis, a technical assistance project working with schools as they move to include students with special needs.

Inclusion began at Camden in 1985 when two children with developmental disabilities were included in a general education classroom for one hour a day with an assistant. Before 1985 all students with special needs were in pull-out programs; some never leaving these special settings, even for lunch or PE. A special education teacher began inviting general education teachers and their students to her room, where they would serve ice cream or cookies and have informal parties. A few teachers agreed to have her students in their classrooms. From this humble start the school progressed to the present: Today all school staff have ownership of, and responsibility for, all students.

An inclusionary program can thrive only if administration shares the vision. When the inclusion program began, the supervisor of special education for Benton County gave support, and soon after became principal of Camden Elementary and was able to infect all faculty with her spirit and vision. This leader developed a set of guidelines as the foundation of the program: *(a)* Provide staff development for all teachers; *(b)* provide material incentives for teachers who embrace the vision; *(c)* understand that diverse functioning levels already exist in the regular classroom and that no mystical cure exists within the special education room; *(d)* develop a strong team approach, focusing on students' personal goals; *(e)* set up time for effective collaboration among teachers, support staff, and parents; *(f)* develop strong paraprofessional support; *(g)* seek assistance from outside service agencies (through RISE); *(h)* introduce the teachers to creative instructional strategies such as cooperative learning groups and center approaches for focused learning; *(i)* include a proactive behavior model with the principal following up with each teacher every day; *(j)* ensure that staff live out the school's mission of reaching all students; *(k)* use technology to enhance the classroom setting for learners at diverse levels.

Camden is providing a model for child-centered change and growth for rural communities in Tennessee, a process that continues and changes daily.

By Rita Parrish, Michele Cervetti, & Tom Buggey. Edited by Michael Peterson

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Social Studies

Dinah is a third grade teacher. She is involving her class in a collaborative project in which they study the history of their town and make a model of the town in its early days. Today, she is having a conversation about what they need to get done. Students were given choices including which historical building they would research, how they would present information, and materials they would use. She asks kids where they are in making their buildings for the town model they are working on. They then start with working on their buildings - post office, Baptist church, cemetery, etc. - constructions of cardboard and wood. Later Dinah explains to the class that "tonight is curriculum night, we are going to write something to our parents or whoever is coming, and they will write back to you." Dinah asks, "What are some things you could say about school, your classroom? How do we end the letter?" They talk about different options. "You have about 20 minutes to work on your letter. Remember, the longer your letter is the more you will share." Dinah circulates through the room helping kids.

In this class two students have limited English speaking abilities, two have cognitive disabilities, and two others have significant learning disabilities. All are distributed in heterogeneous working groups throughout the class. Dinah has connected their individual learning needs with this research and development project (Peterson, Tamor, Feen, & Silagy, 2002).

Challenges in Social Studies Education

Social studies involves a broad range of disciplines that seek to understand the human experience. These include psychology, sociology, history, and more. Given the importance of social studies and the need for students to be able to have a critical understanding of their social environment, this school discipline has the potential to be exciting and engaging, involving students in exploring the key issues of the day.

Unfortunately, traditional social studies doesn't approach this possibility. As in other subjects, traditional social studies particularly relies on students reading long, complicated, boring textbooks, listening to lectures, and taking multiple choice tests based on facts – dates, names of inventions, key people, key events.

Standards for Social Studies Learning

The National Council for Social Studies (NCSS) published curriculum standards for social studies in 1994 and instructional standards in 1997. The NCSS standards emphasized ten broad thematic strands: culture; time and change; people, places, and environments; individuals, groups, and institutions; power and governance; production, distribution, and consumption; science, technology, and society; global connections; and civic ideals and practices. The standards also call for four skills: (1) acquiring and manipulating information; (2) creating arguments and stories related to policy; (3) constructing knowledge; and (4) participating in groups. Based on these standards, effective instruction in social studies should have the following characteristics:

- Students should investigate important topics in depth rather than cursory 'coverage'
- Students should be involved in inquiry involving open-ended questions based on their own interests and choices in individual and collaborative projects
- Social studies learning should be linked the community connections and participation
- Students should use original source materials, not just textbooks
- Students should engage in dialogue, engagement, and debates
- Assessment should focus on key skills of citizenship, not the recall of facts

The dialogue regarding the standards for social studies curriculum content, goals, and instruction has been substantive. Some advocate that social studies instruction should aim to preserve existing values and structures and believe that advocating for social change should be avoided. Others feel that teachers help students critique social practices with the goal of encouraging social change and improvement of society (Hursch & Ross, 2000).

In many ways social studies is at the content center of the curriculum in schools because it touches on all aspects of our lives – work, home, community, politics, the economy. As such, involvement in learning social studies content can be a centerpiece for linking learning of all other subjects together – literacy, math, science, art, even physical education. If we are teaching in elementary school, we can literally link many if not all our subjects around important themes that are centered in social studies. If we teach in high school, we can partner with other teachers to again identify authentic themes from social studies that can be used to link subjects together.

In fact, some writers suggest that fundamental issues related to social studies form a spiraling curriculum that can be carried through the entire K-12 system. Postman (1996) suggests these five themes that can serve as the core focus for all learning in U.S. public schools: (1) spaceship earth – human beings as the stewards and caretakers of the planet; (2) the fallen angel – the struggle of good and evil in human existence, the interaction of knowledge and wisdom; (3) the American experiment – seeing this country as an experiment in whether true democracy can work; (4) the law of diversity – understanding difference in all of life, including society; and (5) the word weavers, the world makers – the impact of language and thought on human events.

Eisler (2000) has suggested that the most critical concern for human beings is the type of society which we create. She suggests that we have two fundamental options: (1) partnership; and (2) dominator. How these two approaches to forming society play out over time, Eislier suggests, should be the organizing center for all studies in schools. These can be studied in a matrix where students explore how different subjects connect with different historical periods. Several cross-themes link studies together: understanding partnership and dominator models in human events; partnership values and ethical/moral standards; partnership competencies (eg. parenting, political, leadership); gender balance; diversity and multiculturalism; and the process of developing a society based on partnership.

Whether we adopt the suggestions of Postman or Eisler, it's easy to see how these powerful themesengage students in meaningful learning, linking many disparate facts together in grappling with our condition as people. Social studies moves from memorizing trivia to exploring the key issues of humankind.

Inclusive Social Studies Learning

The standards for social studies clearly call for students to be actively engaged in studying, debating, and acting on topics and issues of importance in their social and political lives. When social studies learning uses this framework as the foundation for designing instruction and assessment, strategies for inclusive learning are naturally integrated into instruction. Social studies provides a natural opportunity to learn about issues and gain information but also to directly experience democracy, a sense of community, and inclusion. Experiences of students and families become key for making self to world connections, seeing the relationships of personal experiences to larger social and policy issues. Let's look at a few strategies and resources for using these ideas in the inquiry and workshop style of learning.

Studying and Acting on Issues Social studies should involve students in understanding their communities and the larger political systems in which they operate. However, rather than just reading sterile descriptions in a textbook we involve students in exploring important issues. Inquiry learning here, as in science, can be directly applied. We can involve students in identifying important local issues, gathering information about different viewpoints, interviewing people, visiting sites to gather information. In class we can involve students in presenting different perspectives, debating topics, acting out important events and actions. We encourage children to develop their own questions and work together to discover the answers. This occurs most naturally in courses that deal with current topics. However, we can also bring history alive when we help students draw parallels between past and presents events exploring questions like: (1) How are the events in Iraq and Vietnam similar and different? (2) What issues that resulted in the Civil War in the United States are still active today? How?

Sensitive social studies teachers are alert to the presence of issues and needs in our own classrooms. When the experience of students and their families provides a source for grappling with issues we simultaneously connect with issues directly connected to students lives and provide an opportunity to address them. We can involve our students in discussing and identifying important issues in their community and in the school itself. We might raise issues like these: How do students from different racial groups get along in our school? In the local community? Is bullying present in our school and community? Why is this? Where do students with disabilities learn in our school district? Are they included are separated? Why? To identify issues, we can ask students to tell stories they know from their families and invite family and community members to the class to talk about issues. Such a process facilitates the voice of all being heard.

We will often have students working in small groups exploring a question or groups studying related questions. For example, in a local community where major industries have shut down in the last ten years, students may want to understand why this has happened and the impacts of the shut-downs on their community. The class could brainstorm issues and questions and develop working task forces to explore various aspects. When we do this, of course, students are engaging in processes often used in professional organizations. Not only are they learning content they are understanding how collaborative task forces work. In such study groups, per our discussion in chapter 9, we expect small groups to act as a community and identify roles for students with varying skills in the groups where they can make a contribution. This approach lends itself naturally to inclusive teaching (Bigelow, Christensen, Karp, Miner, & Peterson, 1994; Burke-Hengen & Gillespie, 1995; Isaac, 1992; Young, 1994).

Acting Out History Process drama is a very powerful group learning strategy that uses theater to engage students and teachers in living through experiences that engage emotions, mind, and body. This strategy is both a way of presenting information and engaging students in a powerful learning activity. Using this process, teachers engage students in a play of historical events taking different roles in the event, stopping periodically to reflect on what people may be feeling as the event unfolds. In these dramatic sessions teachers' problems with students virtually disappear. Many students who have trouble with writing and reading shine in dramatic learning (Rohd, 1998). Again, the class lessons lead to time that is directed by the students and their own questions and wonderings. Some students use these experiences as a springboard to develop their own play. Others write a story from the perspective of a character and read it to the class or draw pictures of the event (Douglas, 1997; Manley & O'Neill, 1997). Here are a few examples regarding how this might look:

- A class acts out the roles of various people in the passage of the Indian Removal bill involving the U.S. government, plantation owners, and the Cherokee Indians (see the beginning of Chapter 11 for more detail)
- A teacher involved high school students in acting out trials. The class was divided into 3 groups, each of which was given information on a trial involving different legal concepts. Each student took two roles as a lawyer, witness, defendant, jury, or judge. The group prepared and then conducted their trial in front of other students. This was followed by a class discussion of key concepts (Willis & Mann, 2000).
- Students act out the assassination of Martin Luther King and the responses of those pushing for both racial segregation and integration.
- Students explore segregation and discrimination against people with disabilities and role play the time when individuals with disabilities took over the offices of Health, Education, and Welfare to protest for the development of regulations that

would implement the first civil rights law for people with disabilities, Section 504 of the Rehabilitation Act of 1973.

In all these, students have options to play many roles that call on different types and levels of skills. Students in groups work together so that all have valued parts, making these events natural for inclusive teaching.

Beyond the Textbook: ***Using Trade Books and Original Source Material for Learning*** If we have students with wide ranges of abilities to read and write in our classes, total reliance on the text will create difficulties for many of these students. Many inclusive teachers do, in fact, use textbooks but only as a reference, not as the key source for the curriculum. We need to develop a classroom library of trade books on the topics we address that are on different reading levels, ranging from picture books to sophisticated analyses.

Moving beyond the textbook is important for other reasons as well. We need to be teaching students how to read original source material synthesizing information and seeing different points of view. When students read trade books that provide different perspectives on, for example, the causes of the civil war, we are helping students develop their ability to compare, contrast and critically analyze information. When used together with materials of different reading levels, we lay the foundation for deeper thinking as well as inclusive teaching in our classes. Using original source material also easily and directly leads into have students study and take action on local issues and act out important events to deepen their understanding.

Calling on Technology We can use technology to help our students access written materials as well using text to speech software, for example, and speech to text software to help students who have difficulty writing get ideas on paper. However, a growing number of valuable resources for social studies are available that can strengthen learning for all. The internet provides a rich treasure trove of sources that combine graphics (photos, videos, audio files) with typical text. Additionally, a growing number of interactive DVDs for various social studies issues are available.

Journey Into the Classroom:
Reflections On This Year's Journey
Towards a Vision For Erin

In 2004, Erin was a senior in high school. Erin, who had Down syndrome, was always fully included in all general education classes and extra curricula activities and was never in a special education class. Her parents even kept her out of co-taught classrooms feeling that they replicated the look and feel of special

education classes. During her senior year, Erin wrote, "...I'm a cool senior at Westerville South High School. Go Wild Cats! I have my class ring, my letter jacket for Drama Club, and my senior pictures to give to my friends. I go to dances and parties and hang out with my friends at school." A few years earlier, as Erin began high school, Barb McKenzie, her mother, wrote these reflections regarding Erin's experience in general education classes (McKenzie, April, 2001).

VISION: To have a life in a community that values diversity and accentuates strengths and to contribute to that community. *What has happened?*

- Erin's excitement about sitting with friends at lunch and wanting to share that and other events that happen with friends in our talks each day after school.
- Being a "Dancing Tree" in the English class Mythology Play.
- "Her interest and enthusiasm has spilled over into the classroom and is a stimulus for other students who see Erin taking her classroom activities so seriously." Ecology Teacher
- "Thanks for your nice thoughts. It is I that is learning so much from Erin. I believe I am the lucky one to have her in my class. After 22 years of teaching sometimes it takes a wonderful student like Erin to make us realize why we chose teaching as a profession in the first place". English Teacher
- Interest that some ASAP (Active Students Advocating Peace) students seemed to take in brainstorming ideas for promoting an environment that encourages listening and understanding the diverse ways people communicate and valuing them, and looking at ways to be more intentional facilitators for students who need that assistance.

VISION: To have reciprocal relationships with friends; to communicate and advocate for herself. *What has happened?*

- The independent creation of her "commercial" for ecology – "Don't smoke! Yucky, Gross, Ugly! So there!" – that became the creative idea for her science group and the basis for their group commercial.
- Erin's excitement about sitting with friends at lunch and on the bus.
- Working and conversing in lab groups.
- Reading "scary stories" around the pretend campfire in English.
- Asking more questions of other students in English and other places.
- Three great speeches on Erin's favorite topics in English.
- Choir! Choir! Singing in choir! Practicing for Choir! Erin's private singing lessons which she loves too.
- Ushering at plays – and then getting to watch them too.
- Learning about prejudice in the story "To Kill A Mockingbird" . . .

VISION: To have the same opportunities as any other person to learn and participate in typical classroom, extra curricular, and community activities when they would typically happen. To graduate from high school in 2004 with her class and move on to post secondary options such as college and a career Erin is interested in. *What has happened?*

- Sitting in the Westerville South section at the Palace Theater for the, "The Scarlet Pimpernel".
- Going to New York with the Heritage group, which included some South students, and seeing Erin's new favorite play/CD – "Phantom of the Opera".
- When Erin turned on the bathroom fan/light and came running out to tell her Dad and me about the air going out of our house, just like she had learned about in Ecology that day. Later, the humidity that Erin found in the bathroom because of the steam on the mirror.

- Learning the term "recycling" and connecting it to what we have always done with our newspapers, etc.
- Walking past the TV show that her dad was watching about the Aztecs and Tenochtitian and saying, "Oh that's World History! The capital."
- Doing well with vocabulary games and on geography maps.
- Observing Erin easily maneuvering computer tools on a measuring program in math. Seeing her comfortably work with charts and other computer programs.
- Singing "Hail Holy Queen" from Sister Act for the Spring Concert.
- Following her daily schedule and getting to classes on time.

Tragically Erin died in 2004, shortly after graduating from high school. However, her life has been a source of inspiration. A 'Welcoming Space" was created in the library at Otterbein College in honor of Erin. You can visit this at: library.otterbein.edu/ErinMcKenzie/index.htm where you can also view Erin delivering a speech at her high school graduation. We think you'll agree that she is inspiring!!

The Arts and Physical Education

We decide to visit a middle school choir teacher, Abena Agyeman. They are working on a performance involving the total choir with a local youth rock group of Jesus Christ Superstar. We are interested because Abena has several students singing in the choir whose English is very limited and two students with moderate cognitive disabilities. We listen and watch as they practice. We note that one of the students with a cognitive disability sings a bit off key and wonder what Abena thinks about this. We ask her after practice. "Well," she says. "You'd be amazed at how much Sheryl has improved! But, yes, she is a bit off. We continue to work on that. But, you know, I recently had to ask myself the question. Am I a teacher or a conductor of a professional choir? The fact is, my students helped me make that decision. A few weeks ago we were at the state choir competition and, frankly, I had made a decision that Sheryl would sit out for the main competition. I thought she would hurt our chances. However, my students found out about this and they were angry. 'Ms. Agyeman, you know you teach us to respect and help one another. Sheryl is a member of our choir and she needs to participate'. So I allowed it. Interestingly, the judges found out about what had happened and they counted this act in our favor. So I've learned that I am a teacher first and foremost."

This time we visit an art class in Wadsworth Elementary School. Arnold Schoonover, the teacher, has a great sense of humor and is an excellent artist. However, we have heard that he has been very frustrated with some of the students. We follow a 3rd grade class down to his room with Jolinda, the teacher. "I'm not sure what is going on," she explains to us. "But every other day my students are sent back to my class early because of some behavior difficulty. Mr. Schoonover seems particularly concerned about Jared." As we come in Arnold is asking the students to be quiet. He is lecturing about the work of an artist who specialized in painting flowers. He is hoping that students might try to copy her techniques. As we look around we're surprised that

there is no art work up on the walls. We are further surprised as the lecture about the artist goes on for 20 minutes! Students are getting fidgety, Jared particularly. He stands up and twirls around as some of the other students start talking and giggling. Arnold tells them to be quiet and tries to continue his lecture. We notice, interestingly, that Jared, is alternating between jumping up and looking around with plopping on the floor feverishly sketching a picture of a bear and a deer. The class gets noisy again. Arnold say, "OK. I've had enough. All of you go back to your room!!" With lots of confusion and anger students get up and head back to Jolinda's classroom. As students leave we watch Arnold pick up Jared's drawing. "Jared!" he says. "This is a wonderful drawing". We look. So it is. Somehow Jared caught the real spirit of these animals. But Jared has already left.

These stories illustrate very different practices and philosophies about what arts education in schools should be about. Abena had become committed to being a true teacher of the arts, to involve students in performance to the best of their personal abilities, celebrating as a group. Arnold, on the other hand, seemed to forget that art is about expressing oneself. Rather, for him, art was again a list of facts and series of artistic techniques and skills. He had managed to make art much like a lecture-test class, in this case, a lecture-copy class. In the process, he missed some amazing art work that a student did in spite of his lectures. All students were missing out in his class.

In this section, we discuss both the arts and physical education together. While very different in many ways, for inclusive teachers the arts (music, visual arts, drama, etc.) and physical education offer similar opportunities and challenges. In terms of multiple intelligence theory, these disciplines call on different intelligences than the linguistic and logico-mathematical intelligences that are the basis for most traditional instruction in public schools. Very naturally, the arts and physical education offer vast opportunities for students to engage in activities and development at very different levels of ability. Many students who struggle with reading, writing, and mathematics, for example, will often excel in sports or in some aspect of the arts.

Challenges in Art and Physical Education

Despite the opportunities for inclusive teaching in the arts and physical education, we find surprising challenges.

In elementary school, the arts and physical education are thought of as 'the specials.' Typically art, music, and physical education teachers will see all students in the school in their programs. In elementary schools, some arts and physical education teachers feel that they are not considered equally important as other classroom teachers and that having students with special needs in their classes is just another example of being treated as a second class citizen. In fact, some schools integrate students with special

needs only into the arts and physical education classes. In addition, the arts and some aspects of physical education, have too often been seen as luxuries that are the first programs cut when school districts have budget difficulties. Some teachers show their anger in the way they treat students with special needs.

In secondary school, other challenges are present. In both middle and high school the arts and physical education, particularly in sports are tied up in competing with other schools to demonstrate their excellence– sport team competitions, art contests, and choir contests. Some teachers, as in Abena's story above, may be tempted to not include students with special needs in these events. As with Abena, we have to make important decisions regarding whether our prime role is that of a teacher for all or whether we seek to win at all costs.

Other challenges come from the presence of special programs designed for students with disabilities to be involved in the arts and sports. Very Special Arts is an international organization designed to "create a society where all people with disabilities learn through, participate in and enjoy the arts" (Very Special Arts, 2008). This program sponsors events and activities aimed at promoting involvement of individuals with disabilities in the arts. However, sometimes these programs are essentially segregated programs just for children and adults with disabilities. Similarly, Special Olympics is a program "dedicated to empowering individuals with intellectual disabilities to become physically fit, productive and respected members of society through sports training and competition" (Special Olympics, 2008). This typically occurs through various levels of competitions involving children and adults with cognitive disabilities. Thus, the program often functions as a segregated program only for students with disabilities. Both programs offer separate activities based on the assumption that individuals with disabilities cannot participate in typical arts and sports programs in the community. However, as we shall see below, both Very Special Arts and Special Olympics are also taking the lead in developing inclusive options for arts and physical education and engagement.

Standards for Arts and Physical Education

A consortium of arts organizations published the *National Standards for Art Education* was published in 1994 (Consortium of National Arts Education Associations, 1994). This document affirmed the value of the arts and outlined the need for students to be actively engaged in doing the arts. However, art was depicted often as a collection of facts to be memorized. Subsequent work reframed the arts in a more proactive direction

and provided useful guidelines for arts educators. One document, *Gaining the Arts Advantage: Lessons from School Districts that Value Arts Education* identified positive practices associated with schools in which the arts played a central role (Arts Education Partnership and the President's Committee on the Arts and the Humanities, 1998). The (Arts Education Partnership, 2002) published a document suggesting that the arts are central to learning the core academic subjects as well as subjects in their own right. Quality instruction in the arts should include the following characteristics (Zemelman et al., 2005):

- Students should *do* the arts, not just view or listen to them
- The arts should be integrated into all subjects with all teachers engaging the arts
- Students should have choices, be nurtured to find their strengths, creating their own form of expression via the arts, and share their products and performances with others
- Students should be involved in the world of the arts, experiencing various art genres, and connecting with arts events and artists

Inclusive Arts and Physical Education

We will find, if we take these guidelines seriously, that the arts, and physical education, can naturally be inclusive. Here are a few ideas.

Involve Students in *Doing* Art and Physical Education Inclusive arts classes are run as true workshops. The focus is on doing – creating visual art work, performing with instruments, singing, engaging in physical education games. Skills lessons are taught as mini-lessons with the whole class for short periods and with small groups based on need. We can involve students in finding and discovering their inner voice and way to express themselves, whether we are an arts teacher or a general classroom teacher where art is integrated into the curriculum. When our primary goal is to help students learn how to express themselves via the arts, we find that all students, whatever their abilities, can participate valuably. We'll also be surprised at the talents that students with significant limitations sometimes show as well. Information about art techniques and tools, famous artists and musicians, knowledge of color or music – all become tools towards the end of self-expression rather than information in their own right.

Assistive Technology For students with special needs, assistive technology can be helpful. This will range from low tech tools, like paint brushes with large handles, to higher tech tools, like drum machines that a student with only head movement might operate as part of participation in the band.

Cooperative Physical Education Games Inclusive physical education teachers will work to create opportunities for learning that involve all students at their level of challenge. Cooperative games provide opportunities for students to help and challenge one another. One such example is field day. There are two ways of handling this traditional event. The traditional competitive way would have students competing against each other in a variety of sports and physical activities and earning first place, second place, and third place ribbons. The noncompetitive way of running field day has 7-10 stations that students rotate through and play for fun. There are no ribbons given out, but the classes have a great time cheering for their classmates as they complete an obstacle course, play volleyball with a beach ball, run a race to fill a bucket with water, and playing tug of war. The students have a great time doing physical exercises, without students feeling left out for not getting a ribbon.

Inclusive Competitions Inclusive arts and physical education teachers make the decision to include all students in arts of sports competitions. As all school districts move towards having students with special needs in these events, unfair advantages are balanced since all schools will have students with a mix of abilities. Competitions can also include points related to how well a team works together as well as the quality of the product. Judges may also take into account the learning demonstrated of students with special needs. As we move towards creating inclusive arts and physical education options many creative solutions can be developed.

When competitive games are used in physical education classes, teachers can assess the capabilities of students and develop teams with students that have balancing abilities. For example, a student with mild cerebral palsy might be on one team and a student with a moderate cognitive disability who is a slow runner on the other team.
For students with significant disabilities, physical education teachers may collaborate with physical therapists or adapted physical education teachers (teachers with specialized training in working with students with disabilities) who may provide support in integrating students with special needs into the class helping them improve physical functioning. In addition, teachers can involve students in developing adaptations to games that allow students with significant disabilities to participate. In one elementary school, a student with a significant disability moved around slowly with a stand that held him upright. He could barely move his legs. However, the students came up with an adaptation in soccer where they periodically would stop and cheer for David to kick the ball (Reeves & Stein, 1999; Schilling & Coles, 1997; Villa & Thousand, 1996).

Unified Sports is a program that combines equal numbers of athletes with and without mental retardation and other disabilities, of similar age and ability, on teams that compete against other Unified Sports teams. Unified Sports was launched throughout

the United States in 1989, with basketball, bowling, distance running and walking, soccer, softball, volleyball, and cycling; other sports are on the way (North Carolina Special Olympics, 2001). A manual for coaches is available, and most states now have coordinators who can give physical education teachers information on how to begin (Connecticut Interscholastic Athletic Conference, 2001).

Arts and Physical Education in All Classes All teachers should incorporate the arts and physical movement into their classes. In this regard, arts and physical education teachers can provide ideas and support to other teachers in integrating arts and physical education into their programs. An art teacher, for example, might coordinate a school-wide visual arts program around a theme that connects art with interdisciplinary studies in other disciplines. Remember Sydney's moose project in Chapter 11? That school could have easily integrated art into that project with both classroom teachers and the art teacher collaborating in students using the arts as part of their project. This view encourages the production of art as a way of life for all, not merely for the specialized few. In best teaching practices, then, the arts become a part of the total school and teachers of the arts become total school resource staff. In addition, therapists, such as art therapists and occupational therapists, can work collaboratively with arts teachers on projects that will enhance therapeutic goals for students (Johnson, 1997; Kovalik, 1994; Short, Harste, & Burke, 1996; Young, 1994; Zemelman, Daniels, & Hyde, 2005).

In a school that is seeking to use effective learning principles, physical movement, well-being, and skill can be integrated into and supportive of the total school curriculum rather than being an isolated subject. Physical education teachers can provide support and ideas for general education teachers. We might see elementary teachers incorporating dance and games into their thematic study about ancient Greece or a country in Africa. We might see math teachers using physical movements of the class as a way to demonstrate mathematical functions.

One school created a school-wide mileage club. Each day, participating classes walked or ran around the school (4 times equaled a mile they discovered). The younger classes walked together, holding hands and discussing a question from the lesson as they walked. Some classes sang songs together. One class picked up trash as they went around. In a fifth grade classes students recorded the number of laps each day. The teacher used this as an opportunity to teach fractions, decimals, and percents. For every 10 miles they completed, a paper foot was put on the wall with the child's name on it. As the year went on, the line went around the room and out the door. Students had an opportunity to engage in physical education in a very social way.

Towards Inclusive Workshop Learning

We recently went to dinner with four teachers who teach together as an interdisciplinary team in an urban high school. They included: Edna, the math teacher; Devin, the science teacher; Kwame, the language arts and social studies teacher; and Aika, the special education teacher. Over the last three years they have been part of a school reform effort funded jointly by the Bill Gates Foundation and the Annenberg Foundation. Their school took on three initiatives which they joined together as part of a major school improvement initiative: (1) inclusive education in which they committed to including students with mild to moderate disabilities in general education classes; (2) implementation of authentic, workshop-based learning; and (3) creation of smaller learning communities in the school through creation of several 'communities' where teacher teams would follow students across grades 9-12, working with them four years. We've heard good things about this effort and wanted to talk with these teachers.

After we ordered drinks and food, Kwame started the conversation by remembering how he felt 3 years ago when they began. "I was new in the job," he said. "I was absolutely overwhelmed!! I thought they bit off way too much. Not one major change initiative but three!! I told my wife that the school administration was crazy." As we look around the table we see lots of heads nodding in agreement along with smiles, like they are laughing a bit at themselves. "It's true for me too," said Aika. "Truth is, I was terrified. I had spent my ten year career in special education in a self-contained special education classroom. I didn't know anything *about the general education curriculum. I was also convinced that my students would be ridiculed and just lost."*

"But it didn't turn out that way, we understand," Michael said. "No, it didn't," said Devin. "The fact is, looking back on it, we don't think that any one of these initiatives – smaller learning communities, inclusive education, and workshop learning – could have succeeded without being linked to the others." "Right!" said Edna. "As I began to figure out how to link math with real topics and issues in science, social studies, and language arts, I began to find so many ways to help all my students learn at their own level of ability. I had been absolutely lost thinking about what students with cognitive disabilities would do in an algebra class. But as we figured ways to have students involved in workshop learning on various topics, they learned what they needed to learn. And the practical, hands-on, inquiry learning we used help them understand so that many, in fact, have learned algebra skills. Looking back I am amazed."

"I feel the same way," said Devin. "Who would have thought that we could have students with such different abilities in our class and they actually enjoy helping one another and learning together. We've learned so much about how emotional and academic learning go hand in hand. I feel so fortunate to have been part of this school. The administration, as it has turned out, has been great. They've challenged us but also listened and have been very supportive."

"So is there anything else to do to improve your school," Michael asked. The group erupts in laughter. "Oh yes," they say in unison. "We are constantly learning. We are still working to help build community in our classroom and meet needs of kids with very serious problems. We're still aiming to have more of our lessons be real multilevel, rather than tiered lessons. Most important, there are still students with severe, multiple disabilities who should be attending our school. To tell you the truth, I am nervous and a bit scared if I can teach them. But I've learned that if I decide I want to it will likely be OK. So that's a next step."

"What an amazing journey this team and school has traveled", we think as we leave. It's the journey we all should be on. We wonder what the real impact would be if all schools and teachers took this journey. Maybe, just maybe all students really would find their special gifts, not only increasing academic and personal skills, but helping to create better communities along the way. Maybe students would come out of school having grown to be real human beings who know, who have experienced, how truly diverse people can live, learn, and work together. "It's a goal worth pursuing with passion!" we think as we get in the car and drive home.

Traveling Points

We've discussed strategies throughout this book regarding how to be inclusive teachers. In this chapter, we've focused on strategies that are specific to various subject areas. Here are a few notes from this chapter for you.

1. Literacy involves use of many signing systems (written and oral words, pictures, gestures, etc.) to communicate meaning to another person.
2. Students gain skills in reading by reading at their own level with support to develop skills and strategies through mini-lessons and peer to peer support.
3. Students write to express their own perspectives. A key in helping student learn to write is to actually involve them in writing at their own level. Students can increase skills as they write through mini-lessons to the whole class and to small groups of students.
4. Direct instruction is not useful as the major or total curriculum for teaching literacy to any student. It focuses on skills, not the use of literacy to communicate meaning, and reduces student motivation.
5. Learning mathematics for all students must focus on understanding and meaning of concepts, not just following procedures to work problems.
6. Involving students in authentic use of mathematics involving concrete materials and resources helps strengthen student understanding.
7. Mathematics is not just for future engineers but is needed by all people. As teachers we need to commit to creating inclusive learning opportunities.

8. Science is about learning how to think and do as a scientist. It is not about memorizing a series of facts.
9. Involving students in inquiry and actual research, collecting and interpreting data, strengthens learning and understanding and provides a framework for effective multilevel, differentiated lessons.
10. Social studies and science are two key subjects that can be used to organize authentic themes around which to link numerous subjects.
11. Social studies should focus on helping students understand how human beings function as social beings and the social structures by which this occurs. Social studies should involve students in learning about and understanding key, controversial social and political issues. It is not about memorizing facts and dates.
12. Involving students in active learning strategies such as acting out history or studying important local issues facilitates multilevel and tiered lessons to support inclusive teaching.
13. The arts and physical education are natural subjects for inclusive teaching as activities are organized to support students in performing at their own level of ability. They provide a place for students to show abilities in different types of intelligences.
14. The arts and physical education should involve efforts to integrate into the curriculum throughout the school.

Stepping Stones to Whole Schooling

Following are some activities that will help extend your understanding and actions you may take in your journey.

1. Use this information in this chapter and Chapter 11 and 12 and sketch out a semester-long series of lessons in your subject area based on workshop learning. Use multilevel and tiered instruction strategies for both individual, small group, and whole class learning to create an inclusive approach to your lessons.
2. Obtain several lesson plans from other teachers or sources on the internet. Use the information in Chapters 11-13 to critique these lesson plans. In what way are they conducive to inclusive teaching? What problems do you see? How would you change these lesson plans so that they support inclusive teaching?

3. Do a Google search entitled "Inclusive Teaching My Subject" where "My Subject" is the subject you teach. Review at least 3 resources. Compare these to the ideas and strategies discussed in Chapters 11-13. Make notes that will add strategies or deepen your understanding.

4. Discuss the ideas of multilevel, differentiated instruction for inclusive teaching with your principal and other trusted teacher colleagues. See if they would be interested in developing a working group to share about effective strategies for inclusive teaching they are using in the classroom.