From *How People Learn* to Assessment that Serves Learning: Toward An Assessment Ecosystem Grounded in the Sciences of Teaching and Learning

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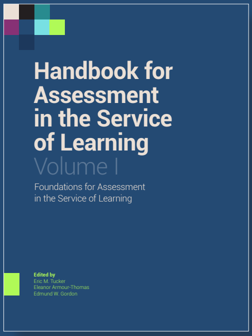

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Building on Gordon's Series Introduction (Gordon, 2025), Section 2 advances assessment as integral to learning, drawing on learning and developmental sciences, sociocognitive frameworks, and measurement methodologies (Baker & Gordon, 2014; Goldman & Lee, 2024). The chapters argue that assessment should be grounded in how people learn and developed and designed to inform instruction and learning (National Research Council, 2001; Pellegrino, 2025; Pellegrino, DiBello, & Goldman, 2016; Pea, Lee, Nasir, & McKinney de Royston, 2025).

Re-grounding Assessment in the Science of Learning and Development

Decades of research identify learning as a complex, relational process shaped by interactions among learners and their social, cultural, and physical contexts (Cantor, Osher, Berg, Steyer, & Rose 2019; Cantor, Gomperts, Lerner, Pittman, & Chase, 2021; Cantor & Osher, 2021). Learning is inseparable from context—it is inherently social, emotional, and cultural, shaped by all aspects of a person's development and everyday life.

Applying this dynamic systems perspective, Lerner and Cantor (2025) argue that assessment must account for the "individual-in-context" by capturing the interplay between a learner and their environment over time. Such an approach requires that we measure not only learners' knowledge but also the "nurturant" supports in their lives—the relationships and contextual factors that enable learning (Lerner & Cantor, 2025).

Pea, Nasir, Lee, and McKinney de Royston (2025) argue that assessments aimed at improving learning must start with how learning actually unfolds, centering learners' social and cultural assets and contexts. Assessments should be grounded in learners' real-world experiences, not context-free tasks. Further, the design of assessment tasks should draw on everyday and community language and cultural practices that value human variation (Gordon, 1995).

Badrinarayan, Darling-Hammond, and Bennett (2025), in their discussion of socioculturally responsive assessment, underscore that making learning visible is *inherently a cultural activity*. One of their key points is that *validity itself* should be reconceived to include cultural validity (Gordon Commission, 2013; Mislevy, 2018). Thus, human variation and the science of learning call on us to expand our conception of what assessment quality means, incorporating efficacy and responsiveness as priorities among principles that guide the design and use of learning-focused assessments (Baker, Everson, and Tucker, 2025).

Integrating Assessment with Pedagogy to Support Learning

Armour-Thomas (2025) argues that to serve learning, assessment must be a core pillar of pedagogy, mutually reinforcing curriculum and instruction (Shepard, 2019; Armour-Thomas, 2025). Assessment should thus elicit and illuminate student thinking—not just outcomes—and drive continuous feedback cycles (Gordon Commission, 2013; Ruiz-Primo & Furtak, 2024).

Building on this, Armour-Thomas, Darvin, and Hughes (2025) argue that assessment should be tailored to the unique ways of reasoning and building knowledge within each discipline. Assessment should thus be domain-specific and aligned with each discipline's pedagogical content knowledge.

Hattie, Sireci, and Baker (2025) argue that improvement hinges on shifting mindsets so assessment is increasingly used to diagnose learning, understand student thinking and strategies, and inform next steps. Creating an error-tolerant classroom climate ensures assessment is embraced as an opportunity rather than feared, allowing mistakes to be seen as informative.

Principles for Instructionally Impactful and Effective Assessment Systems

Badrinarayan (2025) argues that large-scale assessments must be reimagined to support teaching and learning: authentic, curriculum-anchored, educative, developmental, culturally responsive, and timely. Collectively, these principles—illustrated through practical examples like states piloting performance-based assessments—underline that redesigning assessments to better serve teaching and learning is both achievable and necessary.

Marion and Evans (2025) share criteria for instructionally useful assessments: cognitive complexity, close alignment to the curriculum, timely and fine-grained results, and the use of authentic, open-ended tasks. This analysis resonates with the call for *balanced assessment systems* that privileges rich classroom learning environments (Marion, Pellegrino, and Berman, 2024).

LeMahieu and Cobb (2025) introduce *practical measurement for improvement*, an approach embedding measures within daily practice to support real-time learning and continuous improvement. Rooted in improvement science, practical measurement emphasizes frequent, fine-grained assessments specifically designed to inform instructional refinement, rather than acting as endpoint audits. These measures are timely, context-specific, and purpose-built to yield actionable insights aligned with clear improvement goals. By explicitly asking "what works, for whom, under what conditions"—this approach helps educators identify effective practices.

Section 2 offers a research-grounded, forward-looking case for assessment that serves learning—especially when embedded in feedback-rich pedagogy (LeMahieu & Cobb, 2025). Furthermore, it clarifies that learner-centered assessment must reflect the variations of how learners learn as well as the conditions and supports necessary and sufficient for deep learning and its improvement over time.

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