HOW PEOPLE LEARN II

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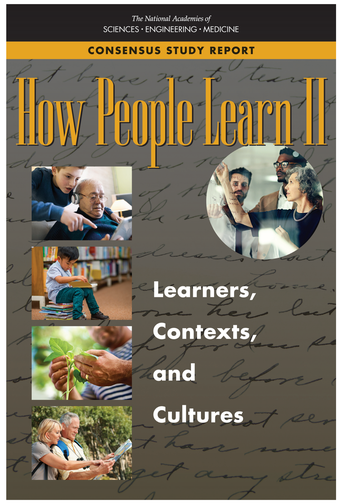
APPROACH



How People Learn II is a report of an expert committee convened by the National Academies of Sciences, Engineering and Medicine. Our consensus studies examine how findings and insights from the behavioral and social sciences can be harnessed to improve policy and practice. For each study, we bring together experts from multiple disciplines to look at the evidence with fresh eyes and openness to insights from other fields. These study committees survey the landscape of relevant research, hold public meetings to gather information, and deliberate to reach consensus, which results in a shared understanding of what the evidence reveals and the best path forward. The results of each study are presented in a report, often accompanied by short summaries, videos, and social media outreach that explain the findings to various audiences.

SCOPE

The Committee will

- update and extend the report How People Learn (NRC, 2000) by reviewing and synthesizing research on the study of learning from birth through adulthood in both formal and informal settings…. with the greatest potential to influence practice and policy.
- consider advances in cognitive science and neuroscience; learning technologies; education and education research; the influence of culture on learning; language and linguistics; social, emotional and motivational aspects of learning; learning disabilities; and assessment.
- specify directions for strategic investments in research and development to promote the knowledge, training, and technologies that are needed to support learning in today's world.

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KEY INSIGHTS FROM RESEARCH

Culture plays an important and complex role in shaping how people learn.

- Learning does not happen in the same way for all people.
- Cultural influences shape individuals from the beginning of life -- all learners grow and learn in culturally defined ways and in culturally defined contexts.

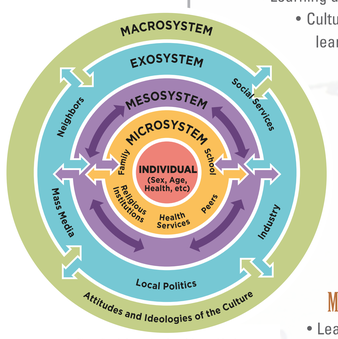


Figure: Bronfenbrenner's ecological theory of development.

Source: Bronfenbrenner, U. (1979). The Ecology of Human Development: Experiments by Design and Nature. Cambridge, MA: Harvard University Press.

Learning is a dynamic processes that continues across the life span.

- Learners adapt to experiences and their environment.
- Influences on learning range from microscopic (e.g., nutrition) to macroscopic (e.g., learner's neighborhood, society, and/or culture).
- There is a reciprocal relationship between brain development and experiences and range of external influences.
- The continuous shaping and reshaping of neural connections across the life span results from the integration of many types of learning (deliberately and unconsciously) in response to experiences.

Mental models are key to developing knowledge.

- Learners develop increasingly complex structures for using and categorizing what is learned.
- The accumulation of knowledge and the capacity to reason about knowledge are key cognitive assets throughout life span
- A number of strategies help learners develop mental models needed to retain knowledge and adapt it for inferences and problem solving.

Motivation is essential to learning.

- Engagement and motivation develop and change over time and are strongly influenced by cultural and developmental processes.
- Motivation to learn is fostered across the life span when a learner feels a sense of belonging and purpose in learning environments.
- Educators can support learners' motivation through a number of different actions targeted at different levels including the individual learner, groups of learners, the setting and the larger environment.

The use of learning technologies requires careful planning.

- Educators need to consider characteristics of the learner, type of learning being targeted, and sociocultural context before incorporating learning technologies into the educational environment.
- Effective use of learning technologies in formal education and training requires consideration of alignment of technology with goals for learnes, provision of professional development and other supports for instructors and learners, and equitable access to technology.
- Ongoing assessment of student learning and evaluation of implementation are also critical to ensuring that a particular area of technology is optimal and to identifying needed improvements.

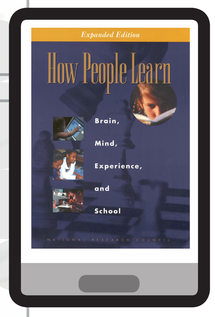
Implications for classrooms.

- To understand the cultural nature of learning and development in every classroom, educators need to attend to cultural influences on learning.
- Supporting the learner includes a consideration of cultural influences, allowing students to take charge of their own learning, and supporting strategies for learning.
- Assessment of learning can be informed by understanding the processes of learning.

Priorities for future research.

The committee identified research objectives in two main areas:

- Research should move beyond the idea of an "average" learner to embrace and explain variation among individuals. Additional interdisciplinary research that examines how individual variation and developmental and contextual factors, including social, emotional, environmental, institutional, and experiential factors, influence the lifelong learning process and learning outcomes is needed. Further, this work would support educators in meeting the needs of all learners by connecting research on internal mechanisms of learning with the shaping forces of contextual variation, including culture, social context, instruction, and time of life.
- Given the increased use of technology across all fields, research is needed to examine the implications of the science of learning for the design of technology to support learning across the life span; the complex interactions between characteristics of the learner, the content to be learned, and the learning environment; how technology may be influencing the nature of what people need to learn and the psychology of learners; and potential drawbacks. Attention should be paid to whether a technology is well suited to the ecological learning niche in which it may be used, the effects of engagement in self-selected online activities on academic learning, and ways to improve the suite of learning technologies available.



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