

Alternate Assessment Score Report Interpretation and Use: Implications for Instructional Planning

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Abstract

The purpose of the study was to evaluate teachers' interpretations and use of individual student score reports that describe results from Dynamic Learning Maps alternate assessments. This paper describes findings from individual and paired interviews with teachers from one Midwestern state. Interviews were analyzed for evidence of how teachers read and interpreted the report contents, how they explained report contents to parents, the resources they used to support their understanding of the reports, and the ways in which they would use report contents to plan for instruction. Teachers used different parts of the report for different purposes and added contextual information when describing results to parents. Findings suggest that teachers are able to use score report contents as intended to inform instruction and develop Individualized Education Programs (IEPs).

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Alternate assessments based on alternate achievement standards (AA-AAS) are relatively new large-scale assessments for students with significant cognitive disabilities, a small but extremely diverse population that comprises approximately 1% of students who participate in large-scale assessments for accountability. Historic limitations of AA-AAS score reports have included unfamiliar terminology, unclear scoring methods, a focus on deficits, and limited information to guide changes in instruction or supports (Nitsch, 2013). Score reports for the new Dynamic Learning Maps (DLM) Alternate Assessments are designed to provide actionable information to guide instructional decisions while also being appropriate for accountability purposes. Final assessment results are based on mastery classifications for discrete skills rather than a scaled score on a latent trait. The individual student score report is comprised of a performance profile and a learning profile. This paper builds on a series of score report design studies¹ (Clark, Karvonen, Kingston, Anderson, & Wells-Moreaux, 2015; Nitsch, 2013) and describes preliminary findings from interviews with teachers on the interpretation and use of summative score reports from the first operational year of the DLM assessment system.

History of Alternate Assessment Scoring and Reporting

Alternate assessments for students with significant cognitive disabilities have only existed in most states since they were first required in 2000-01 under IDEA 1997. AA-AAS have some unique challenges with reporting and usability of results, based in part on intended purposes of the assessments, assessment design, and scoring. Early alternate assessments were often based on a combination of functional and academic content, and not all states provided score reports to communicate their results (Thompson & Thurlow, 2001). These assessments became known as alternate assessments based on alternate achievement standards (AA-AAS) after NCLB (2002) required the assessments be based on grade level content standards with alternate expectations for achievement. By 2006-07, the most frequent purpose states reported for AA-AAS was to measure student progress or performance on state standards (86%); only 51% indicated AA-AAS assessed students' individual strengths and weaknesses and 59% reported that a purpose of AA-AAS was to guide classroom instruction (Cameto et al., 2009, Fig. A-2).

To be useful when planning instruction, a score report must meet teachers' information needs as they consider how to set and assess progress toward goals, address individual needs, evaluate effectiveness of practice, and assess whether student needs are being met (Marsh, Pane, & Hamilton,

¹ Due to the closely related nature of the current paper and Clark et al. (2015), there is substantial overlap in the literature reviews of the two papers.

2006). The nature of AA-AAS scores themselves has limited the usefulness of information for these purposes. Final performance levels for AA-AAS are often determined by cut scores applied to rubrics or raw scores, as small student populations and limited items have not historically allowed states to apply IRT-based scaled scores. In many states, large percentages of students who take AA-AAS receive scores that are considered proficient or advanced; growth across years is difficult to detect because of the lack of underlying scale, small population sizes, and ceiling effects (Karvonen, Flowers, & Wakeman, 2013). These challenges leave few options for what to report on AA-AAS score reports. Even a status indicator – achievement level in the subject -- may be seen as confusing or having little meaning when parents struggle to understand how their child who has very little evidence of academic knowledge and skills can be “proficient”.

Assessment results that convey little meaning have little potential to support educational planning beyond program and school evaluation. The limited utility of assessment results has been noted in studies specifically regarding the education programs of students with significant cognitive disabilities. For example, when teachers in four states were asked how they know whether students with significant cognitive disabilities have mastered a skill and how they decide what to teach next, there was little evidence that teachers used assessment results systematically or considered state academic content standards when making those decisions (Karvonen, Wakeman, Moody, & Flowers, 2013). In a another study involving content analysis of Individualized Education Programs (IEPs) for students who were eligible for AA-AAS, fewer than 50% had statements on present levels of academic and functional performance that included criterion-based evidence of the student’s prior achievement in reading or math (Karvonen, Rao, & Morgan, 2010). Without informative individual student score reports, AA-AAS results have little chance of informing decisions that improve students’ educational opportunity.

The Dynamic Learning Maps Alternate Assessment System

The DLM alternate assessment system was designed to overcome many challenges of past AA-AAS. The system includes actionable reporting as a key feature (Kingston, Karvonen, Bechard, & Erickson, in press) and its score reports were designed to be consistent with the system’s unique design and scoring approach.

The DLM system is designed to assess a student’s learning throughout the year. Assessments take the form of testlets, each of which contains an engagement activity and 3-8 items. Testlets are available for teachers to use on an instructionally embedded basis through most of the year. A spring

testing window allows for full coverage of the blueprint or a resampling of content covered throughout the year, depending on which testing model the state uses.

DLM assessments are based on large, fine-grained learning maps made up of multiple pathways. Nodes in the map represent knowledge, skills, and understandings in English language arts and mathematics as well as foundational areas that are needed for access to academics. Nodes are linked to Essential Elements (EE), the grade-level expectations (i.e., alternate content standards) for students with significant cognitive disabilities. Testlets are available at five linkage levels per EE. For each EE on the blueprint, one or more nodes aligned with the expectation in the EE are grouped together to form the target linkage level. Groups of nodes are also identified in three areas that come before the target (initial precursor, distal precursor, and proximal precursor) and one that stretches past the target (called the successor). Students typically take one testlet per EE, at one linkage level, the assignment of which is based on prior information about the student or performance on recently completed testlets.

Essential Elements are organized further into claims and conceptual areas. The DLM claims are overt statements about what is intended for students to learn and what the DLM assessment will measure. The claims encompass the portion of the learning maps in ELA and mathematics that are connected to the DLM Essential Elements. Subareas of the Claims, called Conceptual Areas, connect the learning map to the overall Claims and identify large areas of conceptually related skills in the maps. Conceptual Areas are areas of the learning maps within Claims organized around common cognitive processes. For example, one of the English language arts claims is that “students will comprehend text in increasingly complex ways.” One of the conceptual areas for that claim is “integrating ideas and information from text.”

DLM uses cognitive diagnostic modeling to calculate the student’s probability of mastery for every EE/linkage level combination. Final assessment results are based on mastery classification (whether a student demonstrated mastery of the linkage level) rather than a score on a latent trait. Because results are based on dichotomous classifications at the linkage level, there is no continuous scale score. DLM scores build up from the linkage level, rather than starting with a scale score that is then broken down into subdomains. All DLM score reporting is based on the linkage level mastery classifications, summarized across two levels of aggregation to make statements about each student’s knowledge and skills. The first level of aggregation is the Conceptual Area. The higher level of aggregation is the performance level. Performance levels are defined through a standard setting process based on profiles of linkage levels mastered. States in the DLM consortium have adopted four performance levels with the following labels: emerging, approaching the target, at target, and advanced.

Prior Research to Inform DLM Score Reports

The consortium has embarked on a series of studies to inform the development of, and evaluate the effectiveness of, individual score reports. First, focus groups were conducted in five states with parents of children with disabilities (Nitsch, 2013) to learn about parent perceptions of AA-AAS and their need for information about student performance. Parents rated themselves as having relatively little knowledge of AA-AAS and some indicated they had not received AA-AAS score reports from their schools. Parents tended to perceive the purpose of AA-AAS as to fulfill a legislative mandate and to drive decisions about the school (including teacher evaluation and determination of resources) rather than to provide information about their child or measure things relevant to their learning. Concerns about the information parents received on AA-AAS results included lack of understanding of how scores were determined or how the content was related to academic content standards, unfamiliar terminology, focus on deficits more so than progress, and lack of information about how results could be used to change instruction or provide different supports to their child.

In 2014 additional focus groups were conducted with parents, advocates and educators (Clark et al., 2015). Participants evaluated prototype score reports. Prototypes were refined between waves of feedback. The goals were to maximize clarity of the contents and support accurate interpretations. Preliminary evidence supported teachers' ability to interpret their contents. Parents appreciated the emphasis on strengths rather than deficits, but expressed concern about teachers' ability to communicate about the contents. Participant feedback led to many of the features seen in the 2014-15 score reports, including narrative statements and linkage level descriptors for every Essential Element (see DLM System Design, below, for more information about report contents).

Building on the previous research that informed score report design (Nitsch, 2013) and refinement (Clark et al., 2015), the purpose of this study was to evaluate teachers' interpretations and use of DLM individual student score reports. Specific research questions included:

1. How do participants read and interpret the information in reports?
2. How do participants explain results to parents?
3. What resources do participants use to support their interpretation and use of report contents?
4. How do participants use report contents for educational planning and instruction?

Methods

DLM Score Reports

Three score reports have been developed at the individual student level: 1) a progress report, 2) an end of year performance profile, and 3) an end of year learning profile. This paper focuses on the second and third reports, which together comprise the individual student summative score report. An example based on the 2014-15 assessment year is provided in the appendix.

The **performance profile** aggregates linkage level mastery information for reporting on each conceptual area and for the subject overall. It contains three main sections. The first section (Overall Results) includes a text summary of the student's performance, including the total number of Essential Elements mastered during the year and the student's final performance level. The second section (Conceptual Areas) reports the percent of skills, or linkage levels, within each conceptual area that the student mastered. This value is calculated as the number of linkage levels mastered (as reported on the learning profile) out of the total number of linkage levels possible for the grade and content area. The third section contains bulleted lists of skills mastered and skills assessed but not mastered. Lists are organized by Conceptual Area.

The **learning profile** shows rows for each Essential Element and columns that correspond to the five linkage levels (initial precursor, distal precursor, proximal precursor, target, and successor). The Essential Elements are grouped by Conceptual Area. Shading is used to distinguish between linkage levels the student mastered, levels assessed but not mastered, and levels not assessed that year.

The reports depict student "mastery" of "skills." Mastery here is determined using cognitive diagnostic modeling with thresholds set for linkage level mastery. If the student's probability of linkage level mastery is greater than this threshold, the student is considered a master of the linkage level. "Skill" refers to a linkage level for an Essential Element.

Table 1 summarizes the components of the performance profile and learning profile that make up the individual student score report. These components were part of the coding scheme used for data analysis and are referred to by number throughout the results section.

Table 1. Components of the DLM 2014-15 Individual Student Score Report

Performance Profile	Learning Profile
1) Overall performance level: a) narrative b) graphic c) performance level descriptors	4) Learning profile narrative
2) Conceptual areas: bar graphs with subtitles	5) Conceptual Area and Essential Element codes
3) Mastery list: a) Conceptual area headings b) Introductory statement c) Bulleted statements	6) Mastery information: a) Mastered (green) b) No evidence of mastery (blue) c) Untested (no shading)

Data Collection

Results described in this paper are based on individual interviews and paired interviews conducted with teachers in one state. Protocols were slightly different for individual and paired interviews but both versions were semi-structured.

The individual interview protocol began with general questions about the participant's background with DLM assessments and previous experience with the score reports. Then the participant was presented with the first score report and asked what it said about the student. Participants were asked to think aloud while they read the contents. Probes were used for clarification of responses and to ensure participants attended to each part of the report (e.g., to point them back to a section they skipped). After interpreting each section of the report (i.e., performance profile and learning profile), the participant was asked how they might say things differently when explaining the report to a parent. The same process (initial interpretation and reinterpretation for a parent) was followed for a second, contrasting report. The interview concluded with an opportunity for the participant to make recommendations about resources that other teachers would need to support their interpretation and use of DLM score reports.

The paired interview began with the same general background questions as the individual interview but also included a question about the participants' history of collaboration. The pair was then presented with a score report and asked to talk aloud about their interpretation of its contents. The primary focus of the interview was the use of report to plan for instruction, including long-term educational planning and for mid-year adjustments to instruction. Participants engaged in unstructured dialog about the contents and in vivo probes were used as needed for clarification and elaboration to cover both major categories of use (instruction and IEP planning). After repeating the process with a second, contrasting report, the interview concluded with an opportunity for recommendations about resources to support score report interpretation and use.

Both types of interviews used 2014-15 score reports with realistic student results but fictitious student identifiers. Sample score reports were prepared in both subjects (ELA and math) and across elementary, middle, and high school grades. Samples were also selected within each subject/grade band to provide contrasting patterns of student performance.

Each interview incorporated two sample reports. The choice of specific reports for each interview were based on the participant's familiarity with the grade band and subject. For example, a middle school teacher who was responsible for both ELA and math might be presented with an ELA grade 6 report for a high-achieving student and a math grade 7 report for a low-achieving student. There was no intentional sequence in which report was presented first.

Participants

Teachers were all from one campus in an urban area in a Midwestern state. The school exclusively serves students with intellectual and multiple disabilities from 6th grade through age 21. Participants taught in secondary grades (grades 6-8, grades 9-10, or grades 11-12). All of them taught two or more academic subjects. Their years of teaching experience ranged from 1 to 26 years. Four teachers participated in individual interviews and four more participated in two paired interviews.

Data Analysis

Individual interviews were coded using a two-step process. First, the researcher reviewed each transcript to mark responses related to the primary research questions (i.e., reading/interpretation, explanation to parents, resources to support interpretation, and uses of report contents). During the second step, the researcher added codes to identify the part of the report the participant was referring to. Thematic codes were also used to identify processes or elements associated with the primary codes. For example, within responses coded as reading/interpretive, statements were also coded to indicate the types of behaviors (e.g., paraphrase, question about contents, misinterpretation). A tentative list of codes was developed prior to analysis, based on review of the literature. Codes were added and refined as new ideas emerged from the data. Paired interviews relied on many of the same codes as individual interviews, but the emphasis was primarily on uses of the contents rather than interpretation. Since the results presented in this paper are preliminary, they are descriptive with regard to the themes, not quantified for dominant patterns.

Results

Reading/Interpretation

Participants varied in the parts of the report that they tended to rely on for information. Results are described with numeric references back to the report component listed in Table 1.

Since the interview imposed minimal structure on the order in which participants reviewed the report and the emphasis they placed on each section, each participant's preferences for information were clear in the think aloud portion of the interview, even before discussing the report contents. For example:

- Anna² walked systematically through each major section of the entire report, starting with the performance profile narrative (1a) to characterize the student's overall performance, describing conceptual areas (2) as general strengths and weaknesses, and using the mastery list (3) to reflect on skills seen during the assessment. In the learning profile she emphasized the mastery information (6) and did not use the narrative (5).
- Liz briefly mentioned the numbers in the performance profile narrative (1a) and could talk superficially through all parts of the performance profile, but had a strong preference for the mastery information (6) in the learning profile.
- Margaret primarily relied on the conceptual areas (2) and looked to the mastery list bullets (3c) to identify examples of the skills in each area, especially when talking to parents. When thinking about instruction she gravitated to the mastery information (6) in the learning profile.

In general, participants paid little attention to narrative statements (1a, 4) and only one briefly mentioned the performance level graphic (2). The performance profile mastery statements (3) and learning profile mastery table (6) were emphasized the most. More detail about interpretation of the learning profile is provided in the Report Use section below.

As participants talked through the report contents, most of their comments were verbatim or near verbatim language from the report. Minimal paraphrasing was occasionally described when interpreting results for parents:

I basically sort of explained the [performance] levels first...so I said emergent is they're just starting out with this skill. They may not have a good understanding. And then I said approaching target, they have some understanding. And then I said target is right where we want them.

Statements about report contents were also evaluated for signs of misinterpretation or misunderstanding. Since most statements were verbatim or near verbatim, there were few opportunities for misinterpretation. One type of misinterpretation came from inappropriately applying terms from one part of the report to results in other sections. For example, in one case a student was

² All names are pseudonyms.

described as “emerging” – a performance level descriptor -- in one of the conceptual areas although there are no performance levels assigned to conceptual areas. In another case the student was described as having “mastered” a conceptual area although mastery judgments are only made at the linkage level. Both of these misstatements were attempts to give a qualitative label to a percent of skills mastered in a conceptual area.

One participant misinterpreted percent as it was reported for conceptual areas when talking to parents. Instead of describing percent of skills mastered, she interpreted percent as it is often used in monitoring instruction and setting instructional goals for students with significant cognitive disabilities: percent accuracy or percent correct over repeated trials.

So it's like constructs understanding [Conceptual Area], he can identify concrete details in an informational text [Linkage Level]. But reminding the parent that that was only like a 20 percent. ... But it seems that oh, my child can identify that. Then you're like, well, but if we look back here, again, remember, that was one out of five times. So it's still only with 20 percent accuracy, which is -- you want 80 percent. So definitely make sure they understand that like a target child, that goal is about 80 percent for their classmates.

Other challenges to correct interpretation were related to features of report design rather than individual student results. Because the testing blueprint allows teacher choice of which Essential Elements (EEs) to assess and does not limit the number of EEs that may be chosen, the learning profile lists all EEs – not just those that are tested. Participants noted this would be confusing for parents who would not know why the additional EEs were not tested. There was additional opportunity for confusion when a teacher tested beyond the minimum requirements and the student performed well; the conceptual area percentages were 100% and the associated statements had numerators that were larger than the denominators (e.g., “mastered 12 out of 10 skills”).

The most extreme case of misconceptions was seen for one participant who asked many questions that reflected his confusion. Some of his challenge was in relating the score report contents to the assessment design and administration. He could not recall how testlets were assigned or the relationship between the linkage level tested and where mastery would be reported. He also wanted to see information in the performance profile (i.e., which skills were not mastered) without realizing it was in the learning profile. He reported using the performance profile bulleted mastery list with parents and the learning profile to think about instruction but was troubled by the learning profile containing information on untested EEs.

Interpreting Reports for Parents

Each participant indicated that they were selective about the parts of the report they chose to discuss with parents. Most commonly mentioned were the Conceptual Area (CA) bar graphs (2), bulleted mastery list statements (3a), and the entire learning profile. For example, one teacher used the CA bar graphs to explain the student's general strengths and weaknesses before discussing more specific skills from the bulleted list as examples from specific CAs. Those who preferred to discuss the learning profile with parents pointed out that it allowed them to focus on current mastery and areas for instruction – whether that be to reteach something that was not mastered or move to another skill after mastering a previous one. The participant who reported less discussion of the report with parents said she focused only on the CA bar graphs and referenced a couple of skills from the LP. Her rationale was that parents' best level of understanding was in the CAs. She sent the report home with them and invited them to ask her questions after they looked it over on their own.

Although the mastery list (3) and the learning profile (6) contained very similar information, some teachers preferred one over the other. Those who preferred the bulleted mastery list tied the CA headings (3a) back to the bar graphs to help anchor their conversation with the parent. When discussing results that did not resonate with parents (i.e., the student demonstrated mastery of a skill the parent thought was implausible, or did not demonstrate mastery of a skill the parent believed the student possessed), another strategy was to refer to the introductory statements (3b) to remind the parent that the report was explaining evidence of mastery from the DLM assessments and that there were multiple ways the student might demonstrate the skill.

As participants described the ways in which they talked with parents about report contents, it became clear that they added contextual information to support parents' understanding. For example, one teacher drew connections to the reports for the general education assessments and content standards, since many parents were familiar with those for other children in their family. Another strategy was to explain why the assessment was challenging that year (e.g., that the assessment was still relatively new, or that they expected the student to improve once s/he was more familiar with working in a computer-based environment).

When discussing specific mastery statements or linkage levels from the learning profile, another contextualizing strategy was to describe what the skill looked like for that student – either during assessment or during instruction. One participant modeled how she would talk to a parent about an EE that had no evidence of mastery on the learning profile:

I even have parents with some intellectual needs. I would actually say it to them that your student, you see these highlighted areas right here in the blue? These areas were the areas where they're struggling, right here, and these areas are the areas that they did really well, and we want to focus on those areas where they were struggling, and right here, -- so understanding function of the objects, okay, what does that mean? So let's say, we need Erika to understand that when she goes over and turns that light on, so understanding what that means, we're going to work on that.

Yet describing skills to parents was difficult when teachers themselves did not understand the linkage level statement. Two types of challenges were noted. First, academic vocabulary was seen as a barrier to talking with parents about the report. One participant, commenting on the word "subitizing" in a linkage level descriptor, noted:

I had that word and we were like what does that mean? We had to get on our phone and look it up to see what it meant and it was like I can't even teach it if I don't know what it means and how does a parent understand it if we don't know what it means?

A second challenge occurred when two similar linkage level statements were difficult to distinguish from one another. One participant illustrated this challenge as she talked through her understanding of "match pictures with representations of real objects" and "match pictures with real objects":

That says matching pictures with representation of real objects. That's interesting. Match a picture with a real object....I might have a parent ask me why did they did they do well here and they didn't do well here? Why did they not do well there and they did well here? ...So, these are two different areas. This one is in the, -- I'm going to get this wrong. One is in reading... reading, and yes, and this one is...reading information, right. Okay, yes. I know, but I'm missing it, but okay, yes, yes. So this is in the story itself. This is in the story itself. So when she's reading the story and understanding, she's getting that information. Okay. She's able to match pictures with, yes, okay. And this is just absolute picture, just like, identifying. Okay. All right.

Resources

All teachers in this preliminary study were from the same campus, which included an instructional facilitator and built in time for both structured professional development sessions and professional learning community meetings. All of the participants credited those resources with helping them be able to interpret and use the score reports. For example, they had a 1-hour professional development session on how to read the score reports. Their PLCs were where they planned for assessment, shared materials and resources, and helped one another with interpretation of linkage

levels. Several participants mentioned talking with the student's teacher from the previous year (whether from within their school or at another school) to better understand how a student was demonstrating a skill that was listed as having been mastered on the score report.

Report Use

Participants described a range of uses of the report contents beyond sharing the results with parents. For this paper, uses are roughly grouped into planning for instruction and IEP development.

Planning for Instruction. A consistent finding across interviews was teachers' use of the learning profile to guide instruction. This included looking to the next linkage level beyond the highest level mastered for a given EE and planning to instruct next on that level. But where students were assessed and did not show mastery, or where teachers thought the student's mastery was limited, they indicated they would reteach a skill that the student had already mastered.

Some participants provided evidence of more sophisticated evaluation and planning, particularly by looking at connections across linkage levels and EEs to think about larger instructional goals.

Because he's mastered the Level 3 which is the precursor so we want him to get up to the target so I would start teaching for the target for the student, tying it back into the precursor stuff that he can do so that we're not working on stuff that he already knows.

So if we can connect those two Elements there, we know that we can start up here with them on this one and I'd have to explain that to a parent and then I would want to know where he's at with this. Once we teach him how to do that, how fast is he going to pick that up to doing the real world problems with numbers and if he can do real world problems up here with numbers, can he do it the same way here? This is adding and subtracting so this is multiplying so it would be different but how is it different there and the same there.

Sometimes an apparently inconsistent or unusual pattern of performance raised questions for the teacher. The typical response was a desire to assess further using their routine classroom methods to understand possible reasons for the inconsistency:

He can combine and partition sets which should lead to multiplying. I don't understand why he can do multiplying in one but not combining in another. I guess I would want to take a look at that one and see how those lead to each other because combining and portioning are the same I guess for both multiplication and adding and subtracting.

When planning for instruction in an area the student had not mastered, the teacher sometimes relied on understanding of the DLM assessment content. One common instructional strategy for students with significant cognitive disabilities is to first teach a skill in a familiar context and then work on transfer to novel situations. One participant describing instruction on “identify the end of a familiar routine” offered this example related to a reading testlet:

What type of routine for it? I know that on the assessments that was really hard for me to think of what type of routine are we using ...because the example has you doing stuff out of a book and that's the routine is what's in the book but then how do you end that routine? ... Well what do we do at the end of math? It all depends on the day. ... Okay when we are getting ready to go on the bus, what's the last thing that you do? You buckle yourself in. Okay. That type of thing for familiarity.

There were a few other ways in which teachers mentioned using the report to plan for instruction, but none of them was described in depth. Examples include using the learning profile to develop lesson plans and creating instructional groupings when students working on different skills were being taught together.

IEP Planning. Participants described using score report contents primarily for two parts of IEP development: statements on the student's present levels of performance and annual goals. The tendency was to use the performance level narrative (1a) and mastery skill list (3c) nearly verbatim in statements of present levels of performance:

I'd take this whole thing and say use this, so say over the assessment is covering fifty skills, for ten essential elements Hunter mastered 37 skills during the year and overall his mastery fell on to at target. And then I would say specifically what he has mastered... and then if he didn't show skills, however, Hunter was tested did not show these skills or he struggled with these skills and then we'd say what he struggled with.

The learning profile, and specifically the next skills that had not been mastered, were one source of information participants reported using to develop IEP goals. However, the expectation in their school was that the learning profile be considered along with other assessments and school-developed checklists in order to identify goals for the student in reading, writing, and math. The contents of IEP goals spanned multiple Essential Elements and the objectives associated with the goal were based on teacher estimates of reasonable instructional targets:

We look at all of the elements that are being assessed. We say where they're starting...We would look at where they're starting, either where they were assessed at or like this year we talked

about they were at the initial level. Most of our students are. And we created some scales, but we would look at where we felt like they could achieve within a year, and we kind of made it into a percentage. So this is where they're starting. These are the things that we would like to see them get to this year and so create a percentage within that.

Besides these two uses of score reports to guide IEP development, one teacher pointed to another possible use of the information for IEP teams. When reviewing a sample score report that showed a student whose overall performance was at the highest performance level, she questioned that student's placement and eligibility for an alternate assessment. Both educational setting and assessment eligibility would be determined by an IEP team.

Discussion

This paper describes preliminary findings from a study that is still in progress. More data will be collected from teachers in another state later this spring. We have also collected data from parent advocates and will be evaluating their interpretation of reports and use of the information when they work with parents and educators.

The findings reported in this paper are admittedly based on a unique sample: a segregated school with resources devoted to teachers' professional learning for academic instruction and assessment. While the setting and support for professional learning are not uncommon in states that use DLM assessments, the findings may reflect the best case scenario for interpretation and use of reports after the first year of operational assessment.

In general, teachers reported liking the reports, finding them helpful when talking to parents and useful for guiding instruction. There were relatively few signs of misconceptions when describing report contents. This was probably due in part to reliance on the exact text in the report, preference for mastery statements over aggregated information, and a tendency to not rephrase key meanings. The fact that we did not see broad evidence of misinterpretations may mean that teachers' misconceptions are more hidden. For instance, they may correctly identify that the conceptual area results are percentages rather than percentiles, but may have a misunderstanding of what "mastery" means that was not evident in these interviews. Different probes and more structured techniques (e.g., paraphrase testing) will be needed to assess this deeper understanding in future interviews.

Despite structured, schoolwide training and expectations for how to interpret and use score report contents, there was still some variation in how individual teachers used the reports. It is not surprising that they overlooked or minimized parts of the report they found less useful (van der Kleij & Eggen, 2013), or that the performance levels were largely ignored (Nitsch, 2013). Teachers' uses of score

report contents in this study were primarily instrumental, not conceptual (van der Kleij & Eggen, 2013). They tied statements to instructional next steps and IEP development in ways that have not been seen in past studies (Karvonen et al., 2010, 2013) but which are consistent with best practices. The potential to support instructional utility seems to be best when teachers use detailed mastery information in either the performance or learning profile.

Assuming future interviews corroborate rather than contradict the current findings, this study provides some preliminary evidence of instructional utility. More work is needed to see how teachers' descriptions of planned action translate into real action.

Additional work is also needed to support teachers' use of DLM score reports and evaluate the effectiveness of interpretive guides and training materials. For example, the mastery bullets in the performance profile (3) were included just for 2014-15, pending finalized grade/content-specific performance level descriptors. Those descriptors will replace the bulleted lists in 2015-16. We will need to improve interpretive materials for 2015-16 to help teachers realize how they can create similar bulleted statements from contents of the learning profile.

The interpretations and uses of score report information in this study also highlight potential risks and unintended consequences we will want to evaluate in the future. For instance, when the learning profile is viewed as a fixed map for the student's future instruction, a teacher may not teach concepts that come between the linkage levels and support student growth. A choice to focus only on the next linkage level, without considering the grade-level target, may lead to viewing the linkage levels as a sequential learning progression – unintentionally lowering expectations and limited progress. Finally, the linkage levels on a summative report are associated with one grade, and these reports are used to plan for the next grade – one which has different Essential Elements and associated linkage levels. Helping teachers understand the learning profile as a source of information about the student's academic skills rather than a concrete road map for the next grade's instruction will prevent misaligned instruction and limited opportunity for growth.

References

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Individual Student Year-End Report Performance Profile



NAME: Noelle [REDACTED]
SUBJECT: English Language Arts

SCHOOL: [REDACTED] Elementary School
DISTRICT: [REDACTED] Comm School
Distr

YEAR: 2014-15
GRADE: 4

REPORT DATE: 02-16-2016

STATE: Iowa

Overall Results

Students in Grade 4 English Language Arts are expected to be administered assessments covering 45 skills for 9 Essential Elements. Noelle mastered 17 skills during the year.

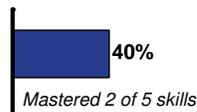
Overall, Noelle's mastery of English Language Arts fell into the second of four performance categories: **approaching the target**. The specific skills Noelle has and has not mastered can be found in Noelle's Learning Profile.



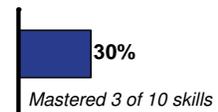
EMERGING:	The student demonstrates emerging understanding of and ability to apply content knowledge and skills represented by the Essential Elements.
APPROACHING THE TARGET:	The student's understanding of and ability to apply targeted content knowledge and skills represented by the Essential Elements 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.

Conceptual Area

Determine critical elements of text



Construct understandings of text



Integrate ideas and information from text



Use writing to communicate



Individual Student Year-End Report Performance Profile



NAME: Noelle [REDACTED]
SUBJECT: English Language Arts

SCHOOL: [REDACTED] Elementary School
DISTRICT: [REDACTED] Comm School
Distr

YEAR: 2014-15
GRADE: 4

REPORT DATE: 02-16-2016

STATE: Iowa

Performance Profile Continued

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

Determine critical elements of text

Noelle showed these skills during the assessment:

- Determine similar or different
- Name or identify objects in pictures

Construct understandings of text

Noelle showed these skills during the assessment:

- Identify familiar people, objects, places, or events
- Understand object names
- Identify character actions in a familiar story

Integrate ideas and information from text

Noelle showed these skills during the assessment:

- Understand object names
- Draw conclusions from category knowledge
- Identify commonalities in two texts

**Individual Student Year-End Report
Performance Profile**



NAME: Noelle [REDACTED]
SUBJECT: English Language Arts

SCHOOL: [REDACTED] Elementary School
DISTRICT: [REDACTED] Comm School
Distr

YEAR: 2014-15
GRADE: 4

REPORT DATE: 02-16-2016

STATE: Iowa

Performance Profile Continued

Use writing to communicate

Noelle showed these skills during the assessment:

- Understand words are comprised of letters
- Differentiate between upper- and lowercase letters
- Understand the use of capitalization
- Understand words are comprised of letters
- Identify first letter in own name
- Use letters to create words
- Understand object names
- Identify people, objects, places, and events
- Identify descriptive words

Individual Student Year-End Report

Learning Profile



NAME: Noelle [REDACTED] **SCHOOL:** [REDACTED] Elementary School **YEAR:** 2014-15
SUBJECT: English Language Arts **DISTRICT:** [REDACTED] Comm School Distr **GRADE:** 4
REPORT DATE: 02-16-2016 **STATE:** Iowa

Noelle's performance in 4th grade English Language Arts Essential Elements is summarized below. This information is based on all of the DLM tests Noelle took during the 2014-15 school year. Grade 4 had 9 Essential Elements in 4 Conceptual Areas available for instruction during the the 2014-15 school year. The minimum required number of Essential Elements for testing in 4th grade was 9. Noelle was tested on 7 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.

Green shading shows levels mastered this year. Blue shading shows Essential Elements with no evidence of mastery. No shading indicates the Essential Element was not assessed this year.

		Level				
		4 (Target)				
Area	Essential Element	1	2	3	4 (Target)	5
ELA.C.1.1	ELA.RL.4.1 Identify familiar people, objects, places, or events	Identify familiar people, objects, places, or events	Identify character actions in a familiar story	Identify character actions	Recount events in a story using details	Recount the key details of a story
ELA.C.1.1	ELA.RL.4.3 Understand object names	Identify familiar people, objects, places, or events	Identify concrete details in a familiar story	Identify characters, setting, and major events	Describe characters in a narrative	Describe characters, setting, and events
ELA.C.1.1	ELA.RL.4.5 Identify familiar people, objects, places, or events	Identify familiar people, objects, places, or events	Name or identify objects in pictures	Identify the beginning, middle, and end of a familiar story	Identify story characteristics	Identify story elements that change

Individual Student Year-End Report

Learning Profile



NAME: Noelle [REDACTED]
SUBJECT: English Language Arts
REPORT DATE: 02-16-2016

SCHOOL: [REDACTED] Elementary School
DISTRICT: [REDACTED] Comm School Distr
STATE: Iowa

YEAR: 2014-15
GRADE: 4

		Level				
						
Area	Essential Element	1	2	3	4 (Target)	5
ELA.C1.1	ELA.RI.4.1	Understand object names	Name or identify objects in pictures	Identify concrete details in an informational text	Identify explicit details in informational texts	Identify words related to explicit information
ELA.C1.1	ELA.RI.4.2	Understand object names	Name or identify objects in pictures	Identify concrete details in informational texts	Identify the overall topic of a familiar text	Identify topic-related words in an informational text
ELA.C1.1	ELA.RI.4.3	Understand object names	Use category knowledge to draw conclusions	Identify concrete details in an informational text	Identify concrete details related to people, events, or ideas	Compare key details
ELA.C1.1	ELA.RI.4.5	Determine similar or different	Name or identify objects in pictures	Identify information presented in pictures or graphics	Recognize informational text characteristics	Understand the structural purpose of a text
ELA.C1.2	ELA.RL.4.2	Identify familiar people, objects, places, or events	Identify major events in a familiar story	Identify a character's actions and corresponding consequences	Identify the theme of a familiar story	Identify the specific theme of a story
ELA.C1.2	ELA.RL.4.4	Understand object names	Identify the meaning of words	Identify words or phrases to complete a literal sentence	Identify the meaning of an unambiguous word	Identify multiple meanings of a word
ELA.C1.2	ELA.RL.4.6	Understand object names	Identify character actions in a familiar story	Identify character actions	Identify the narrator of a story	Identify narrator point of view

Individual Student Year-End Report

Learning Profile



NAME: Noelle [REDACTED]
SUBJECT: English Language Arts
REPORT DATE: 02-16-2016

SCHOOL: [REDACTED] Elementary School
DISTRICT: [REDACTED] Comm School Distr
STATE: Iowa

YEAR: 2014-15
GRADE: 4

		Level				
						
Area	Essential Element	1	2	3	4 (Target)	5
ELA.C1.2	ELA.RI.4.4	Understand object names	Identify the meaning of words	Identify words or phrases to complete a literal sentence	Identify the meaning of an unambiguous word	Identify the multiple meanings of a word
ELA.C1.2	ELA.RI.4.8	Notice what is new	Identify concrete details in an informational text	Identify the main points of a text	Identify reasons that support points	Identify relationship between points and supporting reasons
ELA.C1.2	ELA.L.4.5.c	Identify familiar people, objects, places, or events	Identify descriptive words	Identify real-world uses of words	Identify words with opposite meanings	Understand similar word meanings
ELA.C1.3	ELA.RI.4.9	Understand object names	Draw conclusions from category knowledge	Identify commonalities in two texts	Compare informational texts on the same topic	Compare similarities and differences between texts
ELA.C2.1	ELA.L.4.2.a	Understand words are comprised of letters	Differentiate between upper- and lowercase letters	Understand the use of capitalization	Capitalize the first letter of a sentence	Correct capitalization when writing a title
ELA.C2.1	ELA.L.4.2.d	Understand words are comprised of letters	Identify first letter in own name	Use letters to create words	Spell words phonetically	Spell words with inflectional endings
ELA.C2.1	ELA.W.4.2.b	Understand object names	Identify people, objects, places, and events	Identify descriptive words	Identify words, facts, or details about a topic	Provide facts and details related to a topic

Levels mastered this year

No evidence of mastery on this Essential Element

Essential Element not tested