



# Evaluation Brief

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Program Evaluation Unit

## Outcome Evaluation of the Library Media Program on Information Literacy Skills

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### Executive Summary

The Office of Shared Accountability, at the request of the Office of Curriculum and Instructional Programs, collaborated with the Division of School Library Media Programs (SLMP) for an outcome evaluation of SLMP's curriculum on information literacy. The key study objective was as follows: What are the effects of the instructional services provided through school-based library media programs on acquisition of information literacy skills and on academic achievement, for Montgomery County Public Schools (MCPS) students at different grade levels?

In their role as teachers, library media specialists (LMSs) deliver the curriculum on information literacy skills, which include locating, collecting, organizing, interpreting, and sharing information in an ethical manner (MCPS, 2004).

To measure acquisition of information literacy skills, LMSs administered TRAILS, the Tool for Real-time Assessment of Information Literacy Skills (developed by Kent State University), to one to five class sections of one grade level. LMSs administered TRAILS in spring 2009 to Grade 5 and 8 students and in early fall 2009 to Grade 11 students. LMSs submitted TRAILS scores from 4,221 Grade 5; 2,326 Grade 8; and 1,629 Grade 11 students, representing 42%, 22%, and 15% of all enrolled students at the respective grade levels.

The results for acquisition of information literacy skills showed that students in Grades 5, 8, and 11 met the benchmark for the overall measure of information literacy skills. Results were positive for each subset of information literacy skills, except for one—using information responsibly, ethically, and legally.

To measure academic achievement, reading scores from the Maryland School Assessment (MSA) in reading for Grades 5 and 8 students and the English 10 High School Assessment (HSA) for Grade 11 students were used. For each grade level, a multiple regression tested the relationship between TRAILS scores and reading scores, while controlling for

differences in student characteristics. As expected, students with better information literacy skills (i.e., higher TRAILS scores) had higher academic achievement (i.e., higher reading scores). This relationship was statistically significant and large enough to be of practical significance to educators for each grade level tested.

Program recommendations are as follows:

- Continue instruction that leads to student proficiency in information literacy skills, such as identifying sources and developing a search strategy.
- Encourage LMSs in middle schools to focus more on instruction for developing a topic and evaluating sources.
- Provide professional development and other support to LMSs to increase the ability of students at all levels to use information responsibly, ethically, and legally.
- Support data-driven instruction by promoting the use of TRAILS, so that LMSs can use the results to inform their instruction in information literacy skills.
- Ensure that students make progress in mastering all information literacy skills, which also should improve their reading performance, given the positive association between TRAILS and reading scores.

### Program Description

#### *Program Goals*

SLMP provides instruction, resources, and services to assist students in becoming critical thinkers with the goal of providing all students with equitable and timely access to ideas and information and an integrated instructional program (SLMP, 2010). Additional goals are to ensure that students are effective users of ideas and information and that they achieve learning outcomes in information literacy, independent learning, and socially responsible use of information and information technology.

## ***Curriculum and Instruction***

Information literacy skills are a process by which students access, retrieve, and critically use data to generate knowledge for themselves (Kuhlthau, 2004). Learning to be information literate is a requisite for mastering all disciplines (Harada, 2005). Information literacy skills equip students to be effective lifelong learners (American Association of School Librarians, 1998) and to be college ready (Katz, 2007).

The SLMP curriculum on information literacy skills focuses on five of the six standards from the Maryland State Curriculum for School Library Media (more details are in Appendix A):

- I. Define and refine problem or question
- II. Locate and evaluate resources and sources
- III. Find, generate, record, and organize data/information
- IV. Interpret recorded data/information
- V. Share findings/conclusions

LMSs should teach information literacy skills in conjunction with content curriculum so that students have an authentic learning experience (SLMP, 2007). SLMP's curriculum guide, *Making Connections* (SLMP, 2007), identifies specific opportunities for LMSs to collaborate with teachers at each grade level to integrate information literacy skills into the subject area curricula. The guide includes sample lessons and ideas for achieving the lesson objectives.

For Grade 5, LMSs typically meet with the teaching team to identify the most appropriate information literacy skills to match with English/language arts, social studies, and science. Possible research topics include author studies, the Bill of Rights, and astronomy and celestial objects. The LMS then schedules classes for the library media center. Before students begin their research, the LMS reviews the information literacy skills required. When the LMS does not have the opportunity to collaborate with the classroom teacher, s/he must rely on the curriculum guide and the information literacy skills guide to make connections to a content area.

For Grade 8, LMSs generally meet with the subject-area departments to collaboratively plan lessons on information literacy skills and to support student success in completing required research projects. Typically, the LMS reviews and instructs students in the information literacy skills required to meet the lesson's content objectives. For example, when students study how the Supreme Court's decisions affect the United States political system, they apply information literacy skills, such as identifying key words, taking notes, and writing citations.

For Grade 10, LMSs have the opportunity to work with every student in the required National, State, and Local Government (NSL) course. The required research project for this course allows LMSs to collaborate extensively with NSL teachers and develop lessons that help students refine search strategies and critical analysis skills, especially with electronic resources. English, science, and social studies courses offer further opportunities to match Grade 10 curricular requirements with information literacy skills.

## **Evaluation Questions**

This study addressed two evaluation questions, each for MCPS students at different grade levels:

1. What are the effects of the instructional services provided through school-based library media programs on acquisition of information literacy skills?
2. What are the effects of the instructional services provided through school-based library media programs on academic achievement?

## **Information Literacy Skills and Reading**

Reading performance on state-mandated assessments was used to measure the impact of information literacy skills on student achievement. Research conducted in several states has established that instruction in information literacy skills has a positive relationship with reading performance (Association of Supervisors and Curriculum Developers, 2003; Lance, 2004).

MCPS Information Literacy Standards II–IV include skills that are relevant to reading performance. Mastery of these skills is expected to improve students' comprehension of informational text, a skill included in the reading MSAs for Grades 5 and 8 (Maryland State Department of Education [MSDE], 2010a). For example, both reading skills and information literacy skills involve reading a variety of informational texts, evaluating the text for reliability and connections to the reading purpose or need, and analyzing informational texts for important ideas. Likewise, understanding organizational formats (e.g., chronological, cause/effect) and identifying and using text features (e.g., titles) are skills necessary to both comprehending informational texts and acquiring information literacy.

Mastery of the skills in Standards II–IV is expected to benefit the reading performance of high school students as well. The English 10 HSA tests 12 abilities including the following: students will be able

to locate, retrieve, and use information from various sources to accomplish a purpose (MSDE, 2010b). The skills in Standards II–IV focus on this ability.

## Methodology

### *Measures*

TRAILS, an online multiple-choice tool, was used to measure students' acquisition of information literacy skills. The Kent State University Department of Libraries and Media Services developed this tool. TRAILS is based on literacy competencies for Grades 6 and 9, as found in the Ohio Academic Content Standards and in Information Literacy Standards for Student Learning developed by the American Association of School Librarians and the Association for Educational Communications and Technology (Scholman & Gedeon, 2007). In this study, Grade 5 students completed the Grade 6 version of TRAILS and Grades 8 and 11 students completed the Grade 9/high school version. The TRAILS test includes items on the following five categories (more details on the categories are in Appendix B):

1. Develop topic
2. Identify potential sources
3. Develop, use, and revise search strategies
4. Evaluate sources and information
5. Recognize how to use information responsibly, ethically, and legally

The TRAILS test is an appropriate assessment for the MCPS standards on information literacy skills. Specifically, TRAILS category 1 assesses Standard I, because students need to define and refine the problem or question to begin the research process. TRAILS category 2 assesses Standard II about identifying sources. TRAILS category 3 also assesses the Standard II requirement that students apply knowledge of search strategies when locating relevant sources and the Standard III requirement that students use keywords and text features to find information within a specific source. TRAILS category 4 assesses Standard III on evaluating the relevancy of information within a source and also Standard IV on evaluating and analyzing the quality of recorded data. TRAILS category 5 assesses the ethical component of Standards I–V, as well as the Standard III requirements for intellectual integrity and ethical behavior and the Standard V requirements to share findings legally and responsibly. Examples of TRAILS items related to MCPS Standards II–IV on information literacy are in Appendix C.

To determine whether MCPS students had reached proficiency in information literacy skills, national

average scores on the TRAILS Grade 9 test were used as benchmarks for Grades 8 and 11. National averages were unavailable for the Grade 6 test. Therefore, program staff set the benchmark for this test as average scores of at least 65%.

To measure reading performance, spring 2009 scores from reading MSAs for Grade 5 and 8 students and English 10 HSAs for Grade 11 students were used.

### *Sample*

This study employed a convenience sample. Elementary school LMSs were asked to assess one to three classes; LMSs in middle and high schools were asked to assess three classes. LMSs assessed from one to five classes of one grade level. LMSs administered TRAILS in spring 2009 to Grades 5 and 8 students. Although the plan was to test Grade 10 students at the same time, scheduling conflicts pushed the testing to fall 2009, after the cohort entered Grade 11. TRAILS scores were received from 118 of 131 (90%) elementary school LMSs, 36 of 38 (95%) middle school LMSs, and 23 of 25 (92%) high school LMSs. The sample included 4,221 Grade 5; 2,326 Grade 8; and 1,629 Grade 11 students.

### *Analysis*

To evaluate acquisition of information literacy skills, tests of proportions analyzed whether the average TRAILS scores of MCPS students differed significantly from the benchmark, by grade level.

To evaluate effects on reading achievement, multiple regression analysis tested whether students with higher TRAILS scores had higher reading scores, while controlling for differences in student characteristics. These analyses included only students with valid reading and TRAILS scores. Student characteristics included gender, race and ethnicity, receipt of Free and Reduced-price Meal System (FARMS) services, receipt of special education services, and limited English language proficiency.<sup>1</sup>

For limited English language proficiency, each student was classified as yes or no. The yes group included students who currently receive English for Speakers of Other Languages (ESOL) services. This group also included students who had exited ESOL services within the last two years for Grades 5 and 8; for Grade 11, the yes group also included students who had ever received ESOL services. For each grade, the no group included all other students.

<sup>1</sup> Although the findings are based on appropriate analyses, causality cannot be inferred from the current study.

Lastly, the regression included a variable related to the poverty level of the student’s school; it was Title I or non-Title I for Grade 5 and red (higher poverty) or green (lower poverty) zone for Grades 8 and 11.

The analysis included both statistical significance tests and effect sizes to examine the relationship between information literacy skills and reading achievement. The former examined the likelihood that the observed relationship between TRAILS scores and reading scores occurred by chance. However, sample size influences statistical significance, such that with a large sample, even small differences may be significant. Therefore, effect sizes were used to judge whether the observed relationships between TRAILS scores and reading scores were large enough to be of practical significance to educators (American Psychological Association, 2001). Partial correlations were used as an effect size assessment (Kline, 2005). Cohen (1988) proposed the following guidelines for these correlations: .10, .30, and .50 correspond to small, medium, and large effect sizes, respectively.

## Results

### *Question 1: Acquisition of Information Literacy Skills*

Based on their TRAILS scores, Grade 5 students were proficient in almost all information literacy skills (Table 1). Their scores significantly exceeded the program benchmark for overall score ( $p < .001$ ) and for three categories: develop topic ( $p < .01$ ), identify sources ( $p < .001$ ), and evaluate sources ( $p < .001$ ). In addition, Grade 5 students met the benchmark for develop search strategy. However, their scores were significantly below the benchmark (19 percentage points) for one skill—use responsibly ( $p < .001$ ).

Table 1  
Comparison of MCPS Mean Percentage Correct for Each TRAILS Category to Benchmark, Grade 5 (N = 4,189)

TRAILS category	MCPS students	Program benchmark Grade 5	z score for MCPS vs. benchmark
Overall	70%	65%	4.89***
Develop topic	68%	65%	2.91**
Identify sources	69%	65%	3.90***
Develop search strategy	65%	65%	0.00
Evaluate sources	76%	65%	11.12***
Use responsibly	46%	65%	17.83***

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Grade 8 students showed proficiency in some information literacy skills when compared to the Grade 9 national benchmark (Table 2). They met the benchmark for overall score, as well as for the

categories of identify sources and develop search strategy. However, their scores were significantly below the benchmark for three categories: develop topic ( $p < .01$ ), evaluate sources ( $p < .01$ ), and use responsibly ( $p < .001$ ). The difference was six percentage points for the latter category, but only three percentage points for the other two categories.

Table 2  
Comparison of MCPS Mean Percentage Correct for Each TRAILS Category to Benchmark, Grade 8 (N = 2,234)

TRAILS category	MCPS students	National benchmark Grade 9	z score for MCPS vs. benchmark
Overall	57%	58%	0.90
Develop topic	51%	54%	2.68**
Identify sources	65%	67%	1.87
Develop search strategy	55%	57%	1.79
Evaluate sources	40%	43%	2.73**
Use responsibly	68%	74%	5.77***

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Grade 11 students were proficient in almost all information literacy skills (Table 3). Their scores significantly exceeded the national benchmark for overall score, develop topic, develop search strategy, and evaluate sources ( $p < .001$  for each comparison). In addition, they met the benchmark for identify sources. However, their scores were significantly below the benchmark by 23 percentage points for one skill—use responsibly ( $p < .001$ ).

Table 3  
Comparison of MCPS Mean Percentage Correct for Each TRAILS Category to Benchmark, Grade 11 (N = 1,633)

TRAILS category	MCPS students	National benchmark Grade 9	z score for MCPS vs. benchmark
Overall	63%	58%	4.00***
Develop topic	63%	54%	7.20***
Identify sources	66%	67%	0.82
Develop search strategy	68%	57%	9.07***
Evaluate sources	56%	43%	10.13***
Use responsibly	51%	74%	17.97***

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

### *Question 2: Academic Achievement*

As expected, students with better information literacy skills (i.e., higher TRAILS scores) had higher academic achievement (i.e., higher reading scores).

Results for Grade 5 students are in Table 4. The  $B$ -value for the TRAILS score indicates that a one-point increase in this score is significantly associated with a 2.6-point average increase ( $p < .001$ ) in MSA reading score, after adjusting for student traits. The  $\beta$ -values are standardized to allow comparisons

among predictors. The TRAILS score  $\beta$ -value equals .55 ( $p < .001$ ); thus, this score is the largest predictor of reading scores in the model. The partial  $r$ -value (i.e., the partial correlation) represents the effect size; for the TRAILS score, the partial  $r$ -value equals .55. This value indicates that the relationship between TRAILS scores and Grade 5 MSA reading scores is large enough to be of practical significance.

Table 4  
Relation of MSA Reading Scores to TRAILS Scores After Adjusting for Student Characteristics for Grade 5

Regression model	Grade 5 (N = 4,152)		
	B (SE)	$\beta$	Partial <i>r</i>
TRAILS overall score	2.63 (0.1)	.55***	.55
FARMS (non-recipient vs. recipient)	-5.80 (1.2)	-.07***	-.08
Gender (male vs. female)	-4.30 (0.8)	-.06***	-.08
Limited English proficiency (no vs. yes) <sup>a</sup>	-7.30 (1.5)	-.06***	-.08
Race/ethnicity (African American & Hispanic vs. Asian American & White)	9.68 (1.0)	.13***	.14
Special education services (non-recipient vs. recipient)	-9.23 (1.5)	-.07***	-.10
Title I school (no vs. yes)	2.16 (1.3)	.02	.02
Model fit	$R^2 = .47, F = 522.2***$		

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

<sup>a</sup>Yes includes students who currently receive ESOL services or who exited ESOL services within the last two years.

Results for Grade 8 students are in Table 5.

Table 5  
Relation of MSA Reading Scores to TRAILS Scores After Adjusting for Student Characteristics for Grade 8

Regression model	Grade 8 (N = 2,240)		
	B (SE)	$\beta$	Partial <i>r</i>
TRAILS overall score	2.42 (0.1)	.45***	.46
FARMS (non-recipient vs. recipient)	-6.99 (1.3)	-.11***	-.12
Gender (male vs. female)	6.70 (0.9)	.12***	.15
Limited English proficiency (no vs. yes) <sup>a</sup>	-10.30 (2.4)	-.07***	-.09
Race/ethnicity (African American & Hispanic vs. Asian American & White)	5.70 (1.1)	.10***	.10
Special education services (non-recipient vs. recipient)	-11.04 (1.9)	-.10***	-.12
School zone (green vs. red)	0.12 (1.0)	.00	.00
Model fit	$R^2 = .37, F = 190.0***$		

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

<sup>a</sup>Yes includes students who currently receive ESOL services or who exited from ESOL services within the last two years.

For Grade 8, the  $B$ -value for the TRAILS score shows that a one-point increase in this score is significantly associated with a 2.4-point average increase ( $p < .001$ ) in MSA reading score, after adjusting for student traits. The TRAILS score  $\beta$ -value equals .45 ( $p < .001$ ); thus, this score is the largest predictor of reading scores in the model. For the TRAILS score, the partial  $r$ -value equals .46, which indicates that the relationship between TRAILS scores and Grade 8 MSA reading scores is large enough to be of practical significance to educators.

Results for Grade 11 students are in Table 6. The  $B$ -value for the TRAILS score indicates that a one-point increase in this score is significantly associated with a 2.5-point average increase ( $p < .001$ ) in the HSA English 10 score, after adjusting for student characteristics. The  $\beta$ -value for the TRAILS score equals .55 ( $p < .001$ ); thus, this score is the largest predictor of reading scores in the model. The partial  $r$ -value for the TRAILS score equals .59, which indicates that the relationship between TRAILS scores and HSA English 10 scores is large enough to be of practical significance.

Table 6  
Relation of HSA English 10 Scores to TRAILS Scores After Adjusting for Student Characteristics for Grade 11

Regression model	Grade 11 (N = 1,437)		
	B (SE)	$\beta$	Partial <i>r</i>
TRAILS overall score	2.55 (0.1)	.55***	.59
ESOL (never received vs. ever received)	-4.24 (1.3)	-.06***	-.09
FARMS (non-recipient vs. recipient)	-4.92 (1.4)	-.07***	-.09
Gender (male vs. female)	5.04 (1.0)	.09***	.14
Race/ethnicity (African American & Hispanic vs. Asian American & White)	-8.54 (1.1)	-.15***	-.20
Special education services (non-recipient vs. recipient)	-15.08 (1.7)	-.16***	-.23
School zone (green vs. red)	-4.51 (1.0)	-.08***	-.11
Model fit	$R^2 = .59, F = 294.8***$		

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

In summary, the regression results indicated that the relationship between information literacy skills (i.e., TRAILS scores) and reading performance (i.e., MSA or HSA scores) was statistically significant and large enough to be of practical significance to educators, for each grade level tested.

## Recommendations

Program recommendations are as follows:

- Continue instruction that leads to student proficiency in information literacy skills such as identify sources and develop search strategy.
- Encourage LMSs in middle schools to focus more on instruction related to developing a topic and evaluating sources.
- Provide professional development and other supports to LMSs at all levels to increase the ability of students to use information responsibly, ethically, and legally.
- Support data-driven instruction by promoting the use of TRAILS, so that LMSs can use the results to inform their instruction in information literacy skills. To identify areas that may need attention, LMSs should examine the TRAILS items that their students frequently miss (see suggestions in Morrison, 2007) and also compare their students' TRAILS scores to the benchmark scores used in this study and to the averages for MCPS students (see templates in Appendix D).
- Ensure that students make progress in mastering information literacy skills, which also should improve their reading performance, given the positive association between TRAILS and reading scores.

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# Appendices

## Appendix A

### Standards from the Maryland State Curriculum for School Library Media for Grades Pre-K–12

- I. Define and Refine Problem or Question: Students will be able to follow an inquiry process to define a problem, formulate questions, and refine either or both to meet a personal and/or assigned information need.
- II. Locate and Evaluate Resources and Sources: Students will be able to follow an inquiry process to identify, locate, evaluate, and select resources and sources in a wide variety of formats to meet the information need in an ethical manner.
- III. Find, Generate, Record, and Organize Data/Information: Students will be able to follow an inquiry process to find, generate, record, and organize information relevant to the information need in an ethical manner.
- IV. Interpret Recorded Data/Information: Students will be able to follow an inquiry process to interpret recorded data/information to create new understandings and knowledge related to the information need in an ethical manner.
- V. Share Findings/Conclusions: Students will be able to follow an inquiry process to share findings/conclusions in an appropriate format to support written, oral, and multimedia information products and evaluate the products and the processes in an ethical manner.
- VI. Appreciate Literature and Life-long Learning: Students will be able to demonstrate an appreciation of literature and multimedia as a reflection of human experience and use the inquiry process for life-long learning.

*Source:* Bansbach, J. (Ed.). (2010, February/March). *Maryland State Curriculum: School Library Media* (Monograph). Baltimore, Maryland: Maryland State Department of Education.

Appendix B  
Detailed Descriptions of the Five Categories of TRAILS

**1. Develop topic**

Develop focus. Recognize the hierarchical relationships of broader and narrower topics. Identify individuals to help you focus a topic. Identify manageable topics based on the parameters of an assignment.

**2. Identify potential sources**

Understand the types of containers in which information is housed (ex: different types of libraries, books, databases, online catalogs, primary sources, etc.) and the types of information that can be found within each type of container. Understand the roles and limitations of differing types of information sources (encyclopedias, atlases, dictionaries, etc.) and finding tools (research databases, online catalogs, bibliographic citations, people, etc.). Select the most productive information sources and findings tools to address a given information need.

**3. Develop, use, and revise search strategies**

Understand how to use a given type of information container in order to retrieve information (ex: index and table of contents in a book, an online catalog, etc.). Select search terms. Develop a search strategy for the topic appropriate to a given finding tool. Understand how to use Boolean operators. Revise search strategies when too few, too many, or irrelevant results are returned.

**4. Evaluate sources and information**

Recognize bias. Differentiate between fact and opinion. Determine the accuracy, authority, coverage, currency, and relevancy of information and/or information sources.

**5. Recognize how to use information responsibly, ethnically, and legally**

Recognize how to paraphrase correctly. Understand the concept of intellectual property (especially copyright, fair use, and plagiarism). Understand the concept of intellectual freedom. Create bibliographies and parenthetical citations according to an appropriate style manual.

*Source:* TRAILS: Tool for Real-time Assessment of Information Literacy Skills, (2010). *Categories.* Retrieved April 14, 2010, from <http://www.trails-9.org/categories2.php?page=works>.



Appendix C

Linkages between MCPS Standards for Information Literacy Skills and TRAILS Items by Grade Level Test

<b>Standard</b>	<b>TRAILS-6 (Grade 6)</b>	<b>TRAILS-9 (Grade 9)</b>
<p><b>II</b> Locate and evaluate resources and sources</p>	<p><u>Example 1</u> You need to find the longitude and latitude of Sydney, Australia. What is the best reference source to use?</p> <p><b>CHOOSE ONE ANSWER</b></p> <ul style="list-style-type: none"> <li>• Almanac</li> <li>• <b>Atlas</b></li> <li>• Dictionary</li> <li>• Encyclopedia</li> </ul>	<p><u>Example I</u> You are responsible for writing a paper on the production of electricity in your state. Which resource is <u>least</u> likely to have biased information:</p> <p><b>CHOOSE ONE ANSWER</b></p> <ul style="list-style-type: none"> <li>• <b>Environmental Protection Agency</b></li> <li>• www.freetheplanet.org</li> <li>• A newsletter written by an electric company</li> <li>• <i>The Greenworks Gazette</i></li> <li>• www.slatercoalcompany.com</li> </ul>
	<p><u>Example 2</u> You are to write a report about healthy eating. You are to use only online resources. From the list below, select the best source to help you locate information on your topic.</p> <p><b>CHOOSE ONE ANSWER</b></p> <ul style="list-style-type: none"> <li>• Website on how obesity affects health</li> <li>• <b>Online magazine article titled “Eating for Better Health”</b></li> <li>• Online encyclopedia article on exercise</li> <li>• Online magazine article on the uses of garlic</li> </ul>	<p><u>Example 2</u> Which of the following is <u>not</u> a primary source in history?</p> <p><b>CHOOSE ONE ANSWER</b></p> <ul style="list-style-type: none"> <li>• Original photographs</li> <li>• <b>Book reviews</b></li> <li>• Original music scores</li> <li>• Letters</li> <li>• Personal diaries</li> </ul>

(continued)

Standard	TRAILS–6 (Grade 6)	TRAILS–9 (Grade 9)
<p><b>III</b> Find, generate, record, and organize data/information</p>	<p><u>Example 1</u> You are assigned a broad topic to research. Before you can narrow your topic to a manageable one, you must take certain steps, which are listed below. Which of the following lists the steps in the correct order (first to last)? A. Write down things I need to learn more about the broad topic B. Write down what I already know about the broad topic C. Read about the broad topic</p> <p><b>CHOOSE ONE ANSWER</b></p> <ul style="list-style-type: none"> <li>• C,B,A</li> <li>• <b>B,A,C</b></li> <li>• B,C,A</li> <li>• A,B,C</li> </ul>	<p><u>Example 1</u> You are assigned a report for your social studies class on a speech given by the U.N. Secretary General four days ago. What research tool would <u>not</u> be helpful in finding information about the speech? <b>CHOOSE ONE ANSWER</b></p> <ul style="list-style-type: none"> <li>• Yahoo News Directory (online)</li> <li>• an online newspaper database</li> <li>• <b>your library’s catalog</b></li> <li>• United Nations' Web site (<a href="http://www.un.org">http://www.un.org</a>)</li> </ul>
	<p><u>Example 2</u> You are using recipes from this book in your report. You must include it in your bibliography. Given this title page, who would be the book’s publisher?</p> <div data-bbox="412 1052 683 1352" style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p style="text-align: center;"><b>Fiesta!</b> Cooking Up a Mexican Party</p> <p style="text-align: center;">By Juan Pablomesa</p> <p style="text-align: center;">Cooking Press, Inc. New York*Boston*London</p> </div> <p><b>CHOOSE ONE ANSWER</b></p> <ul style="list-style-type: none"> <li>• Fiesta!</li> <li>• Fiesta! Cooking Up a Mexican Party</li> <li>• <b>Cooking Press, Inc.</b></li> <li>• Juan Pablomesa</li> </ul>	<p><u>Example 2</u> In English class your group is creating a pamphlet about child abuse, and this pamphlet will be distributed in your school and community. Select the correct order for these research steps:</p> <ul style="list-style-type: none"> <li>A. Evaluate and record information from a variety of resources</li> <li>B. Organize information and create a rough draft version of your pamphlet</li> <li>C. Locate appropriate resources</li> <li>D. Create a final version of the pamphlet</li> <li>E. Review the success of your research and final pamphlet</li> <li>F. Determine the focused topic of your research</li> </ul> <p><b>CHOOSE ONE ANSWER</b> C, F, A, B, E, D F, B, A, C, E, D C, F, B, A, D, E <b>F, C, A, B, D, E</b> F, C, B, A, D, E</p>

(continued)

Standard	TRAILS–6 (Grade 6)	TRAILS–9 (Grade 9)
<p><b>IV</b> Interpret recorded data/information</p>	<p><u>Example 1</u> Johnson, Terry. “Working Dogs Help Save Lives.” <i>Dog Fancy</i> 24 June 2007: 75-77.</p> <p>What is <i>Dog Fancy</i> in the example above?</p> <p><b>CHOOSE ONE ANSWER</b></p> <ul style="list-style-type: none"> <li>• Chapter of a book</li> <li>• Publishing company</li> <li>• <b>Title of a magazine</b></li> <li>• Title of an article</li> </ul>	<p><u>Example 1</u> You want to include the ideas from the following quotation from the <i>Farm News Bulletin</i> in your research paper. Which of the following options below demonstrates the correct use of paraphrasing?</p> <p>Citation: Helms, Martha R. "Drought Casualties." <i>Farm News Bulletin</i> 15 Aug. 2007: A4.</p> <p>"The entire state of Oklahoma has not seen a drop of rain in six weeks. Fields have deep chasms in their arid soil; the mouths of these chasms gape open, begging for a drink. Farmers have lost billions of dollars worth of crops, and the lack of feed for livestock is making many more farmers nervous about the winter months."</p> <p><b>CHOOSE ONE ANSWER</b></p> <ul style="list-style-type: none"> <li>• Arid Oklahoma fields have deep chasms that beg for a drink of rain. Farmers are really worried about their livestock</li> <li>• Oklahoma has not seen a drop of rain in six weeks. Farmers have lost billions of dollars worth of crops, and the lack of feed for livestock is making many more farmers nervous about the winter months.</li> <li>• In Oklahoma, “farmers have lost billions of dollars worth of crops, and the lack of feed for livestock is making many more farmers nervous about the winter months” (Helms A4).</li> <li>• <b>The lack of rain in Oklahoma the past six weeks has caused crop loss valued in the billions and has worried farmers about whether they will be able to feed their animals during the winter (Helms A4).</b></li> </ul>
	<p><u>Example 2</u> Read over the sentences in the box below. Select whether the sentence is either Fact or Opinion.</p> <ol style="list-style-type: none"> <li>1. Smoking is bad for your health. <u>Fact</u> Opinion</li> <li>2. Smoking should be banned. <u>Fact</u> <b>Opinion</b></li> <li>3. People shouldn’t smoke in their homes <u>Fact</u> <b>Opinion</b></li> <li>4. Smoking can cause lung cancer. <u>Fact</u> Opinion</li> </ol>	<p><u>Example 2</u> The following is a quote from an article you found for your research paper on stem cell research. "Stem cell research offers the possibility of understanding many different diseases. Until this research is well-funded, the number of Americans with health insurance is not expected to change." Which statement below is most accurate?</p> <p><b>CHOOSE ONE ANSWER</b></p> <ul style="list-style-type: none"> <li>• This is credible information because it is written as a quote, indicating this is an expert opinion.</li> <li>• This is credible information because it presents current scientific understanding</li> <li>• <b>This is not credible information because the relationship between the statements is not logical.</b></li> <li>• This is not credible information because the author is biased against stem cell research.</li> </ul>

Note. Text in **bold** indicates the correct answer.

Appendix D  
 Templates for Library Media Specialists to Analyze TRAILS Scores, by School Level

Elementary School: Grade 5

% correct by TRAILS component	Mean of my students' scores	Mean values for all MCPS	Program benchmark Grade 5	# points between my scores and others	
				All MCPS	Benchmark
Total		70%	65%		
Develop topic		68%	65%		
Identify potential sources		69%	65%		
Develop, use, and revise search strategies		65%	65%		
Evaluate sources and information		76%	65%		
Recognize how to use information responsibly, ethically, and legally		46%	65%		

Middle School: Grade 8

% correct by TRAILS component	Mean of my students' scores	Mean value for all MCPS	National benchmark Grade 9	# points between my scores and others	
				All MCPS	Benchmark
Total		57%	58%		
Develop topic		51%	54%		
Identify potential sources		65%	67%		
Develop, use, and revise search strategies		55%	57%		
Evaluate sources and information		40%	43%		
Recognize how to use information responsibly, ethically, and legally		68%	74%		

High School: Grade 11

% correct by TRAILS component	Mean of my students' scores	Mean value for all MCPS	National benchmark Grade 9	# points between my scores and others	
				All MCPS	Benchmark
Total		63%	58%		
Develop topic		63%	54%		
Identify potential sources		66%	67%		
Develop, use, and revise search strategies		68%	57%		
Evaluate sources and information		56%	43%		
Recognize how to use information responsibly, ethically, and legally		51%	74%		