

Reflect and Connect

In what ways do you differentiate your environment for learners?

Think back to your favorite classroom when you were a student. What characteristics made it your favorite?

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Environments for Learning

"There's something different about your classroom," Janice announces one day in the lunchroom.

"What do you mean?" Margo asks.

"There's just a different feeling in there," she replied. "What do you do to make it different?"

"Different than yours or different from everyone else's?" I coach as I look at Margo.

"Yours is different than Margo's, but in a way, it's the same. I just know that my classroom is not like either of yours. What do you do to make it like that? The kids act so differently in your rooms," she relates.

Margo pipes up, "We do brain-based teaching. Our classrooms are brain-compatible. That means we follow some basic principles. The students are more relaxed, and more learning takes place."

"So, is brain-based teaching the same as differentiation?" Janice inquires.

“Many of the principles are based on the same foundations. Good teaching practices are good teaching practices. They both lend themselves to student-centered classrooms. That’s what you’re seeing and feeling that is different in our rooms. We center the learning experiences on the students instead of around us,” I suggest.

*We center the learning experiences around
the students instead of around us.*

“Well, my classroom isn’t anything like that. There are so many things I think I have to tell the students. If I don’t, how will they ever learn them?” she sighs.

“I went to a workshop about basic presentation skills given by Bob Pike (2001). I was told that as teachers and trainers, we spend way too much time trying to get our learners to know everything. That’s totally unnecessary. Just as the students have to decide what is most important to study and learn, we have to decide what they need to know—then if there is time, we give them the stuff that is nice to know!” Margo announces.

“Please, start at the beginning. Your rooms are interesting. The students seem to know exactly what to do, and there’s no tension. What do I need to do first?” Janice sits quietly and waits for us to begin.

WHAT IS DIFFERENTIATED INSTRUCTION?

The process of differentiation, offering students multiple ways of taking in and expressing information, begins with educators examining four areas: content, process, product, and environment. The idea is to find out where students are in the learning process and offer opportunities for forward movement. This is not individualized instruction, nor does it offer an easy way out for the unenthusiastic learner. It affords different learning opportunities that are based on solid curriculum and high expectations. It does allow students to lead with their strengths and their interests in order to gain enduring understandings and feel successful in the understanding of concepts and skills.

Differentiation can be defined in many ways. The idea of taking your students to the same destination while using different modes of transportation is one way of looking at this concept (Nunley, 2007). Many use the idea that “one size does not fit all.” I learn one way, and you learn best another way. Yet, we both can learn.

Content is **what** we use to teach the standards. When we differentiate the path to the standards, we might include

- choices in how students learn
- materials at different levels of difficulty
- different genres from which to choose
- how quickly a child takes in information (pacing)

Process is **how** we teach the standards. When we differentiate process, we might

- group students according to readiness, interest, or learning profile
- use whole class instruction
- work with some students individually
- offer instructional tools that honor individual learning profiles

Product refers to the way students **show** us what they know. Any type of assessment may be considered “product.” We might vary product by

- offering students choice
- using ongoing formative assessment to determine how well the students are learning
- personally communicating with students in the form of conferences or simple conversations
- varying performance tasks

Differentiation is the teaching method that speaks to the brain-based teaching principle: Every brain is unique.

Differences do not equal excuses. Differentiation makes learning easier; students are still responsible for meeting the standards. They may just meet them in different ways. Tomlinson (2007) tells us, when in doubt, teach up! This means we need to err on the side of the student’s ability, and always keep high expectations!

Good teaching calls for realizing that everyone in the classroom is also a teacher. Getting off the stage is not easy for some of us. Our great fear is that our students will not achieve the wisdom that we are sure we can impart. True wisdom resides in the ability to step back and facilitate learning.

I begin with three basic premises:

1. *We are all teachers, and we are all learners. My students may provide the memory hooks for each other. As students share their own personal background knowledge, others may “borrow” those situations*

and use them to hang new information on. The stories they have to share, the ideas they come up with, or simply the way they put things into words may make all the difference in learning for some of their classmates. According to David Sousa, during every instructional session, the teacher should become the learner and the learner should become the teacher (2003).

2. *Everyone can learn under the right circumstances.* We each have our own preferred way of learning, which involves sensory stimulation and memory systems. Students must be involved in their own learning process. Perception is everything! The way each student perceives what is going on may be different from everyone else's. We know that feedback is essential to discovering what the students are learning.
3. *Learning is fun!* The brain wants to learn, and indeed is learning all the time. When learning is varied and interesting, it is appealing.

With those premises in mind, let's look at the physical, social/emotional, and cognitive environments in the classroom. Carol Ann Tomlinson (2002) has called these the "root system" in the classroom. It is this system that will set the tone for teaching and learning.

Everyone is a teacher, everyone can learn, and learning is fun.

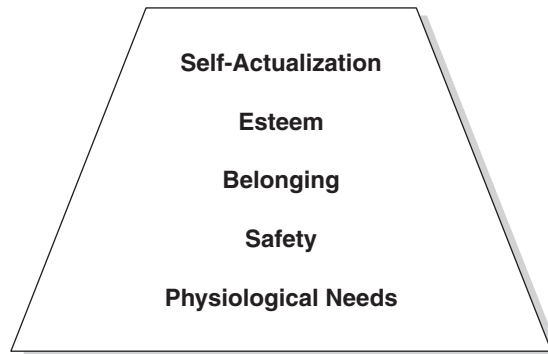
MASLOW'S HIERARCHY OF HUMAN NEEDS

Abraham Maslow (Maslow & Lowery, 1998) is known for his hierarchy of human needs. His theory states that we are motivated to have these needs met. Until and unless these needs are met, humans will continue to focus on satisfying them. His study included successful people like Albert Einstein and Eleanor Roosevelt.

In our search for setting up a classroom in which students feel confident to work and learn together, Maslow's theory can be helpful. We can also look at theories and hierarchies that have been postulated by others, like William Glasser (1992) or Stephen Glenn (1990), but I have found that each covers the same basic needs (see Figure 1.1).

Physiological Needs

These are biological needs and must be met first. They consist of needs for oxygen, food, water, and a relatively constant body temperature. These needs are the most important, as an individual deprived of them would focus only on having these met.

Figure 1.1 Maslow's Hierarchy

Safety Needs

When all physiological needs are satisfied and are no longer controlling thoughts and behaviors, the need for security becomes active. Our students often show the need for safety and security. In light of recent school shootings and terrorist attacks, this issue must be confronted.

Need to Belong

When the needs for safety and for physiological well-being are satisfied, the need to belong surfaces. According to Maslow, people seek to overcome feelings of loneliness and isolation. This involves both giving and receiving love and affection and having a sense of belonging.

Need for Esteem

When the first three levels are satisfied, the need for esteem becomes important. These involve needs for both self-esteem and for the regard a person gets from others. Our students require affirmation. They need a secure, firmly based, high level of self-respect, and they need respect from others. When these needs are satisfied, the student feels self-confident and valuable as a person in the classroom. When these needs are not met, the student may feel helpless and worthless.

Need for Self-Actualization

After all of the abovementioned needs are satisfied, then the need for self-actualization is set in motion. Maslow describes self-actualization as a person's need to be and do that which the person was "born to do."

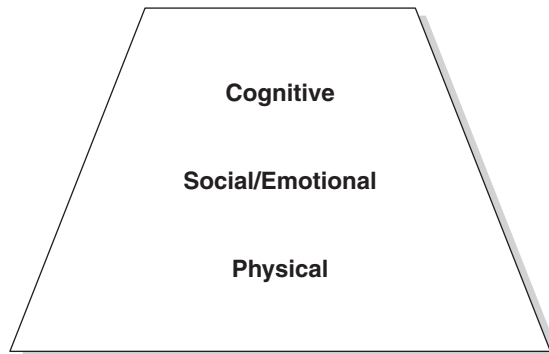
Classroom environments can be divided into three segments: physical environment, social/emotional environment, and cognitive environment.

CLASSROOM ENVIRONMENTS

When I discuss the environment necessary for differentiation, I divide it into three segments: physical environment, social/emotional environment, and cognitive environment. In a sense, they too, are hierarchical (see Figure 1.2).

The physical and social/emotional environmental needs overlap somewhat in the hierarchy. Safety and security involve both the physical and the emotional worlds of our students. Belonging and love are part of our social needs; esteem and self-actualization are included in the social/emotional and cognitive environments.

Figure 1.2 Three Types of Classroom Environments



Physical Environment

Beginning with physiological and safety needs, we can address the physical environment of the classroom. We will look a bit beyond the basics cited by Maslow and include areas such as lighting, seating, color, nutrition, music, and humor. Going back to my three premises (everyone is a teacher, everyone can learn, and learning is fun), we must make our students comfortable and safe. I want my students to walk through the doorway and leave their troubles behind. In some cases, I realize that this is unrealistic, but from experience, I know that this can happen.

Tom was a student who had never been allowed to feel that he was smart. He was athletic, nice looking, easygoing, and in many ways “all boy.”

He sometimes got into mischief. Tom was very bright, yet no one considered him so. He had received average to slightly above average grades.

When Tom transferred to our school, I was the only teacher in the building who had attended professional development workshops on brain-based instruction. My classroom did not resemble any of the other classrooms Tom had been in. The walls had brightly colored posters with positive affirmations on them. In many places in the room one could find tables or shelves with stuffed animals, coloring books, crayons, art supplies, tape recorders with headsets, and large stacks of paper.

The desks were not in rows, but rather grouped together to form tables. My students most always sat with a home base team, or they worked in flexible groupings that would change according to interests, readiness, or learning profile. They did not always do group work, but no one sat alone. Tom was a little suspicious of all of this. When he sat down, I could tell that he was ready at any moment to move out of that seat.

As Tom discovered that my students were allowed to talk to one another at appropriate times, he slowly started to participate. In fact, for the first time, Tom had the opportunity to learn that he had some leadership desires and skills. His mother told me that he had never been happier. Tom started bringing home papers with A's on them. Not just from me. He started getting high grades in every subject. At one point Tom told me that he wasn't sure how he would get through some of his other classes, since the teachers didn't allow him the freedom he needed to interact and learn. I explained to him that his brain needed to adjust to all kinds of learning experiences, and since he knew he would be in our room at various times throughout the day, he could try focusing his attention and learning a bit differently in other rooms. It seemed to work!

An Attractive Environment

Plants, posters, and thought-provoking and pattern-seeking games help a room invite students to come in. Areas that are more casual with bean bag chairs or large pillows present an atmosphere that allows for comfort. Desks that are arranged in small groups or as one large group send the message that "we are all in this together." Although a sense of community can be forged through interaction, setting the stage with a warm atmosphere can make the task easier.

- Decorate your room to make it homier.
- Use posters that are colorful, yet have enough "white space" so you don't overstimulate your students.
- Plants add a nice touch to the room and add oxygen as well.
- Let your students bring in some things from home to give them a feeling of ownership.

Lighting

Many studies have found that both the amount and the type of lighting in a classroom can affect mood and learning. A study into the effects of light on children in school found that when fluorescent lights were replaced with a more natural light, attendance increased (Hathaway, Hargreaves, Thompson, & Novitsky, 1992). Another study found that elementary student test scores in three school districts showed significant improvements (20 percent plus) and was strongly correlated with daylight in classrooms (Jensen, 2005).

Mood changes that are affected by the seasons are shown in some studies to be related at least indirectly to the amount of light exposure during the day. These mood changes are sometimes known as *seasonal affect disorder*. A study revealed that hostility, anger, irritability, and anxiety were higher during the winter months. These symptoms may also be related to the classroom temperature, changes in diet and exercise during the winter months, and the amount of daylight or sunlight to which an individual is exposed (Harmatz et al., 2000).

Other, more recent studies have found that test scores increase with natural light. We cannot all design our classrooms with large windows for adequate natural light. We may be stuck with fluorescent lights, but it's important to be aware of the need for natural light and to provide it whenever possible.

- Expose students to as much natural light as possible.
- Bring in some lamps with incandescent lighting.
- If you are in a room with few or no windows, make an effort to take your students to an area with natural lighting occasionally.

Classroom temperatures should be between 68 and 72 degrees for optimal learning.

Temperature

Is it true what they say about "hot-blooded" people? Perhaps. Some studies have found that higher temperatures change the balance of some of the brain's neurotransmitters. As a result, behavior may also change. Students may become more aggressive in warmer rooms. The ideal temperature, according to some research, is 68 to 72 degrees Fahrenheit. Balance is what is needed here. Rooms that are too cold cause the brain to make many bodily changes that may also interfere with learning (Jensen & Dabney, 2001). If the temperature is above 74 degrees, reading comprehension may suffer. Math may be affected if the heat rises above 77 degrees (Jensen, 2005).

- Keep your room temperature between 68 and 72 degrees.
- On very warm days, make every effort to find cooler areas in the building.
- Give students time to cool down after vigorous activities in the gym or on the playground.

Color

The research on the brain's reactions to specific colors has been controversial, if not interesting. There is solid evidence that the brain does respond better to visual input that is colorful. In a study done by three psychologists, memory of visual input was enhanced by natural color, that is, color as it would be seen by the naked eye rather than black and white or colored pictures (Wichmann, Sharpe, & Gegenfurtner, 2002).

Other research on color suggests that there are colors that are soothing, likes pinks and blues. Purple may also soothe, while red may be good for encouraging short-term high-energy activities (Howard, 2001). At the very least, it appears that color activates the right hemisphere of the brain. Since most of what we do in school is considered left hemisphere activity, having colorful rooms may assist the brain in using both hemispheres for learning.

- Make your room inviting using colorful posters and bulletin boards.
- When making posters, use red sparingly. Save it for the important words.
- Use content visuals that are in natural colors.

Nutrition

At each of my workshops, I ask educators if they believe diet affects their students' learning and behavior. The answer is always an overwhelming yes. Although we have little control over what our students eat outside the school, we can influence them greatly. At back-to-school nights and open houses, rather than spend time going over the curriculum that is conveniently written and copied for parents, I spend my time discussing what the parents can do to help in the learning process. This includes nutritious food and adequate sleep.

In each of these areas, we must be good role models. Keep the soda off the desk. Refrain from giving students candy as rewards. There is some research that suggests that sugar will give the brain energy for up to 30 minutes after consumption (Ratey, 2000). After that, however, the students crash from a sugar low and an excess of certain brain chemicals. I always suggest that if you must give candy, give it to them 30 minutes before they are leaving your classroom!

Breakfast is the most important meal of the day. The brain cannot store energy. Therefore after a night of fasting, the brain needs energy to run efficiently (Wolfe, Burkman, & Streng, 2000). If you have students that you

know do not get breakfast, perhaps your school could provide some nourishment for them. For schools that don't have breakfast programs, keep some nutritious snacks on hand. Fresh fruits and complex carbohydrates are good. Stay away from simple sugars and fats. The "doughnut days" I used to sponsor as student council advisor were probably a bad idea. Doughnuts contain large amounts of sugar and enough fat to keep the blood in the digestive tract instead of in the brain where we need it.

The brain is the only organ in the body that cannot store energy.

- In the book, *The Hungry Brain* (Marcus, 2007), the food groups are divided into three areas: plant food, animal food, and junk food. Discuss these with your students. Ask them to make a chart listing foods under each area. Discuss their decisions to place foods in each group.
- Check with your students to see who is eating breakfast and what they are eating. Keep a food diary with them for a week, so they can see exactly what they are consuming.
- Keep a food pyramid in your classroom. Discuss the importance of the food groups for learning.
- If you have middle or high school students, discuss the body size of models. Let them know how photos are computer generated to make the models look even thinner.

Music

Certainly there are specific tunes that affect your mood. The same is true of our students. Playing music in the classroom can be inspiring, motivating, or calming. It can trigger memory or perhaps make a rainy, dreary day a little less so. When music is playing, students may be more apt to speak in their small groups. It acts as a barrier to embarrassment—others won't be able to hear over the music (Allen, 2002).

Music is also a great way to manage the classroom. Music can signal the end of a session, clean up time, or a celebration. There are several books available with suggestions for music (Green, 2002; Jensen, 2000b; Sprenger, 2007). Since the brain likes rhythm, this is an easy way to add to the physical environment.

- Have music playing as your students enter your room. Choose music that motivates *you*. If you are motivated, you are more likely to motivate your students.

- If your students want *their* music played, provide break times to do so. Be sure all lyrics are appropriate for school.
- Try playing baroque music during testing. Find baroque selections that are marked “adagio.” This provides 40 to 60 beats per minute and is calming.
- Try playing music when the students are working in groups. Let them know that when the music stops, it is time for them to stop talking.

Humor

This specific contribution to the classroom is part of all of the environments. It can do wonders for many situations. Laughter reduces stress while it releases neurotransmitters and tools up the immune system (Society for Neuroscience, 2001). Research has found that humor takes separate brain processes. The first is to be receptive to the surprise element. The second is to make sense of the situation (*The Laughing Brain*, 2003). (This is exercising part of our memory system called *working memory*, which will be discussed fully in Chapter 3.) We must also acknowledge that we usually feel good after laughter. This feel-good part of humor comes from the emotional center in the brain. We know that anything we learn that has emotion tied to it, we will remember much better. Laugh on!

- Telling jokes or stories that require some thought is good practice for the brain.
- When studying a particular topic, let students find and share jokes about it.
- Joke writing is an art. Perhaps some students would like to write jokes about the content. Be sure they understand that they are not to “put down” the information, but rather add to the learning through the joke.
- Use humor in your presentations. Your students will remember them better.

Laughter reduces stress.

Water

Our bodies and our brains are largely water (possibly up to 90 percent, according to Hannaford, 1995). For this reason alone, we must be concerned about hydration. It is very difficult to predict who is hydrated enough. Many of us get most of our water in the foods we eat. Some of us don't like to drink water. But the fact remains that our brains require hydration, and at the very least, we must be cognizant of this fact and patient with our students' needs.

If you are comfortable having water bottles on your students' desks, that is one way of addressing the issue. If water on books and papers is overwhelming to you, how about a drinking fountain or large water cooler in the classroom? If those suggestions are not workable for you in your present situation, have regular drink schedules. There are those who believe that we should be drinking those eight glasses of water each day. Have water available to students in some way: drinking fountain, water bottles, water cooler. It is important to keep the brain hydrated for normal functioning (Jensen, 2005).

- On particularly warm days, encourage your students to drink water.
- Explain to your students that drinking beverages like soft drinks does not adequately fulfill the need for water. They contain caffeine and sodium that deplete the body of water.

Physical Safety

Our students need to be assured that they are safe from physical harm. Recent events have made us all more vigilant about our safety needs. Your school probably has plans for possible attacks or intrusions. Assure your students that the school is prepared and that there are action plans.

- Review rules and plans in your school's handbook at the start of the year.
- Make and review classroom rules for physical safety.
- Discuss the school's action plans for intruders or attacks.
- Assure your students that their safety is of utmost importance to you and the rest of the faculty and staff.

Give your students the opportunity to understand the importance of their physical environment. Assign tasks to keep the room neat and clean. The more involved the students are in the maintenance of their environment, the more aware they will be of the content that is also in the room. This will add to learning retention. In addition, students will feel needed if they have assigned tasks (Glenn, 1990).

Emotional intelligence may be more important for success in school and in life than IQ.

Social/Emotional Environment

Maslow's hierarchy addresses safety and security, which includes *emotional* safety and security. Belonging and esteem are also dependent on this environment. Basic brain-based teaching principles emphasize the role

that emotions play in the learning process. In Daniel Goleman's groundbreaking book, *Emotional Intelligence* (1995), it is stated that EQ (a hypothetical measure of one's emotional intelligence) may be more important to success in school and in life than IQ.

Goleman also coauthored a book called *Primal Leadership* (Goleman, Boyatzis, & McKee, 2002). In this text he has streamlined the basic qualities of emotional intelligence. They are listed as self-awareness, self-management, social awareness, and relationship management.

Self-Awareness

This domain of EQ must really be addressed first. One must be able to identify one's own emotions before being able to effectively deal with others. Many of our students come to school unable to verbalize their emotions. This may be due to the inability of the family to do so, or it may be the inaccessibility of caring adults to acknowledge and validate the child's feelings. Another aspect of self-awareness is understanding one's strengths and weaknesses. Again, this may take dialogue with others as well as time for reflection.

Self-aware students will be able to do several things. Most important, they will be able to recognize and name their own emotions. This may take practice and some helpful activities such as the following:

- Use the book, *My Many Colored Days*, by Dr. Seuss. Read the book to your students, and discuss the emotions that are related to color. At various times, ask your students what color day they are having. Give them the opportunity to share with partners or small groups about their day, or give them time to write in journals about their feelings and the causes of those feelings.
- As you take attendance, ask your students to also give you a barometer of how they feel. Use a scale from one to ten, with ten being "feeling great" and one being "I wish I were in a hole." You could also go back to the Seuss book and have them say a color along with declaring they are present.
- Role-play situations that involve feelings. Follow the suggestions in Figure 1.3. Use the ever-popular posters of facial expressions to discuss and mimic how those expressions let others know about feelings.
- Model self-awareness. Let your students know when you are experiencing a strong emotion that they may be able to relate to. Take a few minutes to let them share or write about a time they felt the same way. See Figure 1.4 for a self-awareness survey that students can use.
- Use self-awareness questions or checklists to give students the opportunity to reflect on their current feelings.
- Have an emotional word wall (see Figure 1.5). When students are emotional and are having difficulty verbalizing their feelings, ask them to pick one out. Add words as new emotions are mentioned. (In one class, students competed in finding new words to define their

feelings. For instance, Genna walked in with a big smile and said, "Today, I am elated!" We added the word, she defined it, and others began looking for feeling words that would be new. It was a great way to increase their vocabulary.)

Figure 1.3 Role-Playing

<p style="text-align: center;">Suggestions for Role-Play or Dramatic Review</p> <ol style="list-style-type: none">1. Assign roles: Make sure everyone has a job (actors, timekeeper, recorder, reviewer).2. Set time limits.3. Student feedback format: Students may write or verbalize feedback. (Give performers options.) Follow a format for feedback: praise/suggest/praise.4. Use written directions.5. Role-play in small groups for less intimidation.6. Supply props to assist actors in their performance.
<p style="text-align: center;">Role-Play Discussion Questions or for Pondering</p> <ol style="list-style-type: none">1. What was the outcome? Was one actor happier at the end?2. What was each character's purpose?3. What approaches were used?4. How do you know who was listening? What clues are there for avid listening?5. Did the characters add information that was not originally included in the scene?6. Was any important information left out that would have made a difference in the final outcome?

SOURCE: Adapted from Pike (2001), *Creative Training Techniques*.

Figure 1.4 Self-Awareness Survey

<ol style="list-style-type: none">1. Today I feel _____.2. The last time I felt this way was _____.3. The reason for this feeling back then was _____.4. I feel this way today because _____.5. When I feel this way I want to<ol style="list-style-type: none">a. Talk about it with othersb. Be alonec. Do something interesting to get my mind off itd. Write about it in my journal
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Figure 1.5 Feelings Wall

Today I feel . . .	Right now I feel . . .
Happy	Anxious
Sad	Scared
Excited	Mad
Angry	Nervous
Bored	Silly
Baffled	Embarrassed
Concerned	Excited
Curious	Proud

Self-Management

Once students are aware and can reflect on their feelings, they can begin to manage their moods and actions. Most often, when we are feeling positive emotions, our behavior is positive. When negative emotions take over, a process that Goleman (1995) refers to as “emotional hijacking,” the results can be quite disturbing.

Emotions are contagious. Our positive attitudes and emotions can motivate others.

This is especially important in light of the suggestion that emotions are contagious (Goleman, 1995). In our classrooms, this suggests that our positive attitudes and emotions can motivate others. Negative emotions must be controlled to prevent the spread of anger, fear, or hostility. A student with self-management skills can control anger and frustration, is better at handling stress, and has less social anxiety.

Self-management also includes self-motivation. If students can control impulsive behavior by dealing with emotions, they can also use emotion to motivate themselves. If the physical and emotional environments are conducive to feeling and expressing emotions appropriately, students will be less inclined to give up when things aren’t going exactly the way they had hoped.

The following strategies will promote self-management:

- Teach your students basic coping skills. These may include exercise, meditation, self-talk, adequate sleep, and proper nutrition.
- Using a reference like Martin Seligman’s *The Optimistic Child* (1995), discuss the importance of optimism.

- Provide time to journal, and emphasize the importance of writing about feelings and experiences. Recent research suggests that when we write about our experiences, we feel that we have more control over them (Restak, 2000).
- Provide a recipe for your students to follow when their emotions seem to be taking over. This must be attempted before the situation has gotten out of hand. An example would be as follows:
 1. Take a deep breath.
 2. Count to 10.
 3. Ask yourself or your partner intelligent questions about the situation and listen carefully.
 4. Consider what others might do in the situation.
 5. Formulate a plan and try it.
- Model good self-management skills. When you share your emotions with your students, be sure to explain how you are dealing with them.
- Think aloud. As you are thinking through tasks and processes in the classroom, verbalize the thought process you are following. This gives students the opportunity to hear and understand how you are managing yourself during different tasks.

Empathy is one of the most important components of social awareness.

Social Awareness

One of the most important components of social awareness is empathy. The ability to understand how someone else feels is vital to strong communication. In just milliseconds, our brains consider the emotional overtones in every conversation. Facial expression, body language, and tone all send messages to the individual who is empathic. From these messages, responses are gleaned that can contribute to a worthwhile and productive conversation. This is vital to a productive classroom that honors diversity.

Our students are very aware of the social strata that have evolved in their school, their neighborhood, and their classroom. It is imperative that we, as good educators, also be aware of the social hierarchy, as it will affect the dynamics in the classroom. In the book *Cliques* by Charlene Giannetti and Margaret Sagarese (2001), the general divisions of middle school are defined. I have taken their information and shared it among thousands of elementary and secondary teachers in my workshops. They agree that cliques begin in the primary grades, and their statistics appear to be accurate for secondary schools as well.

According to *Cliques*, our students fall into four categories.

Popular. About 35 percent of the population is in the popular crowd. This is the “in” group: the athletic kids, the affluent kids, and the pretty kids. These kids are the trendsetters. They’ve been social creatures before most kids their age socialized. They look like they’re in control and having fun. But are they?

Drawbacks to being “popular”: You never know how long that popularity is going to last.

Fringe. About 10 percent of the population falls into this category. The fringe group sometimes hangs around with the popular group, but only when they are invited. This group doesn’t know from day to day where they belong. They dress like the popular group and try to act like them as well. For whatever reason, it is enough for them to be at the beck and call of the populars. They want to be in control and have fun. But can they?

Friendship Circles. This group comprises about 45 percent of the population. It consists of small groups of friends. They know they are not popular, but they don’t care. They have the friendship and loyalty that they need. These groups are not all alike. Some may be labeled geeks or nerds. Others may be considered greasers or bangers. But the fact remains that although they may feel somewhat hostile toward the popular group, they have their niche and seem to be content.

Loners. This last group consists of about 10 percent of the population. These kids have no friends. There are varied reasons for this. Some of these kids are very bright and creative, in a class of their own. Some have no emotional intelligence and use inappropriate behaviors that make others want to stay away from them. Some even we teachers dread being around. Many of them wish to be in a group but have simply never been accepted. These kids could grow up to make a positive influence like Bill Gates, or they could become school shooters. Many of these kids are unhappy.

Empathy becomes a major factor in the classroom when we have such diverse and obvious social groups. Often in the classroom, our students put up with each other when we place them in groups. But we have all heard moans and groans when our students are asked to pair and share and they are displeased with their partners. Empathy must be modeled and taught.

- When speaking to the class or to a student, verbalize the emotion you believe you are feeling and ask your student(s) if or when they have had that same emotion. Discuss it or write about it.
- In the content areas such as social studies or science, try to get students to put themselves in the shoes of the people in history, or those in a geographical area you are studying, or even in the shoes of an inventor or scientist. How did these historical figures feel? How would you feel?

- Read stories or dialogues, and ask students to listen carefully to see if they understand how the character feels.
- Have students bring in cartoon strips, read them to the class, and describe how the characters are feeling.

Relationship Management

This final area of emotional intelligence is the key to providing an emotional environment that is conducive to learning for the diverse groups that we are seeing today. The sequence of recognizing one's emotions, handling one's emotions, recognizing emotions in others, and finally handling other's emotions may appear to be challenging. Yet many of our students do come to us with some, if not all, of these functions operating.

If our students are adept at relationship management, the emotional environment will be one that is stable and comfortable. There will be fewer conflicts, and those that arise will be dealt with more easily. Students will be more democratic in their dealings with those from different social groups. In general, the student population will be friendlier, and those that are very facile in this area will be sought out by their peers. Perhaps even some of those social groups will change or merge as the overall emotional intelligence of the group escalates.

The flexible grouping philosophy of differentiation encourages students to work with many different students depending on readiness, interest, and learning profile.

Cooperative learning groups and teams are vital to the development of EQ. The flexible grouping component of differentiation encourages students to work with many different students depending on readiness, interest, and learning profile. Learning is social; therefore, for our students to learn well, these social skills must be taught. Just as manners must be taught, rapport skills and group skills must also be taught.

- Role-play situations that demonstrate how varied group circumstances might be handled.
- When assigning group work, have mock group meetings to demonstrate how to handle the material and respect each participant.
- Begin with small groups, perhaps even dyads or triads, to give students practice in working with others.
- Utilize short problem-solving sessions with diverse problems to allow the interests and expertise of different group members to emerge.
- Set up situations where students will need to compromise.

- Teach both listening skills and questioning skills.
- Include in your class rules that there is no teasing or humiliation allowed in your classroom.

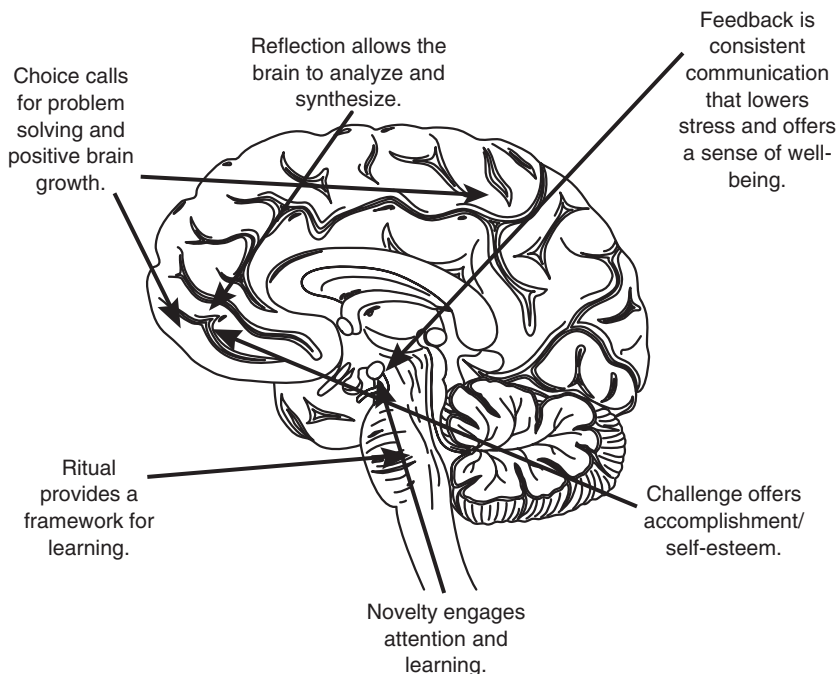
The social/emotional environment can easily make the difference between a class that is easy to handle, where learning takes place quickly, and a class that makes every day difficult.

Cognitive Environment

Once the physical and emotional environments are set, it is time to examine the cognitive environment. It is through this environment that we work on esteem and self-actualization. What do we need for our students to learn and remember? Since all brains learn differently, are there any commonalities I can work on to help my whole class? Thankfully, the answer is yes. There are some brain basics that will affect all students in varying degrees. The characteristics of a strong cognitive environment include predictability, feedback, novelty, choice, challenge, and reflection (see Figure 1.6).

Figure 1.6 The Brain and Cognition

Cognitive environments provide ritual, novelty, feedback, challenge, choice, and reflection. Various areas of the brain respond to these elements, which allow brains to make new connections and reach higher-level thinking.



Predictability

If we want the brain to learn, we must reduce stress. Small amounts of stress may be helpful in learning, but in general, stress causes the brain to initiate the stress response, which interferes with learning. Especially at stressful times, the brain seeks predictability (Sapolsky, 2004). Have you ever come home from a taxing day at school and vegged out in front of the television? Most television programs are extremely predictable. This allows our brains to work at a minimum while feeling confident in knowing what will happen next.

School and classroom situations can be very unpredictable. Even for us. I may expect that my students will be on time. I may expect that my lesson will be received well. I may expect that my principal will like my plans for next week. But I may be disappointed in each of those areas.

Our students expect predictability from us.

Our students expect predictability from us. This may come in the form of returning papers on time. It may be in expecting consistency in following classroom rules and consequences of breaking those rules. They may look forward to a predictable event like a celebration when they do well.

Rituals are predictable events. Music playing as the students enter may start off the predictable events of the day. Your greeting may be a ritual that puts the brain at ease. There are many predictable events in your classroom of which you may not even be aware.

- Set up rituals early in the year. Have several in place on the first day.
- Use rules as part of your rituals. Have them posted and refer to them when necessary.
- Preview material. The preview provides the brain with some information that it can expect. Then when you begin the new material, it doesn't seem so new. The students have some small connections to it.
- Keep your promises. How many times have I heard, "But you said you'd give us our papers back today!"

Feedback

The research on feedback is compelling. According to Hattie (1992), it may be the most important component to improving learning. There is research in the educational arena from researchers like Robert Marzano whose work is supported by much data on the effectiveness of feedback. According to his book, *Classroom Instruction That Works* (Marzano, Pickering, & Pollack, 2001), the most beneficial feedback involves explanations

pertaining to the accuracies or inaccuracies of student work. Add goal setting to your classroom practice, and feedback pertaining to those goals will be even more valuable (Marzano, 2007).

- Provide feedback in a timely manner. Immediate feedback is beneficial as long as there are not others around to make the student feel inadequate. Sometimes we must wait for opportune times. Giving papers back weeks late may be ineffective, as students have forgotten some of the material or lost their motivation for it.
- Be specific with feedback. In my earlier years of teaching, I would find myself writing simple phrases on essays that were well written like, "Nice job!" This feedback did not help those students grow in their writing.
- Let students choose the type of feedback they would like to receive. Sometimes we impose feedback on others. When students are assessing each other, should the feedback be oral or written?
- Give students the opportunity to provide their own feedback. If students have a stake in their learning, self-assessment is very valuable. They can keep track of their scores, video- or audiotape themselves and critique these, or use their journals for feedback.
- When students work in groups or on teams, their teammates can provide feedback. You are only one person. It is desirable that students interact and receive feedback continuously. Teach your teams how to give effective feedback. Use the same strategy that is used in role-play: praise, suggest, and praise.
- Keep in mind that quality is important. The quality of the feedback is directly dependent on the quality of the observation. Your students may need some skill work in observing. Checklists are available.

Novelty

The brain responds well to novelty. As long as predictability exists in the classroom, students will be able to handle some novelty. Something that is unique to the learning situation will garner attention, because our brains have been programmed to respond to unusual stimuli. This was a survival skill hundreds of years ago, as we needed to be aware of danger. A little novelty is good, but if we add too much novelty, we can cause stress.

- Using novelty requires new and different things. If a novel situation gets a positive response from your students, don't repeat it for a while. The brain tends to habituate to stimuli. In other words, after repetition, it won't be novel anymore.
- Costumes and accessories add novelty to learning.
- Field explorations (like field trips, but with some interaction) add novelty to learning.

- Music that represents the theme of what you are teaching can provide novelty.
- On those rainy or dreary days when you know your students are dragging and not very interested in learning, provide novelty through background music, a change in lighting (probably brighter, but dimmer might work), or a change in location. (Take a trip to the library or gym, or switch rooms with another teacher for the day or class period.)

Choice

When the brain is given choices, some researchers have found that it responds positively. Both the prefrontal cortex (responsible for decision making, future planning, and critical thinking) and the amygdala (emotional area) respond in a positive manner (Bechara, Damasio, Damasio, & Lee, 1999).

Offering students choices can increase motivation. Think about this. Instead of always doling out an assignment, what about offering some options that might pique their curiosity? “You can do the problems on page 56, or you may come to my desk and pick up a packet of material and follow the directions.”

- Giving younger students simple options may be best.
- Choice can be used particularly well in assessment. Keeping learning styles and memory in mind, offer students various projects and products.
- Perhaps students can choose what content they want to cover. Of course, they can’t redesign the curriculum, but they may feel more involved if they get to choose what to cover first.
- I redesigned the effective KWL chart. This is a chart to fill out with first, what they Know, then what they Want to know, and finally, what they have Learned. It is used by many teachers of both adults and children. I added two more letters. Mine is KWHLU. The K, W, and L are the same. H stands for How do you want to learn it? The U is for How will you use it in your world? The full chart is shown in Figure 1.7.

Challenge

William Greenough (Blum, 1999) feels that the other ingredient to learning from experience besides feedback is challenge. Differentiation is a strong component here. What is challenging to one student may cause absolute fear in another.

I like Lev Vygotsky’s (1980) approach to challenge. He believed that if we offer tasks that are a bit beyond the learner’s reach, we should provide

Figure 1.7 My Version of the KWL Chart

K	W	H	L	U
What do we know?	What do we want to know?	How do we want to learn it?	What have we learned?	How will we use this information in our world?

support along the way. In other words, the learner requires a coach. This can be the teacher or a peer. We often give students challenges and provide nothing more than a textbook. A textbook may or may not be an adequate coach.

- Provide challenges for your students, keeping in mind different learning styles and readiness levels.
- Provide coaching for each challenge. Some students will require more coaching than others.

- Be sure that you assign relevant projects that are challenging. Even our brightest students will resent difficult or challenging projects that are not associated with current goals and standards.
- To some of our students, everything is challenging. Keep that in mind and provide coaching for them, too.

Reflection

Silence and reflection can enhance learning (Kessler, 2000). It is at this quiet time that students have the opportunity to reflect on their emotions about what is happening, and reflection upon the content allows for higher-level thinking, such as synthesizing the material to make the proper connections in the brain. Reflection will also help memory. To put it simply, reflection is a rehearsal of what one has learned. It is the processing of the experience and reevaluation of perceptions. This is the basis of new knowledge (Boud & Walker, 1991; Sprenger, 2005).

To put it simply, reflection is a rehearsal of what one has learned.

- Although many teachers feel that there is little time for reflection, keep in mind that this is necessary for understanding and retention.
- Use journal writing for reflection on learning.
- All must respect quiet time in the classroom. Reflection time could include some low-level baroque music.
- Reflection time or down time is not a waste of time. When material is new or difficult, reflection time becomes more important.
- When the opportunity presents itself, do some sharing after reflection time. Students can share in small groups or with partners. They may find another student's synthesis of the material helpful.

THE STAGE IS SET

A classroom that is conducive and sensitive to the differences in our students comes about, not through recipes, but through a thinking pattern. As educators, we need to always be thinking about what might work with our students. Assessment is an ongoing process that we utilize to help our students learn. Creating an environment that addresses the physical, emotional, and cognitive needs of the student is the background for differentiation.

DIFFERENT STROKES



1. A teacher who attended one of my summer workshops shared an interesting way to differentiate using the cognitive environment characteristics. For her eighth grade mythology class, she set up the following learning and research centers. Each had Internet access.

Predictability Center: This center was for her students who seemed stressed. Their assignment was to create a family tree and timeline for the mythology characters.

Choice Center: These students were able to choose a mythological creature that had not been previously studied. A poster, interview, or news article could be written.

Novelty Center: Using any preferred medium (clay, paper mâché), these students were to create a scene from a myth not yet covered.

Challenge Center: The students were to create a PowerPoint presentation comparing Hercules with a modern hero who was not Michael Jordan! The characteristics, goals, and accomplishments of the characters were to be compared and contrasted.

Reflection Center: This assignment was an essay sharing the effects mythology has on present-day society.

2. Using teams is one of the strongest components of classroom management. For differentiation purposes, multiple teams are helpful. You may want a base team, writing team, problem-solving team, question-generating team, or study team. This gives students the opportunity to work on social skills and work at their own readiness and interest levels.

Exit Card

Describe two characteristics of the environment that you have control over.

Describe one characteristic of the environment that you can change immediately.