

How does a systems thinking approach align with current educational research and best practice? Some connections.*

❖ **Classroom Instruction that Works, Robert Marzano (2001)**

The bolded instructional strategies that are identified by Marzano's research align well with a systems thinking approach.

Categories of Instructional Strategies That Affect Student Achievement

Identifying similarities and differences
Summarizing and note taking
Reinforcing effort and providing recognition
Homework and practice
Nonlinguistic representations
Cooperative learning
Setting objectives and providing feedback
Generating and testing hypotheses
Questions, cues, and advance organizers

Classroom Instruction that Works; Research-based Strategies for Increasing Student Achievement
Marzano, Pickering, Pollock (2001) ISBN: 0-87120-504-1

❖ **Reading First**

The bolded essential elements of reading instruction identified by *Reading First* are supported by a systems thinking approach.
www.nationalreadingpanel.org/

Reading First

Essential Elements of Research-Based Instruction

- Phonemic Awareness
- Phonics
- Fluency
- **Vocabulary**
- **Comprehension**

Adapted from: The National Reading Panel's report: Teaching Children to Read, (2000) and cited in the No Child Left Behind Act

❖ **SCANS**

The United States Secretary’s Commission on Achieving Necessary Skills (SCANS) identifies key skills and capacities that can be built using a systems thinking approach.

Characteristics of Today’s and Tomorrow’s Schools

Schools of Today (1991)	Schools of Tomorrow
STRATEGY	
<ul style="list-style-type: none"> •Focus on development of basic skills •Testing separate from teaching 	<ul style="list-style-type: none"> •Focus on development of thinking skills •Assessment integral to teaching
LEARNING ENVIRONMENT	
<ul style="list-style-type: none"> •Recitation and recall from short-term memory •Students work as individuals •Hierarchically sequenced—basics before higher order 	<ul style="list-style-type: none"> •Students actively construct knowledge for themselves •Cooperative problem solving •Skills learned in context of real problems
MANAGEMENT	
<ul style="list-style-type: none"> •Supervision by administration 	<ul style="list-style-type: none"> •Learner-centered, teacher directed
OUTCOME	
<ul style="list-style-type: none"> •Only some students learn to think 	<ul style="list-style-type: none"> •All students learn to think

The United States Secretary’s Commission on Achieving Necessary Skills (SCANS) U.S. Department of Labor, 1991
<http://wdr.doleta.gov/SCANS/whatwork/whatwork.pdf>

❖ **Partnership for 21st Century Skills**

The learning skills identified by this nationwide partnership stress the importance of thinking, problem-solving, innovation, creativity, communication and collaboration—all critical components of systems thinking.

www.21stcenturyskills.org