

Teacher Assessment Literacy: Implications for Diagnostic Assessment Systems

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Diagnostic Assessments

- Measure discrete latent traits or “skills”
- Scored using diagnostic modeling to produce mastery information for each skill rather than a raw or scaled score value
 - Probabilistic models determine skill mastery
 - Item responses used to determine likelihood student mastered each skill
- Results summarized in a mastery profile

Large-Scale Assessment Context

- Summative results serve multiple purposes
 - Inclusion in accountability metrics
 - Program evaluation
 - Resource allocation
- Stakeholders desire increasingly fine-grained information that diagnostic assessments can provide
 - Do assessments introduce challenges to teachers' assessment literacy?

Assessment literacy consists of individuals' *understandings of the fundamental assessment concepts and procedures deemed likely to influence educational decisions.*

Popham, 2011

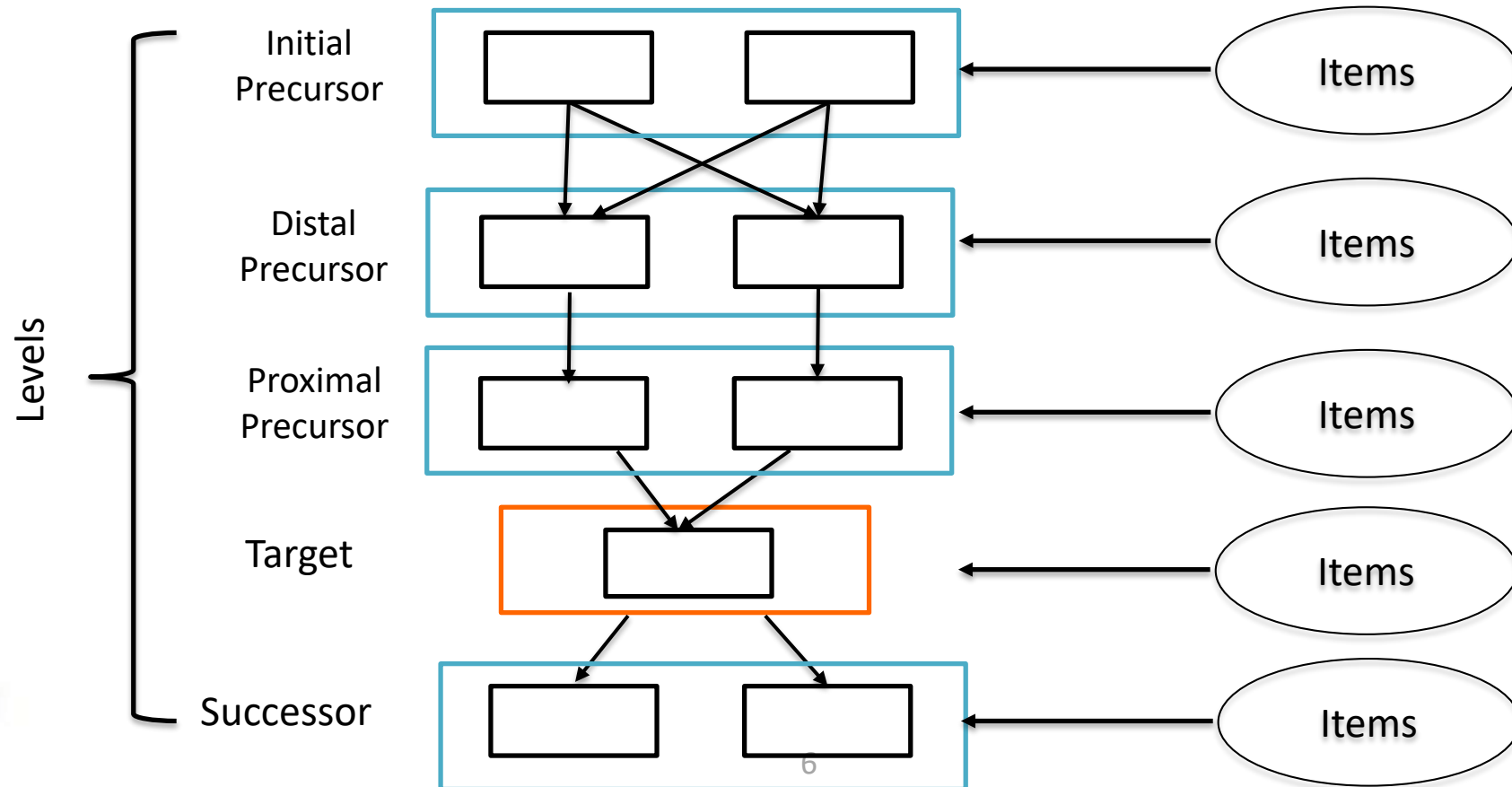
Purpose

Limited evidence to date examining teachers' assessment literacy in a diagnostic assessment context

1. Do teachers demonstrate **understanding** of the diagnostic assessment system and its results?
2. How do teachers talk about **fundamental concepts** related to diagnostic assessment?
3. What **influence** do teachers' conceptions and misconceptions have on their instructional decision-making?

Content Measured

For each content standard, five skills or **linkage levels** measure an underlying map structure



DLM Assessment Reporting

- Calibrated and scored using a diagnostic model
- Mastery status reported for each skill
- Two levels of score reporting:
 - Fine-grained skill mastery in **Learning Profile**
 - Subject summary information in **Performance Profile**

REPORT DATE: 06-06-2018
SUBJECT: English language arts
GRADE: 10

Individual Student Year-End Report Learning Profile 2017-18



NAME: Student DLM
DISTRICT: DLM District ID
SCHOOL: DLM School

DISTRICT ID: DLM District
STATE: DLM State

Student's performance in 10th grade English language arts Essential Elements is summarized below. This information is based on all of the DLM tests Student took during the 2017-18 school year. Grade 10 had 19 Essential Elements in 4 Conceptual Areas available for instruction during the 2017-18 school year. The minimum required number of Essential Elements for testing in 10th grade was 10. Student was tested on 17 Essential Elements in 4 of the 4 Conceptual Areas.

In order to master an Essential Element, a student must master a series of skills leading up to the specific skill identified in the Essential Element. This table describes what skills your child demonstrated in the assessment and how those skills compare to grade level expectations.

Level Mastery						
Area	Essential Element	1	2	3	4 (Target)	5
ELA.C1.2	ELA.L.9-10.4.a	Identify familiar objects through property word descriptors	Identify definition of words	Identify missing words using sentence context	Use semantic clues to identify word meaning	Use semantic clues to identify phrase meaning
ELA.C1.2	ELA.L.9-10.5.b	Draw conclusions from category knowledge	Identify the multiple meanings of a word	Identify word meaning of multiple meaning words using context clues	Identify the intended meaning of multiple meaning words	Understand how multiple meaning words can result in humor
ELA.C1.2	ELA.RI.9-10.1	Identify concrete details in a familiar informational text	Identify concrete details in an informational text	Cite textual evidence for inferred information	Discriminate between citations for explicit and inferred information	Cite evidence for a text's specific meaning

 Levels mastered this year  No evidence of mastery on this Essential Element  Essential Element not tested

Page 1 of 4

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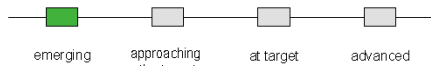
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Overall Results

Students in Grade 10 English language arts are expected to be administered assessments covering 50 skills for 10 Essential Elements. Student mastered 17 skills during the year.

Overall, Student's mastery of English language arts fell into the first of four performance categories: **emerging**. The specific skills Student has and has not mastered can be found in Student's Learning Profile.



EMERGING:	The student demonstrates emerging understanding of and ability to apply content knowledge and skills represented by the Essential Elements.
APPROACHING THE TARGET:	The student's understanding of and ability to apply targeted content knowledge and skills represented by the Essential Elements is approaching the target .
AT TARGET:	The student's understanding of and ability to apply content knowledge and skills represented by the Essential Elements is at target .
ADVANCED:	The student demonstrates advanced understanding of and ability to apply targeted content knowledge and skills represented by the Essential Elements.

A student who achieves at the **emerging** performance level typically can identify objects associated with a text, identify text elements, demonstrate an understanding of language, and identify text structure when reading literature and informational text.

The student identifies objects associated with a text by:

- using property words to identify familiar objects
- identifying objects within a category
- understanding subgroups of objects within a category

The student identifies text elements by:

- identifying details in a familiar text

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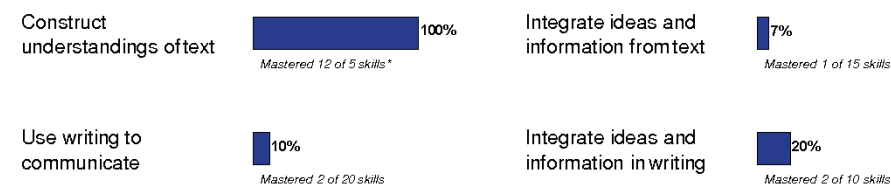


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Performance Profile, continued

Conceptual Area



*Student took more assessments and demonstrated mastery of skills beyond what was required during the year.

More information about Student's performance on each Essential Element that make up the Conceptual Areas is located in the Learning Profile.

Data Collection

- Teacher survey administered each spring
 - 19,144 teachers (78.0%) responded to the survey for 53,543 students
- Focus groups with 17 teachers from 3 states
 - Coding protocol to identify key themes from transcripts

Understanding Diagnostic Assessment System

Described system in ways that reflected understanding of design and administration


- Teachers were confident administering assessments (97.0%)
- Required test administrator training prepared them for administration responsibilities (91.2%)
- Resources helped them understand how to use the system (91.0%)

Understanding Diagnostic Assessment Results

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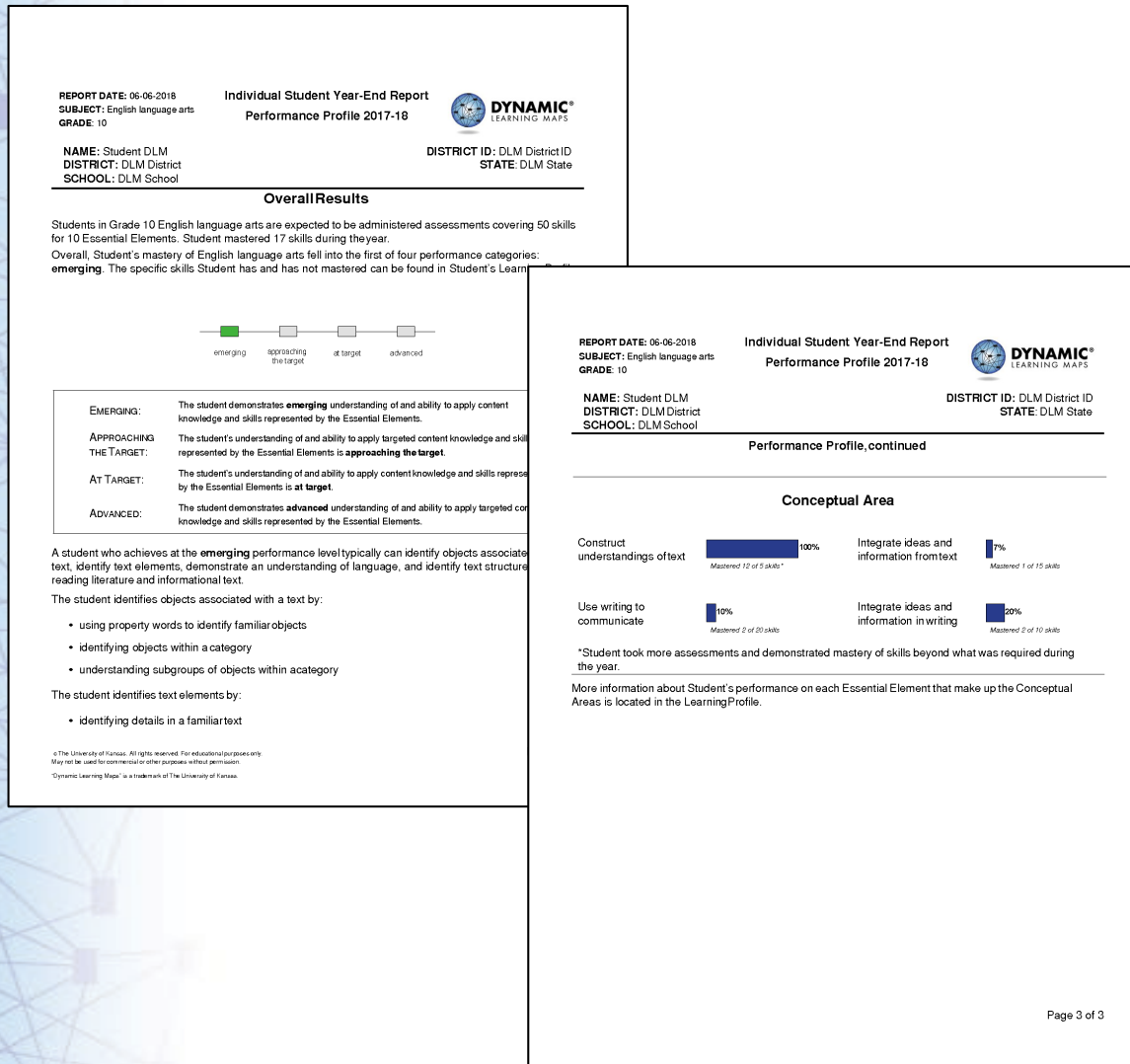
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Page 1 of 4

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- Used report to identify skills mastered
- Understood shading
- Made connections to instructional use and benefits of fine-grained results
 - Even when delivered in subsequent academic year

Understanding Diagnostic Assessment Results



- Correctly described using overall summary information
- Made references to “score”
- Mistaken interpretation of bar graphs as percent of correct item responses or percent of trials student demonstrated behavior

Understanding Diagnostic Assessment Results

- All teachers wanted more training on how to interpret and use results

“That first year, [the score report] wasn’t very meaningful. I didn’t get a lot out of it. I wasn’t able to give the parents a lot out of it other than, ‘Here’s your score report. It’s color-coded so you can see where your kid [mastered skills].”

Fundamental Concepts: “Mastery”

- Comfortable using term “mastery”
- Indicated mastery determinations were consistent with their own assessment of what students know and can do
- Unsure how mastery was determined or aggregated
 - “*very complex thing*”
 - “*black box*”
 - “*lucky guess*”

Influence of Conceptions and Misconceptions

- Use of “score” to describe performance may reflect **reliance** on broader assessment literacy and traditional conceptions of reporting
- Preexisting conceptions of “mastery” may influence interpretation and use
 - Could make results more challenging to understand in instances where teacher believes mastery is determined using a method other than probabilistic scoring model

Influence of Conceptions and Misconceptions

- Did not question certainty of mastery decisions
 - May be related to beliefs about calculation of mastery or overall trust in findings
- Strongly relied on information to plan subsequent instruction
 - *“Without it, I’m not sure how I could educate students because I wouldn’t even know where they are at.”*

Putting it all together

After accessing materials:

*This year it looked more like, "this is the **academic focus**, they're reading X [in the classroom], this is the **focus** of the reading, this is what we're hoping they get out of the reading that **aligns with their IEP goals**, which aligns with the DLM testing." It's a better conversation about why this testing format is.*

Implications

- Because of differences of diagnostic assessments from traditional measures, important to support stakeholders in their interpretation and use of fundamental concepts
- Availability of resources to support variety of stakeholder needs
 - Specifically addressing misconceptions to support appropriate interpretation and use

THANK YOU!

For more information: www.dynamiclearningmaps.org

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