

# References for youth development skills

## Critical thinking skills

Critical thinking skills involve the ability to solve problems, make decisions and evaluate one's stance on particular issues. To carry out these tasks, young people need to experience multiple perspectives, practice independent thinking, and be able to act on their thinking.

Berman, Sheldon. 1991. *Thinking in Context: Teaching for Openmindedness and Critical Understanding in Developing Minds: A Resource Book for Teaching Thinking*, ed. Arthur Costa. Educators for Social Responsibility, Alexandria, VA.

Educators for Social Responsibility claim that students lack the necessary thinking skills to understand complex social issues. Under the whole-language approach, thinking is an integrative process that enhances the context of real, meaningful situations. Berman lists 9 strategies that enrich students' thinking abilities through empowerment and confidence, including: creating a safe environment; collaborative thinking; teaching interconnectedness; multiple perspectives; and providing opportunities to act on their thinking. To become active participants in society, youth must feel confident that others value their thinking and that their thinking makes a difference by improving their own lives or influencing others.

Howe, Robert W. and Charles R. Warren. 1989. *Teaching Critical Thinking Through Environmental Education*, in ERIC/SMEAC Environmental Education Digest, Columbus, OH 43212 (614) 292-6717. EDO-SE-89-22.

Critical thinking skills are an intricate part of daily life. Students are asked and expected to make complex choices, judgments and evaluations every day. Authors list several critical thinking skills definitions, including Ennis's (1987)—critical thinking is composed of the process and skills involved in rationally deciding what to do or believe. Business and industry con-

tinue to report that many employees are not able to think critically in job situations. Authors argue that schools need to reevaluate how and what they teach and how to better prepare students for various societal situations. Environmental education is a good mechanism for teaching critical thinking skills because of the scope, breadth and reality of environmental issues.

Jones, Jo and R. Dale Safrit. 1992. *Critical Thinking: Enhancing Adolescent Decision-Making*. *Journal of Home Economics*, 84(3): 4-7.

Critical thinking skills involve problem-solving, decision-making, and evaluating one's position on issues. Key elements in the critical thinking process are dialogue, reflection and questioning. These underlie the authors' 13 effective strategies to foster critical thinking in teens. Strategies include use of debating teams, dramatizations, journal writing, listening teams and consideration of alternatives. Each strategy presents teens with realistic situations after which they are asked to consider the points of view of those involved in the conflict.

Neilson, Allan R. 1989. *Critical Thinking and Reading: Empowering Learners To Think and Act*. ERIC Clearinghouse on Reading and Communication Skills, Smith Research Center, Indiana University, Bloomington, IN.

Neilson argues that students' lack of critical thinking skills reflects our current educational system and the assumptions it holds about the nature of knowledge, teaching and learning. According to Neilson, educators place overwhelming emphasis on direct instruction (lectures, readings, and drill exercises) as the primary means of transferring facts and skills. When students have little active involvement in their education, compliance is valued more than independence. Neilson asks "How can we better prepare our children for the world beyond the classroom?", applying an alternative framework that encourages personal independence.

## Learning cycle

Science educators consider the learning cycle one of the most effective ways for students to learn science concepts and processes. The learning cycle has been effective in helping to develop reasoning skills and reduce scientific misconceptions. The learning cycle involves three distinct types of instructional methodology: 1) exploration; 2) concepts introduction; and 3) concepts application.

Renner, John W. and Edmund A. Marek. 1988. *The Learning Cycle and Elementary School Science Teaching*, chapters 4–7 and 9–10. Heinemann, Portsmouth, N.H.

These chapters summarize key components and philosophy of the learning cycle as developed by Robert Karplus based on educational principles described by Jean Piaget. The learning cycle focuses on development of the ability to think rather than memorize. The learning cycle approach includes three stages: exploration, conceptual invention and concept implementation.

Programs designed around the learning cycle strategy have been demonstrated to produce students equally knowledgeable about content as students in a traditional course of study, but more able to apply what they have learned in a new situation.

The following references also examine the learning cycle, science education and thinking skills.

Guzzetti, Barbara; Snyder, Tonja; Glass, Gene; and Gamas, Warren. 1993. "Promoting Conceptual Change in Science: A Comparative Meta-Analysis of Instructional Interventions from Reading Education and Science Education." *Reading Research Quarterly*. Vol 28, No. 2, pp. 116–159.

Lawson, Anton E., et al. 1989. *A Theory of Instruction: Using the Learning Cycle to Teach Science Concepts and Thinking Skills*. National Association for Research in Science Teaching Monograph, Number One.

## Learning styles

Individuals receive and process information differently and research shows that the way we learn has little to do with age, sex, race, intelligence or income. Children are best served when parents and teachers take an active role in channeling both the kinds of information children process and their learning styles.

Spinner, Nancy R. 1992. *Using Learning Styles to Empower Youth and Families*. *Journal of Home Economics*, 84(3): 8-11.

Learning reflects our response to environmental, social, emotional, physical and psychological stimuli. Spinner describes studies comparing American and Asian student family situations. These studies suggested that American mothers tend to believe that school success results from innate ability, whereas Japanese and Chinese mothers believe more in the relationship between hard work and success. Spinner also notes various learning styles: visual, auditory, manipulative (kinesthetic), and global learning. The style that suits a child's interest can best be determined by the parents. Determining a child's learning style and encouraging parental involvement in the its education may lead the child to higher achievement. Through greater parental expectations, a child may express him/herself through positive learning attitudes, self-confidence, curiosity, initiative and persistence.

## Social responsibility

Social responsibility involves aspects of community service, political and social involvement, conflict resolution and environmental education. The initiatives behind social responsibility are helping youth develop basic social skills, a sense of connection with their surroundings, and the confidence to make a difference in the world.

Gigliotti, Larry M. 1990. *Environmental Education: What Went Wrong? What Can Be Done?* Journal of Environmental Education, 22(1):9-12.

The author argues that although environmental education has been successful at producing ecologically concerned citizens, people are generally unwilling to change their personal lifestyles in ways which are necessary to solve some environmental problems. Citizens who have learned misconceptions or myths about the environment have criticized the behavior of others, but lack the knowledge and conviction to change their own behaviors. Gigliotti states that every citizen needs a basic understanding of ecological principles, information on the alternatives and consequences of actions, and information on possible individual action. To help change the myth that people are separate from the environment, environmental education messages must make the connection between environmental information and individual actions and solutions to environmental problems.

Hungerford, Harold R. and Trudi L. Volk. 1990. *Changing Learner Behavior Through Environmental Education*. Journal of Environmental Education 21(3): 8-21.

Research into environmental behavior has not shown that increased knowledge changes human behavior. To achieve responsible citizenship behavior, individuals must be given the opportunity to develop a sense of "ownership" and "empowerment." Individuals who act have "expressed an intention to take action" and "possess a desire to act." The authors also found that to change learner behavior, strategies should be implemented across all grade levels. The cooperation of nonformal education agencies as well as local and regional educational resources would maximize this opportunity for success.

Newhouse, Nancy. 1990. *Implications of Attitude and Behavior Research for Environmental Conservation*. Journal of Environmental Education, 22(1):26-32.

Most environmental attitudes are formed as a result of life experiences versus a specific program designed to change attitudes. One explanation for the discrepancy is the possibility that attitudes being taught do not correspond well to behaviors which are being measured. Attitudes have been found to change through certain types of experiences. A sense of loss, repeated exposure to a stimulus, hands-on contact, information and modeling by a respected or liked person, are perceived as having the potential to promote attitudinal change. Yet, in order for a person to take action, he or she must believe in their ability to bring about change through personal behavior. Additionally, change is accompanied by an individual sense of responsibility, a clear understanding of the issues and a supportive atmosphere.





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This material is based upon work supported by the Extension Service, USDA, under special project number 93-EWQ1-1-9046.

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