

# Course 1: Education for the New Millennium

**By:**  
Fred Mednick



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**Online:**

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**C O N N E X I O N S**

Rice University, Houston, Texas

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## Chapter 1

# CTM Overview<sup>1</sup>

### 1.1 Introduction

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A child in Muramba, Rwanda



Figure 1.1: We teach to preserve the future

## 1.2 Outline of Certificate of Teaching Mastery

### ***Image not finished***

The **Certificate of Teaching Mastery** is made up of 5 distinct online courses that are practical, interactive, and oriented for educators who teach children ages 5 to 18. They are as follows:

Course 1: Education for the New Millennium

Course 2: Teaching Methods

Course 3: Assessment Practices

Course 4: Culture for Understanding

Course 5: Educating for Civil Societies

These courses can be taken in any order, and upon successful completion of all 5 courses, a teacher earns a Teachers Without Borders **Certificate of Teaching Mastery**.

## 1.3 Courses Can Be Taken Individually

For teachers who do not wish to earn the **Certificate of Teaching Mastery**, Courses 1 - 4 are available to be taken as separate, "stand-alone" courses. Given the distinct nature and focus of each course, a teacher may choose to take only 1 or 2 courses, 3 or 4 as needed to support the work that they are doing in their classroom. This kind of course flexibility allows teachers to choose what they need and to enter any course at any time.

## 1.4 TWB Learning Cafe

Each course has access to our **TWB Learning Cafe** - an interactive cyberspace where teachers can meet; gain practical tips for their classrooms; discuss ideas; share assignments; and see examples of "what works" from colleagues around the world. We are in the process of creating new forms of collaboration and will update this section so that you can access both information and a global teacher community with ease.

## 1.5 A Closer Look

Find the course(s) that works best for you:

### **Course 1: Education for the New Millennium - Bringing New Thinking in Education into Classroom Practice**

In this course, you'll be introduced to educational theories and approaches to learning and how to apply them to your classroom; aspects of effective teaching; and contemporary issues in education. The material reflects a pattern of inclusive, discovery-oriented, culturally-attuned, and globally-aware teaching.

### **Course 2: Teaching Methods - Looking at Theory, Planning, and Management**

In this course, you'll be introduced to thematic learning and cooperative learning and you'll have a chance to develop lesson plans with these ideas in mind. You are given practical tools for classroom management and ways in which you can guide students to think about their own process of learning.

### **Course 3: Assessment Practices - Improving Student Performance**

You'll discover a new way of designing curriculum so that you get the results you want. This course includes an introduction to student portfolios, problem-based learning, and rubrics that assess different aspects of student work such as mastery of the material, or the ability to apply what one has learned to real-life experiences.

### **Course 4: Culture for Understanding - Understanding Our Students**

In this course, you'll explore your own cultural competence in the classroom; apply multiculturalism to problem-solving; receive training on service learning; and discuss how to create and sustain connections with classrooms around the world.

### Course 5: Educating for Civil Societies - Teaching as Research and Action

This course is a culminating experience with two outcomes: 1) The creation of an electronic Teaching Portfolio (E-Portfolio) that showcases your work from Courses 1 - 4 of the Certificate of Teaching Mastery; and 2) A Service Project - a professional gift to your community that applies what you have learned in the previous four courses to address a local, national, or global need in one of the following areas:

- Early Childhood Education
- Literacy and Numeracy for Adult Learners
- Environmental Education
- Education through the Arts
- Girls' Education
- Conflict Mediation
- Special Education
- Community Teaching and Learning Centers

## 1.6 E-Portfolio

Teachers who successfully complete Courses 1 - 4 will gain access to our Teachers Without Borders Electronic Teaching Portfolio (E-Portfolio) as part of Course 5.

As you know, a portfolio is a powerful assessment tool, and includes evidence from your work on major topics - successes, challenges, and questions. The key word is **evidence** that can show - far more than tests - what you know and what you need to do in order to improve. Portfolios are a professional way of demonstrating your competence and showing employers your achievements.

Traditional portfolios in the form of folders, boxes, or 3-ring binders hold papers, pictures, cassette tapes, and more. With an electronic Teaching Portfolio, known as an "E-Portfolio," information can be stored digitally, taking up little physical space, and is easily accessed from anywhere in the world.

Teachers Without Borders is pioneering E-Portfolios for teachers, and we have provided a way for you to design one. Your electronic Teaching Portfolio will contain the following elements:

- **Professional Statement** - My view and approach to teaching
- **Questions** - My thinking about theory and practice
- **The Imagined Classroom** - School in 2010 through the eyes of the learner
- **Bringing New Thinking into Classroom Practice** - Evidence of how what's new becomes the standard
- **Highlights from Certificate of Teaching Mastery** - My best, most challenging, and growth-oriented work
- **My Students' Work** - Samples of how planning turns into outcomes
- **What Students Say** - About their work and the process of learning
- **My Service Project** - Learning that serves my community
- **Expertise I Wish to Share** - What I can offer other teachers
- **What I Need** - Skills and resources I seek from others
- **Reflections** - My life as a learner, teacher, and world citizen
- **Picture of My Classroom** - A photo that tells a story
- **Resume / References / Letters of Recommendation** - Support for my future in teaching

You will be able to complete all of the E-Portfolio elements by completing your assignments within each course as you go along.

To view the electronic Teaching Portfolio, click [here](http://64.78.30.9/new/myteaching.php)<sup>2</sup>.

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<sup>2</sup><http://64.78.30.9/new/myteaching.php>

## Chapter 2

# New Thinking for the Classroom<sup>1</sup>

Schoolchildren



Figure 2.1: Learning with joy

### 2.1 Learning Objective

In Course 1, teachers explore (a) aspects of effective teaching (b) educational theories and approaches to learning and (c) contemporary issues in education. The focus is on applying what has been learned directly

<sup>1</sup>This content is available online at <<http://cnx.org/content/m13284/1.16/>>.

to your classroom.

### Resources

Course material and conversations with global colleagues.

### List of Assignments

**Assignment 1:** Your Assessment of Aspects of Good Teaching

**Assignment 2:** The Power of Questions

**Assignment 3:** Towards an Imagined Dialogue

**Assignment 4:** Applying Theory

**Assignment 5:** Critical Questions

**Assignment 6:** One Day of Multiple Intelligences

**Assignment 7:** Applying Multiple Intelligences

**Assignment 8:** Towards a New Intelligence

**Assignment 9:** Active Reading and Creating Dialogue

**Assignment 10:** Starting with Your Classroom

**Assignment 11:** Professional Reflections

**Assignment 12:** Effectiveness of Course One

### Timeline

4 - 6 weeks

**Required Reading:** **Education 2050** by Dee Dickinson of New Horizons for Learning<sup>2</sup> .

PDF Version below

Education 2050 <sup>3</sup>

## 2.2 A Different Perspective

The 21st century marks the beginning of some key changes in education. A shift from:

1. regional views to **global** views
2. covering the material to **uncovering** the material
3. passive receipt of information to **active** inquiry
4. product orientation to **process** orientation
5. compliance and competition to **collaboration** and **inquiry** .

Here is what we mean: Education has often focused on one's own regional views. In a society with no interaction with the outside world, this might suffice. However, in our global society requiring different kinds of skills - an awareness of cultures, and collaboration across borders - a regional view may not be enough. In fact, those regional views may be pushed by the current power in charge.

It used to be, too, that if one mastered a body of material and memorized facts, one would be considered a master as well. This view has held that there is a finite amount to know, and the one who accumulates the most - succeeds.

An educated person, however, is more than the sum of facts; s/he is able to think, to solve problems, to collaborate on new approaches. An educated person relies on research and experience to **uncover** new questions, rather than simply cover the material. This requires an active and imaginative mind, an appreciation for risk and inquiry, and an ability to learn from one's mistakes.

We tend to think of these views by remembering the name of a person: **Dr. CROSS**. Each letter stands for education that meets the needs of children and inspires learning:

**D iscovery:** learning to uncover information and use it

**R isk:** taking a chance and learning from mistakes

**C amaraderie:** using the value of the group to enhance learning and pool resources

<sup>2</sup><http://www.newhorizons.org>

<sup>3</sup><http://cnx.org/content/m13284/latest/file:Education2050.pdf>

**R eal Tasks with Real Consequences:** providing opportunities to take on and be held accountable to challenges

**O ut of the ordinary:** moving beyond passive seat time to active learning in the community, out of doors, through one's own exploration of interests

**S kills:** connecting all curriculum to national standards and educated competencies

**S ervice:** using education in a way that meets the needs of one's society

## 2.3 Defining Terms

### **Global Education vs. Education that is Global**

Teachers Without Borders is not about global education as the accumulation of facts about the world or geography lessons. While these are, indeed, important, we are focused on education that is global in the encompassing of methodologies that treat the whole child, the subject as whole exploration, the integration of subjects with learning as a whole.

### **Traditional vs. Tradition**

Another highlight is the difference between traditional and tradition. Alfred North Whitehead made this distinction clear: He defines traditional as the "dead ideas of the living." He defines tradition as the "living ideas of the dead" - a nice distinction and a guide. No one wants to eliminate the masterpieces of bygone eras or dismiss one's history for the sake of the newest trend.

An educated person for the 21st century remembers and appreciates history, while simultaneously embracing the present. In fact, anything sustainable protects the future by grounding it in the past. Our courses reflect wisdom, whether that comes from the villager relying on oral tradition, or the scholar relying upon the written tradition of text and context.

Teachers Without Borders respects tradition and learning that stems from local communities, wherever they may be. In fact, we depend upon indigenous knowledge. We consider the cultural aspects of a society as one of its pillars. We want to emphasize, therefore, the importance of the contributions that come from societies that may not have a written language or contemporary technological devices. A 21st-century education, therefore, should not be substituted for "modern," "better," or "western." It follows that a 21st-century education celebrates and enhances wisdom wherever and whenever it takes place.



## Chapter 3

# A Summary of Principles<sup>1</sup>

### 3.1 Aspects of Good Teaching

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**Figure 3.1:** Chinese children in Kaifeng

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There is plenty of theory out there and you should know it. Great teaching, however, is not about theory, but practice. Theory should inform what you do, but more than anything else it should be integrated so that it is natural. Teachers Without Borders has turned theory into advice (teacher-to-teacher), and we have summarized it below, simply and clearly:

**Focus on the students, not you.** You are not an expert in charge of giving students the "pill" of knowledge. It does not work that way. In planning your lessons, think of what they will do - how they will discover and use information - not how you will perform.

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<sup>1</sup>This content is available online at <<http://cnx.org/content/m13285/1.9/>>.

**Focus on who your students are.** As the saying goes, "It's **who** you know." The word "education" comes from the Latin word **educare** meaning "to grow and to rear." That is what you are doing. The teachers and parents who know their children best are the most effective. There is a big difference between just knowing about a child, and truly **knowing** him. The difference is the gap between mediocrity and excellence. Your classroom, your assignments, and your nature should give rise to the conditions that make knowing children a priority.

**Make it safe.** Education is not about challenging the core of who one is, but challenging ideas. No one can think when s/he is frightened. Your classroom and environment must be free of intimidation. (As TWB has stressed before, if you ever strike a child, you shall be removed from this course of study.) Many times, intimidation comes from a remark that destroys a child's willingness to learn. Never embarrass a child in public.

**Show, Don't Tell.** There are many dimensions to this. Good writing, for instance, describes a crisp fall day by providing images of crimson and yellow leaves, the warm smell of bread baking, the crunch of snow under one's feet. Telling is "top down." Showing is "bottom up." That's the theme here. In terms of teaching, show students where they are going, what they need to accomplish. Then show them how to get there. Provide examples. Model it. Use it. Make it clear and real what it is they need to know in order to get there. Are you teaching physics? Then show them the principle at work; show them the dynamics; get them to figure out "how and why," compare the figures with the reality. Show it.

**Break it down, but don't break it apart.** Great teachers make the unfamiliar - familiar again. Sometimes a concept is overwhelming. If that is the case, start with the foundation and work your way up. People need to understand the story - where it starts, where it is headed, and what it will look like in the end. It is important, then, to make things clear enough in small chunks, so that people can put together the pieces of the puzzle. Curriculum and teaching need a beginning, a middle, and an end. Get students engaged, direct them towards understanding, and show them how the lessons are valuable.

## 3.2 More Aspects

**Tell the truth.** Many teachers believe that if they don't have all the answers, they're worthless. No one has all the answers. If you answer a student with "I don't know," perhaps you can also extend it to "Let's find out." Guide your students to become collaborators in their own learning. Invite them to be subject matter experts. Students need authenticity, not awe.

**Make it human.** In designing curriculum, find out what makes people relate to it. Mathematics was invented for a reason, so describe a problem it can solve - a real one. All great teaching makes complex ideas clear by tying the abstract to a human enterprise.

**Emphasize what you want students to remember.** Go for depth, rather than breadth. Play with the important points by introducing different ways of going about understanding the key issues. (More on this later, in "Learning Styles.") For now, focus on what, at the end of the day, students can identify as the core of the lesson - what they will remember. When all the hacking away at the clay has been completed, what is the elegant sculpted piece that results?

**Questions are as good as answers.** Good questions require thinking. Nobel Peace Prize winner Elie Wiesel is reported to have come home from school one day and to have sat near his mother at the kitchen table. Instead of asking him "How did you do?" or "What grade did you get?," his mother asked him, "Did you ask any good questions today?" Questions probe. Answers come from study and should themselves be the stimulus for even greater and more extensive questions.

**Less is more.** We are not suggesting that you teach less, but teach more by talking less. When you ask a question, don't dive in and answer it if you don't get something back immediately. Cherish the thinking time. Listen. Pay attention to how students are feeling, grappling with the material, treating each other.

**Give students an opportunity to teach.** We all know this to be true: teaching is not separate from learning. Since that is the case, let us not reserve teaching for teachers alone. Allow opportunities for students to become experts in an area and to share their expertise. Provide chances for older or more competent students to tutor younger or less competent ones.

**Think about how athletic coaches and artists work.** The coach demonstrates what s/he knows, explains the rules, gives the student an opportunity to practice, provides feedback, and puts the student into real-life situations. So should a teacher. The artist assembles materials, conceives of the piece, works at it in stages, and collects the work for critique. So should the teacher. The athletic coach and the artist are non-traditional teachers, and they have a great deal to offer all of us. Their techniques are the key to many students who would otherwise not "get" the material from lectures, memorizations, or handouts.

### 3.3 Assignment 1: Your Assessment of Aspects of Good Teaching

Copy the text below, and save it to your disk or computer.

**GOAL:** To deepen your understanding of what makes for effective teaching.

**GIVE:** Feedback to others on their assignments at the **TWB Learning Cafe** by clicking here<sup>2</sup> .

#### **Assignment 1: Your Assessment of Aspects of Good Teaching**

1. List which concepts in the "Aspects of Good Teaching" section fit with your current attitude towards and method of teaching. Next to each concept you list, write a phrase or sentence that triggers a thought or anecdote (story) for you.
2. Choose one concept from your list and expand upon it. Write a paragraph describing the situation - the learning moment - what happened when that concept was applied in your own teaching or in observing another teacher in action.
3. From the list you've created, choose another concept and describe an example in your own teaching or in observing another teacher that tells the story of what happened when this concept was not applied.
4. Look at the original Teachers Without Borders list of "Aspects of Good Teaching" in the previous two pages. Are there any concepts you disagree with in part or its entirety. Explain why.
5. If you were to add 2 more "Aspects of Good Teaching" to the Teachers Without Borders list, what would the new titles be? Write a 2-3 sentence short description for each title/concept.

### 3.4 Tasks

Successful teachers, worldwide, differentiate between basic and advanced tasks and use them appropriately:

#### **Basic Tasks**

- Disciplinary - rules and punishments
- Copying, drawing from the board
- Repetition and rote learning/memorization
- Silent reading
- Repeating a demonstration
- Skill drill

#### **Advanced Tasks**

- Imaginative answers to problems
- Collecting evidence, solving problems, reasoning, creating questions
- Applying new knowledge to tasks; analyzing the tasks themselves in order to ask new questions.
- Reorganizing ideas into new statements or relationships
- Demonstrating knowledge through multiple intelligences
- Developing skills in order to ask questions

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<sup>2</sup>[http://oneface.typepad.com/lois/assign\\_1\\_aspects\\_of\\_good\\_teaching\\_/index.html](http://oneface.typepad.com/lois/assign_1_aspects_of_good_teaching_/index.html)

### 3.5 New Classroom Culture

What emerges is a new classroom culture whereby:

- The **process** of learning is important.
- The focus of our work is on a long-term design project.
- Curriculum incorporates content, processes, and products.
- Assessments evaluate students' new understandings.
- We celebrate ourselves in our work, our classroom, and our community.
- The teacher is the mentor and the facilitator of learning.
- The student is a novice who is learning how to be an expert.
- Interactivity, such as cooperative and collaborative learning, is essential.

### 3.6 Questions to Consider

As teachers begin planning, they must ask themselves some essential questions regarding concepts, processes, products, assessment, schedule, and lesson plans. Some questions are as follows:

#### **Concepts**

What are the big ideas in this course of study?

#### **Processes**

What are the ways of knowing?

Which of the following expert processes will you include: thinking, collecting data, analyzing data, drawing conclusions, and representing knowledge?

#### **Design Products**

What product will the students design to demonstrate mastery of the content and processes of the disciplines?

How does this product relate to the developmental needs and interests of students?

How does this focus on a central, real-world issue or problem?

How can students document production, perception, and reflection - creating footprints along the way?

#### **Assessment**

How will you know what students know?

What types of authentic and alternative assessments will you use?

What criteria will be used for assessing students' products?

What work will students be able to include in a portfolio?

#### **Schedule**

How will you use the block of time most effectively?

How might you creatively group students to learn?

How might you optimize students' and teachers' use of time?

#### **Lesson Plans**

What will students do to learn?

What resources will you use?

How are these lessons related to students' interests?

How are these lessons related to students' needs?

What questions will you ask?

### 3.7 Strategies for Asking Good Questions

**Organize and prioritize your units of study and courses around questions.** Make the "content" of the course the answers to those questions. If you could design the entire course around a question or questions, you might be surprised at what happens.

Below, you will find a **synthesis of research on how curriculum designed around questions creates a learning environment that lasts, and encourages inquiry**, rather than rote learning:

- Use a reasonable number of questions (2-5) per unit of study.
- Analyze the questions to avoid repeating them.
- Make them open-ended and alive so that "yes" or "no" answers are avoided.
- Derive your lessons from how and where students gain their answers.
- Sequence your questions so that one naturally leads to another.
- Post questions around your classroom so that everyone is reminded of them.
- Make certain that students' notebooks address the central questions.
- Ask students to provide ideas, notes, physical objects that help them during the process of answering the questions.
- Make certain that you provide time to ask and address questions so that students know that questions are central. Please be mindful of student age, experience, and other factors so that you don't expect too much or too little.
- Provide instructions that demonstrate what a solid answer looks like - not the answer itself - but the quality of the scholarship and inquiry.
- Share your questions with the faculty at your school and celebrate the questions and responses of your students.

### 3.8 Assignment 2: The Power of Questions

For the Certificate of Teaching Mastery, **we have already started a Question Wall** - a place where our entire community of Learners can make their questions visible.

**To see our Question Wall at the TWB Learning Cafe, click here<sup>3</sup>.**

Now, it is time to create a **personal** Question Wall. You can do this on a sheet of paper - either typing the questions or writing them out by hand. This personal Question Wall is for your eyes only, and it does not have to be related to the field of education. The instructions are listed below, and the process can be an on-going gift to yourself.

#### **Instructions:**

1. Set a clock or a timer for 35 minutes. Do not guess when 35 minutes is up. Keep track of when you begin and at what time you must end.
2. During this 35-minute time period, you are going to do one thing continuously: **make a list of 100 questions**. For 35-minutes, non-stop, you will write one question after another in a long list. No statements. No prose writing expanding on your thoughts. No poetry. Simply, write questions - one right after another in a list.

The questions can be on any topic - they might be personal, or political, related to education or not; they might be philosophical or ordinary questions about the weather. Do not "think" too much about your questions. The point is to **make a list of 100 questions** - all types of questions jumbled together - and to give yourself permission to be messy and uncensored - to ask whatever comes to mind, and to put it on paper.

A list of questions might look odd when re-read because it covers a host of seemingly unrelated topics. Give yourself permission to write a list of questions, completely uncensored by the "editor" that might live in your mind - the part of us that filters out what is "acceptable" and what is "not acceptable" to present to others or to ourselves.

A list might look as diverse as follows:

- When will the rains stop?

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<sup>3</sup>[http://oneface.typepad.com/lois/2005/08/question\\_wall\\_.html](http://oneface.typepad.com/lois/2005/08/question_wall_.html)

- Will Najib come home?
- How can I not feel so tired at the end of the day?
- Will I get to use Sita's bicycle?
- Why is one side of a blade of grass smooth and the other side rough?
- What will happen next?
- What **would** the world look like if I traveled on a beam of light?

It may be difficult to keep at it for 35 minutes, but stick with it. You do not have to write fast. You can take your time. The less you "think" about it and let it flow freely, the more surprises you might view later. Your list of questions might feel too private to share with others. Rest assured. You do not have to share this list with anyone. The point is to experience what it feels like to simply **ask** questions, uncensored, for an extended period of time.

### 3.9 Assignment 2 - The Power of Questions: Continued

Assignment 2: The Power of Questions<sup>4</sup>

#### HOW TO GET TO ASSIGNMENT 2:

##### One Way

You can also copy the text below, and save it to your disk or computer.

#### GOALS:

- **To create your own personal Question Wall.**
- **To experience the value of asking questions.**
- **To see how questions can create meaningful curriculum.**

**GIVE:** Feedback to others on **their** assignments at the **TWB Learning Cafe** by clicking here<sup>5</sup>.

#### Assignment 2: The Power of Questions

##### Part One: Reflection

1. When the 35 minutes is up, simply write 4 - 5 sentences reflecting on the process or experience of writing this list of 100 questions. Re-read your list of questions. What do you notice? What surprised you?

##### Part Two: Course Title and Description

1. Imagine for a moment that a class of students generated these questions - not you. What would be the content of a course that you could design that would address or answer 1 of the questions on the list? or 3 or 4 questions on the list? or most of these questions on the list? Give this new course a title and write a 6 - 7 sentence description of the course including topics to be covered, assigned readings, activities, field trips, etc.

You might begin by putting your questions into groups and then giving titles to each group, or you might simply re-read your list, think about what "your imagined students are asking" and come up with a course title and write your 6 - 7 sentence course description from there. You might simply choose one question and write the course title and description from there. Approach it however you wish.

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<sup>4</sup><http://cnx.org/content/m13285/latest/file:C1A2h.doc>

<sup>5</sup><http://oneface.typepad.com/lois/>

## Chapter 4

# Theories/Approaches to Learning<sup>1</sup>

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### Calling All Teachers

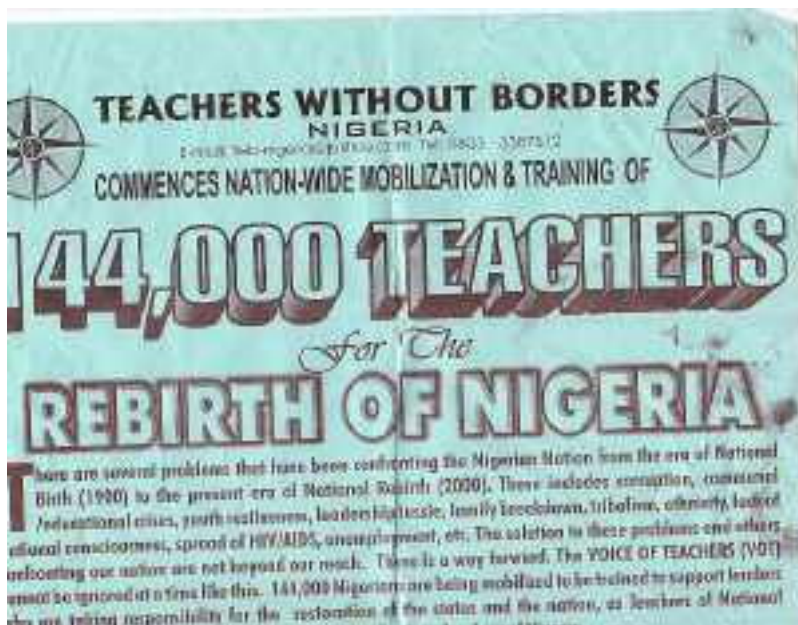


Figure 4.1: A flyer distributed in Nigeria

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### 4.1 Overview

#### HOW TO BE AN ACTIVE READER:

In Learning Section 2 you will be doing a lot of reading and discussing about theories and approaches to learning. Please take a moment now to review Assignment 3 by clicking on "Outline." Looking at Assignment 3 ahead of time may help you to become an active reader taking notes in a journal while you read about

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<sup>1</sup>This content is available online at <<http://cnx.org/content/m13286/1.4/>>.

the theories and approaches to learning presented in this section. As you talk with colleagues in the **TWB Learning Cafe**, you may also wish to take notes. For example, you might spend some time writing in your journal about one or two things you heard someone **else** say in conversation that has sparked your thinking.

### **Piaget**

Swiss biologist and psychologist Jean Piaget (1896-1980) is renowned for constructing a highly influential model of child development and learning. Piaget's theory is based on the idea that the developing child builds cognitive structures - in other words, mental "maps," schemes, or networked concepts for understanding and responding to physical experiences within his or her environment. Piaget further attested that a child's cognitive structure increases in sophistication with development, moving from a few innate reflexes such as crying and sucking to highly complex mental activities.

### **Discussion**

Piaget's theory identifies four developmental stages and the processes by which children progress through them. The four stages are:

1. **Sensorimotor stage** (birth - 2 years old) - The child, through physical interaction with his or her environment, builds a set of concepts about reality and how it works. This is the stage where a child does not know that physical objects remain in existence even when out of sight (object permanance).
2. **Preoperational stage** (ages 2-7) - The child is not yet able to conceptualize abstractly and needs concrete physical situations.
3. **Concrete operations** (ages 7-11) - As physical experience accumulates, the child starts to conceptualize, creating logical structures that explain his or her physical experiences. Abstract problem solving is also possible at this stage. For example, arithmetic equations can be solved with numbers, not just with objects.
4. **Formal operations** (beginning at ages 11-15) - By this point, the child's cognitive structures are like those of an adult and include conceptual reasoning.

Piaget outlined several principles for building cognitive structures. During all development stages, the child experiences his or her environment using whatever mental maps he or she has constructed so far. If the experience is a repeated one, it fits easily - or is assimilated - into the child's cognitive structure so that he or she maintains mental "equilibrium." If the experience is different or new, the child loses equilibrium, and alters his or her cognitive structure to accommodate the new conditions. This way, the child erects more and more adequate cognitive structures.

### **How Piaget's Theory Impacts Learning**

**Curriculum** - Educators must plan a developmentally-appropriate curriculum that enhances their students' logical and conceptual growth.

**Instruction** - Teachers must emphasize the critical role that experiences - or interactions with the surrounding environment - play in student learning.

## **4.2 Erik Erikson's Developmental Stages**

Psychoanalyst Erik Erikson describes the physical, emotional, and psychological stages of human development, and relates specific issues, or developmental work or tasks to each stage.

### **Infant** (Trust vs. Mistrust)

Needs maximum comfort with minimal uncertainty to trust himself/herself, others, and the environment. It is essential to create an atmosphere of care - a sense that a child feels as if s/he exists in the world and is valuable.

### **Toddler** (Autonomy vs. Shame and Doubt)

Works to master physical environment while maintaining self-esteem. Here, the toddler wants to be a whole person, ready to take on the world and moves past immediate rewards and punishments. This is the beginning of the child's realizing that s/he is a person that has rights. It is essential, at this stage, to give some choices while ensuring that rules are followed and that adults are in charge. The child will make some unsafe gestures, so it is important for caregivers to be vigilant.

**Preschooler** (Initiative vs. Guilt)

Begins to initiate, not imitate, activities; develops conscience and sexual identity. S/he realizes that s/he can begin an activity, not just be told what to do. The child begins to make some sense of "right" and "wrong." It is important to talk with the child calmly and with reason in the process of helping her/him develop a sense of moral judgment.

**School-Age Child** (Industry vs. Inferiority)

Tries to develop a sense of self-worth by refining skills. A school-age child learns to distinguish between himself and the others in terms of judgment. What am I good at? How am I doing? It is here that the child begins to try different activities to test some theories about who s/he is. It is important to provide an atmosphere of trust, experimentation, and praise for accomplishments, while minimizing competition between students where the result is lowered self esteem. Try to bolster the confidence of ALL students.

**Adolescent** (Identity vs. Role Confusion)

Tries integrating many roles (child, sibling, student, athlete, worker) into a self-image, taking into consideration other adults and other adolescents. Around the world, adolescence is not an easy task. It is a time of resistance against parents and teachers in order to distinguish oneself. Risk-taking can be much more dangerous. The role of identity is crucial, here, and it is important for students to see the consequences of their behavior, rather than to protect them from life. At the same time, their intellectual abilities are blossoming, and so it is quite important to respect the intelligences of adolescents. Finally, provide them opportunities that stir their hearts - such as service. The results will be a vital, active, interested young person who stands behind her/his beliefs and who tries hard.

**Young Adult** (Intimacy vs. Isolation)

Learns to make personal commitment to another as spouse, parent or partner. At this time, college-age students are beginning to see who they are and what they can do. They think about long-term commitments and about a "definition" for themselves. It is important to listen carefully and, as a caretaker still, respect their ability to make their own choices.

**Middle-Age Adult** (Generativity vs Stagnation)

Seeks satisfaction through productivity in career, family, and civic interests.

**Older Adult** (Integrity vs. Despair)

Reviews life accomplishments, deals with loss and preparation for death.

## 4.3 Constructivism

### Introduction

The latest catchword in educational circles is "constructivism," and it is applied both to learning theory **and** to epistemology (to how people learn and to the nature of knowledge). What is it? What does it have to tell us that is new and relevant, and how do we apply it to our work?

**What is constructivism?**

The term refers to the idea that learners construct knowledge for themselves - each learner individually (and socially) builds meaning - as he or she learns. Constructing meaning **is** learning. The dramatic consequences of this view are two-fold:

1. We have to focus on the learner in thinking about learning (not on the subject/lesson to be taught):
2. There is no knowledge independent of the meaning attributed to experience (constructed) by the learner, or community of learners.

Although it appears radical on an everyday level, it is a position that has been frequently adopted ever since people began to ponder epistemology (the nature of knowledge). If we accept constructivist theory, we have to recognize that there is no such thing as knowledge "out there" independent of the knower, but only knowledge we construct for ourselves as we learn.

Learning is not understanding the "true" nature of things, nor is it remembering dimly perceived perfect ideas, but rather a **personal and social construction of meaning** out of the bewildering array of sensations that have no order or structure besides the explanations that we fabricate for them.

The more important question is: Does it actually make any difference in our everyday work whether deep down we consider knowledge to be about some "real" world independent of us, or whether we consider knowledge to be of our own making? The answer is "Yes, it does make a difference," because of the first point suggested above: in our profession our epistemological views dictate our pedagogic views.

If we believe that knowledge consists of learning about the real world out there, then we endeavor first and foremost to understand that world, organize it in the most rational way possible, and, as teachers, present it to the learner. This view may still engage us in providing the learner with activities, with hands-on learning, with opportunities to experiment and manipulate the objects of the world, but the intention is always to make clear to the learner the structure of the world independent of the learner. We help the learner understand the world, but we don't ask him to construct his or her own world.

In many cultures, the history of learning never considered the learner. The task of the teacher was to make clear to the learner the working of this "machine" and any accommodation to the learner was only to account for different appropriate entry points for different learners. Times have changed.

Constructivist theory requires that we turn our attention by 180 degrees; we must turn our back on any idea of an "all-encompassing machine" that describes nature and, instead, look towards all those wonderful, individual living beings - the learners - each of whom creates his or her own model to explain nature. If we accept the constructivist position, we are inevitably required to follow a pedagogy which argues that we must provide learners with the opportunity to: a) interact with sensory data, and b) construct their own world.

This second point is a little harder for us to swallow, and most of us constantly vacillate between faith that our learners will indeed construct meaning that we will find acceptable (whatever we mean by that) and our need to construct meaning **for** them; that is, to structure situations that are not free for learners to carry out their own mental actions, but "learning" situations that channel them into our ideas about the meaning of experience.

## 4.4 Principles of Learning

What are some guiding principles of constructivist thinking that we must keep in mind when we consider our role as educators? Here is an outline of a few ideas, all predicated on the belief that learning consists of individuals' constructed meanings:

1. **Learning is an active process** in which the learner uses sensory input and constructs meaning out of it. The more traditional formulation of this idea involves the terminology of the active learner (John Dewey's term) stressing that the learner needs to do something; that learning is not the passive acceptance of knowledge which exists "out there" but that learning involves the learner engaging with the world.
2. **People learn to learn as they learn** . Learning consists both of constructing meaning and constructing systems of meaning. For example, if we learn the chronology of dates of a series of historical events, we are simultaneously learning the meaning of a chronology. Each meaning we construct makes us better able to give meaning to other sensations that can fit a similar pattern.
3. **The crucial action of constructing meaning is mental**. It happens in the mind. Physical actions, hands-on experience may be necessary for learning, especially for children, but it is not sufficient; we need to provide activities which engage the mind as well as the hands (Dewey called this reflective activity).
4. **Learning involves language**. The language we use influences learning. On the empirical level, researchers have noted that people talk to themselves as they learn. On a more general level, there is a collection of arguments, presented most forcefully by Vygotsky, that language and learning are bound together.
5. **Learning is a social activity**. Our learning is intimately associated with our connection with other human beings, our teachers, our peers, our family, as well as casual acquaintances, including the people before us or next to us. We are more likely to be successful in our efforts to educate if we recognize this

principle rather than try to avoid it. Much of traditional education is directed towards isolating the learner from all social interaction, and towards seeing education as a one-on-one relationship between the learner and the objective material to be learned. In contrast, progressive education recognizes the social aspect of learning and uses conversation, interaction with others, and the application of knowledge as an integral aspect of learning.

6. **Learning is contextual.** We do not learn isolated facts and theories in some abstract ethereal land of the mind separate from the rest of our lives - we learn in relationship to what else we know, what we believe, our prejudices and our fears. On reflection, it becomes clear that this point is actually a corollary of the idea that learning is active and social. We cannot divorce our learning from our lives.
7. **One needs knowledge to learn.** It is not possible to assimilate new knowledge without having some structure developed from previous knowledge to build on. The more we know, the more we can learn. Therefore any effort to teach must be connected to the state of the learner, must provide a path into the subject for the learner based on that learner's previous knowledge.
8. **It takes time to learn.** Learning is not instantaneous. For significant learning to occur, we need to revisit ideas, ponder them, try them out, play with them, and use them. If you reflect on anything you have learned, you soon realize that it is the product of repeated exposure and thought. Even, or especially, moments of profound insight, can be traced back to longer periods of preparation.
9. **Motivation is a key component in learning.** Not only is it the case that motivation helps learning; it is **essential** for learning. This idea of motivation as described here is broadly conceived to include an understanding of ways in which the knowledge can be used. Unless we know "the reasons why," we may not become engaged in using the knowledge that may be instilled in us, even by the most severe and direct teaching.

#### TALK AT THE TWB LEARNING CAFE:

What do you think about the "Value of Constructivism" ?

Read what others have said. Add your thoughts. Join your global colleagues in conversation at the **TWB Learning Cafe**, by clicking [here](#)<sup>2</sup> .

## 4.5 Behaviorism

### Definition

Behaviorism is a theory of animal and human learning that only focuses on objectively observable behaviors and discounts mental activities. Behavior theorists define learning as nothing more than the acquisition of new behavior.

### Discussion

Experiments by behaviorists identify **conditioning** as a universal learning process. There are two different types of conditioning each yielding a different behavioral pattern:

1. **Classic conditioning** occurs when a natural reflex responds to a stimulus. The most popular example is Pavlov's observation that dogs salivate when they eat or even see food. Essentially, animals and people are biologically "wired" so that a certain stimulus will produce a specific response.
2. **Behavioral** or **operant conditioning** occurs when a response to a stimulus is reinforced. Basically, operant conditioning is a simple feedback system: If a reward or reinforcement follows the response to a stimulus, then the response becomes more probable in the future. For example, leading behaviorist B.F. Skinner used reinforcement techniques to teach pigeons to dance and bowl a ball in a mini-alley.

There have been many criticisms of behaviorism, including the following:

- Behaviorism does not account for all kinds of learning, since it disregards the activities of the mind.

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<sup>2</sup>[http://oneface.typepad.com/lois/the\\_value\\_of\\_constructivism/index.html](http://oneface.typepad.com/lois/the_value_of_constructivism/index.html)

- Behaviorism does not explain some learning such as the recognition of new language patterns by young children - for which there is no reinforcement mechanism.

### How Behaviorism Impacts Learning

This theory is relatively simple to understand because it relies only on observable behavior and describes several universal laws of behavior. Its positive and negative reinforcement techniques can be effective - both in animals, and in treatments for human disorders such as autism and antisocial behavior. Behaviorism often is used by teachers, who reward or punish student behaviors.

## 4.6 Brain-Based Learning & Neuroscience

### Definition

This learning theory is based on the structure and function of the brain. As long as the brain is not prohibited from fulfilling its normal processes, learning will occur.

### Discussion

People often say that everyone can learn. The reality is that everyone **does** learn. Every person is born with a brain that functions as an immensely powerful processor. Traditional schooling, however, often inhibits learning by discouraging, ignoring, or punishing the brain's natural learning processes.

The core principles of brain-based learning state that:

1. The brain is a parallel processor, meaning it can perform several activities at once, like tasting and smelling.
2. Learning engages the whole physiology.
3. The search for meaning is innate.
4. The search for meaning comes through patterning.
5. Emotions are critical to patterning.
6. The brain processes wholes and parts simultaneously.
7. Learning involves both focused attention and peripheral perception.
8. Learning involves both conscious and unconscious processes.
9. We have two types of memory: spatial and rote.
10. We understand best when facts are embedded in natural, spatial memory.
11. Learning is enhanced by challenge and inhibited by threat.

The three **instructional** techniques associated with brain-based learning are:

- Orchestrated immersion - creating learning environments that fully immerse students in an educational experience;
- Relaxed alertness - eliminating fear in learners, while maintaining a highly challenging environment;
- Active processing - allowing the learner to consolidate and internalize information by actively processing it.

### How Brain-Based Learning Impacts Education

**Curriculum** - Teachers must design learning around student interests and make learning contextual.

**Instruction** - Educators let students learn in teams and use peripheral learning. Teachers structure learning around real problems, encouraging students to also learn in settings outside the classroom and the school building.

**Assessment** - Since all students are learning, their assessment should allow them to understand their own learning styles and preferences; students monitor and enhance their own learning process.

### What Brain-Based Learning Suggests

How the brain works has a significant impact on what kinds of learning activities are most effective. Educators need to help students have appropriate experiences and capitalize on those experiences. Educator Renate Caine illustrates this point by describing three interactive elements essential to this process:

1. Teachers must immerse learners in complex, interactive experiences that are both rich and real. One excellent example is immersing students in a different culture to teach them a second language. Educators must take advantage of the brain's ability to parallel process.
2. Students must have a personally meaningful challenge. Such challenges stimulate a student's mind to the desired state of alertness.
3. In order for a student to gain insight about a problem, there must be intensive analysis of the different ways to approach it, and about learning in general. This is what's known as the "active processing of experience."

**A few other tenets of brain-based learning include:**

1. Feedback is best when it comes from reality, rather than from an authority figure.
2. People learn best when solving realistic problems.
3. The big picture can't be separated from the details.
4. Because every brain is different, educators should allow learners to customize their own environments.
5. The best problem solvers are those that laugh!

Designers of educational tools must be artistic in their creation of brain-friendly environments. Instructors need to realize that the best way to learn is not through lecture, but by participation in realistic environments that let learners try new things safely.

**TALK AT THE TWB LEARNING CAFE:**

What questions do you have about "Brain-Based Learning"?

Read what others have said. Add your thoughts. Join your global colleagues in conversation at the **TWB Learning Cafe**, by clicking here<sup>3</sup> .

## 4.7 Learning Styles

### Definition

This approach to learning emphasizes the fact that individuals perceive and process information in very different ways. The learning styles theory implies that how much individuals learn has more to do with whether the educational experience is geared toward their particular style of learning than whether or not they are "smart." In fact, educators should not ask, "Is this student smart?" but rather " **How** is this student smart?"

### Discussion

The concept of learning styles is rooted in the classification of psychological types. The learning styles theory is based on research demonstrating that, as the result of heredity, upbringing, and current environmental demands, different individuals have a tendency to both perceive and process information differently. The different ways of doing so are generally classified as:

**Concrete** and **Abstract Perceivers** - Concrete perceivers absorb information through direct experience, by doing, acting, sensing, and feeling. Abstract perceivers, however, take in information through analysis, observation, and thinking.

**Active** and **Reflective Processors** - Active processors make sense of an experience by immediately using the new information. Reflective processors make sense of an experience by reflecting on and thinking about it.

Traditional schooling tends to favor abstract perceiving and reflective processing. Other kinds of learning aren't rewarded and reflected in curriculum, instruction, and assessment nearly as much.

### How the Learning Styles Theory Impacts Education

**Curriculum** - Educators must place emphasis on intuition, feeling, sensing, and imagination in addition to the traditional skills of analysis, reason, and sequential problem solving.

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<sup>3</sup>[http://oneface.typepad.com/lois/brainbased\\_learning/index.html](http://oneface.typepad.com/lois/brainbased_learning/index.html)

**Instruction** - Teachers should design their instruction methods to connect with all four learning styles using various combinations of experience, reflection, conceptualization, and experimentation. Instructors can introduce a wide variety of experiential elements into the classroom such as sound, music, visuals, movement, experience, and talking.

**Assessment** - Teachers should employ a variety of assessment techniques focusing on the development of "whole brain" capacity and each of the different learning styles.

## 4.8 Right & Left Brain Thinking

### Definition

This theory of the structure and functions of the mind suggests that the two different sides of the brain control two different "modes" of thinking. It also suggests that each of us prefers one mode over the other.

### Discussion

Experimentation has shown that the two different sides, or hemispheres, of the brain are responsible for different manners of thinking. The following table illustrates the differences between left-brain and right-brain thinking:

Left Brain	Right Brain
Logical	Random
Sequential	Intuitive
Rational	Holistic
Analytical	Synthesizing
Objective	Subjective
<b>Looks at parts</b>	<b>Looks at wholes</b>

Table 4.1

Most individuals have a distinct preference for one of these styles of thinking. Some, however, are more whole-brained and equally adept at both modes. In general, schools have favored left-brain modes of thinking while downplaying the right-brain ones. Left-brain scholastic subjects focus on logical thinking, analysis, and accuracy. Right-brained subjects, on the other hand, focus on aesthetics, feeling, and creativity.

### How Right-Brain vs. Left-Brain Thinking Impacts Learning

**Curriculum** - In order to be more "whole-brained" in their orientation, schools need to give equal weight to the arts, creativity, and the skills of imagination and synthesis.

**Instruction** - To foster a more whole-brained scholastic experience, teachers should use instruction techniques that connect with both sides of the brain. They can increase their classroom's "right-brain" learning activities by incorporating more patterning, metaphors, analogies, role playing, visuals, and movement into their reading, calculation, and analytical activities.

**Assessment** - For a more accurate whole-brained evaluation of student learning, educators must develop new forms of assessment that honor right-brained talents and skills.

### TALK AT THE TWB LEARNING CAFE:

What does "Whole-Child Assessment" look like?

Read what others have said. Add your thoughts. Join your global colleagues in conversation at the **TWB Learning Cafe**, by clicking here<sup>4</sup>.

<sup>4</sup>[http://oneface.typepad.com/lois/wholechild\\_assessment\\_/index.html](http://oneface.typepad.com/lois/wholechild_assessment_/index.html)

## 4.9 Control Theory

### Definition

This theory of motivation, developed by William Glasser, asserts that behavior is never caused by a response to an outside stimulus. Instead, the control theory states that behavior is inspired by what a person wants most at any given time: survival, love, power, freedom, or any other basic human need.

### Discussion

Responding to complaints that today's students are "unmotivated," Glasser attests that all living creatures "control" their behavior to maximize their need satisfaction. According to Glasser, if students are not motivated to do their schoolwork, it's because they view schoolwork as irrelevant to their basic human needs.

"Boss" teachers use rewards and punishment to coerce students to comply with rules and complete required assignments. Glasser calls this "leaning on your shovel" work. He shows how high percentages of students recognize that the work they do - even when their teachers praise them - is low-level work.

"Lead" teachers, on the other hand, avoid coercion completely. Instead, they make the intrinsic rewards of doing the work clear to their students, correlating any proposed assignments to the students' basic needs. Plus, they only use grades as temporary indicators of what has and hasn't been learned, rather than as a reward. Lead teachers will "fight to protect" highly engaged, deeply motivated students who are doing quality work from having to fulfill meaningless requirements.

### How the Control Theory Impacts Learning

**Curriculum** - Teachers must negotiate both content and method with students. Students' basic needs literally help shape how and what they are taught.

**Instruction** - Teachers rely on cooperative, active learning techniques that enhance the power of the learners. Lead teachers make sure that all assignments meet some degree of their students' need satisfaction. This secures student loyalty, which carries the class through whatever relatively meaningless tasks might be necessary to satisfy official requirements.

**Assessment** - Instructors only give "good grades" - those that certify quality work - to satisfy students' need for power. Courses for which a student doesn't earn a "good grade" are not recorded on that student's transcript. Teachers grade students using an absolute standard, rather than a relative "curve."

## 4.10 Metacognition

### Definition

Metacognition is the process of thinking about thinking. According to Flavell, "I am engaging in metacognition if I notice that I am having more trouble learning A than B; if it strikes me that I should double check C before accepting it as fact." ( p. 232, Flavell, J.,1976 **Metacognitive Aspects of Problem-Solving**).

### Discussion

Metacognition has to do with the active monitoring and regulation of cognitive processes. Metacognitive processes are central to planning, problem-solving, evaluation, and many aspects of language learning.

Metacognition is relevant to work on cognitive styles and learning strategies in so far as the individual has some awareness of their thinking or learning processes. The work of Piaget is also relevant to research on metacognition since it deals with the development of cognition in children.

Flavell argued that metacognition explains why children of different ages deal with learning tasks in different ways, i.e., they have developed new strategies for thinking. Research studies show that as children get older, they demonstrate more awareness of their thinking processes.

## 4.11 Experiential Learning

### Definition

Carl Rogers distinguished two types of learning: **cognitive** (meaningless) and **experiential** (significant). The former corresponds to academic knowledge such as learning vocabulary or multiplication tables, and

the latter refers to applied knowledge such as learning about engines in order to repair a car. The key to the distinction is that experiential learning addresses the needs and wants of the learner. Rogers lists these qualities of experiential learning: personal involvement, self-initiated, evaluated by learner, and pervasive effects on learner.

#### **Discussion**

To Rogers, experiential learning is equivalent to personal change and growth. Rogers asserts that all human beings have a natural propensity to learn; the role of the teacher is to facilitate such learning. This includes: 1) setting a positive climate for learning; 2) clarifying the purposes of the learner; 3) organizing and making available learning resources; 4) balancing intellectual and emotional components of learning; and 5) sharing feelings and thoughts with learners, but not dominating.

#### **According to Rogers, learning is facilitated when:**

1. The student participates completely in the learning process and has control over its nature and direction.
2. Learning is primarily based upon direct confrontation with practical, social, personal, or research problems.
3. Self-evaluation is the principal method of assessing progress or success.

#### **Principles**

1. Significant learning takes place when the subject matter is relevant to the personal interests of the student. (For example: A person interested in becoming rich might seek out books or classes on economics, investment, great financiers, banking, etc. Such an individual would perceive (and learn) any information provided on this subject in a much different fashion than a person who is assigned a reading or class.)
2. Self-initiated learning is the most lasting and pervasive.
3. Learning that is threatening to the self (e.g., new attitudes or perspectives) are more easily assimilated when external threats are at a minimum. Learning proceeds faster when the threat to the self is low.

#### **For more about Rogers and his work, see:**

An overview<sup>5</sup> of Carl Rogers' life and philosophy

Carl Rogers on education<sup>6</sup>

Rogers and psychological theory<sup>7</sup>

#### **PDF FILES**

Overview of Carl Rogers' life and philosophy<sup>8</sup>

Rogers on Education<sup>9</sup>

Rogers and Psychological Theory<sup>10</sup>

## **4.12 Vygotsky and Social Cognition**

The social cognition learning model asserts that culture is the prime determinant of individual development. Humans are the only species to have created culture, and every human child develops in the context of a culture. Therefore, a child's learning development is affected in ways large and small by the culture (including the culture of the family environment) in which he or she is enmeshed.

#### **Discussion**

Culture makes two sorts of contributions to a child's intellectual development. First, through culture, children acquire much of the content of their thinking, that is, their knowledge. Second, the surrounding

<sup>5</sup><http://opr.com/Rogers>

<sup>6</sup><http://www.infed.org/thinkers/et-rogers.htm>

<sup>7</sup><http://www.ship.edu/~cgboeree/rogers.html>

<sup>8</sup><http://cnx.org/content/m13286/latest/file:rogers1.pdf>

<sup>9</sup><http://cnx.org/content/m13286/latest/file:rogersoneducation.pdf>

<sup>10</sup><http://cnx.org/content/m13286/latest/file:rogerspsych.pdf>

culture provides a child with the processes or means of their thinking, what Vygotskians call the tools of "intellectual adaptation." In short, according to the social cognition learning model, culture teaches children both **what** to think and **how** to think.

Cognitive development results from a dialectical process whereby a child learns through problem-solving experiences shared with someone else, usually a parent or teacher, but sometimes a sibling or peer. Initially, the person interacting with the child assumes most of the responsibility for guiding the problem solving, but gradually this responsibility transfers to the child. Language is a primary form of interaction through which adults transmit to the child the rich body of knowledge that exists in the culture. As learning progresses, the child's own language comes to serve as her primary tool of intellectual adaptation. Eventually, children can use internal language to direct their own behavior. Internalization refers to the process of learning - and thereby internalizing - a rich body of knowledge and tools of thought that first exist outside the child. This happens primarily through language.

A difference exists between what the child can do on her own and what the child can do with help. Vygotskians call this difference the "zone of proximal development."

Since much of what a child learns comes from the culture around her and much of the child's problem solving is mediated through an adult's help, it is wrong to focus on a child in isolation. Such focus does not reveal the processes by which children acquire new skills. Interactions with surrounding culture and social agents, such as parents and more competent peers, contribute significantly to a child's intellectual development.

#### **How Vygotsky Impacts Learning**

**Curriculum** - Since children learn much through interaction, curricula should be designed to emphasize interaction between learners and learning tasks.

**Instruction** - With appropriate adult help, children can often perform tasks that they are incapable of completing on their own. With this in mind, scaffolding - where the adult continually adjusts the level of his or her help in response to the child's level of performance - is an effective form of teaching. Scaffolding not only produces immediate results, but also instills the skills necessary for independent problem solving in the future.

**Assessment** - Assessment methods must take into account the "zone of proximal development." What children can do on their own is their level of actual development and what they can do with help is their level of potential development. Two children might have the same level of actual development, but given the appropriate help from an adult, one might be able to solve many more problems than the other. Assessment methods must target both the level of actual development and the level of potential development.

#### **TALK AT THE TWB LEARNING CAFE:**

Now that you've finished reading about the theories and approaches to learning, join your global colleagues in the "Old Woman or Young Woman" conversation at the **TWB Learning Cafe**, by clicking here<sup>11</sup> .

### **4.13 Assignment 3: Towards an Imagined Dialogue**

1. What theories and approaches to learning fit with your current attitude towards and/or method of teaching (3-4 paragraphs)

**GOAL:** To deepen your understanding of the similarities and differences between several of the theories and approaches to learning, and to do so in an assignment that requires both the "right-brain" (imagination) and "left-brain" (cognitive) functions together.

**GIVE:** Feedback to others on **their** assignments at the **TWB Learning Cafe** by clicking here<sup>12</sup> .

#### **Assignment 3: Towards an Imagined Dialogue**

Please answer the following:

1. Which theories and approaches to learning fit with your current attitude towards and/or method of teaching? (3-4 paragraphs)

<sup>11</sup>[http://oneface.typepad.com/lois/old\\_woman\\_or\\_young\\_woman/index.html](http://oneface.typepad.com/lois/old_woman_or_young_woman/index.html)

<sup>12</sup><http://oneface.typepad.com/lois/>

2. Which theories and approaches to learning do you disagree with in part or whole? Describe your reasons.

3. "The Imagined Dialogue" - Imagine a scene, situation, or setting in which three characters in a short story, play, or myth meet. Have each of the three characters represent a different theory/approach to learning or actually be the person who created the theory. Through that character's words and actions in this imagined scenario, we will come to know something of his/her point of view and theory. This work of fiction you are creating may end up to be a serious, playful, learned, combative, funny, or all-of-the-above encounter between these three characters. To begin, you may wish to brainstorm the setting in which the three characters might meet and what each of the characters is "fighting for" or wants to get from the encounter (after all, most effective dramas include a desired outcome or something each character wants to accomplish). You are welcome to add other characters if you wish, either imagined, real, historic, or mythic to be active characters or those who simply "push a broom across the stage." This fictitious meeting of these three characters (representing each theory) may end up to be 1 page in length.

Be sure to type each of the characters' names first and tell which theory or approach to learning he or she represents. Then, type the location or setting for the story, and tell when it takes place. Follow this by writing the actual 1 - page story, play or myth.

## 4.14 Assignment 4: Applying Theory

Assignment 4: Applying Theory<sup>13</sup>

You can also copy the text below, and save it to your disk or computer.

**GOAL:** To think about how you can apply what you have learned about theories and approaches to learning to your classroom practice.

**GIVE:** Feedback to others on **their** assignments at the **TWB Learning Cafe** by clicking here<sup>14</sup>.

### Assignment 4: Applying Theory

1. Which education theory are you most attracted to? Why?
2. Which theory are you able to apply to your classroom? Why?
3. Describe 3 concrete ways you can apply the theory to your classroom.
4. What kinds of support/resources exist in your school, or nearby schools to help you carry out these 3 aims? (They may be in the form of people, programs, institutional partnerships, monetary resources, internships, service projects, databases of organizational resources available to you.) Describe some of these resources and the concrete ways in which you can connect with them.
5. What challenges or obstacles do you face in applying the chosen theory in your classroom?
6. What kind of help do you need to overcome these obstacles?

## 4.15 Assignment 5: Critical Questions

A well known Nobel Peace Prize winner once said, "When I came home from school each day, my mother did not ask me: 'Did you get the answers correct?' Instead, understanding the value of education as an inquiry into ideas, she would ask: 'Did you ask any good questions?' That made all the difference to me." - Elie Wiesel

Assignment 5: Critical Questions<sup>15</sup>

### HOW TO GET TO ASSIGNMENT 5: One Way

<sup>13</sup><http://cnx.org/content/m13286/latest/file:C1A4f.doc>

<sup>14</sup><http://oneface.typepad.com/lois/>

<sup>15</sup><http://cnx.org/content/m13286/latest/file:C1A5g.doc>

Click on the link in color at the top of the page. When it appears, press "Save" and name the file so that you can work on this assignment "off-line." You can type right on the assignment template. Be sure to save your assignment on a disk or on your computer hard drive.

**Another Way**

You can also copy the text below, and save it to your disk or computer.

**GOAL:** To think about how you can apply what you have learned about theories and approaches to learning to your school and/or larger community.

**GIVE:** Feedback to others on their assignments at the **TWB Learning Cafe** by clicking here<sup>16</sup> .

**Assignment 5: Critical Questions**

1. Utilizing the knowledge you've gained about educational theories and approaches to learning, how would you characterize the educational systems in your community?
2. From your perspective, what positive changes in education are currently underway? What changes are needed?
3. How are you catalyzing positive change or actively participating in the process?
4. Graffiti exists on walls all over the world as part self-expression, part social dialogue. Type one question now on our community's Question Wall. Read the questions others have posted on the Question Wall. Add questions to it as the course progresses. Consider creating a physical "Question Wall" in your classroom.

**To post a question on the Question Wall go to the TWB Learning Cafe by clicking here<sup>17</sup> .**

**HOW TO GET TO THE NEXT MODULE:**

Usually, you just click "Next" to go to the next page. When you finish a section, however, (as you're about to do when you finish reading these two paragraphs), you need to click on the "Outline" button, which is on the bottom, right-hand side of the page. Look underneath the blue bar and click on the word "Outline."

When you click on "Outline," a screen will come up that will show you the outline for Course 1. Look for the next section to read and click on the first topic in that next section. For example, when you get to the outline now, look under the next section called "Multiple Intelligences" and look for the first topic in black lettering called "Overview." Click on "Overview."

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<sup>16</sup><http://oneface.typepad.com/lois/>

<sup>17</sup>[http://oneface.typepad.com/lois/question\\_wall/index.html](http://oneface.typepad.com/lois/question_wall/index.html)



## Chapter 5

# Multiple Intelligences<sup>1</sup>

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Figure 5.1: Student as teacher in Faridabad, India

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### 5.1 Overview

Is intelligence innate? Genetic? Fixed?

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<sup>1</sup>This content is available online at <<http://cnx.org/content/m13287/1.6/>>.

Generally, this is how intelligence has been viewed - as a quantity. Recently, new views have emerged with enormous implications for education. This new perspective asserts that intelligence can be measured in different ways, that it grows, and it is more quality than quantity. It used to be that the question was asked: "Is s/he smart?" New questions now ask: " **How** is s/he smart?" The emphasis is on the various ways in which we demonstrate multiple intelligences, rather than a single intelligence. The readings and assignments that follow discuss multiple intelligences, provide an opportunity for you to apply them, and a way of determining how to assess students.

Howard Gardner created a list of seven intelligences. The first two are ones that have been typically valued in schools; the next three are usually associated with the arts; and the final two are what Howard Gardner called "personal intelligences."

**Linguistic** intelligence involves sensitivity to spoken and written language, the ability to learn languages, and the capacity to use language to accomplish certain goals. This intelligence includes the ability to effectively use language to express oneself rhetorically or poetically, and language as a means to remembering information. Writers, poets, lawyers, and speakers are among those that Howard Gardner sees as having high linguistic intelligence.

**Logical-mathematical** intelligence consists of the capacity to analyze problems logically, carry out mathematical operations, and investigate issues scientifically. In Howard Gardner's words, it entails the ability to detect patterns, reason deductively, and think logically. This intelligence is most often associated with scientific and mathematical thinking.

**Musical intelligence** involves skill in the performance, composition, and appreciation of musical patterns. It encompasses the capacity to recognize and compose musical pitches, tones, and rhythms. According to Howard Gardner musical intelligence runs in an almost structural parallel to linguistic intelligence.

**Bodily-kinesthetic** intelligence entails the potential of using one's whole body or parts of the body to solve problems. It is the ability to use mental abilities to coordinate bodily movements. Howard Gardner sees mental and physical activity as related.

**Spatial intelligence** involves the potential to recognize and use the patterns of wide space and more confined areas.

**Interpersonal** intelligence is concerned with the capacity to understand the intentions, motivations, and desires of other people. It allows people to work effectively with others. Educators, salespeople, religious and political leaders and counselors all need a well-developed interpersonal intelligence.

**Intrapersonal** intelligence entails the capacity to understand oneself, to appreciate one's feelings, fears and motivations. In Howard Gardner's view it involves having an effective working model of ourselves, and to be able to use such information to regulate our lives.

In **Frames of Mind** Howard Gardner treated the personal intelligences "as a piece." Because of their close association in most cultures, they are often linked together. However, he still argues that it makes sense to think of two forms of personal intelligence. Gardner claimed that the seven intelligences rarely operate independently. They are used at the same time and tend to complement each other as people develop skills or solve problems.

In essence, Howard Gardner argues that he was making two essential claims about multiple intelligences:

1. The theory is an account of human cognition in its fullness. The intelligences provided "a new definition of human nature, cognitively speaking" (Gardner 1999: 44). Human beings are organisms who possess a basic set of intelligences.
2. People have a unique blend of intelligences. Gardner argues that the big challenge facing the deployment of human resources "is how to best take advantage of the uniqueness conferred on us as a species exhibiting several intelligences."

Also, these intelligences, according to Howard Gardner, are amoral - they can be put to constructive or destructive use.

## 5.2 The Appeal of Multiple Intelligences

Howard Gardner's theory of multiple intelligences has not been readily accepted within academic psychology. However, it has met with a strong positive response from many educators. It has been embraced by a range of educational theorists, and, significantly, applied by teachers and policymakers to the challenges of schooling. A number of schools have looked to structure curricula according to the intelligences, and to design classrooms and even whole schools to reflect the understandings that Howard Gardner develops. The theory can also be found in use within pre-school, higher, vocational, and adult-education initiatives.

This appeal was not, at first, obvious.

At first, this diagnosis would appear to sound a "death knell" for formal education. It is hard to teach one intelligence; what if there are seven? It is hard to enough to teach even when anything can be taught; what to do if there are distinct limits and strong constraints on human cognition and learning?

Howard Gardner responds to these questions by first making the point that psychology does not directly dictate education, "It merely helps one to understand the conditions within which education takes place." Even more: Seven kinds of intelligence would allow seven ways to teach, rather than one. In addition, paradoxically, constraints can be suggestive and ultimately freeing.

Mindy L. Kornhaber, a researcher at Harvard University, has identified a number of reasons why teachers and policymakers have responded positively to Howard Gardner's presentation of multiple intelligences. Among these are the fact that the theory validates educators' everyday experience: students think and learn in many different ways. It also provides educators with a conceptual framework for organizing and reflecting on curriculum assessment and pedagogical practices. In turn, this reflection has led many educators to develop new approaches that might better meet the needs of the range of learners in their classrooms.

## 5.3 Some issues and problems

As with all theories in education, multiple intelligences theory has its critics. Some maintain that longitudinal studies still bear out the power of genetics and intelligence as a fixed quantity. They argue that this theory apologizes for lack of intellectual achievement. Others argue that the ability to measure or test for such intelligences undermines its core assertions. In short, such critics claim: "If you can't test it, it's not valid."

Dr. Gardner contests such claims of validity by arguing for a different view of standardized testing that is not biased in favor of only one kind of intelligence at the expense of others. He also notes the achievements of students in non-academic settings and the tragedy of exclusion that results when whole segments of the population are not served because their intelligences do not have the opportunity for expression.

### Implications of Multiple Intelligences for Schools

In terms of **Culture** it means support for diverse learners and hard work; acting on a value system that maintains that diverse students can learn and succeed; that learning is exciting; and that hard work by teachers is necessary.

In terms of **Readiness** it means awareness-building for implementing multiple intelligences. Building staff awareness of multiple intelligences and of the different ways that students learn.

Rather than using the theory as an end in and of itself, multiple intelligences can be used as a **Tool** to promote high-quality student work

It can foster **Collaboration** - informal and formal exchanges - sharing ideas and constructive suggestions by the staff.

It allows for **Choice** - meaningful curriculum and assessment options; embedding curriculum and assessment in activities that are valued both by students and the wider culture.

It employs the **Arts** to develop children's skills and understanding within and across disciplines.

### SUGGESTED READINGS

Index of Learning Styles <sup>2</sup> (no need to fill out the questionnaire - just read the questions) - online only  
Multiple Intelligences Reaches the Tibetan Village<sup>3</sup>

<sup>2</sup><http://www.engr.ncsu.edu/learningstyles/ilsweb.html>

<sup>3</sup><http://www.newhorizons.org/trans/international/campbell2.htm>

Implications for Students <sup>4</sup>

**PDF Files:**

Multiple Intelligences Reaches the Tibetan Village <sup>5</sup>

Implications for Students<sup>6</sup>

## 5.4 Inventory of Your Intelligences

### HOW TO GET TO THE ONLINE INVENTORY:

To explore you intelligences, click here<sup>7</sup> . Read the screen that comes up, especially the directions under the title "Explore Your Intelligences" and click on the button at the bottom of that screen that says "Continue."

In this interactive activity, you will see that each person has all of the intelligences in varying degrees. This is intended to be a fun exercise - answer the questions to the best of your ability. At the end of the activity, a unique "Multiple Intelligences Self-Profile" will be generated. The results are not absolute indicators of intelligence - they are simply meant to give you the opportunity to learn more about your unique combination of intelligences.

## 5.5 Assignment 6: One Day of Multiple Intelligences

**GOAL:** To apply what you have learned about Multiple Intelligences to one lesson plan to be used in your classroom.

**GIVE:** Feedback to others on their assignments at the **TWB Learning Cafe** by clicking here<sup>8</sup> .

1. Choose a lesson you need to teach in the coming week. It could be a specific lesson in math, social studies, literature, etc. Then, list the intelligence that will be your central focus for that one lesson. Why did you choose that intelligence?
2. What resources or materials will you need? What room arrangements will you need? What other things do you need to consider?
3. Develop the activity keeping your chosen intelligence in the forefront of your planning. Will students be moving, reading, drawing, acting, singing, talking to each other?
4. Is your lesson plan reaching those who are expressing this intelligence, but have not had a chance to use it before?
5. Conduct the activity by spending more time watching and guiding students than instructing them.
6. Provide feedback on the lesson. What plain observations did you make about individual students, the class as a whole, interactions and happenings that occurred - details you noticed, large actions? Make a list of 7 plain observations.
7. Choose any observation from your list, and write about it in 2 - 3 paragraphs.

## 5.6 Assignment 7: Applying Multiple Intelligences

Below, please find a list of the general characteristics of students who exhibit strengths in each of the intelligences. You will need these to understand essential clues for your assignment.

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<sup>4</sup>[http://www.newhorizons.org/future/Creating\\_the\\_Future/crfut\\_campbellb.html](http://www.newhorizons.org/future/Creating_the_Future/crfut_campbellb.html)

<sup>5</sup><http://cnx.org/content/m13287/latest/file:tibetanvillage.pdf>

<sup>6</sup><http://cnx.org/content/m13287/latest/file:implications.pdf>

<sup>7</sup><http://lessonsforhope.org/survey/index.asp>

<sup>8</sup><http://oneface.typepad.com/lois/>

<b>Multiple Intelligences</b>	<b>Overview</b>
<i>continued on next page</i>	

<b>Verbal-Linguistic</b> - The capacity to learn through words and grammatical logic	Learns from the spoken and written word, in many forms; reads, comprehends, and summarizes effectively
<b>Logical-Mathematical</b> - The capacity for inductive and deductive thinking and reasoning, as well as the use of numbers and the recognition of abstract patterns	Learns through using objects and moving them about, quantity, time, cause and effect; solves problems logically; understands patterns and relationships and makes educated guesses; can handle diverse skills such as advanced math, and represent them in graphic form; works with models; gathers evidence; builds strong arguments.
<b>Visual-Spatial</b> - The ability to visualize objects and spatial dimensions, and create internal images and pictures	Learns by seeing and observing - shapes, faces, colors; uses detail in visual images; learns through visual media; enjoys doodling, drawing; makes three-dimensional objects and moves them around; sees forms where others do not; enjoys abstractions and subtle patterns.
<b>Body-Kinesthetic</b> - The wisdom of the body and the ability to control physical motion	Learns through touching and moving; developed coordination and timing; participation and involvement; role plays. Engages in games, assembles objects; acts. Sensitive to physical environment; dexterity and balance; creates new forms that move.
<b>Musical-Rhythmic</b> - The ability to recognize tonal patterns and sounds, as well as a sensitivity to rhythms and beats	Learns through sound; eager to discuss music and its meaning; sings and plays an instrument; improvises and interprets
<b>Interpersonal</b> - The capacity for person-to-person communications and relationships	Learns through interactions, social relationships; perceives feelings, thoughts, motivations of others; collaborates; influences opinions; understands in verbal and non-verbal ways; takes in diverse points of view; mediates, organizes, develops new social processes and methods.
<b>Intrapersonal</b> - The spiritual, inner states of being, self-reflection, and awareness	Learns through range of personal emotions; finds outlets for feelings; identifies and pursues personal goals; curious about big questions; manages to learn through on-going attempts at gathering in ideas; insightful; empowers others.

Table 5.1



Table 5.2

**One Way**

**GOAL:** To apply what you have learned about Multiple Intelligences to your classroom over an extended period of time.

**GIVE:** Feedback to others on their assignments at the **TWB Learning Cafe** by clicking here.<sup>9</sup>

<sup>9</sup><http://oneface.typepad.com/lois/>

1. Provide a general overview of what you plan to teach this next month:
2. Choose 4 "Multiple Intelligences." For each intelligence, describe 3 ways you will apply that intelligence to your classroom.

## 5.7 Additional Intelligences

Since Howard Gardner's original listing of the intelligences in **Frames of Mind** (1983) there has been a great deal of discussion as to other possible candidates for inclusion - **naturalistic intelligence** (the ability of people to draw upon the resources and features of the environment to solve problems); **spiritual intelligence** (the ability of people to both access and use, practically, the resources available in somewhat less tangible, but nonetheless powerful lessons of the spirit); **moral intelligence** (the ability to access and use certain truths).

### Emotional Intelligence

In a 1994 report on the current state of emotional literacy in the U.S., author Daniel Goleman stated:

"...in navigating our lives, it is our fears and envies, our rages and depressions, our worries and anxieties that steer us day to day. Even the most academically brilliant among us are vulnerable to being undone by unruly emotions. The price we pay for emotional literacy is in failed marriages and troubled families, in stunted social and work lives, in deteriorating physical health and mental anguish and, as a society, in tragedies such as killings..."

Goleman attests that the best remedy for battling our emotional shortcomings is preventive medicine. In other words, we need to place as much importance on teaching our children the essential skills of Emotional Intelligence as we do on more traditional measures like IQ and GPA (Grade Point Average).

**Exactly what is Emotional Intelligence?** The term encompasses the following 5 characteristics and abilities:

1. **Self-awareness** - knowing your emotions, recognizing feelings as they occur, and discriminating between them.
2. **Mood management** - handling feelings so they're relevant to the current situation and you react appropriately.
3. **Self-motivation** - "gathering up" your feelings and directing yourself towards a goal, despite self-doubt, inertia, and impulsiveness.
4. **Empathy** - recognizing feelings in others and tuning into their verbal and nonverbal cues.
5. **Managing relationships** - handling interpersonal interaction, conflict resolution, and negotiations.

## 5.8 Why We Need Emotional Intelligence

Research in brain-based learning suggests that emotional health is fundamental to effective learning. According to a report from the National Center for Clinical Infant Programs, the most critical element for a student's success in school is an understanding of how to learn. ( **Emotional Intelligence**, p. 193.) The key ingredients for this understanding are:

Confidence  
 Curiosity  
 Intentionality  
 Self-control  
 Relatedness  
 Capacity to communicate  
 Ability to cooperate

These traits are all aspects of Emotional Intelligence. Basically, a student who learns to learn is much more apt to succeed. Emotional Intelligence has proven a better predictor of future success than traditional methods like the GPA, IQ, and standardized test scores.

Hence, the great interest in Emotional Intelligence on the part of corporations, universities, and schools nationwide. The idea of Emotional Intelligence has inspired research and curriculum development. Researchers have concluded that people who manage their own feelings well and deal effectively with others are more likely to live content lives. Plus, happy people are more apt to retain information and do so more effectively than dissatisfied people.

Building one's Emotional Intelligence has a lifelong impact. Many parents and educators, alarmed by increasing levels of conflict in young schoolchildren - from low self-esteem to early drug and alcohol use to depression - are rushing to teach students the skills necessary for Emotional Intelligence. Also, in corporations, the inclusion of Emotional Intelligence in training programs has helped employees cooperate better and be more motivated, thereby increasing productivity and profits.

"Emotional Intelligence is a master aptitude, a capacity that profoundly affects all other abilities, either facilitating or interfering with them." (Daniel Goleman, **Emotional Intelligence**, p. 80.)

## 5.9 Assignment 8: Towards a New Intelligence

**GOAL:** To identify and describe a new intelligence derived from observation and experience.

**GIVE:** Feedback to others on their assignments at the **TWB Learning Cafe** by clicking here<sup>10</sup>.

Goleman's work on Emotional Intelligence and Gardner's naturalistic, spiritual, and moral intelligences point us towards new discussions and inquiries about intelligences yet unnamed.

1. If you were to think about a capacity you have seen in others - students, friends, community members - or even in yourself, an intelligence that has not yet been identified by Gardner and Goleman, but is present, what name would you give it?
2. Once you've given a name to a previously unnamed intelligence, write a brief 4 - 5 sentence description of it.
3. Give evidence for this intelligence citing at least 1 example.

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<sup>10</sup><http://oneface.typepad.com/lois/>

## Chapter 6

# Theory Meets Practice<sup>1</sup>

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**Figure 6.1:** Trinidad

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<sup>1</sup>This content is available online at <<http://cnx.org/content/m13288/1.3/>>.

## 6.1 Contemporary Issues in Education

### Required Reading:

The articles below, written for the New Horizons <sup>2</sup> website, provide a review of materials associated with educational change and renewal, much of which have been inspired by innovations in curriculum design.

Dee Dickinson: Learning Society of the Future: Questions to Consider <sup>3</sup>

In *Maturing Outcomes* <sup>4</sup> Arthur L. Costa and Robert J. Garmston present a map of educational outcomes intended for use by educational leaders.

Although the focus is on business, there is much wisdom that can be applied to schools and learning in this article by Tachi Kiuchi: What I Learned in the Rainforest <sup>5</sup>

Stephanie Marshall: Principles for the New Story of Learning <sup>6</sup>

Willam Ayers: Teacher Talk: Teachers Building A Professional Community by Talking to Other Teachers About Teaching <sup>7</sup>

### PDF Files below:

Dickinson: Learning Society of the Future: Questions to Consider<sup>8</sup>

Costa and Garmston: *Maturing Outcomes* <sup>9</sup>

Kiuchi: What I Learned in the Rainforest<sup>10</sup>

Principles for the New Story of Learning <sup>11</sup>

Teacher Talk: Teachers Building A Professional Community by Talking to Other Teachers About Teaching <sup>12</sup>

## 6.2 Assignment 9: Active Reading and Creating Dialogue

Assignment 9: Active Reading and Creating Dialogue<sup>13</sup>

### HOW TO GET TO ASSIGNMENT 9:

#### One Way

To do this assignment, click on the link in color at the top of the page. When it appears, press "Save" and name the file so that you can work on this assignment "off-line." You can type right on the assignment template. Be sure to save your assignment on a disk or on your computer hard drive.

#### Another Way

You can also copy the text below, and save it to your disk or computer.

**GOAL:** To reflect on contemporary issues in education through the use of a tool known as "Focused Freewriting."

**GIVE:** Feedback to others on their assignments at the **TWB Learning Cafe** by clicking here<sup>14</sup> .

### Assignment 9: Active Reading and Creating Dialogue

1. Choose one article from all of the web-based articles you read on the previous page. Find a sentence or phrase within that article that captures your attention. Re-type that sentence or phrase; put it in quotation marks; and tell which article it came from. Now, use that sentence or phrase as a trigger to do a "Focused Freewrite" - 2-3 paragraphs in length.

<sup>2</sup><http://www.newhorizons.org>

<sup>3</sup>[http://www.newhorizons.org/strategies/learning\\_environments/dickinson\\_lrncr4.htm](http://www.newhorizons.org/strategies/learning_environments/dickinson_lrncr4.htm)

<sup>4</sup>[http://www.newhorizons.org/trans/costa\\_garmston.htm](http://www.newhorizons.org/trans/costa_garmston.htm)

<sup>5</sup><http://www.newhorizons.org/future/kiuchi.htm>

<sup>6</sup><http://www.newhorizons.org/future/marshall.htm>

<sup>7</sup><http://www.newhorizons.org/trans/ayers.htm>

<sup>8</sup><http://cnx.org/content/m13288/latest/file:learningsociety.pdf>

<sup>9</sup><http://cnx.org/content/m13288/latest/file:costa.pdf>

<sup>10</sup><http://cnx.org/content/m13288/latest/file:rainforest.pdf>

<sup>11</sup><http://cnx.org/content/m13288/latest/file:marshall.pdf>

<sup>12</sup><http://cnx.org/content/m13288/latest/file:ayers.pdf>

<sup>13</sup><http://cnx.org/content/m13288/latest/file:C1A9i.doc>

<sup>14</sup><http://oneface.typepad.com/lois/>

NOTE: A Focused Freewrite is when you use a phrase or sentence from something you've read as a trigger for free-form writing - that is, you write any thoughts, questions, stories that come to mind as it relates to this phrase or sentence. Focused Freewrites may end up 2-3 paragraphs in length, and sometimes you'll stick to the trigger topic and sometimes your mind will wander into seemingly unrelated places. Give yourself permission to move between "wandering" and coming back to writing about the topic.

## 6.3 Making Small Changes First

What do students see, hear, taste, touch, smell when they enter your classroom? How do they see something of themselves reflected in the classroom? Is there evidence of student work? Interesting works in progress? Colorful posters on the wall?

Stand in your own classroom and, using this list as a starting point, carefully consider the various aspects of your room as a space for teaching and learning:

**Student seating:** How is student seating arranged? Do students sit alone, in pairs, or in groups? How flexible is it? Can it be moved or re-arranged easily?

We suggest that some arrangements of the room itself lend themselves to effective teaching. Some arrangements do not. If students are asked to listen to a presentation, the rows might work. If students are to work on projects, their chairs and the room should be arranged to meet these needs. In short, the physical space makes a difference.

**Circulation:** How easy is it to move around the space? Are there aisles? Which areas cannot be reached? Where is the natural place to stand? Can everyone see? Can students get to the teacher? To each other?

**Learning resources:** How much of your needed resources are in the room? How will students have access to these resources? If there are resources, how many students can use them? What teaching equipment do you have? Do you have electricity?

**The room itself:** Is it lit well or poorly? Is it hot in the summer? Can everyone hear? How can you and other teachers use this space effectively?

## 6.4 Assignment 10: Starting with Your Classroom

Assignment 10: Starting With Your Classroom<sup>15</sup>

### HOW TO GET TO ASSIGNMENT 10

#### One Way

To do this assignment, click on the link in color at the top of the page. When it appears, press "Save" and name the file so that you can work on this assignment "off-line." You can type right on the assignment template. Be sure to save your assignment on a disk or on your computer hard drive.

#### Another Way

You can also copy the text below, and save it to your disk or computer.

**GOAL:** To make practical improvements in your classroom that also reflect your thinking about Multiple Intelligences.

**GIVE:** Feedback to others on their assignments at the **TWB Learning Cafe** by clicking here<sup>16</sup> .

#### Assignment 10: Starting With Your Classroom

1. Describe your classroom addressing the categories and questions listed on the previous page. ("Student Seating, Circulation, Learning Resources, and the Room Itself.") Also, filter your written description through each of the five senses - what do you see, touch, taste, smell, and hear when you're in your classroom. (2-3 paragraphs)

<sup>15</sup><http://cnx.org/content/m13288/latest/file:C1A10k.doc>

<sup>16</sup><http://oneface.typepad.com/lois/>

2. In "Assignment 7: Applying Multiple Intelligences" you were asked to incorporate some of the intelligences into your course planning. Revisit this assignment and review what you wrote. For each of the four multiple intelligences you chose, discuss how you could improve something in the physical setting of your class to enhance that intelligence goal. (1-2 sentences for each of the four intelligences you chose.)
3. "Student Seating, Circulation, Learning Resources, and the Room Itself" are four areas we've discussed. Name 2 other areas to consider in making your classroom more open to learning. Explain their importance to you.

## 6.5 Assignment 11: Professional Reflections

Assignment 11: Professional Reflections<sup>17</sup>

### HOW TO GET TO ASSIGNMENT 11:

#### One Way

To do this assignment, click on the link in color at the top of the page. When it appears, press "Save" and name the file so that you can work on this assignment "off-line." You can type right on the assignment template. Be sure to save your assignment on a disk or on your computer hard drive.

#### Another Way

You can also copy the text below, and save it to your disk or computer.

**GOAL:** To refine and gather your thoughts into one professional statement and vision.

**GIVE:** Feedback to others on their assignments at the **TWB Learning Cafe** by clicking here<sup>18</sup>.

#### Assignment 11: Professional Reflections

Please prepare a final Reflection Paper incorporating what you have learned in Course 1. Follow the instructions for each part:

#### Part One: Professional Statement

Write a 1 - 2 page statement that responds to the following and includes these as topic headings:

What I Believe

Why I Teach

What I Teach

How I Teach

(For an example of a Professional Statement, click on the Word icon below.)

Sample Professional Statement<sup>19</sup>

#### Part Two: Reflection

Please answer the following questions:

1. Kabir, once said, "Wherever you are is the entry point." Where are you now in your teaching practices? Where would you like to be? How will you get from here to there?
2. What do you want to keep in your teaching practices and what do you want to throw away. Why?
3. What are the challenges that lie ahead?
4. What in this course material has struck the most responsive chord in you? What idea or ideas stand out for you and stay with you now?

#### Part Three: The Imagined Classroom

Imagine one day in the life of a student at your school in the year 2010.

1. Using the research from this course as a source for ideas, as well as futuristic thinking you carry within your heart and mind, describe that student's day through his/her eyes from the moment s/he wakes up until s/he goes to sleep (including, of course, time spent at school and, specifically, in your class). (1-page)

<sup>17</sup><http://cnx.org/content/m13288/latest/file:C1A11g.doc>

<sup>18</sup><http://oneface.typepad.com/lois/>

<sup>19</sup><http://cnx.org/content/m13288/latest/file:Loisportfolio.doc>

## 6.6 Assignment 12: Effectiveness of Course 1

Congratulations on completing Course 1: Education for the New Millennium!

As you know, there are several other courses for you to choose from. However, before you begin another course, please send an email to us at: [ctm@teacherswithoutborders.org](mailto:ctm@teacherswithoutborders.org) and let us know that you are ready to receive the "Effectiveness of Course 1 Survey." We ask that you complete this simple survey as your final assignment for Course 1.

We are eager to learn how to make this course even better. Thank you, in advance, for completing this survey as it will have an enormous impact for future versions of Course 1: Education for the New Millennium.

### **HOW TO POST TO YOUR E-PORTFOLIO**

If you would like to learn how to post your "Professional Statement" and "Imagined Classroom" documents (both from Assignment 11) to your

E-Portfolio, please click [here](#)<sup>20</sup>.

### **SAVE YOUR STUDENTS' WORK**

Save examples of your students' work as you go through these courses. You'll be glad you did. Course 5 asks you to post samples of your students' work for your final E-Portfolio.

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<sup>20</sup><http://cnx.org/content/m13288/latest/file:postagain.doc>

## Index of Keywords and Terms

**Keywords** are listed by the section with that keyword (page numbers are in parentheses). Keywords do not necessarily appear in the text of the page. They are merely associated with that section. *Ex.* apples, § 1.1 (1) **Terms** are referenced by the page they appear on. *Ex.* apples, 1

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