

What Is a Learning Progression?

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Learning progressions describe in words and examples what it means to move over time toward more expert understanding. Learning progressions depict successively more sophisticated ways of thinking about an idea that might reasonably follow one another as students learn. Learning progressions have been referred to by many different names, including progress variables, learning trajectories, progressions of developmental competence, and profile strands.

Learning progressions should be developed around the big ideas of a domain. These big ideas are the coherent foundation for the concepts, theories, principles, and explanatory schemes for phenomena in a discipline. In science, organizing principles would include evolution and kinetic molecular theory.

Research Foundations

Ideally, learning progressions should be based on research about how competence develops in the domain. Using research on children's learning, learning progressions can be identified that trace the path that children might follow as instruction helps them move from naïve ideas to more sophisticated understanding.

Research points to the challenges inherent in identifying progressions. Competence may develop along multiple pathways by which certain understandings can be reached. But some paths are followed more often than others. These typical paths may provide the basis for developing learning progressions. However, any learning progression is inferential or hypothetical as I know of no long-term studies of actual children learning a particular concept. Furthermore, describing students' reasoning is difficult because different researchers have used different methods and conceptual frameworks.

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Several caveats about learning progressions are in order.

- First, learning progressions are not developmentally inevitable but depend on instruction.
- Second, there is no single “correct order.” More than one path leads to competence. There may be multiple pathways by which

- certain understandings can be reached. Which pathway is taken may be influenced by prior instructional experiences, individual differences, and current instruction. The pathways that individual students follow depend on many things, including the knowledge and experience that they bring to the task, the quality of the instruction that supports their learning, and the nature of the specific tasks that are part of the experience.
- Third, actual learning is more like ecological succession, with changes taking place simultaneously in multiple interconnected ways, than like the artificially constrained and ordered accounts that we can give in this article.

Assessment Development

Learning progressions can provide clues about the types of assessment tasks that will elicit evidence to support inferences about student achievement at different points along the progression. A three-stage process might be used for designing assessments to tap into students' progress along a learning progression:

1. Translate the big ideas into student performances, i.e., tasks or

activities suitable for classroom settings through which students can demonstrate their understanding of big ideas and practices.

2. Use these learning performances to develop clusters of assessment tasks or items, including both traditional and nontraditional items.
3. Use research on children's learning as a basis for rubrics to interpret student responses, explaining how responses reveal students' thinking with respect to big ideas and learning progressions.

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