LEARNING POLICY INSTITUTE
Research. Action. Impact.

MAY 2026

The Science of Learning and Development

FACT SHEET

What is the science of learning and development, and why does it matter?

The science of learning and development (SoLD) is a multidisciplinary body of research that explains how children grow, learn, and develop across cognitive, social, emotional, and physical domains. This research shows that all children are capable of learning and thriving and that development is shaped by the interaction of biology, relationships, and environments.

Many features of the U.S. education system were designed around assumptions of fixed ability and standardized learning pathways. SoLD provides a more accurate and actionable foundation for designing policies and education systems that:

- Ensure each and every student has access to the conditions that support healthy learning and development
- Recognize individual variability in learning
- Align learning environments with how development actually occurs

Applying this science can help education systems better meet the needs of every learner and enable all students to reach their full potential.

What are the key findings from the science of learning and development?

SoLD research identifies several core principles that explain how children grow, learn, and thrive across contexts and over time. These insights overlap and need to be understood together, in an integrated way, to have the greatest impact on education systems.

- **Potential:** Each young person—regardless of background, experiences, or starting point—has the capacity for growth and success when education systems support their diverse needs, interests, and abilities.
- **Malleable:** The brain remains highly adaptable throughout life, and stimulating experiences, supportive environments, and positive, developmental relationships enable productive development and learning.
- **Individuality:** Every young person has unique neurological structures, genetic expressions, backgrounds, and personal experiences, and each learner's trajectory is unique. There is no such thing as an "average" or "normal" learner.
- **Context:** Learning and development are deeply influenced by unique experiences, environments, and cultures, and learning environments can be designed to support positive development.
- **Relationships:** Strong, trusting relationships are essential to learning and development and serve as the foundation for young people's ability to adapt, establish good emotional health, foster social connections, and become resilient and effective learners.
- **Integration:** Learning is not purely academic; it is interconnected with all aspects of development. Academic, social, emotional, cognitive, and physical development are deeply linked, and growth in one domain influences others. This underscores the need to support students holistically.

- **Continuum:** Human development is a progression, but not a linear one. Each child's learning builds on what came before, and progress is driven by the right degree of challenge and productive failure.
- **Meaning Making:** The brain actively filters, organizes, and connects information, and learners build understanding by reflecting on and making sense of new knowledge and experiences. This process ignites the desire to learn and is essential to learning and development.

How can the science of learning and development inform education policy?

Science shows that all children can learn and thrive, but solving the critical issues facing education today, such as chronic absence, mental health challenges, and lagging achievement, requires SoLD-aligned policy solutions. Research points to several considerations for policymakers:

- **Design systems that support whole-child development.** Policies can move beyond a narrow focus on academic outcomes to support integration across cognitive, social, emotional, and physical domains. Education and youth-serving systems can come together to create a clear vision for collaboration, resource sharing, and collective responsibility to improve education opportunities and outcomes.
- **Invest in relationship-centered learning environments.** Because relationships are central to learning and development, policies can prioritize structures that allow educators to build strong, sustained connections with students.
- **Enable personalized and flexible learning pathways.** Given that learning is individualized and non-linear, policies can support flexibility in pacing, instructional approaches, and assessments to better reflect students' developmental trajectories rather than enforcing uniform progression.
- **Support conditions that reduce stress and promote well-being.** Policies can promote school conditions that are physically and emotionally safe and reduce chronic stressors that hinder learning.
- **Strengthen educators' capacity to support development.** Given educators' role in shaping learning environments and relationships, policies can support preparation and professional learning that help educators understand development; respond to variability; and integrate social, emotional, and academic learning.
- **Align systems and structures with how learning occurs.** Policies related to curriculum, assessment, accountability, and school design can be aligned with developmental science—ensuring that they support, rather than constrain, meaningful learning experiences.
- **Recognize the role of families and communities.** Learning happens across settings. Policies can encourage partnerships with families and community organizations to support development beyond the classroom.

Education policy is most effective when it reflects how learning actually happens. Aligning systems, structures, and supports with the science of learning and development can create conditions in which all students have the opportunity to thrive.

Learn more

Access the SoLD section of the Learning Policy Institute website and the SoLD Alliance website to learn more.