

Critical thinking. Global perspective. Informed action.



# ***Facing the Future's* Curriculum and Program Pedagogical Model**

**July 2007**

Prepared by Gilda Wheeler, *Facing the Future* Former Program Director

# Contents

<b>Introduction .....</b>	<b>3</b>
<b>Global Sustainability Education as a Rigorous and Ideal Context for Integrated, Contextual Curriculum .....</b>	<b>3</b>
<b><i>Facing the Future's</i> Curriculum Content Framework .....</b>	<b>4</b>
Content Framework	
Global Issues: Core Concepts and Skills	
Sustainable Solutions	
Positive Action	
<b>Teacher Preparation and Professional Development .....</b>	<b>6</b>
Meeting the Needs of Preservice Teachers	
Meeting the Needs of Current Classroom Teachers	
<b>Teaching and Learning Models .....</b>	<b>7</b>
Simulations, Problem-based, and Inquiry-based Learning	
Differentiated Instruction and Achievement Gap	
<i>Understanding by Design</i> Curriculum Development	
Interdisciplinary/Integrated Curriculum	
<b>References .....</b>	<b>11</b>

# ***Facing the Future's Curriculum and Program Pedagogical Model***

## **Introduction**

Using global sustainability as a context and framework, *Facing the Future* promotes effective teaching and learning through research-based curriculum models and teaching strategies. This paper includes:

- A discussion of global sustainability education
- The framework within which *Facing the Future* materials are developed
- *Facing the Future* offerings for teacher preparation and professional development
- The pedagogical models and strategies that inform *Facing the Future's* program

## **Global Sustainability Education as a Rigorous and Ideal Context for Integrated, Contextual Curriculum**

Global sustainability is an attempt to provide intergenerational responsibility, or the best outcomes for the world's human and natural environments – both now and into the indefinite future. The organizing premise is that when sustainability has been achieved, the current generation would be able to meet its needs without jeopardizing the ability of future generations to meet their needs (1). Global sustainability considers the three interconnected systems of the environment, the economy, and society.

In the United States, the original purpose of public education was to build a responsible citizenry. Today, global issues place new demands on education. In the era of globalized trade and media, and pressing issues such as climate change, what does it mean to be a responsible *global* citizen? What does this require of education? In our rapidly changing and increasingly interconnected world, *Facing the Future* believes that education is the key to helping students meet the challenges they will confront now and in the future. Global sustainability education provides a practical and inspired framework for young people to understand these issues not as insurmountable problems but as opportunities to create a better world.

The lives of young people are increasingly shaped by what happens economically, environmentally, and socially in other parts of the world. Global sustainability education provides knowledge, skills, and dispositions that students need if they are to ensure their own, and others', well-being and make a positive contribution, both locally and globally.

Global sustainability education involves young people fully in their own learning through the use of a wide range of participatory learning methods. These engage the learner while developing confidence along with critical thinking, communication, and cooperation skills. These are all vital ingredients in improving academic achievement and creating healthy attitudes and responsible behaviors through a student's educational experience.

Global sustainability education encourages young people to care about the planet and develop empathy with, and an active concern for, those with whom they share it. A

globally educated citizenry is one that has been given the tools and resources to know, to care, and to act to make the world more just and humane (2).

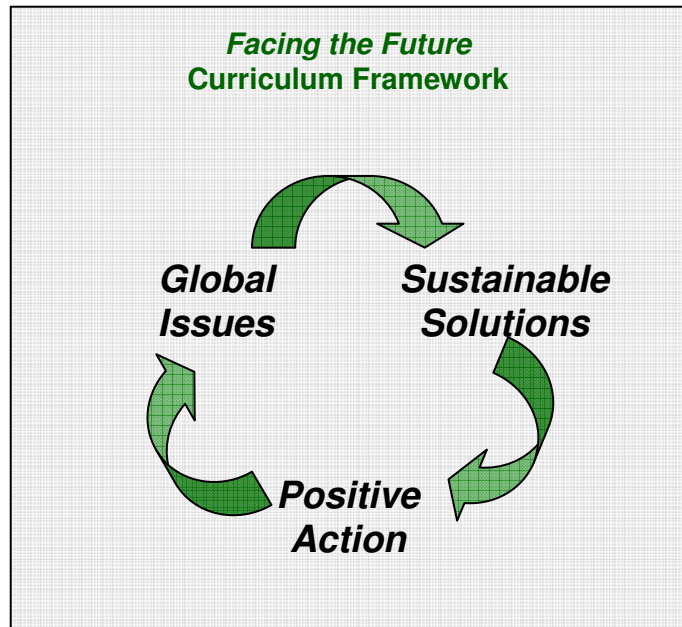
## ***Facing the Future's Curriculum Content Framework***

*Facing the Future* uses a unique content model approach consisting of a three part framework that includes global issues, sustainable solutions, and positive action. **Global issues** are those that pose significant challenges for humanity and the planet today. **Sustainable solutions** address these challenges by proposing remedies that attempt to balance the interconnections between environment, society, and economy. **Positive action** is how students move from understanding to action, taking on local and global service learning projects to help create a more sustainable future.

### **Global Issues: Core Concepts and Skills**

Global sustainability education includes a set of core concepts and skills that are essential for student success in an increasingly interconnected world. Because of the speed at which globalization is making the world even more connected, there are several core concepts that will impact the lives of all students both now and in the future. These core concepts are infused throughout *Facing the Future* curriculum:

- Systems Interconnections & Interdependence
- Sustainability
- Poverty, Equity, & Economic Development
- Environmental Impacts & Stewardship
- Social Justice & Human Rights
- Population
- Food, Water, & Energy Security
- Quality of Life
- Health & Education
- Culture & Worldview
- Governance
- Peace and Conflict
- Technology and Media Literacy



In order to be successful and fulfilled as they become adults, students need to be equipped with more than just knowledge about key concepts. A core set of skills will allow young people –whether they are attending college, raising a family, or entering the workforce– to be more effective, successful, and fulfilled citizens. *Facing the Future* curriculum helps develop the following core skills that are essential for students to participate in an interconnected world:

- **Systems Thinking** – A perspective, a set of tools and a way of thinking that considers interconnections, whole systems, time horizons, and limits
- **Critical Thinking** – A purposeful cognitive process in which students evaluate, analyze, infer, and synthesize information
- **Problem Solving** – The use of knowledge and understanding to solve real world problems
- **Collaboration and Cooperative Learning** – The ability to work together in the pursuit of knowledge, to develop projects, and to problem solve
- **Communication** – The ability to convey ideas in a variety of forms and to a variety of audiences and purposes
- **Media Literacy** – The ability to critically analyze media and understand its effect on consumers
- **Understanding Multiple Perspectives and Cultural Competency** – Knowing and understanding one’s own worldview and its effect on how we interact with the world, while also understanding and respecting the perspective and worldview of people from different cultural backgrounds

Mastery of these core skills makes content knowledge relevant, rigorous, and relational, rather than merely a disconnected body of information and facts. These skills allow students to make sense of the information, understand the connections, and become part of the solution.

### **Sustainable Solutions**

Infused throughout *Facing the Future* curriculum are examples of sustainable solutions to address global challenges through remedies that attempt to balance the interconnections between environment, society, and economy. These are real-world examples of people (especially youth) taking action and of sustainable technology that is already being used around the world. For example, *Facing the Future* explores the concept of “leapfrog technology” in which developing countries meet their growing needs through the use of sustainable technologies rather than by adopting unsustainable methods that are being used in the developed world. Thereby allowing developing countries to pass by or “leap over” unsustainable technologies and go directly to those that are more sustainable.

Infused throughout the curriculum are ideas and examples of personal and structural solutions to global issues taken by individuals and organizations. A distinction is made between personal and structural solutions so students can see where they fit in as individuals and the actions they can do *personally*, as well as how they can contribute to *structural* actions taken by larger decision-making bodies that address the underlying causes of global issues.

### **Positive Action**

Students can become easily overwhelmed by the complexity and magnitude of global issues. Offering stories of hope and the positive actions that people of all ages around the world have taken provide students with the vision, confidence, and motivation to take

action themselves. Engaging students on these issues through action and involvement is critical to developing citizens who know they can make a difference.

Service Learning is an important aspect of the positive action component of *Facing the Future's* framework. Service Learning ties academic curriculum to a service project that reinforces and expands students' learning. It is through experiential education that young people can connect learning to their own lives and provide a benefit to the local or global community. In a meta-analysis of service learning articles, research has begun to converge on the positive effects that service-learning appears to have on students in three domains: cognitive ("heads"), affective ("hearts"), and behavioral ("hands"), along with benefits to schools and communities (3).

*Facing the Future* offers teachers the tools and research to easily implement service learning in their classrooms including an extensive database of service learning projects linked to global issues. Students can and should be part of solutions to create a better world. To do this they need the type of knowledge, skills, examples, and practice with service that *Facing the Future's* curriculum provides.

## **Teacher Preparation and Professional Development**

Professional development grounded in content-specific strategies can enhance teachers' effectiveness (4). *Facing the Future's* program directly serves educators ranging from students in pre-service education programs to classroom teachers seeking resources and professional development. *Facing the Future* materials and professional development workshops offer content-specific resources, tools, and strategies that promote excellence in teaching.

Common practices of highly effective teachers include the use of a student-centered approach to teaching, multiple opportunities for discourse, small student groupings, a variety of formative and summative assessment, and the use of culturally competent materials and strategies (4). These practices and strategies are integral to *Facing the Future's* approach and materials.

### **Meeting the Needs of Preservice Teachers**

*Teacher educators can choose to lead the way to a more positive future by focusing attention on what really matters in the lives of children today... The many thousands of teachers who leave preparation programs each year will touch millions of lives during their careers* (5).

*Facing the Future* provides resources specifically geared towards colleges of education faculty and preservice teachers. Because it is teacher-friendly (easy to use), highly relevant, and engaging for students, *Facing the Future* curriculum is a respected and useful resource for beginning teachers. With the increasing pressure that new teachers face, including a greater diversity of students than ever before and a need to close the achievement gap and help students meet standards, a rigorous integrated curriculum program such as that offered by *Facing the Future* is an invaluable resource.

### **Meeting the Needs of Current Classroom Teachers**

Current classroom teachers are the majority of those directly served by *Facing the Future* curriculum which is in use by over 8,000 teachers in virtually every state in the nation and in over 40 countries. In addition to developing a comprehensive set of global sustainability curriculum resources, *Facing the Future* provides an extensive array of professional development opportunities for classroom teachers. Workshops are offered

at national and regional educator conferences and through individualized in-services designed to meet the specific needs of a district or school.

## Teaching and Learning Models

*Facing the Future* curriculum is developed using a variety of research-based best practices for teaching and learning. The curriculum draws from the tenets of a number of proven and effective pedagogical models as described below.

### Simulations, Problem-based, and Inquiry-based Learning

Students learn effectively in the context of authentic, real-life activities (4). Simulation or role-play learning is a teaching method in which students take on the profiles of specific people or groups in a hypothetical, but potentially real, setting. A simulation models human interactions (allowing the players to role-play) in a constructed environment by emulating a known social structure and providing a scenario for players to respond and react to the situation.

Many of *Facing the Future's* lessons use simulation learning to create a sense of empathy while increasing students' knowledge and understanding. In these simulations, students have a visceral experience with a global issue. When they are faced with a real-world scenario, students experience the impacts and solutions of global issues in an interactive and compelling way. During a simulation learning suddenly becomes personal.

Simulation learning is often tied to Problem-based Learning, which is an instructional method that challenges students to work cooperatively in groups to seek solutions to real-world problems. Problem-based Learning prepares students to think critically and analytically, and to find and use appropriate learning resources (6).

Problem-based Learning is sometimes referred to as a form of inquiry. Here, learning is driven and owned by the student's own interest. Inquiry-based Learning takes students from questioning to understanding. It involves exercising a set of skills and acquiring attitudes that permit students to seek resolutions to questions and issues while constructing new knowledge. With the inquiry approach, content information is the vehicle through which students develop information-processing and problem-solving skills, rather than the goal itself. Students who actively make observations, collect, analyze, and synthesize information, and draw conclusions are developing useful problem-solving skills (7).

While *Facing the Future* lessons do not rest exclusively within the framework of Problem-based or Inquiry Learning, the majority of its lessons incorporate a problem and inquiry-based approach in which students investigate global issues, pose questions, and acquire new knowledge through problem-solving activities and simulations.

### Differentiated Instruction and Achievement Gap

Not all students are alike, nor do all students learn alike. Howard Gardner's research on multiple intelligences reveals that people acquire knowledge through one or more intelligences: linguistic, logical-mathematical, musical, kinesthetic, spatial, interpersonal, intrapersonal, and naturalist (8). Differentiated instruction aims to give students multiple options for taking in information and making sense of ideas. It is based on the premise that instructional approaches should vary and be adapted to diverse individual learning styles or modalities. Differentiated instruction is an effective strategy used to address the achievement gap of low-achieving students.

The model of differentiated instruction requires teachers to be flexible in their approach to teaching and adjust the curriculum and presentation of information to meet the learner's needs, rather than expecting students to modify themselves for the curriculum. According to this model, classroom teaching should be a blend of whole-class, group, and individual instruction (9).

*Facing the Future* curriculum maximizes opportunities to use differentiated instruction strategies and help close the achievement gap. It incorporates a variety of teaching methods to reach a diverse student population. These include a mixture of direct instruction and constructivist learning; individual, small group, and whole class projects; kinesthetic and art-based activities; verbal and written responses, and a variety of formative (during instruction) and summative (post instruction) assessments to both gauge and direct student learning.

### **Understanding by Design Curriculum Development**

*Understanding by Design* is a curriculum development framework created by educators Grant Wiggins and Jay McTighe. *Understanding by Design* integrates many learning theories, gleaned research-based best practices to improve student achievement through standards-driven curriculum development, instructional design, assessment, and professional development. The core concepts in *Understand by Design* include defining "big ideas" and "essential questions," the use of multiple forms of assessment, and incorporating the six facets of understanding, providing opportunities for students to explain, interpret, apply, shift perspective, empathize, and self-assess (10).

*Facing the Future's* activity-based lessons are closely aligned with the *Understanding by Design* framework. Lesson design incorporates big ideas and essential questions. The lessons include multiple forms of assessment to let students demonstrate their understanding in various ways. They provide opportunities for students to act on the six facets of understanding. *Facing the Future* lessons include authentic performance tasks calling for students to demonstrate their understanding and apply knowledge and skills. The lessons prompt students to revisit and rethink important ideas to deepen their understanding.

### **Interdisciplinary/Integrated Curriculum**

A widely accepted definition of integrated curriculum is "a curricular approach that consciously applies methodology and language from more than one discipline to examine a central theme, issue, problem, topic, or experience" (11).

Educational institutions have traditionally sorted academic disciplines into discrete boxes that reduce students' understanding of the world into subject specific analyses. Integrated, contextual curriculum approaches have been shown to significantly help students achieve academic excellence, acquire career skills, and develop character by connecting schoolwork with students' own experience and knowledge (11).

Global sustainability issues are inherently interdisciplinary and therefore lend themselves to an integrated approach to teaching and learning. This integrated approach can be useful in helping teachers meet an increasing demand on their time, as described by UNESCO (the United Nations Educational, Scientific, and Cultural Organization):

*An over-loaded curriculum is a concern of many teachers. Increasingly, teachers are feeling that there is not enough time to cover all the additional material being put into the curriculum. As a result, many feel that covering the content of key subjects, such as language, mathematics, science, and social studies must come ahead of cross-curriculum themes such as education for a sustainable future.*

*However, many educational objectives, especially in the areas of attitudes and skills, are common across most subjects in the curriculum. Teaching about sustainability emphasizes critical and creative thinking, problem solving, decision making, analysis, co-operative learning, leadership, and communication skills. As a result, it is an effective way of achieving educational objectives without adding to the problem of curriculum overload (12).*

*Facing the Future* curriculum uses global sustainability as a context for teaching the core content areas, including social studies (history, geography, civics, and economics), science (life, physical, and environmental), math, reading, and writing. With a real-world, contextually-based curriculum, *Facing the Future* provides opportunities for students to make connections between themselves, their community, and the contemporary world.

## References

1. United Nations World Commission on Environment and Development (1987). "Our Common Future Report".
2. Banks, James A. (2003). "Teaching for Multicultural Literacy, Global Citizenship, and Social Justice" Retrieved 3/1/2007 from <http://www.lib.umd.edu/PAL/SCPA/fowlercolloq2003bankspaper.html>
3. Billig, Shelley H., Ph.D. (Heads, Hearts, and Hands: The Research on K-12 Service-Learning) RMC Research Corporation, Denver, CO; The Center for Information and Research on Civic Learning and Engagement, Retrieved 4/6/07 from [www.civicyouth.org/PopUps/Billig\\_Article2.pdf](http://www.civicyouth.org/PopUps/Billig_Article2.pdf)
4. Darling-Hammond, Linda and Bransford, John. (2005). "Preparing Teachers for a Changing World", Jossey-Bass, San Francisco, CA.
5. Nolet, Victor (2007). "Preparing Sustainability Literate Teachers" pre-publication, Western Washington University.
6. Savery, John R. and Duffy, Thomas M. (1996). "Problem Based Learning: An instructional model and its constructivist framework", Constructivist Learning Environments: Case Studies in Instructional Design, Educational Technology Publications Englewood Cliffs, NJ. Retrieved 4/2/07 from <http://www3.uakron.edu/edfound/people/savery/papers/sav-duff.html>
7. From Concept to Classroom, (2004) Retrieved 3/19/07 from <http://www.thirteen.org/edonline/concept2class/inquiry/index.html>
8. Gardner, Howard (1993). "Frames of Mind: The Theory of Multiple Intelligences."
9. Hall, T. (2002). Differentiated Instruction. Wakefield, MA: National Center on Accessing the General Curriculum. Retrieved 4/6/07 from [http://www.cast.org/publications/ncac/ncac\\_diffinstruc.html](http://www.cast.org/publications/ncac/ncac_diffinstruc.html)
10. Grant and Wiggins (1989). Authentic Education, "What is Understanding by Design?" Retrieved 3/27/07 from <http://www.grantwiggins.org/ubd.html>
11. Jacobs, H. H.(1989). "Interdisciplinary Curriculum: Design and Implementation." Alexandria, VA, ASCD. Retrieved 3/27/07 from <http://www.nwrel.org/scpd/sirs/8/c016.html>
12. UNESCO, "Teaching and Learning for a Sustainable Future, A multimedia Teacher Education Program", Retrieved 6/16/07 from [http://www.unesco.org/education/tlsf/TLSF/theme\\_b/mod06/uncom06t03.htm](http://www.unesco.org/education/tlsf/TLSF/theme_b/mod06/uncom06t03.htm)