Theories of Action for Innovative Assessment Systems: Considerations for Development, Refinement, and Evaluation

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Instructionally Embedded Assessment: Theory of Action for an Innovative System

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Background & Context

Assessments Intended for Action

• Summative assessments alone may not provide instructionally relevant information

• Field is moving towards assessments that are flexible, ongoing, and embedded in instruction
  – Not solely an indicator of student achievement
  – Designed to lead directly to action on the part of the teacher and student
Dynamic Learning Maps (DLM) Alternate Assessment

• Administered to students with the most significant cognitive disabilities in grades 3-8 and high school
• Based on a research-based learning map model of interconnected skills
• Currently used by > 20 states for state accountability purposes
  – Year-end
  – Instructionally embedded
Six states use instructionally embedded assessment model.

- Two 15-week testing windows
- Embraces teacher choice
  - When and how often to test within the window, relative to instruction
  - Which standards to assess, from a set of constraints (e.g., choose 3 of 6)
  - Level(s) of assessment (system provides recommendation)
- Cyclical approach to instruction and assessment is recommended
  - Select standards/levels, instruct, assess, evaluate
DLM Theory of Action

• Outlines how the DLM instructionally embedded system will function in order to elicit the desired outcomes

• The ToA includes:
  – Assessment’s intended effects (long-term outcomes)
  – Claims related to design, delivery and scoring
  – Action mechanisms (connections between claims)
DLM Theory of Action
DLM Theory of Action
Theory of Action Development Cycle

Develop/Refine → Evaluate

Evaluate ← Develop/Refine
Considerations for Development

• Strong theoretical rationale for claims and relationships in the model
  – Evidence from supporting research

Professional Development strengthens educators’ knowledge and skills for instructing students with SCD

Brownell et al. (2017)
Bock & Erickson (2015)
Guskey & Yoon (2009)

Educators provide instruction aligned with content standards and at an appropriate level of challenge
Considerations for Development

• Context specific
  – DLM ToA is based on consortium priorities and collective beliefs about academic learning for the DLM population
    – Reflects an extremely heterogeneous population and individualized nature of instruction and assessment
  – Other assessment programs might articulate beliefs and assumptions related to a homogeneous population
Considerations for Development

• Collaborative - our state partners helped identify:
  – Intended score uses and long-term outcomes
  – Whether claims are realistic
  – Whether evidence to support claims is feasible to collect
Considerations for Development

- Iterative Process

Original (2013)

Revised (2019)
Considerations for Evaluation

- A strong theory of action supports validation, which is critical for peer review
- Argument-based approach to assessment validation
- Theory of action used to organize the interpretive argument
  - Chain of reasoning between claims, propositions, and evidence
Considerations for Evaluation

• Theory of action helps prioritize validity studies each year based on gaps and most critical claims

• Mix of procedural and empirical evidence
  – Include multiple types of evidence whenever possible

Educators administer assessments with fidelity → System data

System data → Focus groups
Considerations for Evaluation

• Theory of action can be used as communication tool with stakeholders to encourage collaboration in collecting evidence
  – DLM state partners routinely help with recruitment for studies
Some Claims with Unique Evidence

(A) Cognitive model (map) accurately describes the development of knowledge and skills.

(B) Rigorous academic expectations, the alternate content standards, provide grade level access to college and career readiness standards.

(C) The system used to deliver DLM assessments is designed to maximize accessibility.

(D) Instructionally relevant assessments are designed to allow students to demonstrate their knowledge, skills, and understandings relative to academic expectations.

(E) Training strengthens educator knowledge and skills for assessing.

(F) Professional development strengthens educator knowledge and skills for instructing and assessing students with significant cognitive disabilities.

(G) The combination of administered assessments measure knowledge and skills at the appropriate breadth, depth, and complexity.

(H) Educators provide instruction aligned with content standards and at an appropriate level of challenge.

(I) Students interact with the system to show their knowledge, skills, and understandings.

(J) Educators administer assessments with fidelity.

(K) Mastery results indicate what students know and can do.

(L) Results indicate summative performance relative to alternate achievement standards.

(M) Results can be used for instructional planning, monitoring, and adjustment.

(N) Students make progress toward higher expectations.

(P) Educators have high expectations.

(Q) State and district education agencies use results for monitoring and resource allocation.
Some Claims with Unique Evidence

- Cognitive model (map) accurately describes the development of knowledge and skills
- Educators administer assessments with fidelity
- Mastery results indicate what students know and can do
- Results can be used for instructional planning, monitoring and adjustment
- Learning map model external review
- System data and focus groups on teachers’ implementation
- Diagnostic classification modeling, model fit, reliability
- Design of mastery-based score reports; interpretation and use of mastery results
Considerations for Evaluation

Future Work

• Collecting evidence not only on individual claims, but the connections between them (action mechanisms) and long-term outcomes

• Evaluating and weighing strength of evidence

• Considering context and variability in implementation
Considerations for Refinement

- Validity evidence, assessment system maturation, changes and improvements inform refinements to the theory of action
Questions for Consideration

• How can we better promote adoption and use of theories of action for assessment systems?

• How can we better support collaboration in development, evaluation and refinement of theories of action?
THANK YOU!

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