NCAASE National Center on Assessment and Accountability for Special Education

Advancing research on growth measures, models, and policies for improved practice

Assessing Opportunity to Learn

Advancing Instruction and Access to the General Curriculum for All Students

Stephen N. Elliott, PhD

Alexander Kurz, PhD

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ARIZONA STATE UNIVERSITY

1

Opportunity to Learn (OTL)

OTL refers to "the opportunities which schools provide students to learn what is expected of them."

(Herman, Klein, & Abedi, 2000, p. 16)

Focus on OTL

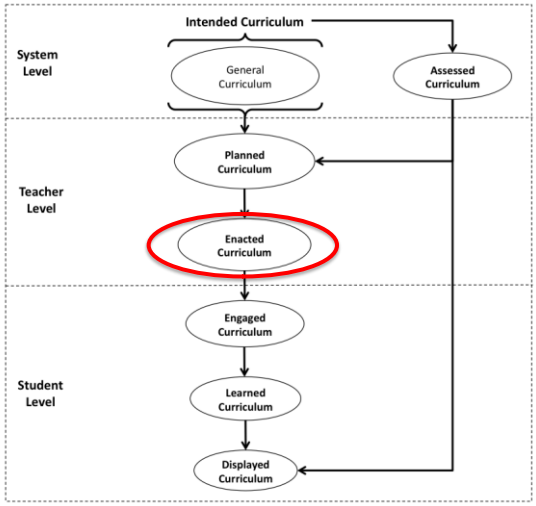
- Define opportunity-to-learn (OTL) more precisely.
- Create awareness of how to measure OTL with a tool called MyiLOGS.
- Share results of research on OTL from a 3-state study with middle school teachers and students with disabilities.
  - Initial Validity Evidence for MyiLOGS
  - Findings regarding Differentiated Opportunities for SWD
- Highlight how a measure of OTL contributes to research to be conducted by NCAASE.

5 Big Ideas about OTL

- OTL is an equity and access policy issue that influences practice.
- OTL is a multi-dimensional construct; it is more than alignment between content standards and tests.
- OTL can be measured accurately by teachers themselves.
- MyiLOGS can measure OTL at the class and student levels.
- OTL is a fundamental requirement for valid inferences about students' test scores, yet it additive predictive value is questionable based on early results.

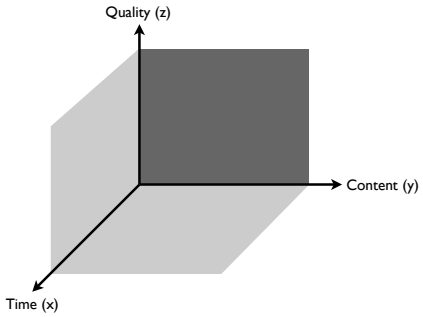
Access & Equity

- "The issue of curricular access for students with disabilities became a central legislative concern following the 1994 reauthorization of the Elementary and Secondary Education Act (ESEA) . . . the IDEA included the so-called 'access to general curriculum mandates,' which established the right of students [with disabilities] to access the same general curriculum that is offered to all students." (Kurz, 2012, p. XX)
- The IDEA signaled "a clear presumption that all students with disabilities should have access to the general curriculum and to the same opportunity to learn challenging and important content that is offered to all students" (McLaughlin, 1999, p. 9).



(Kurz, 2011)

Conceptual Model of OTL



Kurz, A. (2011). Access to what should be taught and will be tested: Students' opportunity to learn the intended curriculum. In S. N. Elliott, R. J. Kettler, P. A. Beddow, & A. Kurz (Eds.), *The handbook of accessible achievement tests for all students: Bridging the gaps between research, practice, and policy* (pp. 99-129). New York: Springer.

Opportunity-to-Learn (OTL)

- **OTL** is defined as the degree to which a teacher dedicates instructional minutes to covering the content prescribed by the standards using pedagogical approaches that address a range of cognitive processes, instructional practices, and grouping formats (Kurz, Elliott, & Kettler, 2012).

- This definition is the conceptual foundation for the indices measured by the **Instructional Learning Opportunities Guidance System** (MyiLOGS; Kurz, Elliott, & Shrago, 2009), an online teacher log developed in a recently completed USDE Enhanced Assessment Grant (Award#S368A090006).

MyiLOGS: An Online Teacher Log

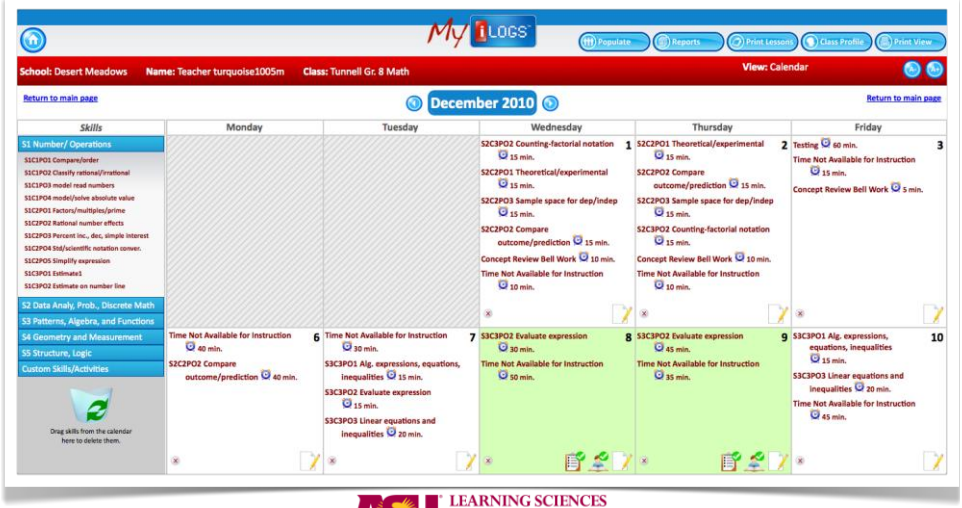
- **MyiLOGS** allows teachers to document their planned and enacted instruction along their state-specific intended curriculum.

- Seven key OTL indices are established at the class and student level:
  1. Time on Standards (Min/Day and %)
  2. Time on Custom Skills (Min/Day and %)
  3. Non-Instructional Time (Min/Day and %)
  4. Content Coverage (%)
  5. Cognitive Process Score (1.00 – 2.00)
  6. Instructional Practices Score (1.00 – 2.00)
  7. Grouping Formats Score (1.00 – 2.00)

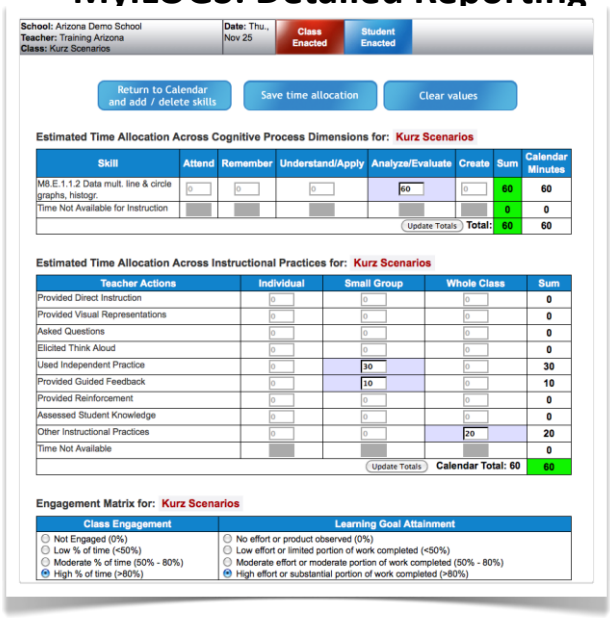
Instructional Dimensions, Indicators, Definitions, and Operational Indices of OTL

Dimension	Indicator	Definition	Index
Time	Instructional Time	Instructional time dedicated to teaching the general curriculum standards and, if applicable, any intended IEP objectives.	*IT*: Average amount of instructional minutes spent on intended curriculum objectives per day.
Content	Content Coverage	Content coverage of the general curriculum standards and, if applicable, any intended IEP objectives.	*CC*: Percentage of addressed intended curriculum objectives.
Quality	Cognitive Processes	Emphasis of cognitive process expectations along a range of lower-order to higher-order thinking skills.	*CP*: Sum of differentially weighted percentages of instructional time dedicated to each cognitive process expectation.
	Instructional Practices	Emphasis of instructional practices along a range of generic to empirically supported practices.	*IP*: Sum of differentially weighted percentages of instructional time dedicated to each instructional practice.
	Grouping Formats	Emphasis of grouping formats along a range from individual to whole class instruction.	*GF*: Sum of differentially weighted percentages of instructional time dedicated to each grouping format.
Note. Emphasis can be operationalized as the amount of instructional minutes.			

MyiLOGS: Calendar Reporting



MyiLOGS: Detailed Reporting



School: Arizona Demo School
Teacher: Training Arizona
Class: Kurz Scenarios
Date: Thu., Nov 25
Class Enacted | Student Enacted

Return to Calendar and add / delete skills | Save time allocation | Clear values

Estimated Time Allocation Across Cognitive Process Dimensions for: Kurz Scenarios

Skill	Attend	Remember	Understand/Apply	Analyze/Evaluate	Create	Sum	Calendar Minutes
M8.E.1.1.2 Data mult. line & circle graphs, histogr.	0	0	0	60	0	60	60
Time Not Available for Instruction						0	0
					Update Totals Total:	60	60

Estimated Time Allocation Across Instructional Practices for: Kurz Scenarios

Teacher Actions	Individual	Small Group	Whole Class	Sum
Provided Direct Instruction	0	0	0	0
Provided Visual Representations	0	0	0	0
Asked Questions	0	0	0	0
Elicited Think Aloud	0	0	0	0
Used Independent Practice	0	30	0	30
Provided Guided Feedback	0	10	0	10
Provided Reinforcement	0	0	0	0
Assessed Student Knowledge	0	0	0	0
Other Instructional Practices	0	0	20	20
Time Not Available				0
		Update Totals	Calendar Total: 60	60

Engagement Matrix for: Kurz Scenarios

Class Engagement	Learning Goal Attainment
○ Not Engaged (0%)	○ No effort or product observed (0%)
○ Low % of time (<50%)	○ Low effort or limited portion of work completed (<50%)
○ Moderate % of time (50% - 80%)	○ Moderate effort or moderate portion of work completed (50% - 80%)
◉ High % of time (>80%)	◉ High effort or substantial portion of work completed (>80%)

Cognitive Process Expectations for Student Learning and Definitions

Cognitive Process	Definition
Attend	Orient toward instructional task and related instructions. ▪ Synonyms include *listen, focus, pay attention.*
Remember[a]	Retrieve relevant knowledge from long-term memory. ▪ Synonyms include *recognize, identify, recall, retrieve.*
Understand[a]	Construct meaning from instructional messages. ▪ Synonyms include *interpret, exemplify, classify, summarize, infer, compare, explain.*
Apply[a]	Carry out or use a procedure in a given situation. ▪ Synonyms include *execute, implement, use.*
Analyze[a]	Break materials into its constituent parts and determine how the parts relate. ▪ Synonyms include *differentiate, organize, integrate, attribute.*
Evaluate[a]	Make judgments based on criteria and standards. ▪ Synonyms include *check, test, critique, judge.*
Create[a]	Put elements together to form a coherent whole or a new structure. ▪ Synonyms include *generate, hypothesize, plan, design, produce.*
[a]This cognitive process and definition is based on the revised Bloom's taxonomy (see Anderson et al., 2001).	

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Instructional Practices and Definitions

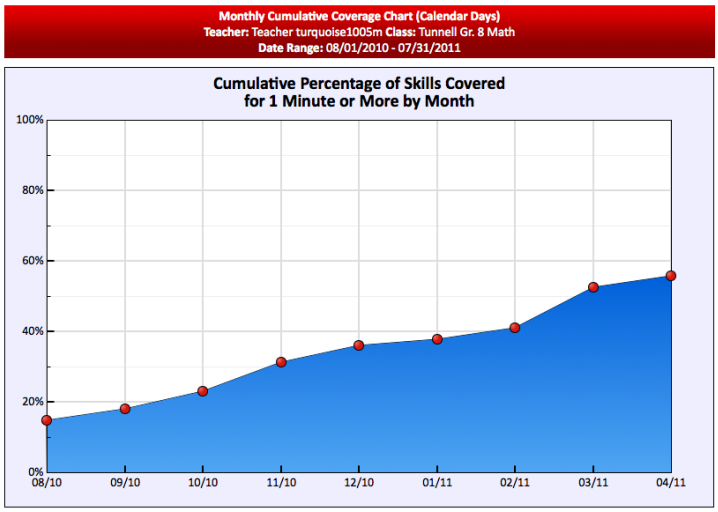
Instructional Practice	Definition
Provided Direct Instruction[a]	Teacher presents issue, discusses or models a solution approach, and engages students with approach in similar context.
Provided Visual Representations[a]	Teacher uses visual representations to organize information, communicate attributes, and explain relationships.
Asked Questions[a]	Teacher asks questions to engage students and focus attention on important information.
Elicited Think Aloud[a]	Teacher prompts students to think aloud about their approach to solving a problem.
Used Independent Practice	Teacher allows students to work independently to develop and refine knowledge and skills.
Provided Guided Feedback[a]	Teacher provides feedback to students on work quality, missing elements, and observed strengths.
Provided Reinforcement[a]	Teacher provides reinforcement contingent on previously established expectations for effort and/or work performance.
Assessed Student Knowledge[a]	Teacher uses quizzes, tests, student products, or other forms of assessment to determine student knowledge.
Other Instructional Practices	Any other instructional practices not captured by the aforementioned key instructional practices.
[a]This instructional practice has received empirical support across multiple studies.	

12 Key Indices

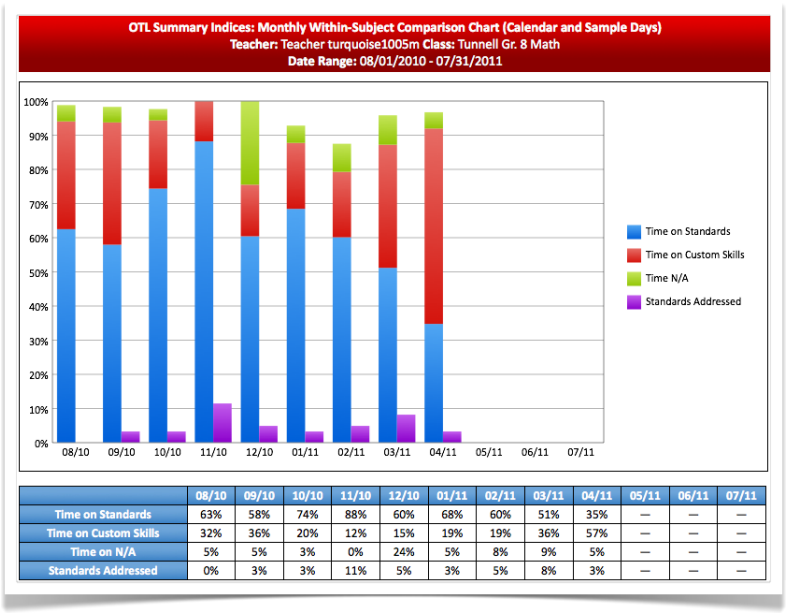
MyiLOGS OTL Indices and Operational Definitions

Index	Definition
Instructional Time on Standards (Min/Day)	Average amount of instructional minutes dedicated to the state-specific academic standards per day.
Instructional Time on Standards (%)	Average percentage of allocated class time used for instruction on the state-specific academic standards per day.
Instructional Time on Custom (Min/Day)	Average amount of instructional minutes dedicated to custom objectives per day.
Instructional Time on Custom (%)	Average percentage of allocated class time used for instruction on the custom objectives per day.
Non-Instructional Time (Min/Day)	Average amount of non-instructional minutes per day.
Non-Instructional Time (%)	Average percentage of allocated class time not used for instruction.
Content Coverage (%)	Percentage of state-specific academic standards addressed.
Cognitive Process Score	Sum of differentially weighted percentages of instructional time dedicated to each cognitive process expectation (*Attend* and *Remember* x1; *Understand/Apply*, *Analyze/Evaluate*, and *Create* x2).
Instructional Practice Score	Sum of differentially weighted percentages of instructional time dedicated to each instructional practice (*Used Independent Practice* and *Other Instructional Practices* x1; *Provided Direct Instruction*, *Provided Visual Representation*, *Asked Question*, *Elicited Think Aloud*, *Provided Guided Feedback*, and *Assessed Student Knowledge* x2).
Grouping Format Score	Sum of differentially weighted percentages of instructional time dedicated to each grouping format (*Whole Class* x1; *Individual* and *Small Group* x2)
Engagement	Average score based on "Not engaged (0%)" = 0; "Low % of time (<50%)" = 1; "Moderate % of time (50%-80%)" = 2; "High % of time (>80%)" = 3.
Goal Attainment/Effort	Average score based on No effort or product observed (0%) = 0; Low effort or limited portion of work completed (<50%) = 1; Moderate effort or moderate portion of work completed (50%-80%) = 2; High effort or substantial portion of work completed (>80%) = 3.

MyiLOGS: Instructional Reports



4/5/12 No assumption has been made that 100% of skills should or need to be covered as part of effective instruction. 17



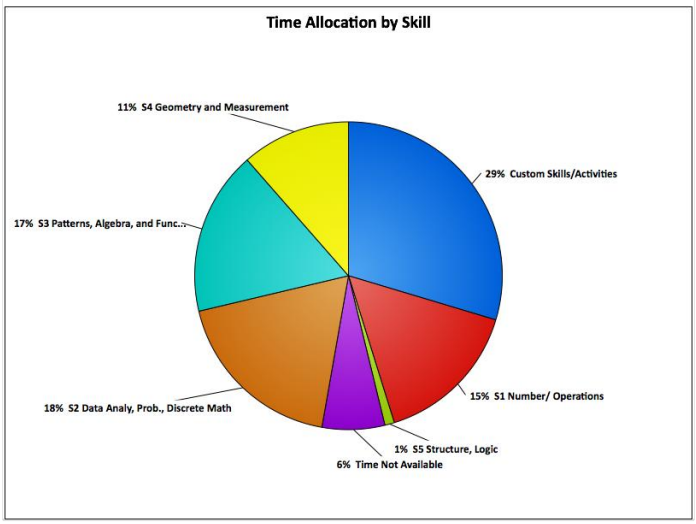
	08/10	09/10	10/10	11/10	12/10	01/11	02/11	03/11	04/11	05/11	06/11	07/11
Time on Standards	63%	58%	74%	88%	60%	68%	60%	51%	35%	—	—	—
Time on Custom Skills	32%	36%	20%	12%	15%	19%	19%	36%	57%	—	—	—
Time on N/A	5%	5%	3%	0%	24%	5%	8%	9%	5%	—	—	—
Standards Addressed	0%	3%	3%	11%	5%	3%	5%	8%	3%	—	—	—

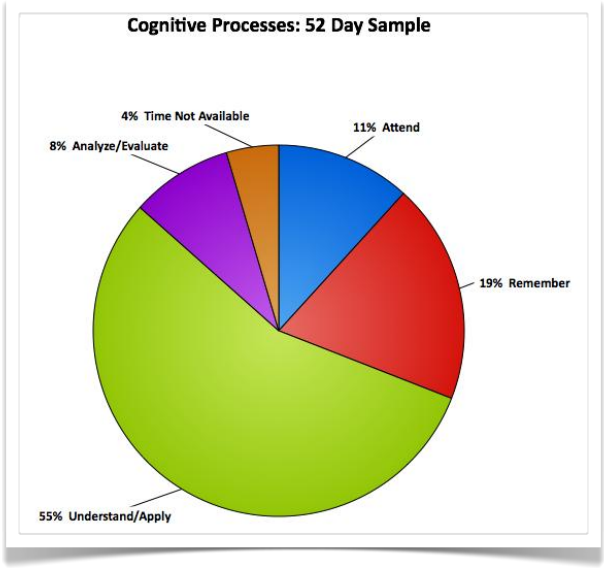
4/5/12 18

Detailed Content Coverage Bar Chart (Calendar Days)
Teacher: Teacher turquoise1005m **Class:** Tunnell Gr. 8 Math
Date Range: 08/01/2010 - 07/31/2011

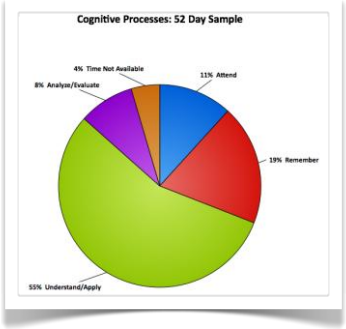
Skills	% of Total Time	
S1 Number/ Operations	**15.6%**	**33 hrs 20 mins**
S1C1PO1 Compare/order	0.6%	1 hrs 15 mins
S1C1PO2 Classify rational/irrational	1.5%	3 hrs 15 mins
S1C1PO3 model read numbers	1.5%	3 hrs 15 mins
S1C1PO4 model/solve absolute value	0.5%	1 hrs 10 mins
S1C2PO1 Factors/multiples/prime	1.6%	4 hrs 30 mins
S1C2PO2 Rational number effects	1.0%	2 hrs 10 mins
S1C2PO3 Percent inc., dec, simple interest	3.1%	7 hrs 45 mins
S1C2PO4 Std/scientific notation conver.	1.4%	3 hrs 5 mins
S1C2PO5 Simplify expression	3.4%	7 hrs 20 mins
S1C3PO1 Estimate1		
S1C3PO2 Estimate on number line	0.7%	2 hrs 35 mins
S2 Data Analy, Prob., Discrete Math	**18.5%**	**40 hrs 42 mins**
S2C1PO1 Use displays, box-whisker, scatterplot	5.2%	11 hrs 12 mins
S2C1PO2 Inferences, 2 data sets	1.2%	3 hrs 40 mins
S2C1PO3 Summary-shape of distribution		
S2C1PO4 Bias, effective presentation	0.2%	1 hrs 30 mins
S2C1PO5 Evaluate design		
S2C2PO1 Theoretical/experimental	3.2%	7 hrs 50 mins
S2C2PO2 Compare outcome/prediction	2.3%	5 hrs 0 mins
S2C2PO3 Sample space for dep/indep	1.5%	3 hrs 15 mins
S2C3PO1 Counting-order,repetition		
S2C3PO2 Counting-factorial notation	2.4%	5 hrs 5 mins
S2C4PO1 Solve graph problems	2.4%	5 hrs 10 mins

Broad Content Domain Coverage Pie Chart (Calendar Days)
Teacher: Teacher turquoise1005m **Class:** Tunnell Gr. 8 Math
Date Range: 08/01/2010 - 07/31/2011

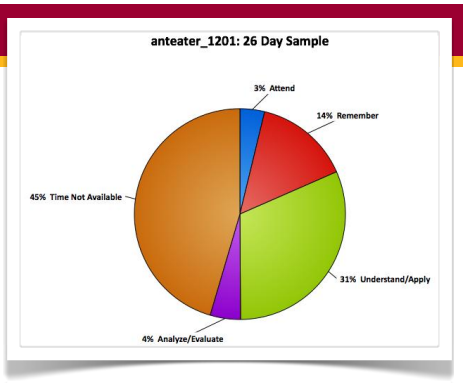


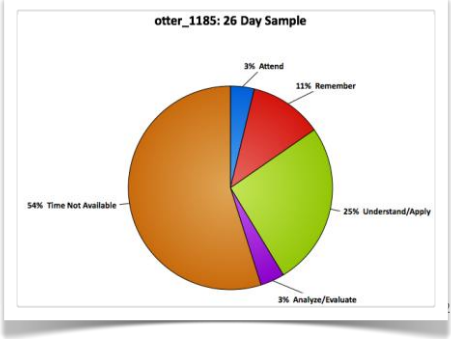


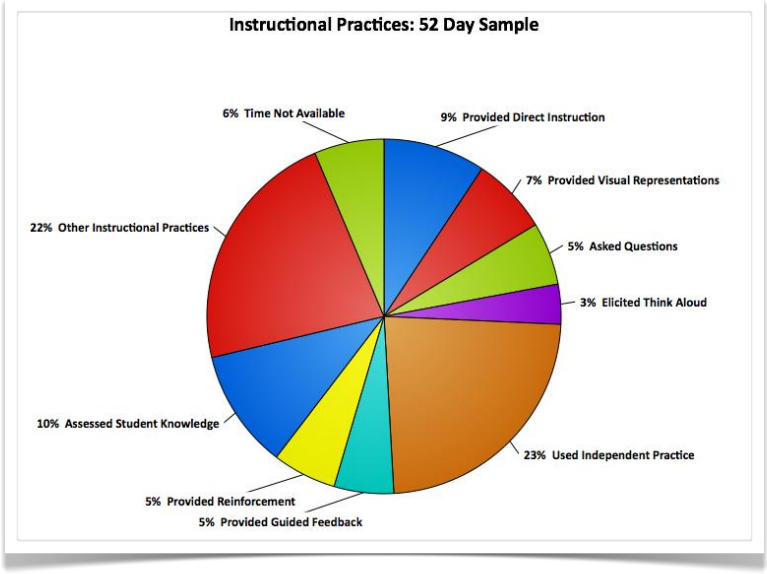
Review the two students with disabilities to the right.

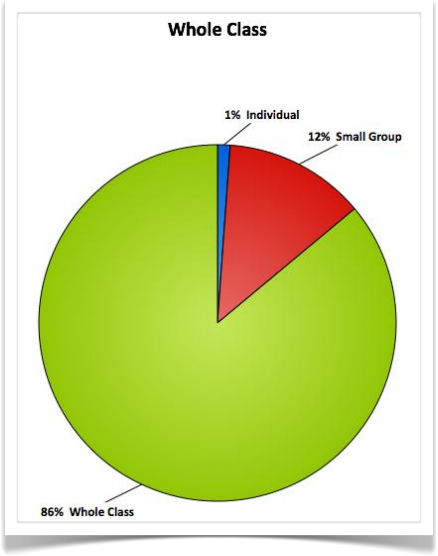


What are some key differences?






Instructional Practices: 52 Day Sample
6% Time Not Available
9% Provided Direct Instruction
7% Provided Visual Representations
5% Asked Questions
3% Elicited Think Aloud
22% Other Instructional Practices
10% Assessed Student Knowledge
23% Used Independent Practice
5% Provided Reinforcement
5% Provided Guided Feedback


Whole Class
1% Individual
12% Small Group
86% Whole Class

Study 1: Initial Validity Evidence for MyiLOGS

Research Questions

1. Can teachers be trained to use MyiLOGS with high integrity to yield reliable OTL indices?
2. To what extent is there convergent and predictive validity evidence for the MyiLOGS indices?
3. What are the relations between student-based MyiLOGS indices and student achievement?

Sample

Breakdown of Schools, Teachers, Classrooms, and Target Students by State and Subject

Sample	Arizona			Pennsylvania			South Carolina		
	MA	ELA	Unique	MA	ELA	Unique	MA	ELA	Unique
Schools			7			5			5
Teachers	8	7	15[a]	5	8	12	6	8	11
Classes	9	7		5	8		6	11	
Target Students	18	14	22	10	16	19	11	20	15

Note. MA = Mathematics; ELA = English/Language Arts.
[a]Includes three special education co-teachers.

MyiLOGS Worked Example

SUBJECT: Mathematics (Gr. 8)
CLASS PERIOD: 60 min

CALENDAR:

- Classroom announcements occupied about 10 minutes. [Time not available for instruction]
- ***Simplify numeric expressions*** for about 50 minutes. [Numbers and Operations]

CLASS ENACTED:

- For review, you asked questions of the whole class. Students were expected to recall previously taught strategies for ***simplifying numeric expressions*** for about 10 minutes.
- Because students seemed to have difficulties during the review, you decided to focus the lesson on discussing and modeling several problem-solving approaches with the whole class, which lasted for about 40 minutes. Throughout this time, students were expected to attend to your modeling for about 10 minutes and summarize and explain some of the strategies for about 30 minutes.
- The class was highly engaged and put forth an excellent effort.

STUDENT ENACTED:

- **Kayla** participated and completed the same activities as the rest of the class. She was highly engaged and put forth an excellent effort.
- **James** showed up a full 20 minutes late to class. He thus missed announcements and the review. His engagement and effort were low today.

MyiLOGS Training & Usage Data

- Performance assessment
  - All participants logged at least 2 instructional scenarios with 100% accuracy
- Survey responses
  - Consistent training across states in terms of trainer preparation and perceived ability to use the system reliably post training
- Bi-weekly fidelity check
  - Based on 15 PF checks, an average of 92% classrooms were logged without any missing information
- Website usage statistics
  - On average, participants logged into MyiLOGS 2.4 times per week (*SD* = 0.6) and clocked about 5.9 minutes per week (*SD* = 1.4) of active log-in time.
- Classroom observations
  - Average teacher-observer agreement was 77%
  - Average IOA was 97%

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Post-Training and Follow-up Survey Results

Question Number	Question Stem	Post-Training (n = 41)		Follow-Up (n = 26)	
		M	*(SD)*	*M*	*(SD)*
1	Professional development related to the content standards is important for promoting effective instruction.	5.8	(0.4)	5.6	(0.6)
2	Comprehensive, high-quality coverage of the content standards is an important part of effective instruction.	5.8	(0.4)	5.6	(0.6)
3	The MyiLOGS training was helpful for understanding how to use the system.	5.9	(0.3)	5.4	(0.7)
4	Based on the MyiLOGS training, I was prepared to use the system reliably.	5.5	(0.5)	5.3	(0.8)
5	An online version of this training (e.g., webinar) could have been equally effective.	3.2	(1.5)	3.9	(1.4)
6	I think MyiLOGS can support my comprehensive, high-quality coverage of the content standards.	5.6	(0.6)	5.2	(0.7)
7*	The MyiLOGS training scenarios were helpful for understanding how to use the system.	5.9	(0.4)	--	--
8*	Overall, I think the trainers were well prepared.	5.9	(0.4)	--	--
9*	Overall, I think the training time was sufficient for understanding how to use the system.	5.7	(0.5)	--	--
10**	The charts and tables of the MyiLOGS Report provided meaningful information about my instruction.	--	--	5.3	(0.7)
11**	I would use the MyiLOGS Report feedback during the school year to improve my instruction.	--	--	5.2	(0.8)
12**	I think MyiLOGS Instructional Growth Plan could be helpful as a professional development tool.	--	--	5.2	(0.8)
13**	Using MyiLOGS substantially increase my self-reflection and awareness of how and what I was teaching.	--	--	5.3	(0.8)

Note. Strongly Disagree = 1; Disagree = 2; Somewhat Disagree = 3; Somewhat Agree = 4; Agree = 5; Strongly Agree = 6.
*Post-training only question. **Follow-up only question.

Teacher Follow Up Data

- Teachers believe the use of MyiLOGS will improve their instructional practices and help them optimize instructional time and content coverage.
- Teachers found it easy to use MyiLOGS.
- Teachers we re-tested on their accurate use of MyiLOGS 8 months after their involvement in study and found to use it accurately.

MyiLOGS: Classroom Observation Form

Teacher ID: **Date:** **Class:** **Time:**

Record in 1-min intervals. Use tally marks (𝍸) to record the **student expectation** and **teacher action** that occupied the **majority of time** during the 1-min interval.

Skills	Attend Listen, focus, pay attention	Remember Recognize, identify, recall	Understand/Apply Interpret, exemplify, classify, summarize, infer, compare, explain / Execute, implement, use	Analyze/Evaluate Differentiate, organize, integrate, attribute / Check, test, critique, judge	Create Generate, hypothesize, plan, design, produce	Comments
Time not available for instruction						

Teacher Actions	Individual Action is focused on single individuals	Small Group Action is focused on small groups	Whole Class Action is focused on entire class	Comments
Provided Direct Instruction Teacher presents issue, discusses or models a solution approach, and engages students with approach in similar context.				
Provided Visual Representations Teacher uses visual representations to organize information, communicate attributes, and explain relationships.				
Asked Questions Teacher asks questions to engage students and focus attention on important information.				
Elicited Think Aloud Teacher prompts students to think aloud about their approach to solving a problem.				
Used Independent Practice Teacher allows students to work independently to develop and refine knowledge and skills.				
Provided Guided Feedback Teacher provides feedback to students on work quality, missing elements, and observed strengths.				
Provided Reinforcement Teacher provides reinforcement contingent on previously established expectations for effort and/or work performance.				
Assessed Student Knowledge Teacher uses quizzes, tests, student products, or other forms of assessment to determine student knowledge.				
Other Instructional Practices Any instructional practices not captured by the aforementioned key instructional practices. You can use the class notes to leave additional details.				
Time not available for instruction				

Summative Class Engagement ○ 0% ○ <50% ○ 50%-80% ○ >80% **Summative Goal Attainment** ○ 0% ○ <50% ○ 50%-80% ○ >80%

Percentage Agreement between Two Independent Observers

IOA Session	Cognitive Processes	Instructional Practices	Overall Agreement
1	100	96	**98**
2	100	96	**97**
3	100	100	**100**
4	100	100	**100**
5	88	100	**95**
6	82	100	**95**
7	100	100	**100**
8	100	100	**100**
9	100	96	**97**
10	100	100	**100**
11	100	100	**100**
12	100	100	**100**
13	91	100	**97**
14	67	100	**94**
15	100	96	**98**
16	67	89	**85**
M (SD)	93 (12)	98 (3)	**97 (4)**

Calendar-Based Class OTL Indices for Entire Sample

OTL Index	*n*	*M*	*(SD)*
Logged School Days	**46**	**151**	(18)
Instructional Time on Standards (Min/Day)	46	44	(23)
Instructional Time on Standards (%)	46	67	(18)
Instructional Time on Custom (Min/Day)	46	18	(11)
Instructional Time on Custom (%)	46	27	(17)
Non-Instructional Time (Min/Day)	46	3	(3)
Non-Instructional Time (%)	46	5	(4)
Number of Standards	**46**	**53**	**(28)**
Content Coverage of Standards (%)	46	68	(22)

Calendar-Based Class OTL Indices By Subject Area

OTL Index	MA			ELA		
	n	*M*	*SD*	*n*	*M*	*SD*
Across States						
Logged School Days	**20**	**156**	**(12)**	**26**	**147**	**(21)**
Instructional Time on Standards (Min/Day)	20	43	(19)	26	45	(25)
Instructional Time on Standards (%)	20	69	(16)	26	66	(19)
Instructional Time on Custom (Min/Day)	20	17	(11)	26	18	(11)
Instructional Time on Custom (%)	20	27	(17)	26	28	(17)
Non-Instructional Time (Min/Day)	20	3	(3)	26	3	(3)
Non-Instructional Time (%)	20	4	(4)	26	5	(5)
Number of Standards	**20**	**48**	**(13)**	**26**	**58**	**(36)**
Content Coverage of Standards (%)	20	66	(20)	26	69	(23)

Note. MA = Mathematics; ELA = English/Language Arts.

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Sample-Day Based Class OTL Quality Indices By Subject Area

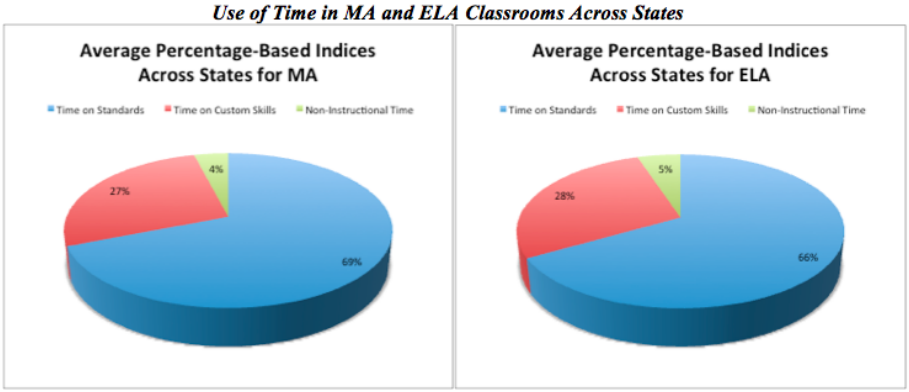
	MA			ELA		
	n	*M*	*SD*	*n*	*M*	*SD*
Arizona						
Logged Sample Days	**9**	**51**	**8**	**7**	**50**	**4**
Cognitive Process Score	9	1.69	0.16	7	1.82	0.10
Instructional Practice Score	9	1.67	0.08	7	1.57	0.11
Grouping Format Score	9	1.27	0.18	7	1.12	0.07
Engagement	9	2.60	0.30	7	2.63	0.27
Goal Attainment/Effort	9	2.59	0.29	7	2.60	0.29
Pennsylvania						
Logged Sample Days	**5**	**40**	**5**	**8**	**37**	**5**
Cognitive Process Score	5	1.71	0.17	8	1.79	0.13
Instructional Practice Score	5	1.70	0.09	8	1.69	0.18
Grouping Format Score	5	1.33	0.16	8	1.14	0.12
Engagement	5	2.42	0.22	8	2.71	0.19
Goal Attainment/Effort	5	2.36	0.28	8	2.69	0.21
South Carolina						
Logged Sample Days	**6**	**41**	**6**	**11**	**39**	**13**
Cognitive Process Score	6	1.67	0.13	11	1.74	0.11
Instructional Practice Score	6	1.68	0.18	11	1.49	0.25
Grouping Format Score	6	1.24	0.20	11	1.36	0.34
Engagement	6	2.52	0.32	11	2.43	0.40
Goal Attainment/Effort	6	2.50	0.31	11	2.43	0.40
Across States						
Logged Sample Days	**20**	**45**	**8**	**26**	**41**	**10**
Cognitive Process Score	20	1.69	0.14	26	1.78	0.11
Instructional Practice Score	20	1.68	0.12	26	1.57	0.21
Grouping Format Score	20	1.28	0.18	26	1.23	0.26
Engagement	20	2.53	0.28	26	2.57	0.33
Goal Attainment/Effort	20	2.50	0.29	26	2.56	0.33

Note. MA = Mathematics; ELA = English/Language Arts.

Correlations between SEC and MyiLOGS OTL Indices and Class Achievement Averages

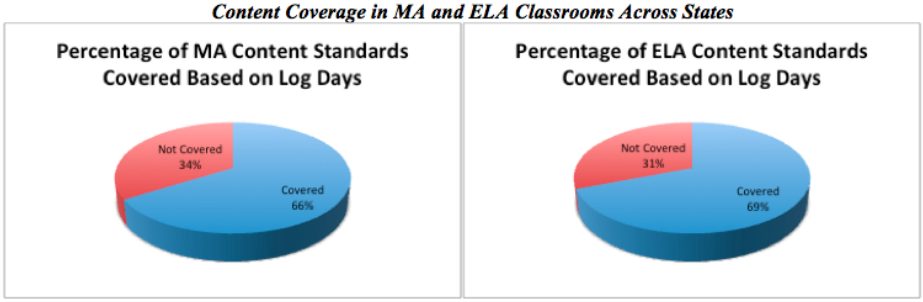
Index	2010-2011 Average Class Achievement
SEC Alignment Index	-.53*
Instructional Time on Standards (Min/Day)	.56*
Instructional Time on Standards (%)	.06
Instructional Time on Custom (Min/Day)	.49
Non-Instructional Time (Min/Day)	-.04
Non-Instructional Time (%)	-.32
Content Coverage of Standards (%)	-.30
Cognitive Process Score	.64**
Instructional Practice Score	-.34
Grouping Format Score	-.71**
Note. N = 16. *p <.05; **p < .01.	

Use of Time in MA and ELA Classrooms Across States



- MA data were based on 20 MA classes and an average of 156 log days. ELA data were based on 26 ELA classes and an average of 147 log days.

Content Coverage in MA and ELA Classrooms Across States



- The percentage-based *Content Covered* index was based on any content standard covered for more than 1 minute out of the total number of state- and subject-specific standards

Hierarchical Regression Analysis Summary for Student-Based OTL Indices Predicting Stude Achievement Controlling for Prior Achievement

Variable	*B*	*SEB*	*β*	R^2	ΔR^2
Step 1				**.62**	**.62**
Prior Achievement	0.76	0.11	0.79*		
Step 2				**.64**	**.02**
Prior Achievement	0.70	0.13	0.73*		
Time on Standards (Min/Day)	0.00	0.37	0.00		
Time on Custom (Min/Day)	0.46	0.51	0.13		
Non-Instructional Time (Min/Day)	0.20	0.40	0.06		
Step 3				**.63**	**-.01**
Prior Achievement	0.79	0.11	0.83*		
Content Coverage (%)	0.54	0.50	0.13		
Step 4				**.63**	**.00**
Prior Achievement	0.78	0.14	0.81*		
Cognitive Process Score	9.17	42.17	0.03		
Instructional Practice Score	36.75	55.37	0.09		
Grouping Format Score	2.26	37.30	0.01		
Final Model				**.62**	
Prior Achievement	0.76	0.11	0.79*		
Note. $p < .05$.					

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Hierarchical Regression Analysis Summary for Student-Based OTL Indices Predicting Student Achievement

Variable	*B*	*SEB*	*β*	R^2	ΔR^2
Step 1				**.25**	
Time on Standards (Min/Day)	-0.01	0.52	0.00		
Time on Custom (Min/Day)	1.76	0.64	0.50`		
Non-Instructional Time (Min/Day)	0.11	0.56	0.04		
Step 2				**.25**	**.00**
Time on Custom (Min/Day)	1.72	0.58	0.49`		
Content Coverage (%)	-0.13	0.70	-0.03		
Step 3				**.26**	**.01**
Time on Custom (Min/Day)	1.39	0.77	0.40		
Cognitive Process Score	36.58	67.88	0.12		
Instructional Practice Score	-39.46	75.93	-0.10		
Grouping Format Score	4.34	53.03	0.02		
Final Model				**.24**	
Time on Custom (Min/Day)	1.74	0.56	0.49`		

Note. $p < .05$.

Conclusions About Validity Evidence

The majority of findings of this study are unique, because no investigators have previously reported a study where OTL data were continuously collected and analyzed along all three instructional dimensions—time, content, and quality—at the class and student level for a large portion of the school year.

The evidence collected with MyiLOGS by teachers substantiated that:

(a) teachers can be trained to criterion within 4-hour to report reliably on various OTL indices based on instructional scenarios at the class and student level;

(b) teachers can maintain high procedural fidelity logging various OTL indices at the class and student level across the duration of a school year; and

(c) teachers' concurrent log data provided a valid account of their classroom instruction based on agreement percentages between teachers and independent observers. The results of the classroom observations indicated that two independent observers were able to achieve high agreements across both observation categories and teachers and observers generally had lower agreements for cognitive processes than instructional practices.

(d) Student-based OTL indices in general did not add significantly to over prior achievement when predicting end of year achievement.

The current findings do support the conclusion that the teacher self-report data from MyiLOGS provides a rich picture and reliable account of opportunities to learn in middle school classrooms across several states. Future studies are needed to address sample limitations.

Additional Research Questions to be Addressed with MyiLOGS

- In a subsequent analysis of data from this initial study, we also examined differences in the opportunity to learn of students with and without disabilities.

- Next, I highlight a few findings comparing general education classroom instruction for the entire classes and for individual students with disabilities receiving instruction in the general curriculum (i.e., state indented content standards).

Calendar-Based Class OTL Indices By Class Type

OTL Index	GENED (n = 29)		SPED (n = 17)				
	M	*SD*	*M*	*SD*	*df*	*t*	*ES*
Logged School Days	**155**	**17**	**142**	**17**	44	2.49*	0.76
Instructional Time on Standards (Min/Day)	50	23	34	16	44	2.60*	0.83
Instructional Time on Standards (%)	71	13	61	23	44	1.94	0.55
Instructional Time on Custom (Min/Day)	17	10	18	14	44	-0.13	-0.03
Instructional Time on Custom (%)	26	14	30	22	44	-0.81	-0.23
Non-Instructional Time (Min/Day)	3	3	3	3	44	-0.07	-0.02
Non-Instructional Time (%)	4	4	6	5	44	-1.14	-0.33
Number of Standards	**63**	**32**	**37**	**4**	44	3.42*	1.17
Content Coverage of Standards (%)	74	19	59	24	44	2.35*	0.69

Note. GENED = General education class; SPED = Special education class.

Sample-Day Based Class OTL Quality Indices By Class Type

OTL Index	GENED (n = 29)		SPED (n = 17)				
	M	*SD*	*M*	*SD*	*df*	*t*	*ES*
Across States							
Logged Sample Days	**47**	**9**	**37**	**6**	**44**	**3.98***	**1.27**
Cognitive Process Score	1.77	0.14	1.68	0.11	44	2.41*	0.75
Instructional Practice Score	1.64	0.13	1.59	0.25	44	0.77	0.22
Grouping Format Score	1.19	0.17	1.36	0.27	44	-2.70*	-0.78
Engagement	2.60	0.28	2.47	0.34	44	1.38	0.41
Goal Attainment/Effort	2.58	0.28	2.46	0.35	44	1.27	0.37

Note. *p <.05; GENED = General education class; SPED = Special education class; ES = Effect size measure *d*.

Differences in Class and Student Key OTL Indices By Class Type

	Class		Student				
	M	*SD*	*M*	*SD*	*df*	*t*	*ES*
General Education (n = 55)							
Instructional Time on Standards (Min/Day)	**47**	12	**41**	17	54	4.77***	.24
Instructional Time on Custom (Min/Day)	**21**	12	**20**	12	54	2.18*	.09
Non-Instructional Time (Min/Day)	**4**	4	**10**	13	54	-4.58***	-.20
Content Coverage of Standards (%)	**47**	15	**42**	17	54	5.36***	.31
Cognitive Process Score	**1.77**	0.14	**1.76**	0.15	54	3.89***	.05
Instructional Practice Score	**1.64**	0.13	**1.63**	0.14	54	2.32*	.08
Grouping Format Score	**1.19**	0.17	**1.21**	0.18	54	-1.70	-.11
Special Education (n = 34)							
Instructional Time on Standards (Min/Day)	**32**	18	**29**	17	33	3.90***	.18
Instructional Time on Custom (Min/Day)	**17**	13	**18**	14	33	-0.77	-.05
Non-Instructional Time (Min/Day)	**6**	5	**8**	8	33	-1.68	-.38
Content Coverage of Standards (%)	**38**	18	**36**	19	33	3.98***	.08
Cognitive Process Score	**1.68**	0.11	**1.67**	0.12	33	1.81	.09
Instructional Practice Score	**1.59**	0.25	**1.59**	0.26	33	0.92	.03
Grouping Format Score	**1.36**	0.26	**1.36**	0.28	33	0.52	.01

Note. *p <.05; ***p < .001; ES = Effect size measure *d*.

Conclusions About OTL for SWDs

"Based on this sample's general education classrooms, which represented a full inclusion model, students with disabilities experienced less time on standards, more non-instructional time, and less content coverage compared to their class. … At least for students with disabilities nested in general education classrooms, OTL appears to be a differentiated opportunity structure. …the instructional differences do not indicate equal or equitable OTL for students with disabilities. Given their disability-related characteristics, students with disabilities may need at least as much OTL, if not more, than their peers without disabilities. However, the current findings suggest the exact opposite; if replicable, these data would pose serious instructional challenges for teachers and hold profound implications for policy makers focusing on academic proficiency and growth without consideration for the instructional inputs and processes that affect student outcomes." (Kurz, Elliott, Lemons, Kettler, Zigmond, & Kloo, 2012)

Use of MyiLOGS in NCAASE Multiple Measures Study

The two primary types of measures include (a) opportunity to learn (OTL) as measured classwide with My instructional Learning Opportunity Guidance System or MyiLOGS, and (b) interim assessments, using a curriculum-based measure (easyCBM) or a brief multiple-choice test (NWEA MAP tests). We will also have state achievement test results for each year.

Design. For 2 consecutive years, we are following 4 target students—2 students with disabilities and 2 students without disabilities—who (a) receive math instruction in general education classrooms and (b) participate in the general state test. Multiple teachers across several grade levels (e.g., 2 MA teachers in Grades 4 and 5) in the same school are needed to maximize the likelihood that we can follow the same students for 2 consecutive years.

	Year 1 (2012-2013)	**Year 2** (2013-2014)
Grade 4	X	
Grade 5	X	X
Grade 6	X	X
Grade 7	X	X
Grade 8		X

Key References

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