DYNAMIC®
LEARNING MAPS

2017–2018 Technical Manual Update

Delaware Science Supplement

January 2019

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1. Introduction

During the 2017–2018 academic year, the Dynamic Learning Maps® (DLM®) Alternate Assessment System offered assessments of student achievement in mathematics, English language arts (ELA), and science for students with the most significant cognitive disabilities in grades 3 through 8 and high school.

A complete technical manual was created for the first year of operational administration for science (Dynamic Learning Maps Consortium [DLM Consortium], 2017a). Additionally, the 2017–2018 update to the science technical manual provides updated information for the 2017–2018 administration, including only sections with changes (DLM Consortium, 2018b). This volume provides state-specific information for two of those chapters. For a complete description of the DLM system, refer to the *2014–2015 Technical Manual—Year-End Model* (DLM Consortium, 2016). For a complete description of DLM science assessments, refer to the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a).

1.1. State-Specific Supplement Overview

Chapter 1 provides an overview of the contents of the Delaware state-specific supplement.

Chapter 2 and Chapter 3 do not include data specific to a single state and are not included in the state-specific supplement.

Chapter 4 provides a summary of Delaware teacher responses to a subset of the teacher survey administered in spring 2018. The chapter also includes a summary of Delaware student Access Profile selections.

Chapter 5 and Chapter 6 do not include data specific to a single state and are not included in the state-specific supplement.

Chapter 7 reports the 2017–2018 operational results for Delaware, including student participation data. The chapter details the percentage of students at each performance level; subgroup performance by gender, race, ethnicity, and English learner status; and the percentage of students who showed mastery at each linkage level.

Chapter 8, Chapter 9, Chapter 10, and Chapter 11 are not included in the state-specific supplement. For a complete summary, see the *2017–2018 Technical Manual Update—Science* (DLM Consortium, 2018b).

2. Essential Element Development

Essential Elements (EEs) are a key feature of the Dynamic Learning Maps® (DLM®) Alternate Assessment System, and serve as the conceptual and content basis for the DLM alternate assessment for science. For a description of the process used to develop the EEs, including the detailed work necessary to align them to the *Framework for K-12 Science Education: Practices, Crosscutting Concepts, and Core Ideas* (National Research Council, 2012) and the Next Generation Science Standards (NGSS Lead States [NGSS], 2013), and to the needs of the student population, see Chapter 2 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a).

3. Item and Test Development

For a description of updates to the Dynamic Learning Maps® (DLM®) Alternate Assessment System's item and test development for the 2017–2018 academic year, including a summary of external reviews of items and testlets for content, bias, and accessibility; a description of the operational assessments; and a description of field tests, see Chapter 3 of the *2017–2018 Technical Manual Update—Science* (DLM Consortium, 2018b).

For a complete description of item and test development, including a summary of item and testlet information; external reviews of items and testlets for content, bias, and accessibility; a description of operational assessments; and a description of field tests, see Chapter 3 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a).

4. Test Administration

Chapter 4 of the Dynamic Learning Maps® (DLM®) Alternate Assessment System *2017–2018 Technical Manual Update—Science* (DLM Consortium, 2018b) describes general test administration and monitoring procedures. This chapter supplement presents procedures and data collected in 2017–2018 for the state of Delaware, including teacher survey responses regarding user experience and accessibility and Access Profile selections.

For a complete description of test administration for DLM assessments, including information on administration time, available resources and materials, and information on monitoring assessment administration, see the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a).

4.1. User Experience with the DLM System

User experience with the 2017–2018 assessments was evaluated through the spring 2018 survey, which was disseminated to teachers who had administered a DLM assessment during the spring window. This section summarizes Delaware users' experience with the KITE® system. Additional survey responses are reported in the Accessibility section. For teacher responses to the 2015–2016 version of the survey, see Chapter 4 and Chapter 9 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a).

A total of 150 teachers from Delaware responded to the survey (with a response rate of 75%) for 319 students.

Participating Delaware teachers responded to surveys for between one and 11 students. Delaware teachers most frequently reported having 0 to 5 years of experience in science and with students with significant cognitive disabilities. The median response to the number of years of experience in both of these areas was 6 to 10 years. Approximately 2% indicated they had experience administering the DLM assessment in all three operational years.

The remainder of this section describes Delaware teachers' responses to the portions of the survey addressing educators' experiences with DLM assessments and KITE Client.

4.1.1. Educator Experience

Survey respondents were asked to reflect on their own experience with the assessments as well as their comfort level and knowledge administering them. Most of the questions required teachers to respond on a four-point scale: *strongly disagree*, *disagree*, *agree*, or *strongly agree*. Responses are summarized in Table 4.1.

Nearly all Delaware teachers (91%) agreed or strongly agreed that they were confident administering DLM testlets. Most respondents (71%) agreed or strongly agreed that the required test administrator training prepared them for their responsibilities as test administrators. Most Delaware teachers also responded that manuals and the Educator Resources page helped them understand how to use the system (85%); that they knew how to use accessibility supports, allowable supports, and options for flexibility (91%); and that the Testlet Information Pages helped them deliver the testlets (88%).

Table 4.1. Teacher Responses Regarding Test Administration

Statement	SD		D		A		SA		A+SA	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%
Confidence in ability to deliver DLM testlets	1	1.3	6	8.0	50	66.7	18	24.0	68	90.7
Test administrator training prepared respondent for responsibilities of test administrator	2	2.7	20	26.7	44	58.7	9	12.0	53	70.7
Manuals and DLM Educator Resources Page materials helped respondent understand how to use assessment system	1	1.3	10	13.3	57	76.0	7	9.3	64	85.3
Respondent knew how to use accessibility features, allowable supports, and options for flexibility	0	0.0	7	9.5	54	73.0	13	17.6	67	90.6
Testlet Information Pages helped respondent to deliver the testlets	0	0.0	9	12.0	53	70.7	13	17.3	66	88.0

Note: SD = strongly disagree; D = disagree; A = agree; SA = strongly agree; A+SA = agree and strongly agree.

4.1.1.1. KITE System

Teachers were asked questions regarding the technology used to administer testlets, including the ease of use of KITE Client and Educator Portal.

The software used for the administration of DLM testlets is KITE Client. Teachers were asked to consider their experiences with KITE Client and respond to each question on a five-point scale: *very hard, somewhat hard, neither hard nor easy, somewhat easy,* or *very easy*. Table 4.2 summarizes teacher responses to these questions.

Delaware respondents found it to be either *somewhat easy* or *very easy* to log in to the system (63%), to navigate within a testlet (68%), to record a response (70%), to submit a completed testlet (70%), and to administer testlets on various devices (61%). Open-ended survey response feedback indicated testlets were easy to administer and that technology had improved compared to previous years.

Table 4.2. Ease of Using KITE Client

	VH		SH		N		SE		VE		SE+VE	
Statement	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**
Enter the site	3	4.2	6	8.5	17	23.9	26	36.6	19	26.8	45	63.4
Navigate within a testlet	1	1.4	6	8.5	16	22.5	25	35.2	23	32.4	48	67.6
Record a response	0	0.0	4	5.6	17	23.9	23	32.4	27	38.0	50	70.4
Submit a completed testlet	0	0.0	3	4.3	18	25.7	21	30.0	28	40.0	49	70.0
Administer testlets on various devices	1	1.4	5	7.0	22	31.0	23	32.4	20	28.2	43	60.6

Note: VH = very hard; SH = somewhat hard; N = neither hard nor easy; SE = somewhat easy; VE = very easy; SE+VE = somewhat easy and very easy.

Educator Portal is an area of the KITE system used to store and manage student data and enter PNP and First Contact information. Teachers were asked to assess the ease of navigating and using Educator Portal for its intended purposes. The data are summarized in Table 4.3 using the same scale used to rate experiences with KITE Client. Overall, Delaware respondents' feedback was mixed to favorable: approximately half of teachers found it to be either *somewhat easy* or *very easy* to navigate the site (45%), enter PNP and First Contact information (49%), manage student data (38%), manage their accounts (46%), or manage tests (41%).

Open-ended survey responses indicated that teachers want less wait time between testlet generation. They also want to be able to generate Testlet Information Pages for the entire class at one time.

Table 4.3. Ease of Using Educator Portal

	VH		SH		N		SE		VE		SE+VE	
Statement	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**
Navigate the site	6	8.5	13	18.3	20	28.2	23	32.4	9	12.7	32	45.1
Enter Access Profile and First Contact information	2	2.8	11	15.5	23	32.4	26	36.6	9	12.7	35	49.3
Manage student data	4	5.6	15	21.1	25	35.2	20	28.2	7	9.9	27	38.1
Manage my account	4	5.6	10	14.1	24	33.8	23	32.4	10	14.1	33	46.5
Manage tests	4	5.6	16	22.5	22	31.0	18	25.4	11	15.5	29	40.9

Note: VH = very hard; SH = somewhat hard; N = neither hard nor easy; SE = somewhat easy; VE = very easy; SE+VE = somewhat easy and very easy.

Finally, respondents were asked to rate their overall experience with KITE Client and Educator Portal on a four-point scale: *poor, fair, good,* or *excellent*. Results are summarized in Table 4.4. The majority of respondents reported a positive experience with KITE Client. A total of 74% of respondents rated their KITE Client experience as *good* or *excellent*, while 57% rated their overall experience with Educator Portal as *good* or *excellent.*

Table 4.4. Overall Experience With KITE Client and Educator Portal

	Poor		Fair		Good		Excellent	
Statement	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**
KITE Client	7	9.7	12	16.7	38	52.8	15	20.8
Educator Portal	8	11.1	23	31.9	35	48.6	6	8.3

Overall, feedback from teachers indicated that KITE Client was easy to navigate and user friendly. Teachers also provided useful feedback about how to improve the Educator Portal user experience, which will be considered for technology development for 2018–2019 and beyond.

4.2. Accessibility

Accessibility supports provided in 2017–2018 were the same as those available in previous years. DLM accessibility guidance, in accordance with DLM Consortium (2017b), distinguishes among accessibility supports that are provided in KITE Client via the Access Profile[1], require additional tools or materials, and are provided by the test administrator outside the system.

[1]The Access Profile includes both the PNP profile and the First Contact Survey.

Table 4.5 shows selection rates for the three categories of accessibility supports. The most commonly selected supports in Delaware were spoken audio, human read aloud, and calculator. For a complete description of the available accessibility supports, see Chapter 4 in the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a).

Table 4.5. Accessibility Supports Selected for Students (N = 381)

Support	*n*	%
Supports provided in KITE Client via Access Profile		
Spoken audio	225	59.1
Magnification	50	13.1
Color contrast	29	7.6
Overlay color	*	*
Invert color choice	*	*
Supports requiring additional tools/materials		
Calculator	200	52.5
Individualized manipulatives	136	35.7
Single-switch system	22	5.8
Alternate form - visual impairment	*	*
Two-switch system	*	*
Uncontracted braille	*	*
Supports provided outside the system		
Human read aloud	287	75.3
Test administrator enters responses for student	150	39.4
Partner assisted scanning	50	13.1
Sign interpretation of text	*	*
Language translation of text	*	*

* These data were suppressed because $n < 15$.

Table 4.6 describes Delaware teacher responses to survey items about the accessibility supports used during administration. Teachers were asked to respond to two items using a four-point Likert-type scale (*strongly disagree*, *disagree*, *agree*, or *strongly agree*) or indicate if the item did not apply to the student. The majority of teachers agreed that students were able to effectively use accessibility supports (88%), and that accessibility supports were similar to ones students used for instruction (89%). These data support the conclusions that the accessibility supports of the DLM alternate assessment were effectively used by students, emulated accessibility supports used during instruction, and met student needs for test administration. Additional data will be collected during the spring 2019 survey to determine whether results improve over time.

Table 4.6. Teacher Report of Student Accessibility Experience

	SD		D		A		SA		A+SA		N/A	
Statement	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**	***n***	**%**
Student was able to effectively use accessibility features.	2	2.7	2	2.7	39	53.4	25	34.2	64	87.6	5	6.8
Accessibility features were similar to ones student uses for instruction.	2	2.7	2	2.7	39	53.4	26	35.6	65	89.0	4	5.5

Note: SD = strongly disagree; D = disagree; A = agree; SA = strongly agree; A+SA = agree and strongly agree. N/A = not applicable.

4.3. Conclusion

During the 2017–2018 academic year, the DLM system was available during two testing windows: an optional instructionally embedded window and the required spring window. Implementation evidence was collected in the form of teacher survey responses regarding user experience, accessibility, and Access Profile selections. Results from the teacher survey indicated that teachers felt confident administering testlets in the system, that KITE Client was easy to use, and that Educator Portal posed some challenges but had improved since the prior year.

5. Modeling

The Dynamic Learning Maps® (DLM®) Alternate Assessment System draws upon a well-established research base in cognition and learning theory but relatively uncommon operational psychometric methods to provide feedback about student performance. The approach uses innovative operational psychometric methods to provide feedback about student mastery of skills. For a summary of the psychometric model that underlies the DLM assessment system and modeling evidence from the 2017–2018 year, see Chapter 5 of the *2017–2018 Technical Manual Update—Science* (DLM Consortium, 2018b).

For a complete description of the psychometric model used to calibrate and score the DLM assessments, including the psychometric background, the structure of the assessment system suitability for diagnostic modeling, and a detailed summary of the procedures used to calibrate and score DLM assessments, see Chapter 5 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a).

6. Standard Setting

The standard setting process for the Dynamic Learning Maps® (DLM®) Alternate Assessment System in science derived cut points for assigning students to four performance levels. For a description of the process, including the development of policy performance level descriptors, the 3-day standard setting meeting, follow-up evaluation of impact data and cut points, and specification of grade-specific performance level descriptors, see Chapter 6 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a).

7. Assessment Results

Chapter 7 of the Dynamic Learning Maps® (DLM®) Alternate Assessment System *2017–2018 Technical Manual Update—Science* (DLM Consortium, 2018b) describes consortium assessment results for the 2017–2018 academic year, including student participation and performance summaries, and an overview of data files and score reports delivered to state partners. This chapter presents Delaware-specific 2017–2018 student participation data; the percentage of students achieving at each performance level; and subgroup performance by gender, race, ethnicity, and English learner (EL) status. This chapter also reports the distribution of students by the highest linkage level mastered during spring 2018. For a complete description of score reports and interpretive guides, see Chapter 7 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a).

7.1. Student Participation

During spring 2018, science assessments were administered to 474 students in Delaware. The assessments were administered by 183 educators in 95 schools and 23 school districts.

Table 7.1 summarizes the number of Delaware students tested in each grade and course. More than 100 students participated in each of the elementary (grades 3-5) and the middle school (grades 6-8) grade bands. In biology (grades 9-12) almost 200 students participated.

Table 7.1. Delaware Student Participation by Grade or Course (N = 474)

Grade	Students (n)
3	*
4	*
5	139
6	*
7	*
8	155
Biology	169

* These data were suppressed because $n < 15$.

Table 7.2 summarizes the demographic characteristics of Delaware students who participated in the spring 2018 administration. The majority of participants were male (65%) and white (45%). About 1% of students were monitored or eligible for EL services.

Table 7.2. Demographic Characteristics of Participants (N = 474)

Subgroup	*n*	%
Gender		
Male	306	64.6
Female	168	35.4
Race		
White	215	45.4
African American	191	40.3
Two or more races	47	9.9
Asian	15	3.2
American Indian	*	*
Native Hawaiian or Pacific Islander	*	*
Hispanic ethnicity		
No	427	90.1
Yes	47	9.9
English learner (EL) participation		
Not EL eligible or monitored	†	†
EL eligible or monitored	*	*

* These data were suppressed because $n < 15$.
† These data were complementarily suppressed.

In addition to the spring administration, instructionally embedded science assessments are also made available for teachers to administer to students during the year. Results from the instructionally embedded science assessments do not contribute to final summative scoring but can be used to guide instructional decision-making. A total of 2 Delaware students took at least one instructionally embedded testlet during the 2017–2018 academic year.

Table 7.3 summarizes the number of instructionally embedded test sessions taken in science. In Delaware, students took 2 total testlets during the instructionally embedded window.

Table 7.3. Number of Instructionally Embedded Science Test Sessions, by Grade or Course (N = 2)

Grade	*n*
3	0
4	0
5	0
6	0
7	2
8	0
Biology	0

7.2. Student Performance

Student performance on DLM assessments is interpreted using cut points, determined during standard setting, which separate student scores into four performance levels. For a full description of the standard-setting process, see Chapter 6 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a). A student receives a performance level based on the total number of linkage levels mastered across the assessed Essential Elements (EEs).

For the spring 2018 administration, student performance was reported using the same four performance levels approved by the DLM Consortium for prior years:

- The student demonstrates Emerging understanding of and ability to apply content knowledge and skills represented by the EEs.
- The student's understanding of and ability to apply targeted content knowledge and skills represented by the EEs is Approaching the Target.
- The student's understanding of and ability to apply content knowledge and skills represented by the EEs is At Target.
- The student demonstrates Advanced understanding of and ability to apply targeted content knowledge and skills represented by the EEs.

7.2.1. Overall Performance

Table 7.4 reports the percentage of Delaware students achieving at each performance level from the spring 2018 administration for science.

The spring 2018 results were fairly consistent with performance in prior years, with the majority of students achieving at either the Emerging or Approaching the Target performance levels. At the elementary level, the percentage of students who achieved at the At Target or Advanced levels was 12%; in middle school grades 22% achieved at the At Target or Advanced levels; and in high school end-of-instruction biology, the percentage was 21%.

Table 7.4. Percentage of Students by Grade and Performance Level

Grade	Emerging (%)	Approaching (%)	Target (%)	Advanced (%)	Target+ Advanced (%)
3*	*	*	*	*	*
4*	*	*	*	*	*
5 (n = 139)	68.3	19.4	11.5	0.7	12.2
6*	*	*	*	*	*
7*	*	*	*	*	*
8 (n = 155)	49.0	27.7	22.6	0.6	23.2
Biology (n = 169)	60.9	18.3	17.2	3.6	20.7

* These data were suppressed because $n < 15$.

7.2.2. Subgroup Performance

Data collection for DLM assessments includes demographic data on gender, race, ethnicity, and EL status. Table 7.5 summarizes the Delaware disaggregated frequency distributions for science,

collapsed across all assessed grade levels. Rows labeled Missing indicate the student's demographic data were not entered into the system.

Table 7.5. Students at Each Performance Level, by Demographic Subgroup (N = 474)

Subgroup	Emerging		Approaching		Target		Advanced	
	n	%	*n*	%	*n*	%	*n*	%
Gender								
Male	182	59.5	†	†	60	19.6	*	*
Female	101	60.1	44	26.2	†	†	*	*
Race								
White	127	59.1	45	20.9	†	†	*	*
African American	115	60.2	41	21.5	†	†	*	*
Two or more races	27	57.4	*	*	*	*	*	*
Asian	*	*	*	*	*	*	*	*
American Indian	*	*	*	*	*	*	*	*
Native Hawaiian or Pacific Islander	*	*	*	*	*	*	*	*
Hispanic ethnicity								
No	257	60.2	91	21.3	†	†	*	*
Yes	26	55.3	*	*	*	*	*	*
English learner (EL) participation								
Not EL eligible or monitored	280	59.8	101	21.6	†	†	*	*
EL eligible or monitored	*	*	*	*	*	*	*	*

* These data were suppressed because $n < 15$.
† These data were complementarily suppressed.

7.2.3. Linkage Level Mastery

As described earlier in the chapter, overall performance in each subject is calculated based on the number of linkage levels mastered across all EEs. Results indicate the highest linkage level the student mastered for each EE. The linkage levels are (in order): Initial, Precursor, and Target. A student can be a master of zero, one, two, or all three linkage levels, within the order constraints. For example, if a student masters the Precursor level, they also master the Initial linkage level. This section summarizes the distribution of students by highest linkage level mastered across all EEs. For each student, the highest linkage level mastered across all tested EEs was calculated. Then, for each grade, the number of students with each linkage level as their highest mastered linkage level across all EEs was summed and then divided by the total number of students who tested in the grade. This resulted in the proportion of students for whom each level was the highest level mastered.

Table 7.6 reports the percentage of Delaware students who mastered each linkage level as the highest linkage level across all EEs for each grade. For example, across all fifth-grade EEs, the Initial level was the highest level that students mastered 37% of the time. The percentage of students who mastered as high as the Target linkage level ranged from approximately 35% in end-of-instruction biology to 49% in grade eight.

Table 7.6. Students' Highest Linkage Level Mastered Across Science EEs, by Grade

Grade	Linkage Level			
	No evidence (%)	Initial (%)	Precursor (%)	Target (%)
3*	*	*	*	*
4*	*	*	*	*
5 (*n* = 139)	5.8	36.7	22.3	35.3
6*	*	*	*	*
7*	*	*	*	*
8 (*n* = 155)	5.8	12.9	32.3	49.0
Biology (*n* = 169)	1.2	41.4	22.5	34.9

* These data were suppressed because $n < 15$.

8. Reliability

The Dynamic Learning Maps® (DLM®) Alternate Assessment System uses nontraditional psychometric models (i.e., diagnostic classification models) to produce student score reports. As such, evidence for the reliability of results is based on methods that are commensurate with the models used to produce score reports. For a summary of the methods used to estimate reliability and reliability evidence from the 2017–2018 year, see Chapter 8 of the *2017–2018 Technical Manual Update—Science* (DLM Consortium, 2018b).

For a complete description of the simulation-based methods used to calculate reliability for DLM assessments, including the psychometric background, see Chapter 8 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a).

9. Validity Studies

Evidence in support of the overall validity argument for results produced by the Dynamic Learning Maps® (DLM®) Alternate Assessment System is summarized in the chapters of the *2017–2018 Technical Manual Update—Science* (DLM Consortium, 2018b), the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a), and the other annual technical manual updates (DLM Consortium, 2018a). For a description of additional evidence collected during 2017–2018 for the five critical sources of evidence (i.e., evidence based on test content, response process, internal structure, relation to other variables, and consequences of testing), as described in the *Standards for Educational and Psychological Testing* (American Educational Research Association, American Psychological Association, & National Council on Measurement in Education [AERA et al.], 2014), see Chapter 9 of the *2017–2018 Technical Manual Update—Science* (DLM Consortium, 2018b).

10. Training and Instructional Activities

Chapter 10 of the Dynamic Learning Maps® (DLM®) Alternate Assessment System *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a) describes the training offered in 2015–2016 to state and local education agency staff, the required test administrator training, the optional science module for test administrators, and the optional science instructional activities. No changes were made to training or optional science resources in 2017–2018. For a complete description of facilitated and self-directed training and professional development for DLM assessments, including a description of training for state and local education agency staff, see Chapter 10 of the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a).

11. Conclusion and Discussion

The Dynamic Learning Maps® (DLM®) Alternate Assessment System is based on the core belief that all students should have access to challenging, grade-level academic content. Therefore, the DLM assessments provide students with the most significant cognitive disabilities the opportunity to demonstrate what they know and can do. It is designed to map students' learning after a full year of instruction.

The DLM science assessment completed its third operational administration year in 2017–2018. The chapters of the *2017–2018 Technical Manual Update—Science* (DLM Consortium, 2018b) provide updated evidence from the 2017–2018 year to support the propositions and assumptions that undergird the assessment system as described at the onset of its design in the DLM theory of action. Chapter 11 of the *2017–2018 Technical Manual Update—Science* (DLM Consortium, 2018b) summarizes that manual's contents and describes plans for future studies. For a complete summary of evidence collected for the DLM theory of action, also see the *2015–2016 Technical Manual—Science* (DLM Consortium, 2017a).

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