

Sternberg's Theory of Intelligence

Robert Sternberg first became interested in intelligence when he was in elementary school. As a sixth grader, Sternberg suffered from test anxiety and performed poorly on an intelligence test. His score was so poor, in fact, that he had to take the test again with fifth graders. He felt more confident with the younger students and performed much better the second time. This experience made him wonder about the validity of intelligence tests. In the seventh grade, Sternberg developed his own intelligence test, and he has continued to study human intelligence ever since.

SUCCESSFUL INTELLIGENCE

Sternberg believes that intelligence has less to do with success in the classroom and more to do with success in the real world. He refers to the ability to achieve success in life as “successful intelligence.” He believes that people have three types of intelligence and that “successfully intelligent” people learn to balance the three types of intelligence effectively.

Sternberg's three types of intelligence, called the Triarchic Theory, are:

- **Analytical, or componential, intelligence.** This type of intelligence allows a person to process information effectively and think abstractly. Most tests measure this type of intelligence.
- **Creative, or experiential, intelligence.** This type of intelligence allows a person to come up with new ideas. People high in creative intelligence can find connections between concepts that seem different and distinct.
- **Practical, or contextual, intelligence.** This type of intelligence allows a person to find practical solutions to real problems. People with this type of intelligence are often considered “street smart.”

According to Sternberg, people do not need to be high in all three types of intelligence in order to be “successfully intelligent.” Instead, they need to determine their strengths and weaknesses and use both effectively. If they are strong in a certain area, they need to build on that strength. If they are weak in an area, they need to improve in that area or find a way to compensate for the weakness.

TEACHING FOR SUCCESSFUL INTELLIGENCE

Sternberg believes that all three types of intelligence can be developed. He also believes that students learn better if the way they are taught matches their ability to learn. This means teaching and testing students in ways that use all three types of intelligence—analytical, creative, and practical.

- **Analytically oriented teaching** asks students to analyze, critique, compare and contrast, evaluate, and assess.
- **Creatively oriented teaching** asks students to create, invent, discover, imagine, and predict what might happen.
- **Practically oriented teaching** asks students to apply, use, put into practice, implement, or employ.

Sternberg's research has shown that all three methods of teaching can be used in a variety of subjects. Creatively oriented teaching, for example, is appropriate in a history class, as well as in an art class. His research has also shown that students who are taught in all three ways generally perform better on tests than students who are taught in a single or more traditional way.

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Taking Action

A person who is high in creative or practical intelligence may solve problems differently from a person who is high in analytical intelligence. A person with high analytical intelligence might use the following problem-solving steps:

1. Recognize the problem.
2. Gather and evaluate information about the problem.
3. Consider alternatives and their consequences.
4. Choose the best alternative.
5. Plan a course of action and act.
6. Evaluate the action and how you chose it.

How might people with high creative or practical intelligence solve a problem? List the steps you think they might follow.

Problem Solving Using Creative Intelligence:

Problem Solving Using Practical Intelligence:

The Educational Theories of Benjamin Bloom

Do you think it is normal for some students to succeed and others to fail? Benjamin Bloom did not. He was an educational theorist who believed that teachers were too concerned about comparing and ranking students. He felt that they should focus on setting goals for their students and then making sure that they reached them.

BLOOM'S TAXONOMY

Bloom believed that there were different levels of thinking skills that students needed to be able to use in order to really master a subject. His research showed that most test questions only required students to memorize and recall information, the lowest level. With a group of educational psychologists, Bloom identified six levels of thinking skills that students needed. Those six levels, now known as Bloom's Taxonomy, are described below:

- **Remember**—the ability to recall information
- **Understand**—the ability to understand the meaning of information
- **Apply**—the ability to apply information to answer a question or solve a problem
- **Analyze**—the ability to break information into parts and to think critically and in depth
- **Evaluate**—the ability to make judgments about ideas
- **Create**—the ability to use parts to create something with a new meaning or structure

The six levels are arranged from the simplest skills to the most complex. Each level builds on the previous levels. In other words, for a student to be able to evaluate information, he or she must first remember it, understand it, and be able to apply and analyze it.

Bloom's taxonomy has two primary uses. It helps teachers set educational goals that promote higher-level thinking. It also allows teachers to classify the questions they ask from simple to complex. This helps ensure that teachers are asking questions at all of the levels. There are certain words or phrases that are commonly used in questions at each level:

- **Remembering questions** use words like: define, name, and list.
- **Understanding questions** use words like: summarize, explain, and restate.
- **Apply questions** use words like: use, demonstrate, and solve.
- **Analyze questions** use words like: analyze, focus, and determine.
- **Evaluation questions** use words like: judge, examine, and detect.
- **Create questions** use words like: design, generate, and produce.

BLOOM'S OTHER CONTRIBUTIONS

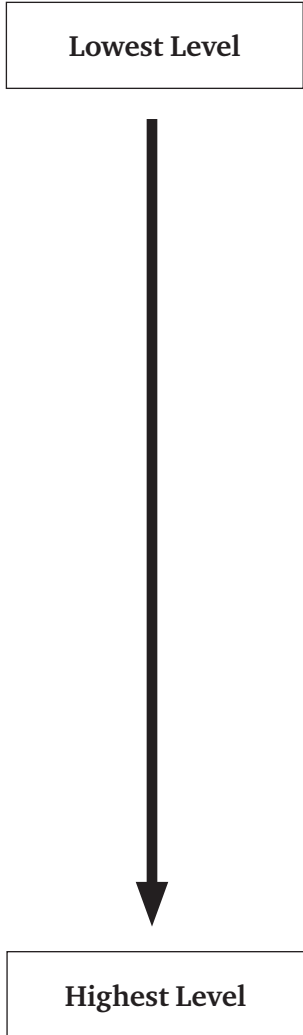
Bloom did not believe that a child's IQ was determined at birth. He believed that a child's environment strongly influences how the child performs in school. His studies showed that the first four years of life are a critical period in a child's intellectual development.

Bloom believed that virtually all students could be successful in school, given the right teaching methods. He stressed that not all students should be expected to learn the same material in the same amount of time. Instead, teachers should accommodate individual differences by allowing students more time, if needed, to really master a subject. Bloom's ideas about teaching and mastery learning still influence teachers today.

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Taking Action

For each level in Bloom's Taxonomy, write a question that would require a student to use the thinking skills at that level.



Bloom's Taxonomy	
Level	Question
Remember	
Understand	
Apply	
Analyze	
Evaluate	
Create	

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Enhancing Everyday Learning Opportunities

Each day is full of opportunities to reinforce and expand on what children learn in school. By taking advantage of these opportunities, you send the message that learning takes place everywhere.

According to research, when parents are involved in their child's education, the child does better in school and has a more positive attitude about learning. That translates into better attendance and behavior at school.

EVERYDAY LEARNING

If you are around children, look for *teachable moments*. These are everyday situations that present opportunities to help children understand their world. Here are some examples:

- **Become kitchen scientists.** Let children help plan, shop for, and prepare meals. As you cook, you might talk about what makes baked goods like muffins and cakes rise (the baking soda or powder). You might discuss why an egg beater or wire whisk is used to mix scrambled eggs (to add air and make them fluffy).
- **Clean up.** Have children help with laundry and explain how the washing machine works or what bleach does. Discuss how sanitation in the kitchen is related to staying healthy.
- **Be tuned in.** Read the newspaper or watch the news together. Talk about what is happening locally and in your state, the nation, and the world.
- **Dig a little deeper.** Let children help with gardening and caring for the lawn. Decide what to plant together.
- **Hammer it out.** Teach children how to fix things and how to use simple household tools appropriately and safely.
- **Take a walk.** Family hikes are not only good for bonding, they are a great way to increase physical activity and overall good health. Along the way you can listen and watch for birds and animals. Collect leaves or rocks. Bring along a trash bag and pick up litter.
- **Money matters.** Talk with children about money management. Open a bank account for them. Encourage them to save for something they want.
- **Discover the arts.** Get tickets for a community theater production or attend a free concert, visit art galleries, or enroll children in drama and art classes.
- **Look back.** Visit a museum together. Discuss how learning about the past can be helpful in modern life.
- **Play games together.** This is a great way for children to learn basic social skills such as taking turns, winning and losing, and following the rules.
- **Name that tune.** Expose children to different kinds of music.

SUPPORT

Parents and caregivers should make it apparent to children that they care about their education. An involved parent or caregiver pays attention to a child's needs, builds a good relationship, and loves and supports the child consistently.

Part of that support includes recognizing that children have their own talents and interests—and that they may differ from their parents'. For example, a mother who excelled at volleyball in middle school should not assume that her daughter will want to play. The child may prefer activities like art and orchestra instead.

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Here are some additional ways to offer support to children:

- **Offer the four As.** Provide plenty of “the four As”—attention, appreciation, affection, and acceptance.
- **Reach for the stars.** Help children set goals. Celebrate together when they are met.
- **Ask questions.** Find out what children learned in school today and what they might be learning tomorrow. If they get in the habit of saying “nothing,” try this approach: “Tell me one thing that you learned today.”
- **Be there.** Attend or help with school events. Spend time in the classroom. Attend all school conferences.
- **Celebrate small steps.** Help children learn to break down goals into smaller ones. Recognize everyday progress. Do not wait until the end of the semester or school year to say, “Good job.” Do so frequently.
- **Do not compare.** Keep in mind that all children develop and learn in their own way and at their own rate. Focus on the unique development of the individual child instead of making comparisons with siblings or classmates.

Taking Action

Investigate local classes offered for children ages seven to twelve. Possible sources are the park district, arts organizations, or a museum. Select at least three classes or events that might have interested you at that age. Share your ideas with classmates. Work together to compile a “Learning Fun” brochure. Distribute it to elementary school teachers in your area.