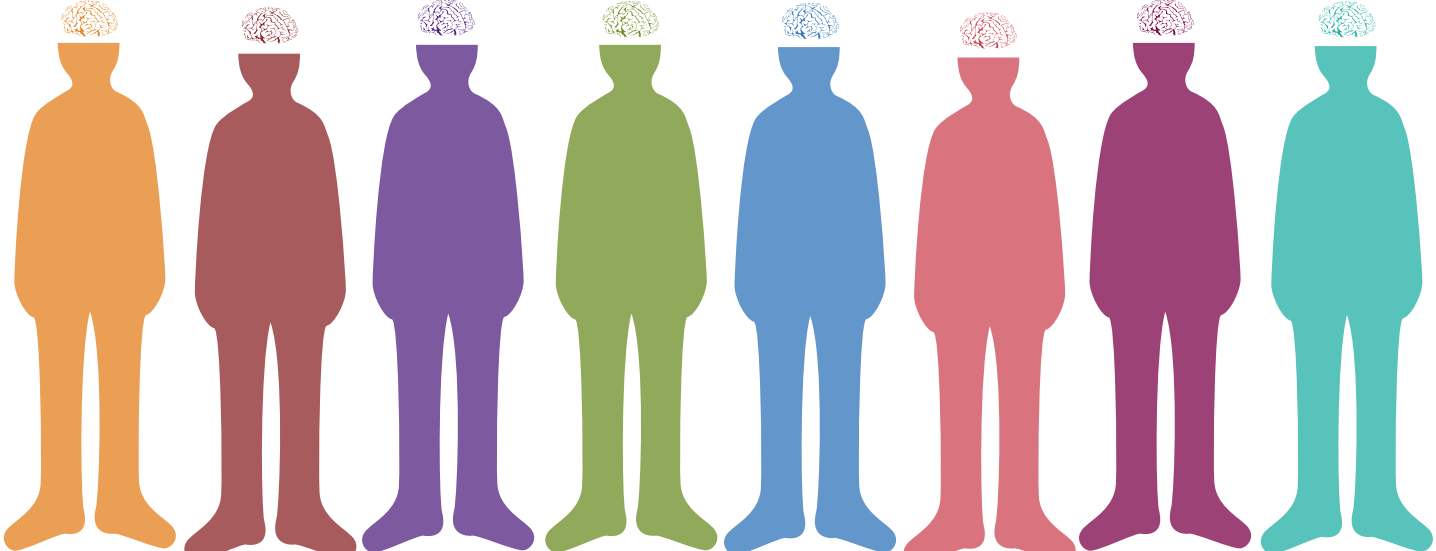


Brainy Approaches to Learning

Each student's brain is **unique**



The brain is shaped by a continuous interaction of genetics and experience.

As a result, each student's brain is organized in a unique way. Each student has a complex and dynamic profile of strengths and limitations, and a student's ability in one area does not predict his or her ability in another area.

The brain is **highly adaptive**, and each student's brain **continually changes** as he/she learns



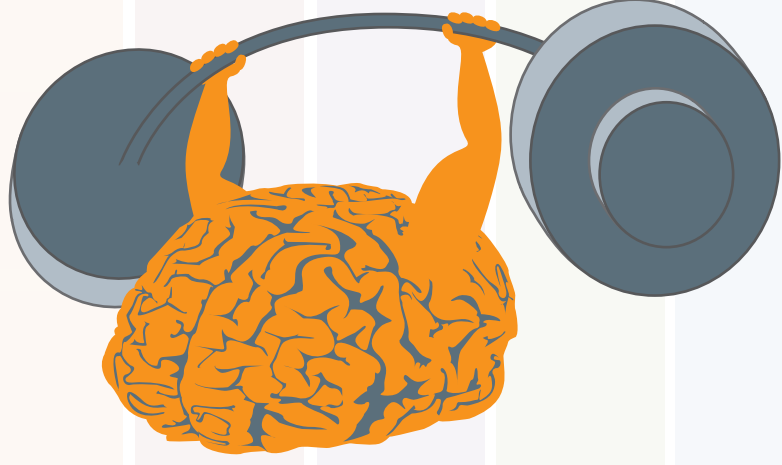
Learning experiences shape the physical architecture of the brain.

Learning experiences are translated into electrical and chemical signals, which cascade among neurons in many areas of the brain. Gradually, these signals modify connections among neurons in certain areas of the brain and those areas are reorganized.

The brain is made up of networks of interconnecting nerve cells, called neurons, and supportive glial cells.

The brain's adaptability means that each student's abilities are continuously developing.

Learning is most likely to occur when experiences are **active**, not passive



The changes in the brain's neuronal connections that underlie learning occur when students are actively engaged in learning relevant information. Passive exposure to information, on the other hand, does not necessarily lead to learning.

In educational terms, this suggests that "seat time" in a classroom will not necessarily lead to learning.

Learning is happening all the time, both in **formal** . . .



. . . and **informal** settings

The brain doesn't stop learning when the school bell rings. Experiences outside of school continue to shape the brain and a student's abilities.

Given this, education systems should formally recognize and credit informal education experiences with nontraditional educators, as well as more traditional school experiences.

Instructional strategies should meet the different **needs** and **interests** of students

Students can follow different learning pathways to master the same core skills. Each individual learns most effectively through experiences tailored to his or her needs and interests.

Traditional instruction, set pacing calendars, and standardized curriculum make it extremely difficult to accommodate for individual differences.



Student-centered approaches to learning **maximize what we know** about how students learn

- Embrace the learner's experience and research on teaching and learning as the starting point of education.
- Emphasize motivation and engagement as central to learning.
- Harness the full range of learning experiences at all times of the day, week, and year.
- Expand and reshape the role of the educator.
- Determine progression based upon mastery.

Learn more about

Student-centered Approaches to Learning

www.studentsatthecenter.org

Students at the Center synthesizes and adapts for practice current research on key components of student-centered approaches to learning. Our goal is to strengthen the ability of practitioners and policymakers to engage each student in the skills, knowledge, and expertise needed for success in college and a career. The edited volume *Anytime, Anywhere: Student Centered Learning for Schools and Teachers* will be available spring 2013 from Harvard Education Press. This *Jobs for the Future* project is supported generously by funds from the Nellie Mae Education Foundation.